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(54) **Titre : LUTTE CONTRE LES RAVAGEURS UTILISANT UNE COMBINAISON D'INSECTICIDES ET DE PLANTES
TRANSGENIQUES AU MOYEN D'UNE APPLICATION FOLIAIRE ET D'UNE APPLICATION PAR ARROSAGE**
(54) **Title: PEST CONTROL USING A COMBINATION OF INSECTICIDES AND TRANSGENIC PLANTS BY MEANS OF LEAF AND
DRENCHING APPLICATION**

(57) **Abrégé/Abstract:**

The invention relates to a method for controlling pests by combining insecticides and transgenic plants and as a result for better utilizing the production potential of transgenic plants. Said plant is treated with a combination of active substances containing an active substance from the group of anthranilic acid amids and at least one other insecticide.



**Pest control using a combination of insecticides and transgenic plants by means of leaf and
drenching application**

A b s t r a c t

5 The invention relates to a method for controlling pests using a combination of insecticides and transgenic plants and consequently improving the utilization of the production potential of transgenic plants which comprises treating the plant with active compound combinations comprising an active compound from the group of the anthranilamides and at least one further insecticide.

**Pest control using a combination of insecticides and transgenic plants by means of leaf and
drenching application**

The invention relates to a method for controlling pests using a combination of insecticides and transgenic plants and consequently improving the utilization of the production potential of transgenic plants.

In recent years, there has been a marked increase in the proportion of transgenic plants in agriculture, even if regional differences are still noticeable to date. Thus, for example, the proportion of transgenic maize in the USA has doubled from 26% to 52% since 2001, while transgenic maize has hardly been of any practical importance in Germany. However, in other European countries, for example in Spain, the proportion of transgenic maize is already about 12%.

Transgenic plants are employed mainly to utilize the production potential of respective plant varieties in the most favourable manner, at the lowest possible input of production means. The aim of the genetic modification of the plants is in particular the generation of resistance in the plants to certain pests or harmful organisms or else herbicides and also to abiotic stress (for example drought, heat or elevated salt levels). It is also possible to modify a plant genetically to increase certain quality or product features, such as, for example, the content of selected vitamins or oils, or to improve certain fibre properties.

Herbicide resistance or tolerance can be achieved, for example, by incorporating genes into the useful plant for expressing enzymes to detoxify certain herbicides, so that a relatively unimpeded growth of these plants is possible even in the presence of these herbicides for controlling broad-leaved weeds and weed grasses. Examples which may be mentioned are cotton varieties or maize varieties which tolerate the herbicidally active compound glyphosate (Roundup®), (Roundup Ready®, Monsanto) or the herbicides glufosinate or oxynil.

More recently, there has also been the development of useful plants comprising two or more genetic modifications ("stacked transgenic plants" or multiply transgenic crops). Thus, for example, Monsanto has developed multiply transgenic maize varieties which are resistant to the European corn borer (*Ostrinia nubilalis*) and the Western corn rootworm (*Diabrotica virgifera*). Also known are maize and cotton crops which are both resistant to the Western corn rootworm and the cotton bollworm and tolerant to the herbicide Roundup®.

It has now been found that the utilization of the production potential of transgenic useful plants

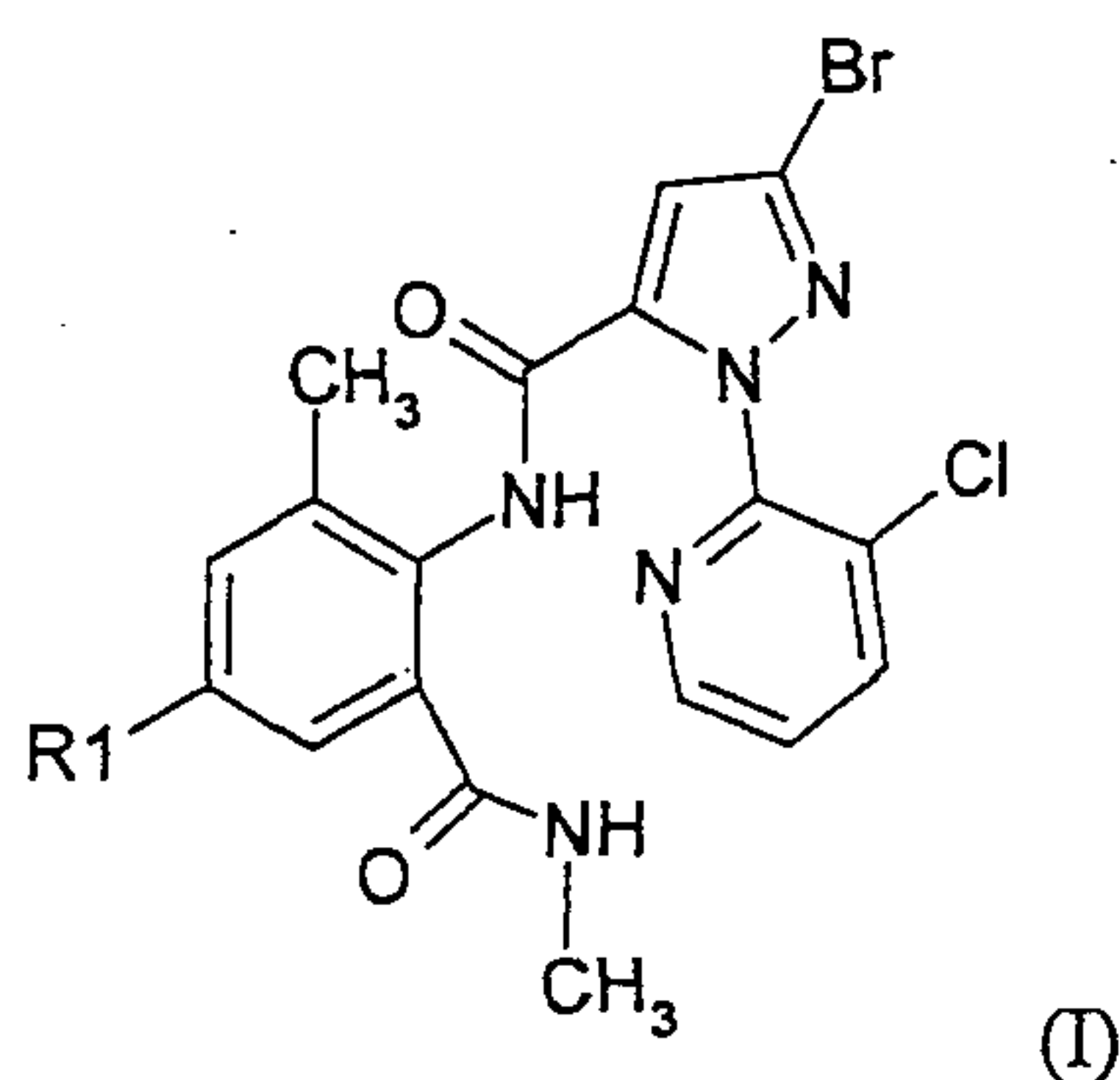
30725-943

- 2 -

can be improved even more by treating the plants with a mixture of an active compound of the formula (I) and an active compound of group II. Here, the term "treatment" includes all measures resulting in a contact between these active compounds and at least one plant part. "Plant parts" are to be understood as meaning all above-ground and below-ground parts and organs of plants, such as shoot, leaf, flower and root, by way of example leaves, needles, stalks, stems, flowers, fruit bodies, fruits and seed, and also roots, tubers and rhizomes. The plant parts also include harvested material and also vegetative and generative propagation material, for example cuttings, tubers, rhizomes, slips and seed.

It is already known that compounds of the formula (I) have insecticidal action (for example from WO 03/015519 and WO 04/067528), and that they can be used in mixtures (for example from WO 05/048711, WO 05/107468, WO 06/007595, WO 06/068669).

Disclosed herein are mixtures of an active compound of the formula (I) as follows:



where

R1 represents Cl or cyano

and at least one of the following active compounds from group (II). The active compounds of group (II) are classified in various classes (1-21) and groups according to their mechanism of action:

Insecticides/acaricides/nematicides:

(1) Acetylcholinesterase (AChE) inhibitors, for example

carbamates, e.g. alanycarb, aldicarb, aldoxycarb, allyxycarb, aminocarb, bendiocarb, benfuracarb,

- 3 -

bufencarb, butacarb, butocarboxim, butoxycarboxim, carbaryl, carbofuran, carbosulfan, cloethocarb, dimetilan, ethiofencarb, fenobucarb, fenothiocarb, formetanate, furathiocarb, isoprocarb, metam-sodium, methiocarb, methomyl, metolcarb, oxamyl, pirimicarb, promecarb, propoxur, thiodicarb, thiofanox, trimethacarb, XMC, and xylylcarb; or

- 5 organophosphates, e.g. acephate, azamethiphos, azinphos (-methyl, -ethyl), bromophos-ethyl, bromfenvinfos (-methyl), butathiofos, cadusafos, carbophenothion, chlorethoxyfos, chlorfenvinphos, chlormephos, chlorpyrifos (-methyl/-ethyl), coumaphos, cyanofenphos, cyanophos, chlorfenvinphos, demeton-S-methyl, demeton-S-methylsulphon, dialifos, diazinon, dichlofenthion, dichlorvos/DDVP, dicrotophos, dimethoate, dimethylvinphos, dioxabenzofos, disulfoton, EPN, ethion, ethoprophos, etrimfos, famphur, fenamiphos, fenitrothion, fensulfothion, fenthion, flupyrzofos, fonofos, formothion, fosmethilan, fosthiazate, heptenophos, iodofenphos, iprobenfos, isazofos, isofenphos, isopropyl, O-salicylate, isoxathion, malathion, mecarbam, methacrifos, methamidophos, methidathion, mevinphos, monocrotophos, naled, omethoate, oxydemeton-methyl, parathion (-methyl/-ethyl), phenthoate, phorate, phosalone, phosmet, 15 phosphamidon, phosphocarb, phoxim, pirimiphos (-methyl/-ethyl), profenofos, propaphos, propetamphos, prothiofos, prothoate, pyraclofos, pyridaphenthion, pyridathion, quinalphos, sebufos, sulfotep, sulprofos, tebupirimfos, temephos, terbufos, tetra-chlorvinphos, thiometon, triazophos, trichlorfon, vamidothion, and imicyafos.

(2) GABA-gated chloride channel antagonists, for example

- 20 organochlorines, e.g. camphechlor, chlordane, endosulfan, gamma-HCH, HCH, heptachlor, lindane, and methoxychlor; or

fiproles (phenylpyrazoles), e.g. acetoprole, ethiprole, fipronil, pyrafluprole, pyriprole, and vaniliprole.

(3) Sodium channel modulators/voltage-dependent sodium channel blockers, for example

- 25 pyrethroids, e.g. acrinathrin, allethrin (d-cis-trans, d-trans), beta-cyfluthrin, bifenthrin, bioallethrin, bioallethrin S-cyclopentyl isomer, bioethanomethrin, biopermethrin, bioresmethrin, chlovaporthrin, cis-cypermethrin, cis-resmethrin, cis-permethrin, clocythrins, cycloprothrin, cyfluthrin, cyhalothrin, cypermethrin (alpha-, beta-, theta-, zeta-), cyphenothrin, deltamethrin, empenthrin (1R isomer), esfenvalerate, etofenprox, fenfluthrin, fenpropathrin, fenpyrithrin, fenvalerate, flubrocycrin, flucythrinate, flufenprox, flumethrin, fluvalinate, fubfenprox, 30 gamma-cyhalothrin, imiprothrin, kadethrin, lambda-cyhalothrin, metofluthrin, permethrin (cis-, trans-), phenothrin (1R trans isomer), prallethrin, profluthrin, protrifenbute, pyresmethrin,

resmethrin, RU 15525, silafluofen, tau-fluvalinate, tefluthrin, terallethrin, tetramethrin (-1R- isomer), tralomethrin, transfluthrin, ZXI 8901, pyrethrin (pyrethrum), eflusilanat;

DDT; or methoxychlor.

(4) Nicotinic acetylcholine receptor agonists/antagonists, for example

5 chloronicotinyis, e.g. acetamiprid, clothianidin, dinotefuran, imidacloprid, imidaclothiz, nitenpyram, nithiazine, thiacloprid, thiamethoxam, AKD-1022,

nicotine, bensultap, cartap, thiosultap-sodium, and thiocylam.

(5) Allosteric acetylcholine receptor modulators (agonists), for example

spinosyns, e.g. spinosad and spinetoram.

10 (6) Chloride channel activators, for example

mectins/macrolides, e.g. abamectin, emamectin, emamectin benzoate, ivermectin, lepimectin, and milbemectin; or

juvenile hormone analogues, e.g. hydroprene, kinoprene, methoprene, epofenonane, triprene, fenoxycarb, pyriproxifen, and diofenolan.

15 (7) Active compounds with unknown or non-specific mechanisms of action, for example

gassing agents, e.g. methyl bromide, chloropicrin and sulfuric fluoride;

selective antifeedants, e.g. cryolite, pymetrozine, pyrifluquinazon and flonicamid; or

mite growth inhibitors, e.g. clofentezine, hexythiazox, etoxazole.

(8) Oxidative phosphorylation inhibitors, ATP disruptors, for example

20 diafenthiuron;

organotin compounds, e.g. azocyclotin, cyhexatin and fenbutatin oxide; or

propargite, tetradifon.

(9) Oxidative phosphorylation decouplers acting by interrupting the H⁺ proton gradient, for example chlorfenapyr, binapacryl, dinobuton, dinocap and DNOC.

(10) Microbial disruptors of the insect gut membrane, for example *Bacillus thuringiensis* strains.

(11) Chitin biosynthesis inhibitors, for example benzoylureas, e.g. bistrifluron, chlorfluazuron, diflubenzuron, fluazuron, flucycloxuron, flufenoxuron, hexaflumuron, lufenuron, novaluron, novifluron, penfluron, teflubenzuron or triflumuron.

(12) Buprofezin.

(13) Moulting disruptors, for example cyromazine.

(14) Ecdysone agonists/disruptors, for example diacylhydrazines, e.g. chromafenozide, halofenozide, methoxyfenozide, tebufenozide, and flufenozide; or azadirachtin.

(15) Octopaminergic agonists, for example amitraz.

(16) Site III electron transport inhibitors/site II electron transport inhibitors, for example hydramethylnon; acequinocyl; fluacrypyrim; or cyflumetofen and cyenopyrafen.

(17) Electron transport inhibitors, for example site I electron transport inhibitors, from the group of the METI acaricides, e.g. fenazaquin, fenpyroximate, pyrimidifen, pyridaben, tebufenpyrad, tolfenpyrad, and rotenone; or voltage-dependent sodium channel blockers, e.g. indoxacarb and metaflumizone.

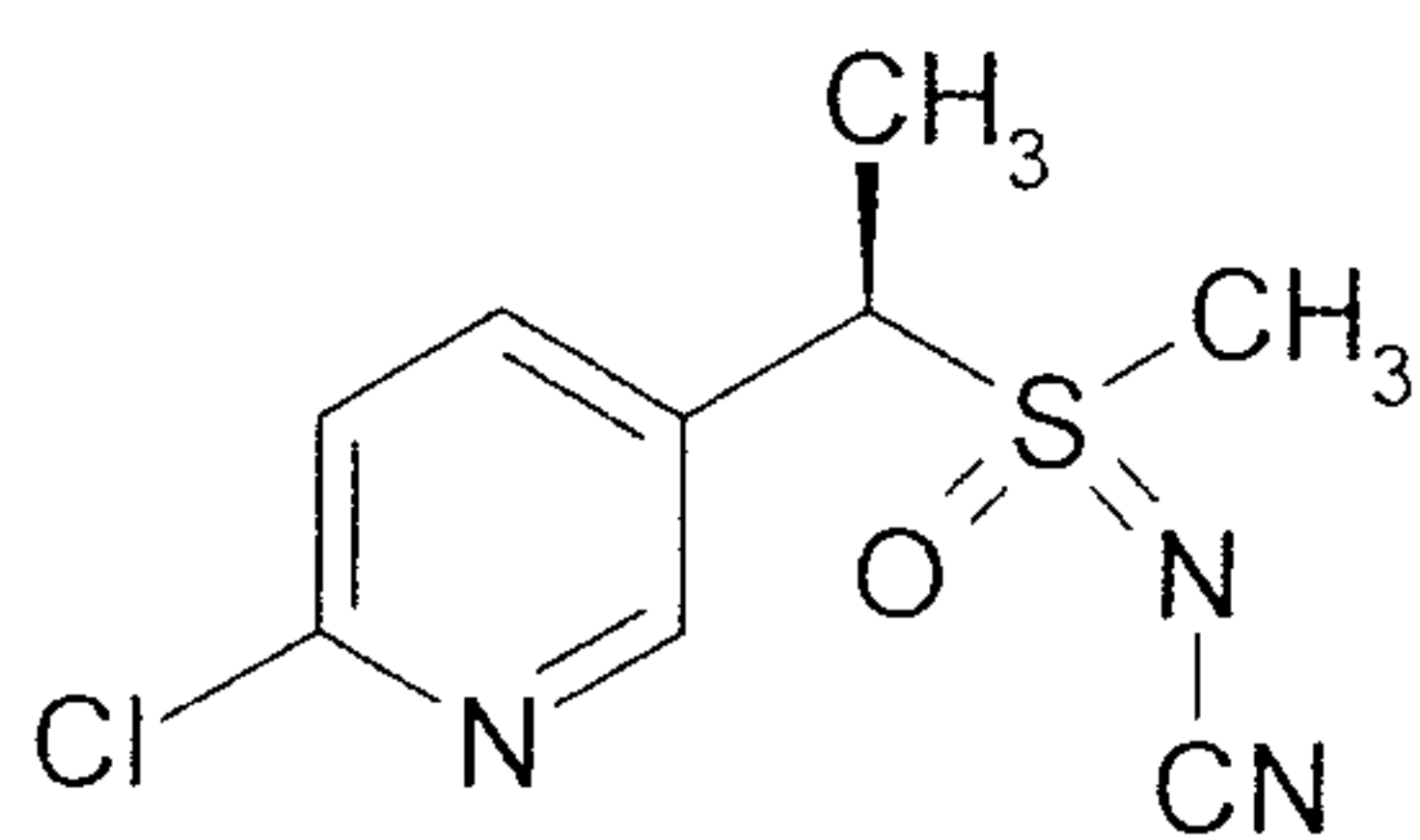
(18) Fatty acid biosynthesis inhibitors, for example tetroneic acid derivatives, e.g. spirodiclofen and spiromesifen; or tetramic acid derivatives, e.g. spirotetramat.

(19) Neuronal inhibitors with unknown mechanism of action, e.g. bifenazate.

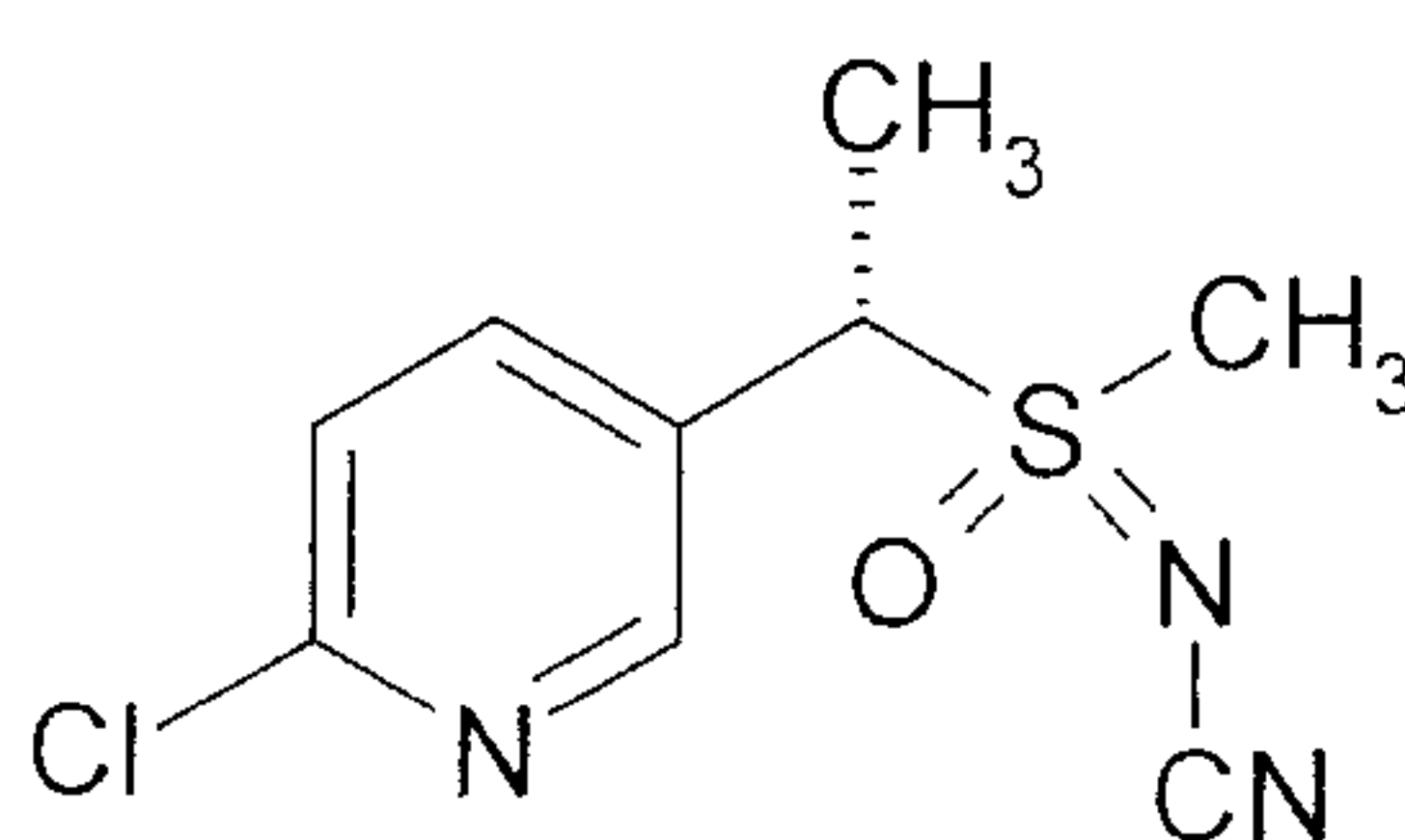
(20) Ryanodine receptor effectors, for example diamides, e.g. flubendiamide or (R),(S)-3-chloro-N¹-(2-methyl-4-[1,2,2,2-tetrafluoro-1-(trifluoromethyl)ethyl]phenyl)-N²-(1-methyl-2-methylsulphonyl)ethyl)phthalamide.

(21) Further active compounds with unknown mechanism of action, for example amidoflumet, benclothiaz, benzoximate, bromopropylate, buprofezin, chinomethionat, chlordimeform, chlorobenzilate, clothiazoben, cycloprene, dicofol, dicyclanil, fenoxacrim, fentrifanil, flubenzimine, flufenerim, flutenzin, gossyplure, japonilure, metoxadiazone, petroleum, potassium oleate, pyridalyl, sulfluramid, tetrasul, triarathene or verbutin; or the following known active compounds:

4-[[[(6-bromopyrid-3-yl)methyl](2-fluoroethyl)amino}furan-2(5H)-one (known from WO 2007/115644), 4-[[[(6-fluoropyrid-3-yl)methyl](2,2-difluoroethyl)amino}furan-2(5H)-one (known from WO 2007/115644), 4-[[[(2-chloro-1,3-thiazol-5-yl)methyl](2-fluoroethyl)amino}furan-2(5H)-one (known from WO 2007/115644), 4-[[[(6-chloropyrid-3-yl)methyl](2-fluoroethyl)amino}furan-2(5H)-one (known from WO 2007/115644), 4-[[[(6-chloropyrid-3-yl)methyl](2,2-difluoroethyl)amino}furan-2(5H)-one (known from WO 2007/115644), 4-[[[(6-chloro-5-fluoropyrid-3-yl)methyl](methyl)amino}furan-2(5H)-one (known from WO 2007/115643), 4-[[[(5,6-dichloropyrid-3-yl)methyl](2-fluoroethyl)amino}furan-2(5H)-one (known from WO 2007/115646), 4-[[[(6-chloro-5-fluoropyrid-3-yl)methyl](cyclopropyl)amino}furan-2(5H)-one (known from WO 2007/115643), 4-[[[(6-chloropyrid-3-yl)methyl](cyclopropyl)amino}furan-2(5H)-one (known from EP-A-0 539 588), 4-[[[(6-chloropyrid-3-yl)methyl](methyl)amino}furan-2(5H)-one (known from EP-A-0 539 588), [[[(6-chloropyridin-3-yl)methyl](methyl)oxido- λ^4 -sulfanylidene]cyanamide (known from WO 2007/149134), [1-(6-chloropyridin-3-yl)ethyl](methyl)oxido- λ^4 -sulfanylidene]cyanamide (known from WO 2007/149134) and its diastereomers (A) and (B)



(A)

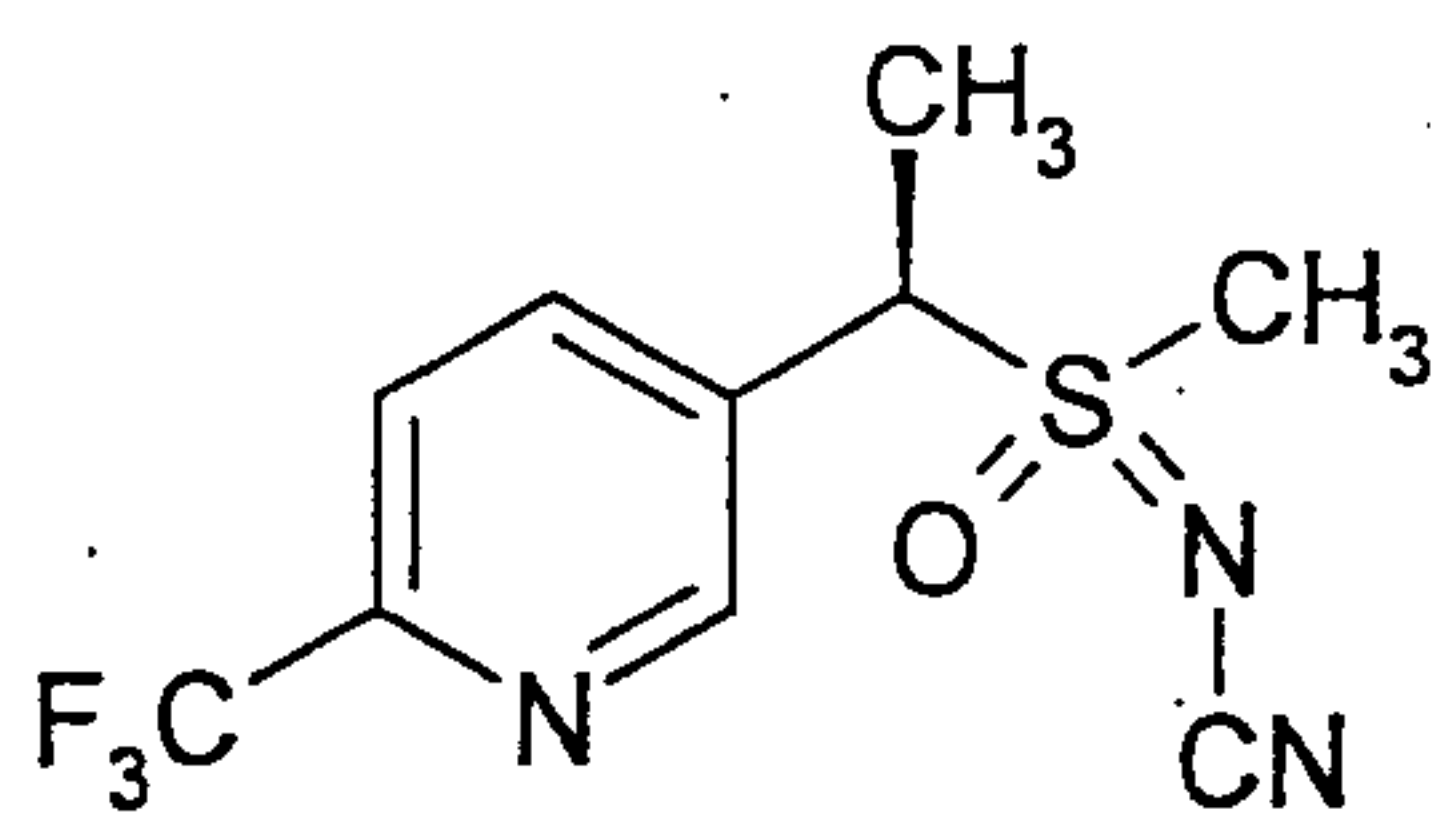


(B)

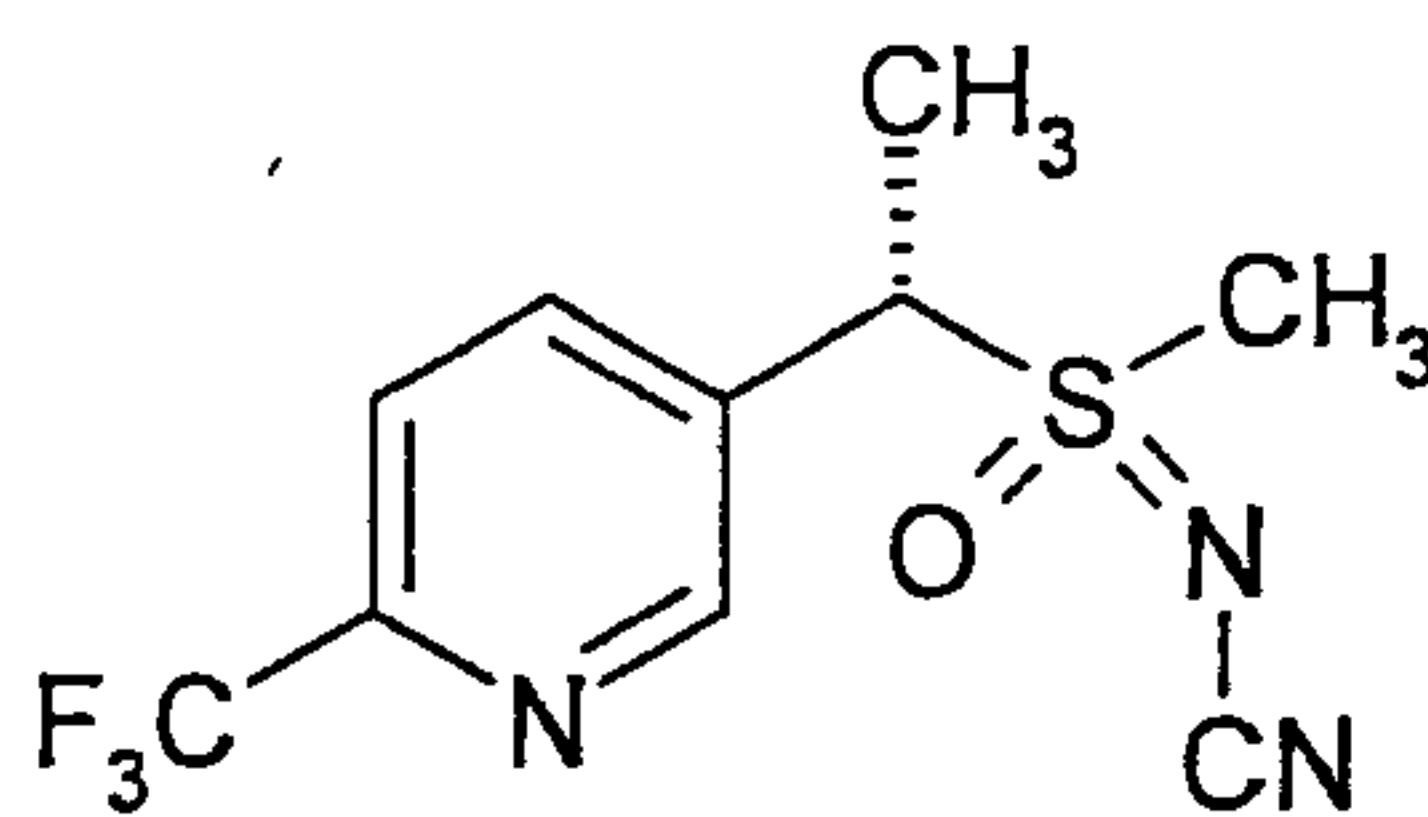
(likewise known from WO 2007/149134), [[[(6-trifluoromethylpyridin-3-yl)methyl](methyl)oxido- λ^4 -sulfanylidene]cyanamide (known from WO 2007/095229), or [1-(6-trifluoromethylpyridin-3-yl)ethyl](methyl)oxido- λ^4 -sulfanylidene]cyanamide (known from WO 2007/149134) and its diastereomers (C) and (D)

30725-943

- 7 -



(C)

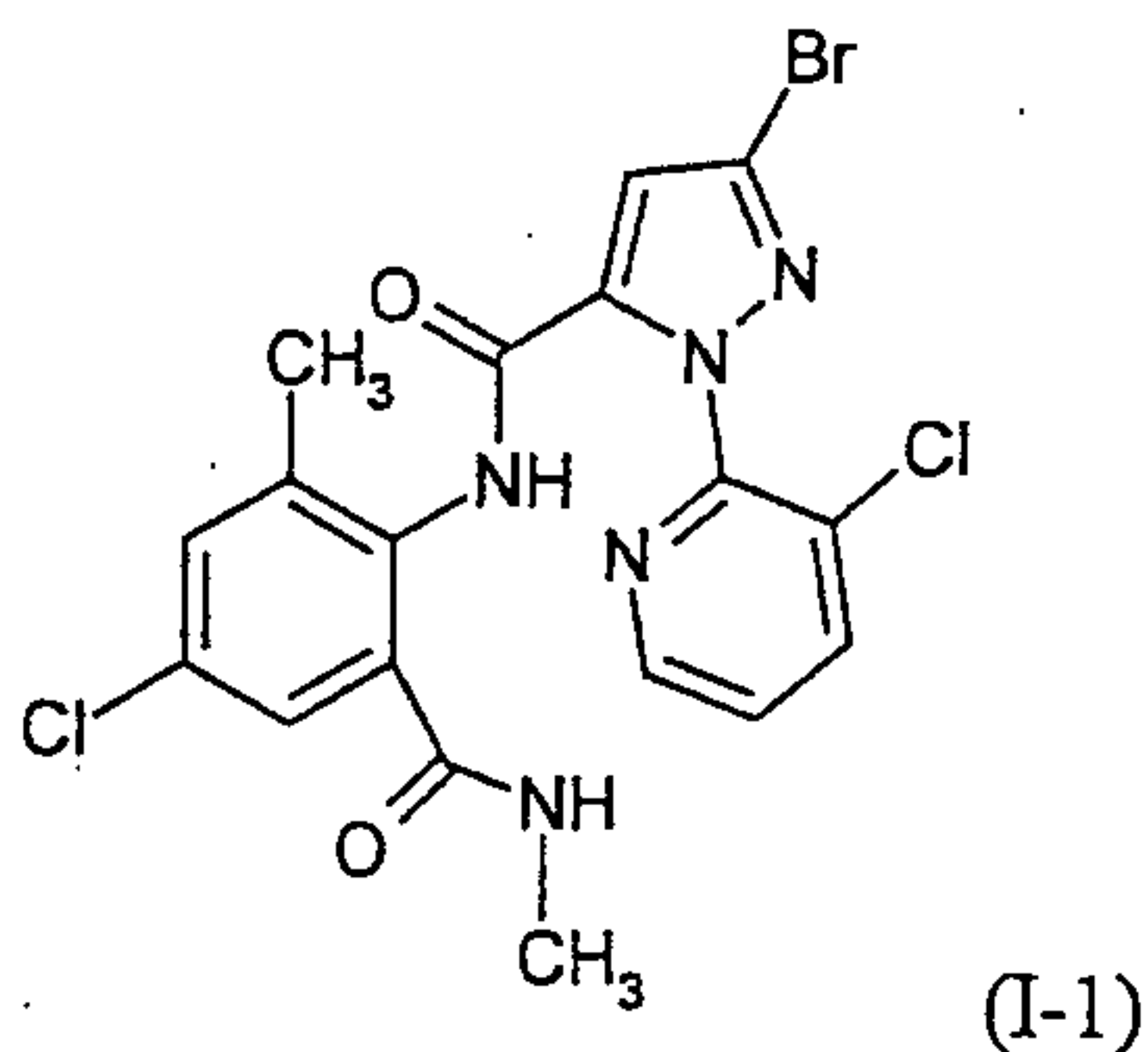


(D).

(likewise known from WO 2007/149134).

The active compounds mentioned in this description by their common name are known for example from "The Pesticide Manual" 13th Ed., British Crop Protection Council 2003, and the Compendium of Pesticide Common Names, published by Alan Wood (see <http://www.alanwood.net/pesticides>).

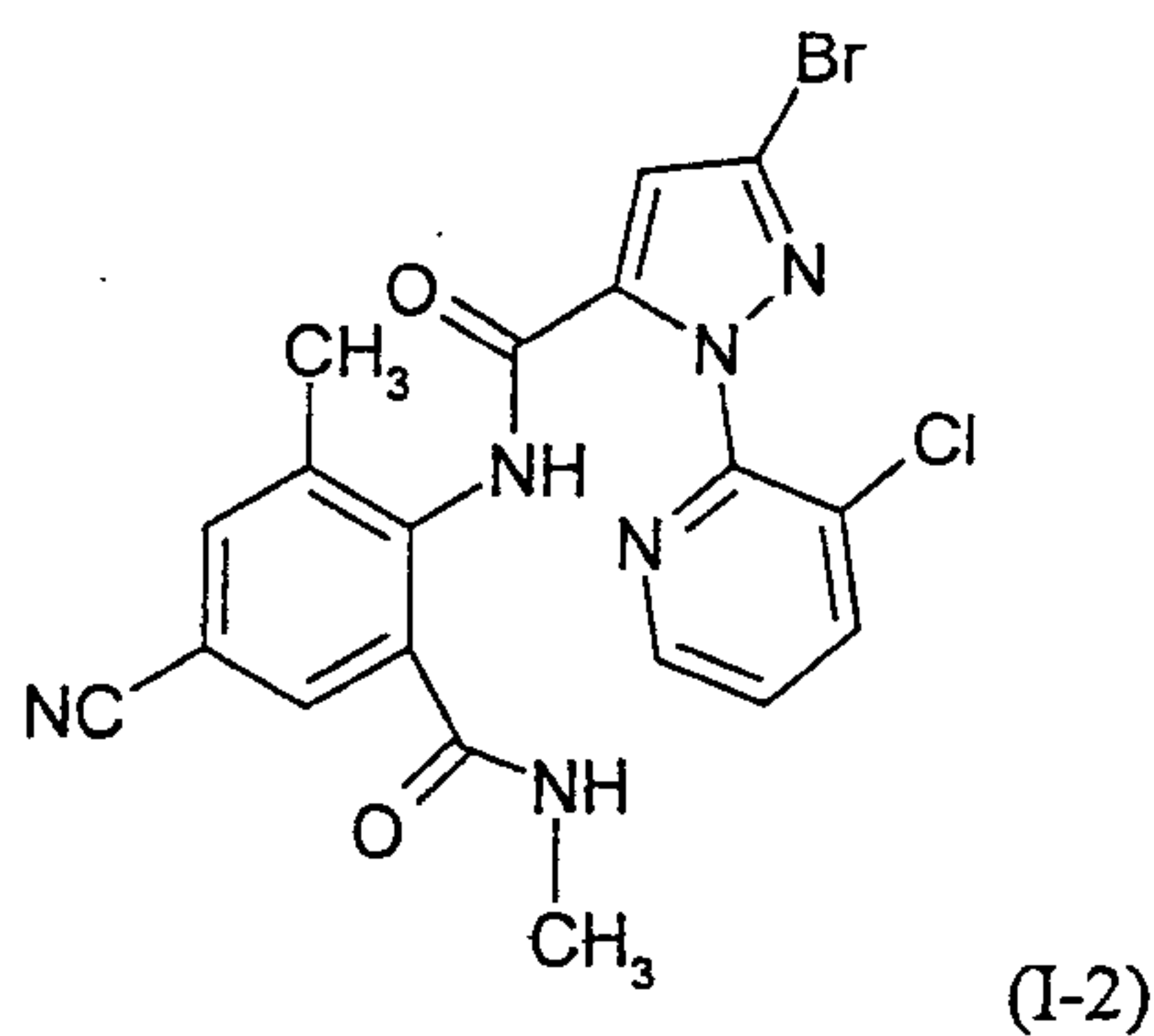
- 5 Preference is given to mixtures comprising the active compound of the formula (I-1)



(I-1)

and at least one active compound of group II.

Preference is likewise given to mixtures comprising the active compound of the formula (I-2)



(I-2)

- 10 and at least one active compound of group II.

30725-943

- 8 -

In these preferred mixtures, the at least one compound of group (II) may be abamectin, beta-cyfluthrin, clothianidin, fipronil, imidacloprid and/or spinosad.

In one embodiment, the compound of group (II) is beta- cyfluthrin.

30725-943

- 9 -

In addition, the active compound combinations may also comprise further fungicidally, acaricidally or insecticidally active co-components.

In general, the mixtures according to the invention comprise an active compound of the formula (I) and an active compound of group (II) in the stated preferred and particularly preferred mixing ratios:

The preferred mixing ratio is from 250:1 to 1:50.

- 5 The particularly preferred mixing ratio is from 125:1 to 1:50.

The most particularly preferred mixing ratio is from 25:1 to 1:25.

The especially preferred mixing ratio is from 5:1 to 5:1

The mixing ratios are based on weight ratios. The ratio is to be understood as active compound of the formula (I):co-component of group (II) to active compound of the formula (I):co-component of group (II).

10

	Mixing partner	Particularly preferred mixing ratio	Very particularly preferred mixing ratio	Especially preferred mixing ratio
1.	Acrinathrin	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
2.	Alpha-Cypermethrin	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
3.	Betacyfluthrin	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
4.	Cyhalothrin	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
5.	Cypermethrin	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
6.	Deltamethrin	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
7.	Esfenvalerate	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
8.	Etofenprox	125:1 to 1: 50	25:1 to 1:25	5:1 to 1:5
9.	Fenpropathrin	125:1 to 1: 50	25:1 to 1:25	5:1 to 1:5
10.	Fenvalerate	125:1 to 1: 50	25:1 to 1:25	5:1 to 1:5
11.	Flucythrinate	125:1 to 1: 50	25:1 to 1:25	5:1 to 1:5

	Mixing partner	Particularly preferred mixing ratio	Very particularly preferred mixing ratio	Especially preferred mixing ratio
12.a	Lambda-Cyhalothrin	125:1 to 1: 50	25:1 to 1:25	5:1 to 1:5
12.b	Gamma-Cyhalothrin	125:1 to 1: 50	25:1 to 1:25	5:1 to 1:5
13.	Permethrin	125:1 to 1: 50	25:1 to 1:25	5:1 to 1:5
14.	Tau-fluvalinate	125:1 to 1: 50	25:1 to 1:25	5:1 to 1:5
15.	Tralomethrin	125:1 to 1: 50	25:1 to 1:25	5:1 to 1:5
16.	Zeta-Cypermethrin	125:1 to 1: 50	25:1 to 1:25	5:1 to 1:5
17.	Cyfluthrin	125:1 to 1: 50	25:1 to 1:25	5:1 to 1:5
18.	Bifenthrin	125:1 to 1: 50	25:1 to 1:25	5:1 to 1:5
19.	Cycloprothrin	125:1 to 1: 50	25:1 to 1:25	5:1 to 1:5
20.	Eflusilanate	125:1 to 1: 50	25:1 to 1:25	5:1 to 1:5
21.	Fubfenprox	125:1 to 1: 50	25:1 to 1:25	5:1 to 1:5
22.	Pyrethrin	125:1 to 1: 50	25:1 to 1:25	5:1 to 1:5
23.	Resmethrin	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
24.	Imidacloprid	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
25.	Acetamiprid	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
26.	Thiamethoxam	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
27.	Nitenpyram	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
28.	Thiacloprid	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
29.	Dinotefuran	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5

	Mixing partner	Particularly preferred mixing ratio	Very particularly preferred mixing ratio	Especially preferred mixing ratio
30.	Clothianidin	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
31.	Imidaclothiz	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
32.	Chlorfluazuron	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
33.	Diflubenzuron	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
34.	Lufenuron	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
35.	Teflubenzuron	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
36.	Triflumuron	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
37.	Novaluron	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
38.	Flufenoxuron	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
39.	Hexaflumuron	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
40.	Noviflumuron	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
41.	Buprofezin	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
42.	Cyromazine	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
43.	Methoxyfenozide	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
44.	Tebufenozide	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
45.	Halofenozide	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
46.	Fufenozide	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
47.	Chromafenozide	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
48.	Endosulfan	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5

	Mixing partner	Particularly preferred mixing ratio	Very particularly preferred mixing ratio	Especially preferred mixing ratio
49.	Fipronil	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
50.	Ethiprole	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
51.	Pyrafluprole	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
52.	Pyriprole	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
53.	Flubendiamide	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
54.	(R)-, (S)-3-Chloro-N ¹ -{2-methyl-4-[1,2,2,2-tetrafluoro-1-(trifluoromethyl)ethyl]phenyl}-N ² -(1-methyl-2-methylsulfonyl)ethyl)phthalamide	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
55.	Emamectin	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
56.	Emamectin benzoate	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
57.	Abamectin	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
58.	Ivermectin	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
59.	Milbemectin	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
60.	Lepimectin	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
61.	Tebufenpyrad	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
62.	Fenpyroximate	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
63.	Pyridaben	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
64.	Fenazaquin	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5

	Mixing partner	Particularly preferred mixing ratio	Very particularly preferred mixing ratio	Especially preferred mixing ratio
65.	Pyrimidifen	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
66.	Tolfenpyrad	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
67.	Dicofol	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
68.	Cyenopyrafen	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
69.	Cyflumetofen	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
70.	Acequinocyl	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
71.	Fluacrypyrin	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
72.	Bifenazate	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
73.	Diafenthiuron	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
74.	Etoxazole	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
75.	Clofentezine	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
76.	Spinosad	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
77.	Triarathen	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
78.	Tetradifon	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
79.	Propargit	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
80.	Hexythiazox	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
81.	Bromopropylate	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
82.	Chinomethionate	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
83.	Amitraz	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5

	Mixing partner	Particularly preferred mixing ratio	Very particularly preferred mixing ratio	Especially preferred mixing ratio
84.	Pymetrozine	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
85.	Flonicamid	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
86.	Pyriproxyfen	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
87.	Diofenolan	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
88.	Chlorfenapyr	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
89.	Metaflumizone	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
90.	Indoxacarb	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
91.	Chlorpyrifos	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
92.	Spirodiclofen	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
93.	Spiromesifen	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
94.	Spirotetramate	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
95.	Pyridalyl	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
96.	4-{{[(6-Chloropyrid-3-yl)methyl](2-fluoroethyl)-amino} furan-2(5H)-one	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
97.	4-{{[(6-Chloropyrid-3-yl)methyl](2,2-difluoroethyl)-amino} furan-2(5H)-one	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
98.	4-{{[(6-Chloro-5-fluoropyrid-3-yl)methyl](methyl)amino}-furan-2(5H)-one	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5

	Mixing partner	Particularly preferred mixing ratio	Very particularly preferred mixing ratio	Especially preferred mixing ratio
99.	4-[[[6-Chloropyrid-3-yl)methyl](methyl)amino]-furan-2(5H)-one	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5
100.	Spinetoram	125:1 to 1:50	25:1 to 1:25	5:1 to 1:5

According to the method proposed according to the invention, transgenic plants, in particular useful plants, are treated with the mixtures according to the invention to increase agricultural productivity. For the purpose of the invention, transgenic plants are plants which contain at least one "foreign gene". The term "foreign gene" in this connection means a gene or gene fragment which may originate or be derived from another plant of the same species, from plants of a different species, but also from organisms from the animal kingdom or microorganisms (including viruses) ("foreign gene") and/or, if appropriate, already has mutations compared to a naturally occurring gene or gene fragment. According to the invention, it is also possible to use synthetic genes or gene fragments, which is also included in the term "foreign gene" here. It is also possible for a transgenic plant to code for two or more foreign genes of different origin.

For the purpose of the invention, the "foreign gene" is further characterized in that it comprises a nucleic acid sequence which has a certain biological or chemical function or activity in the transgenic plant. In general, these genes code for biocatalysts, such as, for example, enzymes or ribozymes, or else they comprise regulatory sequences, such as, for example, promoters or terminators, for controlling the expression of endogenous proteins. However, to this end, they may also code for regulatory proteins, such as, for example, repressors or inducers. Furthermore, the foreign gene may also serve the targeted localization of a gene product of the transgenic plant, coding, for example, for a signal peptide. The foreign gene may also code for inhibitors, such as, for example, antisense RNA.

The person skilled in the art is readily familiar with numerous different methods for producing transgenic plants and methods for the targeted mutagenesis, for gene transformation and cloning, for example from: Willmitzer, 1993, Transgenic plants, in: Biotechnology, A Multivolume Comprehensive Treatise, Rehm et al. (eds.), Vol. 2, 627-659, VCH Weinheim, Germany; McCormick et al., 1986, Plant Cell Reports 5: 81-84; EP-A 0221044; EP-A 0131624, or Sambrook

et al., 1989, "Molecular Cloning: A Laboratory Manual", 3rd Ed., Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY; Winnacker, 1996, "Gene und Klone" [Genes and Clones], 2nd Ed., VCH Weinheim or Christou, 1996, Trends in Plant Science 1: 423-431. Examples of transit or signal peptides or time- or site-specific promoters are disclosed, for example, in Braun et al., 1992, EMBO J. 11: 3219-3227; Wolter et al., 1988, Proc. Natl. Acad. Sci. USA 85: 846-850; Sonnewald et al., 1991, Plant J. 1: 95-106.

A good example of a complex genetic manipulation of a useful plant is the so-called GURT technology ("Genetic Use Restriction Technologies") which allows the technical control of the propagation of the transgenic plant variety in question. To this end, in general two or three foreign genes are cloned into the useful plant which, in a complex interaction after administration of an external stimulus, trigger a cascade resulting in the death of the embryo which would otherwise develop. To this end, the external stimulus (for example an active compound or another chemical or abiotic stimulus) may interact, for example, with a repressor which then no longer suppresses the expression of a recombinase, so that the recombinase is able to cleave an inhibitor thus allowing expression of a toxin causing the embryo to die. Examples of this type of transgenic plants are disclosed in US 5,723,765 or US 5,808,034.

Accordingly, the person skilled in the art is familiar with processes for generating transgenic plants which, by virtue of the integration of regulatory foreign genes and the overexpression, suppression or inhibition of endogenous genes or gene sequences mediated in this manner, if appropriate, or by virtue of the existence or expression of foreign genes or fragments thereof, have modified properties.

As already discussed above, the method according to the invention allows better utilization of the production potential of transgenic plants. On the one hand, this may, if appropriate, be based on the fact that the application rate of the active compound which can be employed according to the invention can be reduced, for example by lowering the dose employed or else by reducing the number of applications. On the other hand, if appropriate, the yield of the useful plants may be increased quantitatively and/or qualitatively. This is true in particular in the case of a transgenically generated resistance to biotic or abiotic stress.

Depending on the plant species or plant varieties, their location and the growth conditions (soils, climate, vegetation period, nutrients), these synergistic actions may vary and may be multifarious. Thus possible are, for example, reduced application rates and/or a widening of the activity spectrum and/or an increase of the activity of the compounds and compositions used according to the invention. better plant growth, increased tolerance to high or low temperatures, increased

tolerance to drought or to water or soil salt content, increased flowering, easier harvesting, accelerated maturation, higher harvest yields, higher quality and/or higher nutrient value of the harvested products, increased storability and/or processibility of the harvested products, which exceed the effects normally to be expected.

- 5 These advantages are the result of a synergistic action, achieved according to the invention, between the mixtures according to the invention which can be employed and the respective principle of action of the genetic modification of the transgenic plant. This reduction of production means as a result of the synergism, with simultaneous yield or quality increase, is associated with considerable economical and ecological advantages.
- 10 A list of examples known to the person skilled in the art of transgenic plants, with the respective affected structure in the plant or the protein expressed by the genetic modification in the plant being mentioned, is compiled in **Table 1**. Here, the structure in question or the principle expressed is in each case grouped with a certain feature in the sense of a tolerance to a certain stress factor. A similar list (**Table 3**) compiles - in a slightly different arrangement - likewise examples of
- 15 principles of action, tolerances induced thereby and possible useful plants. Further examples of transgenic plants suitable for the treatment according to the invention are compiled in **Table 4**.

In an advantageous embodiment, the mixtures according to the invention are used for treating transgenic plants comprising at least one foreign gene coding for a Bt toxin. A Bt toxin is a protein originating from or derived from the soil bacterium *Bacillus thuringiensis* which either belongs to

20 the group of the *crystal toxins (Cry)* or the *cytolytic toxins (Cyt)*. In the bacterium, they are originally formed as protoxins and are only metabolized in alkaline medium - for example in the digestive tract of certain feed insects - to their active form. There, the active toxin then binds to certain hydrocarbon structures at cell surfaces causing pores to be formed which destroy the osmotic potential of the cell, which may effect cell lysis. The result is the death of the insects. Bt

25 toxins are active in particular against certain harmful species from the orders of the Lepidoptera (butterflies), Homoptera, Diptera and Coleoptera (beetles) in all their development stages; i.e. from the egg larva via their juvenile forms to their adult forms.

It has been known for a long time that gene sequences coding for Bt toxins, parts thereof or else peptides or proteins derived from Bt toxins can be cloned with the aid of genetic engineering into

30 agriculturally useful plants to generate transgenic plants having endogenous resistance to pests sensitive to Bt toxins. For the purpose of the invention, the transgenic plants coding for at least one Bt toxin or proteins derived therefrom are defined as "Bt plants".

The “first generation” of such Bt plants generally only comprise the genes enabling the formation of a certain toxin, thus only providing resistance to one group of pathogens. An example of a commercially available maize variety comprising the gene for forming the Cry1Ab toxin is “YieldGard®” from Monsanto which is resistant to the European corn borer. In contrast, in the Bt cotton variety (Bollgard®), resistance to other pathogens from the family of the Lepidoptera is generated by introduction by cloning of the genes for forming the Cry1Ac toxin. Other transgenic crop plants, in turn, express genes for forming Bt toxins with activity against pathogens from the order of the Coleoptera. Examples that may be mentioned are the Bt potato variety “NewLeaf®” (Monsanto) capable of forming the Cry3A toxin, which is thus resistant to the Colorado potato beetle, and the transgenic maize variety “YieldGard®” (Monsanto) which is capable of forming the Cry 3Bb1 toxin and is thus protected against various species of the Western corn rootworm.

In a “second generation”, the multiply transgenic plants, already described above, expressing or comprising at least two foreign genes were generated.

Preference according to the invention is given to transgenic plants with Bt toxins from the group of the *Cry* family (see, for example, Crickmore et al., 1998, Microbiol. Mol. Biol. Rev. 62 : 807-812), which are particularly effective against Lepidoptera, Coleoptera and Diptera. Examples of genes coding for the proteins are (Table A-1 to A-197):

(A-1) cry1Aa1; (A-2) cry1Aa2; (A-3) cry1Aa3; (A-4) cry1Aa4; (A-5) cry1Aa5; (A-6) cry1Aa6; (A-7) cry1Aa7; (A-8) cry1Aa8; (A-9) cry1Aa9; (A-10) cry1Aa10; (A-11) cry1Aa11; (A-12) cry1Ab1; (A-13) cry1Ab2; (A-14) cry1Ab3; (A-15) cry1Ab4; (A-16) cry1Ab5; (A-17) cry1Ab6; (A-18) cry1Ab7; (A-19) cry1Ab8; (A-20) cry1Ab9; (A-21) cry1Ab10; (A-22) cry1Ab11; (A-23) cry1Ab12; (A-24) cry1Ab13; (A-25) cry1Ab14; (A-26) cry1Ac1; (A-27) cry1Ac2; (A-28) cry1Ac3; (A-29) cry1Ac4; (A-30) cry1Ac5; (A-31) cry1Ac6; (A-32) cry1Ac7; (A-33) cry1Ac8; (A-34) cry1Ac9; (A-35) cry1Ac10; (A-36) cry1Ac11; (A-37) cry1Ac12; (A-38) cry1Ac13; (A-39) cry1Ad1; (A-40) cry1Ad2; (A-41) cry1Ae1; (A-42) cry1Af1; (A-43) cry1Ag1; (A-44) cry1Ba1; (A-45) cry1Ba2; (A-46) cry1Bb1; (A-47) cry1Bc1; (A-48) cry1Bd1; (A-49) cry1Be1; (A-50) cry1Ca1; (A-51) cry1Ca2; (A-52) cry1Ca3; (A-53) cry1Ca4; (A-54) cry1Ca5; (A-55) cry1Ca6; (A-56) cry1Ca7; (A-57) cry1Cb1; (A-58) cry1Cb2; (A-59) cry1Da1; (A-60) cry1Da2; (A-61) cry1Db1; (A-62) cry1Ea1; (A-63) cry1Ea2; (A-64) cry1Ea3; (A-65) cry1Ea4; (A-66) cry1Ea5; (A-67) cry1Ea6; (A-68) cry1Eb1; (A-69) cry1Fa1; (A-70) cry1Fa2; (A-71) cry1Fb1; (A-72) cry1Fb2; (A-73) cry1Fb3; (A-74) cry1Fb4; (A-75) cry1Ga1; (A-76) cry1Ga2; (A-77) cry1Gb1; (A-78) cry1Gb2; (A-79) cry1Ha1; (A-80) cry1Hb1; (A-81) cry1Ia1; (A-82) cry1Ia2; (A-83) cry1Ia3; (A-84) cry1Ia4; (A-85) cry1Ia5; (A-86) cry1Ia6; (A-87) cry1Ib1; (A-88) cry1Ic1; (A-89) cry1Id1; (A-

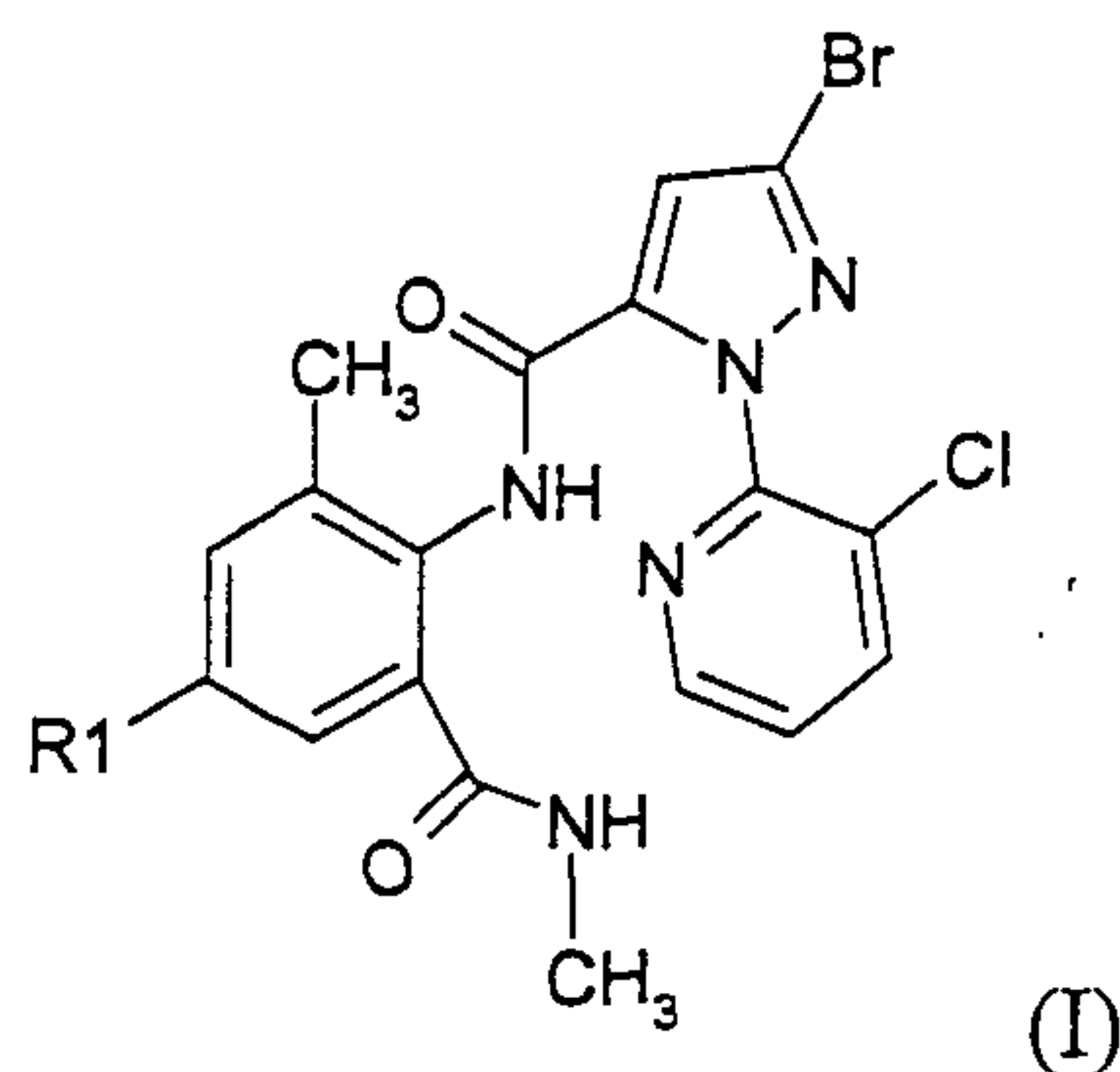
90) cry1Ie1; (A-91) cry1I-like; (A-92) cry1Ja1; (A-93) cry1Jb1; (A-94) cry1Jc1; (A-95) cry1Ka1;
 (A-96) cry1-like; (A-97) cry2Aa1; (A-98) cry2Aa2; (A-99) cry2Aa3; (A-100) cry2Aa4; (A-101)
 cry2Aa5; (A-102) cry2Aa6; (A-103) cry2Aa7; (A-104) cry2Aa8; (A-105) cry2Aa9; (A-106)
 cry2Ab1; (A-107) cry2Ab2; (A-108) cry2Ab3; (A-109) cry2Ac1; (A-110) cry2Ac2; (A-111)
 5 cry2Ad1; (A-112) cry3Aa1; (A-113) cry3Aa2; (A-114) cry3Aa3; (A-115) cry3Aa4; (A-116)
 cry3Aa5; (A-117) cry3Aa6; (A-118) cry3Aa7; (A-119) cry3Ba1; (A-120) cry3Ba2; (A-121)
 cry3Bb1; (A-122) cry3Bb2; (A-123) cry3Bb3; (A-124) cry3Ca1; (A-125) cry4Aa1; (A-126)
 cry4Aa2; (A-127) cry4Ba1; (A-128) cry4Ba2; (A-129) cry4Ba3; (A-130) cry4Ba4; (A-131)
 cry5Aa1; (A-132) cry5Ab1; (A-133) cry5Ac1; (A-134) cry5Ba1; (A-135) cry6Aa1; (A-136)
 10 cry6Ba1; (A-137) cry7Aa1; (A-138) cry7Ab1; (A-139) cry7Ab2; (A-140) cry8Aa1; (A-141)
 cry8Ba1; (A-142) cry8Ca1; (A-143) cry9Aa1; (A-144) cry9Aa2; (A-145) cry9Ba1; (A-146)
 cry9Ca1; (A-147) cry9Da1; (A-148) cry9Da2; (A-149) cry9Ea1; (A-150) cry9 like; (A-151)
 cry10Aa1; (A-152) cry10Aa2; (A-153) cry11Aa1; (A-154) cry11Aa2; (A-155) cry11Ba1; (A-156)
 cry11Bb1; (A-157) cry12Aa1; (A-158) cry13Aa1; (A-159) cry14Aa1; (A-160) cry15Aa1; (A-161)
 15 cry16Aa1; (A-162) cry17Aa1; (A-163) cry18Aa1; (A-164) cry18Ba1; (A-165) cry18Ca1; (A-166)
 cry19Aa1; (A-167) cry19Ba1; (A-168) cry20Aa1; (A-169) cry21Aa1; (A-170) cry21Aa2; (A-171)
 cry22Aa1; (A-172) cry23Aa1; (A-173) cry24Aa1; (A-174) cry25Aa1; (A-175) cry26Aa1; (A-176)
 cry27Aa1; (A-177) cry28Aa1; (A-178) cry28Aa2; (A-179) cry29Aa1; (A-180) cry30Aa1; (A-181)
 cry31Aa1; (A-182) cyt1Aa1; (A-183) cyt1Aa2; (A-184) cyt1Aa3; (A-185) cyt1Aa4; (A-186)
 20 cyt1Ab1; (A-187) cyt1Ba1; (A-188) cyt2Aa1; (A-189) cyt2Ba1; (A-190) cyt2Ba2; (A-191)
 cyt2Ba3; (A-192) cyt2Ba4; (A-193) cyt2Ba5; (A-194) cyt2Ba6; (A-195) cyt2Ba7; (A-196)
 cyt2Ba8; (A-197) cyt2Bb1.

Particular preference is given to the genes or gene sections of the subfamilies cry1, cry2, cry3, cry5 and cry9; especially preferred are cry1Ab, cry1Ac, cry3A, cry3B and cry9C.

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- 20a -

In one embodiment, the present invention relates to a method for improving the utilization of the production potential of a transgenic plant by controlling harmful pests, the method comprising treating the transgenic plant by leaf- or drench-application with an effective amount of a mixture of: (i) at least one compound of the formula (I)



5

where R^1 represents chlorine or cyano; and (ii) at least one compound selected from: abamectin, beta-cyfluthrin, clothianidin, fipronil, imidacloprid, and spinosad, wherein the transgenic plant contains at least one gene for one or more *Bacillus thuringiensis* (Bt) toxins selected from the Cry family, and wherein the at least one gene is selected from

10 cry1Ab, cry1Ac, cry3A, cry3B and cry9C.

Furthermore, it is preferred to use plants which, in addition to the genes for one or more Bt toxins, express or contain, if appropriate, also genes for expressing, for example, a protease or peptidase inhibitor (such as in WO-A 95/35031), of herbicide resistances (for example to glufosinate or glyphosate by expression of the pat gene or bar gene) or for becoming resistant

15 to nematodes, fungi or viruses (for example by expressing a gluconase, chitinase). However, they may also be modified in their metabolic properties, so that they show a qualitative and/or quantitative change of ingredients (for example by modification of the energy, carbohydrate, fatty acid or nitrogen metabolism or by metabolite currents influencing these (see above).

A list of examples of principles of action which can be introduced by genetic modification into a

useful plant and which are suitable for the treatment according to the invention on their own or in combination is compiled in **Table 2**. Under the header “AP” (active principle), this table contains the respective principle of action and associated therewith the pest to be controlled.

In a particularly preferred variant, the process according to the invention is used for treating transgenic vegetable, maize, soya bean, cotton, tobacco, rice, potato, sunflower, rape and sugar beet varieties. These are preferably Bt plants.

The vegetable plants or varieties are, for example, the following useful plants:

- potatoes: preferably starch potatoes, sweet potatoes and table potatoes;
- root vegetables: preferably carrots, turnips (swedes, stubble turnips (*Brassica rapa* var. *rapa*), spring turnips, autumn turnips (*Brassica campestris* ssp. *rapifera*), *Brassica rapa* L. ssp. *rapa* f. *teltowiensis*), scorzonera, Jerusalem artichoke, turnip-rooted parsley, parsnip, radish and horseradish;
- tuber vegetables: preferably kohlrabi, beetroot, celeriac, garden radish;
- bulb crops: preferably scallion, leek and onions (planting onions and seed onions);
- brassica vegetables: preferably headed cabbage (white cabbage, red cabbage, kale, savoy cabbage), cauliflowers, broccoli, curly kale, marrow-stem kale, seakale and Brussels sprouts;
- fruiting vegetables: preferably tomatoes (outdoor tomatoes, vine-ripened tomatoes, beef tomatoes, greenhouse tomatoes, cocktail tomatoes, industrial and fresh market tomatoes), melons, eggplants, aubergines, pepper (sweet pepper and hot pepper, Spanish pepper), chilli pepper, pumpkins, courgettes and cucumbers (outdoor cucumbers, greenhouse cucumbers snake gourds and gherkins);
- vegetable pulses: preferably bush beans (as sword beans, string beans, flageolet beans, wax beans, corn beans of green- and yellow-podded cultivars), pole beans (as sword beans, string beans, flageolet beans, wax beans of green-, blue- and yellow-podded cultivars), broadbeans (field beans, Windsor beans, cultivars having white- and black-spotted flowers), peas (chickling vetch, chickpeas, marrow peas, shelling peas, sugar-peas, smooth peas, cultivars having light- and dark-green fresh fruits) and lentils;

- green vegetables and stem vegetables: preferably Chinese cabbage, round-headed garden lettuce, curled lettuce, lamb's-lettuce, iceberg lettuce, romaine lettuce, oakleaf lettuce, endives, radicchio, lollo rossa, rucola lettuce, chicory, spinach, chard (leaf chard and stem chard) and parsley;
- 5 ○ other vegetables: preferably asparagus, rhubarb, chives, artichokes, mint varieties, sunflowers, Florence fennel, dill, garden cress, mustard, poppy seed, peanuts, sesame und salad chicory.

Bt vegetables including exemplary methods for preparing them are described in detail, for example, in Barton et al., 1987, Plant Physiol. 85 : 1103-1109 ; Vaeck et al., 1987, Nature 328 :
 10 33-37 ; Fischhoff et al., 1987, Bio/Technology 5 : 807-813. In addition, Bt vegetable plants are already known as commercial varieties, for example the potato cultivar NewLeaf® (Monsanto). The preparation of Bt vegetables is also described in US 6,072,105.

Likewise, Bt cotton is already known in principle, for example from US-A-5,322,938 or from Prietro-Samsonór et al., J. Ind. Microbiol. & Biotechn. 1997, 19, 202, and H. Agaisse and D.
 15 Lereclus, J. Bacteriol. 1996, 177, 6027. Different varieties of Bt cotton, too, are already commercially available, for example under the name NuCOTN® (Deltapine (USA)). In the context of the present invention, particular preference is given to Bt cotton NuCOTN33® and NuCOTN33B®.

The use and preparation of Bt maize has likewise already been known for a long time, for example
 20 from Ishida, Y., Saito, H., Ohta, S., Hiei, Y., Komari, T., and Kumashiro, T. (1996). High efficiency transformation of maize (*Zea mayz* L.) mediated by *Agrobacterium tumefaciens*. Nature Biotechnology 4: 745-750. EP-B-0485506, too, describes the preparation of Bt maize plants. Furthermore, different varieties of Bt maize are commercially available, for example under the following names (company/companies is/are in each case given in brackets): KnockOut®
 25 (Novartis Seeds), NaturGard® (Mycogen Seeds), Yieldgard® (Novartis Seeds, Monsanto, Cargill, Golden Harvest, Pioneer, DeKalb inter alia), Bt-Xtra® (DeKalb) and StarLink® (Aventis CropScience, Garst inter alia). For the purpose of the present invention, particular preference is given especially to the following maize cultivars: KnockOut®, NaturGard®, Yieldgard®, Bt-Xtra® and StarLink®.

30 For rape, InVigor® cultivars resistant to the herbicide glufosinate are available and can be treated according to the invention. These cultivars are also distinguished by an improved crop yield.

For soya beans, too, Roundup®Ready cultivar or cultivars resistant to the herbicide Liberty Link®

are available and can be treated according to the invention. In the case of rice, a large number of “Golden Rice” lines are available which are likewise characterized in that, by virtue of a transgenic modification, they have an increased content of provitamin A. They, too, are examples of plants which can be treated by the method according to the invention, with the advantages
5 described.

The method according to the invention is suitable for controlling a large number of harmful organisms which occur in particular in vegetables, maize, soya bean, cotton, rice, tobacco, rape, potatoes, sugar beet and sunflowers preferably arthropods and nematodes, in particular insects and arachnids. The pests mentioned include:

- 10 From the order of the Isopoda, for example, *Oniscus asellus*, *Armadillidium vulgare*, *Porcellio scaber*.

From the order of the Diplopoda, for example, *Blaniulus guttulatus*.

From the order of the Chilopoda, for example, *Geophilus carpophagus*, *Scutigera* spp.

From the order of the Symphyla, for example, *Scutigera* spp.

- 15 From the order of the Thysanura, for example, *Lepisma saccharina*.

From the order of the Collembola, for example, *Onychiurus armatus*.

From the order of the Orthoptera, for example, *Acheta domesticus*, *Gryllotalpa* spp., *Locusta migratoria migratorioides*, *Melanoplus* spp., *Schistocerca gregaria*.

- 20 From the order of the Blattaria, for example, *Blatta orientalis*, *Periplaneta americana*, *Leucophaea maderae*, *Blattella germanica*.

From the order of the Dermaptera, for example, *Forficula auricularia*.

From the order of the Isoptera, for example, *Reticulitermes* spp.

From the order of the Phthiraptera, for example, *Pediculus humanus corporis*, *Haematopinus* spp., *Linognathus* spp., *Trichodectes* spp., *Damalinia* spp.

- 25 From the order of the Thysanoptera, for example, *Hercinothrips femoralis*, *Thrips tabaci*, *Thrips palmi*, *Frankliniella occidentalis*.

From the order of the Heteroptera, for example, *Eurygaster* spp., *Dysdercus intermedius*, *Piesma*

quadrata, Cimex lectularius, Rhodnius prolixus, Triatoma spp.

From the order of the Homoptera, for example, Aleurodes brassicae, Bemisia tabaci, Trialeurodes vaporariorum, Aphis gossypii, Brevicoryne brassicae, Cryptomyzus ribis, Aphis fabae, Aphis pomi, Eriosoma lanigerum, Hyalopterus arundinis, Phylloxera vastatrix, Pemphigus spp.,
 5 Macrosiphum avenae, Myzus spp., Phorodon humuli, Rhopalosiphum padi, Empoasca spp., Euscelis bilobatus, Nephotettix cincticeps, Lecanium corni, Saissetia oleae, Laodelphax striatellus, Nilaparvata lugens, Aonidiella aurantii, Aspidiotus hederae, Pseudococcus spp., Psylla spp.

From the order of the Lepidoptera, for example, Pectinophora gossypiella, Bupalus piniarius, Cheimatobia brumata, Lithocolletis blancardella, Hyponomeuta padella, Plutella xylostella,
 10 Malacosoma neustria, Euproctis chrysorrhoea, Lymantria spp., Bucculatrix thurberiella, Phyllocnistis citrella, Agrotis spp., Euxoa spp., Feltia spp., Earias insulana, Heliothis spp., Mamestra brassicae, Panolis flammea, Spodoptera spp., Trichoplusia ni, Carpocapsa pomonella, Pieris spp., Chilo spp., Pyrausta nubilalis, Ephestia kuehniella, Galleria mellonella, Tineola bisselliella, Tinea pellionella, Hofmannophila pseudospretella, Cacoecia podana, Capua reticulana,
 15 Choristoneura fumiferana, Clysia ambiguella, Homona magnanima, Tortrix viridana, Cnaphalocerus spp., Oulema oryzae.

From the order of the Coleoptera, for example, Anobium punctatum, Rhizopertha dominica, Bruchidius obtectus, Acanthoscelides obtectus, Hylotrupes bajulus, Agelastica alni, Leptinotarsa decemlineata, Phaedon cochleariae, Diabrotica spp., Psylliodes chrysocephala, Epilachna
 20 varivestis, Atomaria spp., Oryzaephilus surinamensis, Anthonomus spp., Sitophilus spp., Otiorrhynchus sulcatus, Cosmopolites sordidus, Ceuthorrhynchus assimilis, Hypera postica, Dermestes spp., Trogoderma spp., Anthrenus spp., Attagenus spp., Lyctus spp., Meligethes aeneus, Ptinus spp., Niptus hololeucus, Gibbium psylloides, Tribolium spp., Tenebrio molitor, Agriotes spp., Conoderus spp., Melolontha melolontha, Amphimallon solstitialis, Costelytra zealandica,
 25 Lissorhoptrus oryzophilus.

From the order of the Hymenoptera, for example, Diprion spp., Hoplocampa spp., Lasius spp., Monomorium pharaonis, Vespa spp.

From the order of the Diptera, for example, Aedes spp., Anopheles spp., Culex spp., Drosophila melanogaster, Musca spp., Fannia spp., Calliphora erythrocephala, Lucilia spp., Chrysomyia spp.,
 30 Cuterebra spp., Gastrophilus spp., Hyppobosca spp., Stomoxys spp., Oestrus spp., Hypoderma spp., Tabanus spp., Tannia spp., Bibio hortulanus, Oscinella frit, Phorbia spp., Pegomyia hyoscyami, Ceratitis capitata, Dacus oleae, Tipula paludosa, Hylemyia spp., Liriomyza spp.

From the order of the Siphonaptera, for example, *Xenopsylla cheopis*, *Ceratophyllus* spp.

From the class of the Arachnida, for example, *Scorpio maurus*, *Latrodectus mactans*, *Acarus siro*, *Argas* spp., *Ornithodoros* spp., *Dermanyssus gallinae*, *Eriophyes ribis*, *Phyllocoptruta oleivora*, *Boophilus* spp., *Rhipicephalus* spp., *Amblyomma* spp., *Hyalomma* spp., *Ixodes* spp., *Psoroptes* spp., *Chorioptes* spp., *Sarcoptes* spp., *Tarsonemus* spp., *Bryobia praetiosa*, *Panonychus* spp., *Tetranychus* spp., *Hemitarsonemus* spp., *Brevipalpus* spp.

The plant-parasitic nematodes include, for example, *Pratylenchus* spp., *Radopholus similis*, *Ditylenchus dipsaci*, *Tylenchulus semipenetrans*, *Heterodera* spp., *Globodera* spp., *Meloidogyne* spp., *Aphelenchoides* spp., *Longidorus* spp., *Xiphinema* spp., *Trichodorus* spp., *Bursaphelenchus* spp.

The method according to the invention is particularly suitable for treating sugar beet or Bt vegetables, Bt maize, Bt cotton, Bt soya beans, Bt tobacco, and also Bt rice, Bt potatoes, Bt rape or Bt sunflowers for controlling insects from the order of the Isoptera, for example, *Reticulitermes* spp., from the order of the Thysanoptera, for example, *Thrips tabaci*, *Thrips palmi*, *Frankliniella occidentalis*, from the order of the Heteroptera, for example, *Eurygaster* spp., *Dysdercus intermedius*, *Piesma quadrata*, from the order of the Homoptera, for example, *Aleurodes brassicae*, *Bemisia tabaci*, *Trialeurodes vaporariorum*, *Aphis gossypii*, *Brevicoryne brassicae*, *Cryptomyzus ribis*, *Aphis fabae*, *Aphis pomi*, *Eriosoma lanigerum*, *Phylloxera vastatrix*, *Pemphigus* spp., *Macrosiphum avenae*, *Myzus* spp., *Phorodon humuli*, *Rhopalosiphum padi*, *Empoasca* spp., *Nephotettix cincticeps*, *Lecanium corni*, *Saissetia oleae*, *Laodelphax striatellus*, *Nilaparvata lugens*, *Aonidiella aurantii*, *Pseudococcus* spp., *Psylla* spp., from the order of the Lepidoptera, for example, *Pectinophora gossypiella*, *Cheimatobia brumata*, *Lithocolletis blancardella*, *Hyponomeuta padella*, *Plutella xylostella*, *Euproctis chrysorrhoea*, *Lymantria* spp., *Phyllocnistis citrella*, *Agrotis* spp., *Earias insulana*, *Heliothis* spp., *Mamestra brassicae*, *Spodoptera* spp., *Trichoplusia ni*, *Carpocapsa pomonella*, *Pieris* spp., *Chilo* spp., *Pyrausta nubilalis*, *Ephestia kuehniella*, *Capua reticulana*, *Clysia ambiguella*, *Tortrix viridana*, *Cnaphalocerus* spp., *Oulema oryzae*, from the order of the Coleoptera, for example, *Leptinotarsa decemlineata*, *Phaedon cochleariae*, *Diabrotica* spp., *Psylliodes chrysocephala*, *Epilachna varivestis*, *Atomaria* spp., *Oryzaephilus surinamensis*, *Anthonomus* spp., *Sitophilus* spp., *Otiorrhynchus sulcatus*, *Cosmopolites sordidus*, *Ceuthorrhynchus assimilis*, *Meligethes aeneus*, *Tribolium* spp., *Tenebrio molitor*, *Agriotes* spp., *Lissorhoptrus oryzophilus*, from the order of the Hymenoptera, for example, *Diprion* spp., *Hoplocampa* spp. or from the order of the Diptera, for example, *Oscinella frit*, *Phorbia* spp., *Pegomyia hyoscyami*, *Ceratitis capitata*, *Dacus oleae*, *Hylemyia* spp., *Liriomyza* spp.

The active compound combinations can be employed in customary formulations, such as solutions, emulsions, wettable powders, water- and oil-based suspensions, powders, dusts, pastes, soluble powders, soluble granules, granules for broadcasting, suspoemulsion concentrates, natural compounds impregnated with active compound, synthetic substances impregnated with active compound, fertilizers and also microencapsulations in polymeric substances.

These formulations are prepared in a known manner, for example by mixing the active compounds with extenders, i.e. liquid solvents and/or solid carriers, if appropriate using surfactants, i.e. emulsifiers and/or dispersants and/or foam-formers. The formulations are prepared either in suitable plants or else before or during application.

10 Wettable powders are preparations which can be dispersed homogeneously in water and which, in addition to the active compound and beside a diluent or inert substance, also comprise wetting agents, for example polyethoxylated alkylphenols, polyethoxylated fatty alcohols, alkylsulphonates or alkylphenylsulphonates and dispersants, for example sodium lignosulphonate, sodium 2,2'-dinaphthylmethane-6,6'-disulphonate.

15 Dusts are obtained by grinding the active compound with finely distributed solid substances, for example talc, natural clays, such as kaolin, bentonite, pyrophyllite or diatomaceous earth. Granules can be prepared either by spraying the active compound onto granular inert material capable of adsorption or by applying active compound concentrates to the surface of carrier substances, such as sand, kaolinites or granular inert material, by means of adhesives, for example polyvinyl alcohol, sodium polyacrylate or mineral oils. Suitable active compounds can also be granulated in the manner customary for the preparation of fertilizer granules - if desired as a mixture with fertilizers.

Suitable for use as auxiliaries are substances which are suitable for imparting to the composition itself and/or to preparations derived therefrom (for example spray liquors, seed dressings) particular properties such as certain technical properties and/or also particular biological properties. Typical suitable auxiliaries are: extenders, solvents and carriers.

Suitable extenders are, for example, water, polar and nonpolar organic chemical liquids, for example from the classes of the aromatic and non-aromatic hydrocarbons (such as paraffins, alkylbenzenes, alkylnaphthalenes, chlorobenzenes), the alcohols and polyols (which, if appropriate, may also be substituted, etherified and/or esterified), the ketones (such as acetone, cyclohexanone), esters (including fats and oils) and (poly)ethers, the unsubstituted and substituted amines, amides, lactams (such as N-alkylpyrrolidones) and lactones, the sulphones and

sulphoxides (such as dimethyl sulphoxide).

If the extender used is water, it is also possible to employ, for example, organic solvents as auxiliary solvents. Essentially, suitable liquid solvents are: aromatics such as xylene, toluene or alkylnaphthalenes, chlorinated aromatics and chlorinated aliphatic hydrocarbons such as chlorobenzenes, chloroethylenes or methylene chloride, aliphatic hydrocarbons such as cyclohexane or paraffins, for example petroleum fractions, mineral and vegetable oils, alcohols such as butanol or glycol and also their ethers and esters, ketones such as acetone, methyl ethyl ketone, methyl isobutyl ketone or cyclohexanone, strongly polar solvents such as dimethyl sulphoxide, and also water.

Suitable solid carriers are:

- 10 for example, ammonium salts and ground natural minerals such as kaolins, clays, talc, chalk, quartz, attapulgite, montmorillonite or diatomaceous earth, and ground synthetic minerals, such as finely divided silica, alumina and silicates; suitable solid carriers for granules are: for example, crushed and fractionated natural rocks such as calcite, marble, pumice, sepiolite and dolomite, and also synthetic granules of inorganic and organic meals, and granules of organic material such as paper, sawdust, 15 coconut shells, maize cobs and tobacco stalks; suitable emulsifiers and/or foam-formers are: for example, nonionic and anionic emulsifiers, such as polyoxyethylene fatty acid esters, polyoxyethylene fatty alcohol ethers, for example alkylaryl polyglycol ethers, alkylsulphonates, alkyl sulphates, arylsulphonates and also protein hydrolysates; suitable dispersants are nonionic and/or ionic substances, for example from the classes of the alcohol-POE and/or -POP ethers, acid and/or 20 POP POE esters, alkylaryl and/or POP POE ethers, fat and/or POP POE adducts, POE- and/or POP-polyol derivatives, POE- and/or POP-sorbitan or -sugar adducts, alkyl or aryl sulphates, alkyl- or arylsulphonates and alkyl or aryl phosphates or the corresponding PO-ether adducts. Furthermore, suitable oligo- or polymers, for example those derived from vinylic monomers, from acrylic acid, from EO and/or PO alone or in combination with, for example, (poly)alcohols or 25 (poly)amines. It is also possible to employ lignin and its sulphonic acid derivatives, unmodified and modified celluloses, aromatic and/or aliphatic sulphonic acids and their adducts with formaldehyde.

Tackifiers such as carboxymethylcellulose and natural and synthetic polymers in the form of powders, granules or latices, such as gum arabic, polyvinyl alcohol and polyvinyl acetate, as well as 30 natural phospholipids such as cephalins and lecithins, and synthetic phospholipids, can be used in the formulations.

It is possible to use colorants such as inorganic pigments, for example iron oxide, titanium oxide and

Prussian Blue, and organic dyestuffs, such as alizarin dyestuffs, azo dyestuffs and metal phthalocyanine dyestuffs, and trace nutrients such as salts of iron, manganese, boron, copper, cobalt, molybdenum and zinc.

Other possible additives are perfumes, mineral or vegetable, optionally modified oils, waxes and nutrients (including trace nutrients), such as salts of iron, manganese, boron, copper, cobalt, molybdenum and zinc.

Stabilizers, such as low-temperature stabilizers, preservatives, antioxidants, light stabilizers or other agents which improve chemical and/or physical stability may also be present.

These individual types of formulation are known in principle and are described, for example, in: Winnacker-Küchler, 1986, "Chemische Technologie" [Chemical Technology], Volume 7, 4th Ed., C. Hauser Verlag Munich; van Falkenberg, 1972-73, "Pesticides Formulations", 2nd Ed., Marcel Dekker N.Y.; Martens, 1979, "Spray Drying Handbook", 3rd Ed., G. Goodwin Ltd. London.

Based on his general expert knowledge, the person skilled in the art is able to choose suitable formulation auxiliaries (in this context, see, for example, Watkins, "Handbook of Insecticide Dust Diluents and Carriers", 2nd Ed., Darland Books, Caldwell N.J.; v. Olphen, "Introduction to Clay Colloid Chemistry", 2nd Ed., J. Wiley & Sons, N.Y.; Marsden, "Solvents Guide", 2nd Ed., Interscience, N.Y. 1950; McCutcheon's, "Detergents and Emulsifiers Annual", MC Publ. Corp., Ridgewood, N.J.; Sisley and Wood, "Encyclopedia of Surface Active Agents", Chem. Publ. Co. Inc., N.Y. 1964; Schönfeldt, "Grenzflächenaktive Äthylenoxidaddukte" [Surface-active Ethylene Oxide Adducts], Wiss. Verlagsgesell., Stuttgart 1967; Winnacker-Küchler, "Chemische Technologie" [Chemical Technology], Volume 7, 4th Ed., C. Hanser Verlag Munich 1986.

The active compound combinations according to the invention, in commercially available formulations and in the use forms prepared from these formulations, can be present in a mixture with other known active compounds such as insecticides, attractants, sterilants, bactericides, acaricides, nematicides, fungicides, growth regulators or herbicides. The insecticides include, for example, phosphoric esters, carbamates, carboxylic esters, chlorinated hydrocarbons, phenylureas, substances produced by microorganisms, and the like.

A mixture with other known active compounds such as fertilizers is also possible.

When used as insecticides, the active compound combinations according to the invention in their commercially available formulations and in the use forms which are prepared from these formulations may furthermore be present as a mixture with synergists. Synergists are compounds

by which the action of the active compounds is increased without it being necessary for the synergist added to be active itself.

In general, the formulations comprise from 0.01 to 98% by weight of active compound, preferably from 0.5 to 90%. In wettable powders, the active compound concentration is, for example, from about 10 to 90% by weight, the remainder to 100% by weight consisting of customary formulation components. In the case of emulsifiable concentrates, the active compound concentration can be from about 5 to 80% by weight. In most cases, formulations in the form of dusts comprise from 5 to 20% by weight of active compound, sprayable solutions comprise about 2 to 20% by weight. In the case of granules, the active compound content depends partially on whether the active compound is present in liquid or solid form and on which granulation auxiliaries, fillers, etc., are used.

The use is accomplished in a customary manner adapted to the use forms, preferably by means of leaf and drenching application.

The treatment according to the invention of the transgenic plants with the combinations of active compounds is effected directly or by action on their surroundings, habitat or storage space according to customary methods of treatment, for example by immersion, spraying, evaporating, pouring on, misting, scattering, painting on and in the case of propagation material, in particular in the case of seeds, further by applying one or more coats.

The required application rate may also vary with external conditions such as, inter alia, temperature and humidity. It may vary within wide limits, for example between 0.1 g/h and 5.0 kg/ha or more of active substance. Owing to the synergistic effects between Bt vegetables and the active compound combinations according to the invention, particular preference is given to application rates of from 0.1 to 500 g/ha. Particular preference is given to application rates of from 10 to 500 g/ha, especially preferred are 10 to 200 g/ha.

The active compound content of the use forms prepared from the commercial formulations may vary within wide limits. The active compound concentration of the use forms may be from 0.0000001 to 95% by weight of active compound and is, preferably between 0.0001 and 1% by weight.

Table 1: Plant: Maize

Structure affected or principle expressed	Feature of the plant / tolerance to
acetolactate synthase (ALS)	sulphonylurea compounds, imidazolinones triazolepyrimidines, pyrimidyloxybenzoates, phthalides
acetyl-CoA carboxylase (ACCase)	aryloxyphenoxyalkanecarboxylic acid, cyclohexanedione
hydroxyphenylpyruvate dioxygenase (HPPD)	isooxazoles, such as isoxaflutol or isoxachlortol, triones, such as mesotrione or sulcotrione
phosphinothricin acetyltransferase	phosphinothricin
O-methyl transferase	modified lignin content
glutamine synthetase	glufosinate, bialaphos
adenylosuccinate lyase (ADSL)	inhibitors of IMP and AMP synthesis
adenylosuccinate synthase	inhibitors of adenylosuccinate synthesis
anthranilate synthase	inhibitors of tryptophan synthesis and degradation
nitrilase	3,5-dihalo-4-hydroxybenzonitriles, such as bromoxynil and loxynil
5-enolpyruvyl-3-phosphoshikimate synthase (EPSPS)	glyphosate or sulphosate
glyphosate oxidoreductase	glyphosate or sulphosate
protoporphyrinogen oxidase (PROTOX)	diphenyl ethers, cyclic imides, phenylpyrazole, pyridine derivative, phenopylate, oxadiazoles etc.
cytochrome P450 e.g. P450 SU1	xenobiotics and herbicides, such as sulphonylurea
dimboa biosynthesis (Bx1-Gen)	Helminthosporium turcicum, Rhopalosiphum maydis, Diplodia maydis, Ostrinia nubilalis, Lepidoptera sp.
CMIII (small basic peptide building block from maize grain)	plant pathogens e.g. Fusarium, Alternaria, Sclerotinia
Com-SAFP (zeamatin)	plant pathogens, e.g. Fusarium, Alternaria, Sclerotinia, Rhizoctonia, Chaetomium, Phycomycen

Structure affected or principle expressed	Feature of the plant / tolerance to
Hm1-gene	Cochliobulus
chitinases	plant pathogens
glucanases	plant pathogens
envelope proteins	viruses, such as the Maize dwarf mosaic virus (MDMV)
toxins of <i>Bacillus thuringiensis</i> , VIP 3, <i>Bacillus cereus</i> toxin, <i>Photorhabdus</i> and <i>Xenorhabdus</i> toxins	Lepidoptera, Coleoptera, Diptera, nematodes, e.g. <i>Ostrinia nubilalis</i> , <i>Heliothis zea</i> , armyworms e.g. <i>Spodoptera frugiperda</i> , Western corn rootworm, <i>Sesamia</i> sp., <i>Aprotis ipsilon</i> , Asian corn borer, weevils
3-hydroxysteroid oxidase	Lepidoptera, Coleoptera, Diptera, nematodes, e.g. <i>Ostrinia nubilalis</i> , <i>Heliothis zea</i> , armyworms e.g. <i>Spodoptera frugiperda</i> , Western corn rootworm, <i>Sesamia</i> sp., <i>Aprotis ipsilon</i> , Asian corn borer, weevils
peroxidase	Lepidoptera, Coleoptera, Diptera, nematodes, e.g. <i>Ostrinia nubilalis</i> , <i>Heliothis zea</i> , armyworms e.g. <i>Spodoptera frugiperda</i> , Western corn rootworm, <i>Sesamia</i> sp., <i>Aprotis ipsilon</i> , Asian corn borer, weevils
aminopeptidase inhibitors, e.g. leucine aminopeptidase inhibitors (LAPI)	Lepidoptera, Coleoptera, Diptera, nematodes, e.g. <i>Ostrinia nubilalis</i> , <i>Heliothis zea</i> , armyworms e.g. <i>Spodoptera frugiperda</i> , Western corn rootworm, <i>Sesamia</i> sp., <i>Aprotis ipsilon</i> , Asian corn borer, weevils
limonene synthase	Western corn rootworm
lectin	Lepidoptera, Coleoptera, Diptera, nematodes, e.g. <i>Ostrinia nubilalis</i> , <i>Heliothis zea</i> , armyworms e.g. <i>Spodoptera frugiperda</i> , Western corn rootworm, <i>Sesamia</i> sp., <i>Aprotis ipsilon</i> , Asian corn borer, weevils
protease inhibitors e.g. cystatin, patatin, virgiferin, CPTI	weevils, Western corn rootworm

Structure affected or principle expressed	Feature of the plant / tolerance to
ribosome-inactivating protein	Lepidoptera, Coleoptera, Diptera, nematodes, e.g. Ostrinia nubilalis, Heliothis zea, armyworms e.g. Spodoptera frugiperda, Western corn rootworm, Sesamia sp., Aprotis ippsilon, Asian corn borer, weevils
5C9-maize polypeptide	Lepidoptera, Coleoptera, Diptera, nematodes, e.g. Ostrinia nubilalis, Heliothis zea, armyworms e.g. Spodoptera frugiperda, Western corn rootworm, Sesamia sp., Aprotis ippsilon, Asian corn borer, weevils
HMG-CoA reductase	Lepidoptera, Coleoptera, Diptera, nematodes, e.g. Ostrinia nubilalis, Heliothis zea, armyworms e.g. Spodoptera frugiperda, Western corn rootworm, Sesamia sp., Aprotis ippsilon, Asian corn borer, weevils

Plant: Wheat

Structure affected / protein expressed	Feature of the plant / tolerance to
acetolactate synthase (ALS)	sulphonylurea compounds, imidazolinones triazolepyrimidines, pyrimidyloxybenzoates, phthalides
acetyl-CoA carboxylase (ACCase)	aryloxyphenoxyalkanecarboxylic acid, cyclohexanedione
hydroxyphenylpyruvate dioxygenase (HPPD)	isooxazoles, such as isoxaflutol or isoxachlortol, triones, such as mesotrione or sulcotrione
phosphinothricin acetyltransferase	phosphinothricin
O-methyl transferase	modified lignin content
glutamine synthetase	glufosinate, bialaphos
adenylosuccinate lyase (ADSL)	inhibitors of IMP and AMP synthesis
adenylosuccinate synthase	inhibitors of adenylosuccinate synthesis
anthranilate synthase	inhibitors of tryptophan synthesis and degradation
nitrilase	3,5-dihalo-4-hydroxybenzonitriles, such as

Structure affected / protein expressed	Feature of the plant / tolerance to
5-enolpyruvyl-3-phosphoshikimate synthase (EPSPS)	bromoxynil and loxynil glyphosate or sulphosate
glyphosate oxidoreductase	glyphosate or sulphosate
protoporphyrinogen oxidase (PROTOX)	diphenyl ethers, cyclic imides, phenylpyrazoles, pyridine derivatives, phenopylate, oxadiazoles etc.
cytochrome P450 e.g. P450 SU1	xenobiotics and herbicides, such as sulphonylurea compounds
antifungal polypeptide AlyAFP	plant pathogens, e.g. Septoria and Fusarium
glucose oxidase	plant pathogens, e.g. Fusarium, Septoria
pyrrolnitrin synthesis gene	plant pathogens, e.g. Fusarium, Septoria
serine/threonine kinases	plant pathogens, e.g. Fusarium, Septoria and other diseases
polypeptide having the effect of triggering a hypersensitivity reaction	plant pathogens, e.g. Fusarium, Septoria and other diseases
systemic acquired resistance (SAR) genes	viral, bacterial, fungal and nematodal pathogens
chitinases	plant pathogens
glucanases	plant pathogens
double-strand ribonuclease	viruses such as, for example, BYDV and MSMV
envelope proteins	viruses such as, for example, BYDV and MSMV
toxins of <i>Bacillus thuringiensis</i> , VIP 3, <i>Bacillus cereus</i> toxins, <i>Photorhabdus</i> and <i>Xenorhabdus</i> toxins	Lepidoptera, Coleoptera, Diptera, nematodes
3-hydroxysteroid oxidase	Lepidoptera, Coleoptera, Diptera, nematodes
peroxidase	Lepidoptera, Coleoptera, Diptera, nematodes
aminopeptidase inhibitors, e.g. leucine aminopeptidase inhibitor	Lepidoptera, Coleoptera, Diptera, nematodes
lectins	Lepidoptera, Coleoptera, Diptera, nematodes, aphids

Structure affected / protein expressed	Feature of the plant / tolerance to
protease inhibitors, e.g. cystatin, patatin, virgiferin, CPTI	Lepidoptera, Coleoptera, Diptera, nematodes, aphids
ribosome-inactivating protein	Lepidoptera, Coleoptera, Diptera, nematodes, aphids
HMG-CoA reductase	Lepidoptera, Coleoptera, Diptera, nematodes, e.g. <i>Ostrinia nubilalis</i> , <i>Heliothis zea</i> , armyworms e.g. <i>Spodoptera</i> <i>frugiperda</i> , Western corn rootworm, <i>Sesamia</i> sp., <i>Aprodis ipsilon</i> , Asian corn borer, weevils

Plant: Barley

Structure affected / protein expressed	Feature of the plant / tolerance to
acetolactate synthase (ALS)	sulphonylurea compounds, imidazolinones triazolepyrimidines, pyrimidyloxybenzoates, phthalides
acetyl-CoA carboxylase (ACCase)	aryloxyphenoxyalkanecarboxylic acids, cyclohexanediones
hydroxyphenylpyruvate dioxygenase (HPPD)	isooxazoles, such as isoxaflutol or isoxachlortol, triones, such as mesotrione or sulcotrione
phosphinothricin acetyltransferase	phosphinothricin
O-methyl transferase	modified lignin content
glutamine synthetase	glufosinate, bialaphos
adenylosuccinate lyase (ADSL)	inhibitors of IMP and AMP synthesis
adenylosuccinate synthase	inhibitors of adenylosuccinate synthesis
anthranilate synthase	inhibitors of tryptophan synthesis and degradation
nitrilase	3,5-dihalo-4-hydroxybenzonitriles, such as bromoxynil and loxynil
5-enolpyruvyl-3-phosphoshikimate synthase (EPSPS)	glyphosate or sulphosate
glyphosate oxidoreductase	glyphosate or sulphosate
protoporphyrinogen oxidase (PROTOX)	diphenyl ethers, cyclic imides, phenylpyrazoles, pyridine derivatives,

Structure affected / protein expressed	Feature of the plant / tolerance to
	phenopylate, oxadiazoles etc.
cytochrome P450 e.g. P450 SU1	xenobiotics and herbicides, such as sulphonylurea compounds
antifungal polypeptide AlyAFP	plant pathogens, e.g. Septoria and Fusarium
glucose oxidase	plant pathogens, e.g. Fusarium, Septoria
pyrrolnitrin synthesis gene	plant pathogens, e.g. Fusarium, Septoria
serine/threonine kinases	plant pathogens, e.g. Fusarium, Septoria and other diseases
polypeptide having the effect of triggering a hypersensitivity reaction	plant pathogens, e.g. Fusarium, Septoria and other diseases
systemic acquired resistance (SAR) genes	viral, bacterial, fungal and nematodal pathogens
chitinases	plant pathogens
glucanases	plant pathogens
double-strand ribonuclease	viruses such as, for example, BYDV and MSMV
envelope proteins	viruses such as, for example, BYDV and MSMV
toxins of Bacillus thuringiensis, VIP 3, Bacillus cereus toxins, Photorabdus and Xenorhabdus toxins	Lepidoptera, Coleoptera, Diptera, nematodes
3-hydroxysteroid oxidase	Lepidoptera, Coleoptera, Diptera, nematodes
peroxidase	Lepidoptera, Coleoptera, Diptera, nematodes
aminopeptidase inhibitors, e.g. leucine aminopeptidase inhibitor	Lepidoptera, Coleoptera, Diptera, nematodes
lectins	Lepidoptera, Coleoptera, Diptera, nematodes, aphids
protease inhibitors, e.g. cystatin, patatin, virgiferin, CPTI	Lepidoptera, Coleoptera, Diptera, nematodes, aphids
ribosome-inactivating protein	Lepidoptera, Coleoptera, Diptera, nematodes, aphids
HMG-CoA reductase	Lepidoptera, Coleoptera, Diptera, nematodes, aphids

Plant: Rice

Structure affected/ principle expressed	Feature of the plant / tolerance to
acetolactate synthase (ALS)	sulphonylurea compounds, imidazolinones triazolepyrimidines, pyrimidyloxybenzoates, phthalides
acetyl-CoA carboxylase (ACCase)	aryloxyphenoxyalkanecarboxylic acid, cyclohexanedione
hydroxyphenylpyruvate dioxygenase (HPPD)	isooxazoles, such as isoxaflutol or isoxachlortol, triones, such as mesotrione or sulcotrione
phosphinothricin acetyltransferase	phosphinothricin
O-methyl transferase	modified lignin content
glutamine synthetase	glufosinate, bialaphos
adenylosuccinate lyase (ADSL)	inhibitors of IMP and AMP synthesis
adenylosuccinate synthase	inhibitors of adenylosuccinate synthesis
anthranilate synthase	inhibitors of tryptophan synthesis and degradation
nitrilase	3,5-dihalo-4-hydroxybenzonitriles, such as bromoxynil and loxynil
5-enolpyruvyl-3-phosphoshikimate synthase (EPSPS)	glyphosate or sulphosate
glyphosate oxidoreductase	glyphosate or sulphosate
protoporphyrinogen oxidase (PROTOX)	diphenyl ethers, cyclic imides, phenylpyrazoles, pyridine derivatives, phenopylate, oxadiazoles etc.
cytochrome P450 e.g. P450 SU1	xenobiotics and herbicides, such as sulphonylurea compounds
antifungal polypeptide AlyAFP	plant pathogens
glucose oxidase	plant pathogens
pyrrolnitrin synthesis gene	plant pathogens
serine/threonine kinases	plant pathogens
phenylalanine ammonia lyase (PAL)	plant pathogens, e.g. bacterial foliar mildew and inducible rice blast
phytoalexins	plant pathogens, e.g. bacterial

Structure affected/ principle expressed	Feature of the plant / tolerance to
B-1,3-glucanase (antisense)	foliar mildew and rice blast plant pathogens, e.g. bacterial
receptor kinase	foliar mildew and rice blast plant pathogens, e.g. bacterial
polypeptide having the effect of triggering a hypersensitivity reaction	foliar mildew and rice blast plant pathogens
systemic acquired resistance (SAR) genes	plant pathogens
chitinases	viral, bacterial, fungal and nematodal pathogens
glucanases	plant pathogens, e.g. bacterial
double-strand ribonuclease	foliar mildew and rice blast plant pathogens
envelope proteins	viruses such as, for example, BYDV and MSMV
toxins of <i>Bacillus thuringiensis</i> , VIP 3, <i>Bacillus cereus</i> toxins, <i>Photorhabdus</i> and <i>Xenorhabdus</i> toxins	viruses such as, for example, BYDV and MSMV Lepidoptera, e.g. stem borer, Coleoptera, e.g. weevils such as <i>Lissorhoptrus oryzophilus</i> , Diptera, rice planthoppers, e.g. rice brown planthopper
3-hydroxysteroid oxidase	Lepidoptera, e.g. stem borer, Coleoptera, e.g. weevils such as <i>Lissorhoptrus oryzophilus</i> , Diptera, rice planthoppers, e.g. rice brown planthopper
peroxidase	Lepidoptera, e.g. stem borer, Coleoptera, e.g. weevils such as <i>Lissorhoptrus oryzophilus</i> , Diptera, rice planthoppers, e.g. rice brown planthopper
aminopeptidase inhibitors, e.g. leucine aminopeptidase inhibitor	Lepidoptera, e.g. stem borer, Coleoptera, e.g. weevils such as <i>Lissorhoptrus</i> <i>oryzophilus</i> , Diptera, rice planthoppers, e.g. rice brown planthopper
lectins	Lepidoptera, e.g. stem borer, Coleoptera, e.g. weevils such as <i>Lissorhoptrus</i> <i>oryzophilus</i> , Diptera, rice planthoppers, e.g.

Structure affected/ principle expressed	Feature of the plant / tolerance to
protease inhibitors	rice brown planthopper Lepidoptera, e.g. stem borer, Coleoptera, e.g. weevils such as Lissorhoptrus oryzophilus, Diptera, rice planthoppers e.g. rice brown planthopper
ribosome-inactivating protein	Lepidoptera, e.g. stem borer, Coleoptera, e.g. weevils such as Lissorhoptrus oryzophilus, Diptera, rice planthoppers, e.g. rice brown planthopper
HMG-CoA reductase	Lepidoptera, e.g. stem borer, Coleoptera, e.g. weevils such as Lissorhoptrus oryzophilus, Diptera, rice planthoppers e.g. rice brown planthopper

Plant: Soya bean

Structure affected/ principle expressed	Feature of the plant / tolerance to
acetolactate synthase (ALS)	sulphonylurea compounds, imidazolinones triazolepyrimidines, pyrimidyloxybenzoates, phthalides
acetyl-CoA carboxylase (ACCase)	aryloxyphenoxyalkanecarboxylic acids, cyclohexanediones
hydroxyphenylpyruvate dioxygenase (HPPD)	isooxazoles, such as isoxaflutol or isoxachlortol, triones, such as mesotrione or sulcotrione
phosphinothricin acetyltransferase	phosphinothricin
O-methyl transferase	modified lignin content
glutamine synthetase	glufosinate, bialaphos
adenylosuccinate lyase (ADSL)	inhibitors of IMP and AMP synthesis
adenylosuccinate synthase	inhibitors of adenylosuccinate synthesis
anthranilate synthase	inhibitors of tryptophan synthesis and degradation
nitrilase	3,5-dihalo-4-hydroxybenzonitriles, such as bromoxynil and loxynil
5-enolpyruvyl-3-phosphoshikimate	glyphosate or sulphosate

Structure affected/ principle expressed	Feature of the plant / tolerance to
synthase (EPSPS)	
glyphosate oxidoreductase	glyphosate or sulphosate
protoporphyrinogen oxidase (PROTOX)	diphenyl ethers, cyclic imides, phenylpyrazoles, pyridine derivatives, phenopylate, oxadiazoles etc.
cytochrome P450 e.g. P450 SU1 or selection	xenobiotics and herbicides, such as sulphonylurea compounds
antifungal polypeptide AlyAFP	bacterial and fungal pathogens such as, for example, Fusarium, Sclerotinia, stem rot
oxalate oxidase	bacterial and fungal pathogens such as, for example, Fusarium, Sclerotinia, stem rot
glucose oxidase	bacterial and fungal pathogens such as, for example, Fusarium, Sclerotinia, stem rot
pyrrolnitrin synthesis gene	bacterial and fungal pathogens such as, for example, Fusarium, Sclerotinia, stem rot
serine/threonine kinases	bacterial and fungal pathogens such as, for example, Fusarium, Sclerotinia, stem rot
phenylalanine ammonia lyase (PAL)	bacterial and fungal pathogens such as, for example, Fusarium, Sclerotinia, stem rot
phytoalexins	plant pathogens, e.g. bacterial foliar mildew and rice blast
B-1,3-glucanase (antisense)	plant pathogens, e.g. bacterial foliar mildew and rice blast
receptor kinase	bacterial and fungal pathogens such as, for example, Fusarium, Sclerotinia, stem rot
polypeptide having the effect of triggering a hypersensitivity reaction	plant pathogens
systemic acquired resistance (SAR) genes	viral, bacterial, fungal and nematodal pathogens
chitinases	bacterial and fungal pathogens such as, for example, Fusarium, Sclerotinia, stem rot
glucanases	bacterial and fungal pathogens such as, for example, Fusarium, Sclerotinia, stem rot
double-strand ribonuclease	viruses such as, for example, BPMV and SbMV

BCS 08-3018-Foreign Countries

- 40 -

Structure affected/ principle expressed	Feature of the plant / tolerance to
envelope proteins	viruses such as, for example, BYDV and MSMV
toxins of <i>Bacillus thuringiensis</i> , VIP 3, <i>Bacillus cereus</i> toxins, <i>Photorhabdus</i> and <i>Xenorhabdus</i> toxins	Lepidoptera, Coleoptera, aphids
3-hydroxysteroid oxidase	Lepidoptera, Coleoptera, aphids
peroxidase	Lepidoptera, Coleoptera, aphids
aminopeptidase inhibitors, e.g. leucine aminopeptidase inhibitor	Lepidoptera, Coleoptera, aphids
lectins	Lepidoptera, Coleoptera, aphids
protease inhibitors, e.g. virgiferin	Lepidoptera, Coleoptera, aphids
ribosome-inactivating protein	Lepidoptera, Coleoptera, aphids
HMG-CoA reductase	Lepidoptera, Coleoptera, aphids
barnase	nematodes, e.g. root-knot nematodes and cyst nematodes
hatching factor for cyst nematodes	cyst nematodes
principles for preventing food uptake	nematodes, e.g. root-knot nematodes and cyst nematodes

Plant: Potato

Structure affected / protein expressed	Feature of the plant / tolerance to
acetolactate synthase (ALS)	sulphonylurea compounds, imidazolinones triazolepyrimidines, pyrimidyloxybenzoates, phthalides
acetyl-CoA carboxylase (ACCase)	aryloxyphenoxyalkanecarboxylic acids, cyclohexanediones
hydroxyphenylpyruvate dioxygenase (HPPD)	isooxazoles, such as isoxaflutol or isoxachlortol, triones, such as mesotrione or sulcotrione
phosphinothricin acetyltransferase	phosphinothricin
O-methyl transferase	modified lignin content
glutamine synthetase	glufosinate, bialaphos
adenylosuccinate lyase (ADSL)	inhibitors of IMP and AMP synthesis
adenylosuccinate synthase	inhibitors of adenylosuccinate synthesis

Structure affected / protein expressed	Feature of the plant / tolerance to
anthranilate synthase	inhibitors of tryptophan synthesis and degradation
nitrilase	3,5-dihalo-4-hydroxybenzonitriles, such as bromoxynil and loxynil
5-enolpyruvyl-3-phosphoshikimate synthase (EPSPS)	glyphosate or sulphosate
glyphosate oxidoreductase	glyphosate or sulphosate
protoporphyrinogen oxidase (PROTOX)	diphenyl ethers, cyclic imides, phenylpyrazoles, pyridine derivatives, phenopylate, oxadiazoles etc.
cytochrome P450 e.g. P450 SU1 or selection	xenobiotics and herbicides, such as sulphonylurea compounds
polyphenol oxidase or polyphenol oxidase (antisense)	black spot
metallothionein	bacterial and fungal pathogens such as, for example, Phytophthora,
ribonuclease	Phytophthora, Verticillium, Rhizoctonia
antifungal polypeptide AlyAFP	bacterial and fungal pathogens such as, for example, Phytophthora
oxalate oxidase	bacterial and fungal pathogens such as, for example, Phytophthora, Verticillium, Rhizoctonia
glucose oxidase	bacterial and fungal pathogens such as, for example, Phytophthora, Verticillium, Rhizoctonia
pyrrolnitrin synthesis gene	bacterial and fungal pathogens such as, for example, Phytophthora, Verticillium, Rhizoctonia
serine/threonine kinases	bacterial and fungal pathogens such as, for example, Phytophthora, Verticillium, Rhizoctonia
cecropin B	bacteria such as, for example, Corynebacterium sepedonicum, Erwinia carotovora
phenylalanine ammonia lyase (PAL)	bacterial and fungal pathogens such as. for example, Phytophthora, Verticillium, Rhizoc-

Structure affected / protein expressed	Feature of the plant / tolerance to
phytoalexins	tonia bacterial and fungal pathogens such as, for example, Phytophthora, Verticillium, Rhizoc-tonia
B-1,3-glucanase (antisense)	bacterial and fungal pathogens such as, for example, Phytophthora, Verticillium, Rhizoc-tonia
receptor kinase	bacterial and fungal pathogens such as, for example, Phytophthora, Verticillium, Rhizoc-tonia
polypeptide having the effect of triggering a hypersensitivity reaction	bacterial and fungal pathogens such as, for example, Phytophthora, Verticillium, Rhizoc-tonia
systemic acquired resistance (SAR) genes	viral, bacterial, fungal and nematodal pathogens
chitinases	bacterial and fungal pathogens such as, for example, Phytophthora, Verticillium, Rhizoc-tonia
barnase	bacterial and fungal pathogens such as, for example, Phytophthora, Verticillium, Rhizoc-tonia
gene 49 for controlling disease resistance	bacterial and fungal pathogens such as, for example, Phytophthora, Verticillium, Rhizoc-tonia
trans-aldolase (antisense)	black spot
glucanases	bacterial and fungal pathogens such as, for example, Phytophthora, Verticillium, Rhizoc-tonia
double-strand ribonuclease	viruses such as, for example, PLRV, PVY and TRV
envelope proteins	viruses such as, for example, PLRV, PVY and TRV
17kDa or 60 kDa protein	viruses such as, for example, PLRV, PVY and TRV
nuclear inclusion proteins, e.g. a or b	viruses such as, for example, PLRV, PVY and

Structure affected / protein expressed	Feature of the plant / tolerance to
pseudoubiquitin	TRV viruses such as, for example, PLRV, PVY and TRV
replicase	viruses such as, for example, PLRV, PVY and TRV
toxins of <i>Bacillus thuringiensis</i> , VIP 3, <i>Bacillus cereus</i> toxins, <i>Photorhabdus</i> and <i>Xenorhabdus</i> toxins	Coleoptera, e.g. Colorado beetle, aphids
3-hydroxysteroid oxidase	Coleoptera, e.g. Colorado beetle, aphids
peroxidase	Coleoptera, e.g. Colorado beetle, aphids
aminopeptidase inhibitors, e.g. leucine aminopeptidase inhibitor	Coleoptera, e.g. Colorado beetle, aphids
stilbene synthase	Coleoptera, e.g. Colorado beetle, aphids
lectins	Coleoptera, e.g. Colorado beetle, aphids
protease inhibitors, e.g. cystatin, patatin	Coleoptera, e.g. Colorado beetle, aphids
ribosomene-inactivating protein	Coleoptera, e.g. Colorado beetle, aphids
HMG-CoA reductase	Coleoptera, e.g. Colorado beetle, aphids
hatching factor for cyst nematodes	cyst nematodes
barnase	nematodes, e.g. root-knot nematodes and cyst nematodes
principles for preventing food uptake	nematodes, e.g. root-knot nematodes and cyst nematodes

Plant: Tomato

Structure affected/ principle expressed	Feature of the plant / tolerance to
acetolactate synthase (ALS)	sulphonylurea compounds, imidazolinones triazolepyrimidines, pyrimidyloxybenzoates, phthalides
acetyl-CoA carboxylase (ACCase)	aryloxyphenoxyalkanecarboxylic acid, cyclohexanedione
hydroxyphenylpyruvate dioxygenase (HPPD)	isooxazoles, such as isoxaflutol or isoxachlortol, triones, such as mesotrione or sulcotrione
phosphinothricin acetyltransferase	phosphinothricin

Structure affected/ principle expressed	Feature of the plant / tolerance to
O-methyl transferase	modified lignin content
glutamine synthetase	glufosinate, bialaphos
adenylosuccinate lyase (ADSL)	inhibitors of IMP and AMP synthesis
adenylosuccinate synthase	inhibitors of adenylosuccinate synthesis
anthranilate synthase	inhibitors of tryptophan synthesis and degradation
nitrilase	3,5-dihalo-4-hydroxybenzonitriles, such as bromoxynil and loxynil
5-enolpyruvyl-3-phosphoshikimate synthase (EPSPS)	glyphosate or sulphosate
glyphosate oxidoreductase	glyphosate or sulphosate
protoporphyrinogen oxidase (PROTOX)	diphenyl ethers, cyclic imides, phenylpyrazoles, pyridine derivatives, phenopylate, oxadiazoles etc.
Cytochrome P450 e.g. P450 SU1 or selection	xenobiotics and herbicides, such as sulphonylurea compounds
polyphenol oxidase or polyphenol oxidase (antisense)	black spot
metallothionein	bacterial and fungal pathogens such as, for example, Phytophthora
ribonuclease	Phytophthora, Verticillium, Rhizoctonia
antifungal polypeptide AlyAFP	bacterial and fungal pathogens such as, for example, bacterial blotch, Fusarium, soft rot, powdery mildew, foliar blight, leaf mould etc.
oxalate oxidase	bacterial and fungal pathogens such as, for example, bacterial blotch, Fusarium, soft rot, powdery mildew, foliar blight, leaf mould etc.
glucose oxidase	bacterial and fungal pathogens such as, for example, bacterial blotch, Fusarium, soft rot, powdery mildew, foliar blight, leaf mould etc.
pyrrolnitrin synthesis gene	bacterial and fungal pathogens such as, for example, bacterial blotch, Fusarium,

Structure affected/ principle expressed	Feature of the plant / tolerance to
	soft rot, powdery mildew, foliar blight, leaf mould etc.
serine/threonine kinases	bacterial and fungal pathogens such as, for example, bacterial blotch, Fusarium, soft rot, powdery mildew, foliar blight, leaf mould etc.
cecropin B	bacterial and fungal pathogens such as, for example, bacterial blotch, Fusarium, soft rot, powdery mildew, foliar blight, leaf mould etc.
phenylalanine ammonia lyase (PAL)	bacterial and fungal pathogens such as, for example, bacterial blotch, Fusarium, soft rot, powdery mildew, foliar blight, leaf mould etc.
Cf genes, e.g. Cf 9 Cf5 Cf4 Cf2	leaf mould
osmotin	early blight
alpha hordothionin	bacteria
systemin	bacterial and fungal pathogens such as, for example, bacterial blotch, Fusarium, soft rot, powdery mildew, foliar blight, leaf mould etc.
polygalacturonase inhibitors	bacterial and fungal pathogens such as, for example, bacterial blotch, Fusarium, soft rot, powdery mildew, foliar blight, leaf mould etc.
Prf control gene	bacterial and fungal pathogens such as, for example, bacterial blotch, Fusarium, soft rot, powdery mildew, foliar blight, leaf mould etc.
12 fusarium resistance site	Fusarium
phytoalexins	bacterial and fungal pathogens such as, for example, bacterial blotch, Fusarium, soft rot, powdery mildew, foliar blight, leaf mould etc.
B-1,3-glucanase (antisense)	bacterial and fungal pathogens such as, for

Structure affected/ principle expressed	Feature of the plant / tolerance to
	example, bacterial blotch, Fusarium, soft rot, powdery mildew, foliar blight, leaf mould etc.
receptor kinase	bacterial and fungal pathogens such as, for example, bacterial blotch, Fusarium, soft rot, powdery mildew, foliar blight, leaf mould etc.
polypeptide having the effect of triggering a hypersensitivity reaction	bacterial and fungal pathogens such as, for example, bacterial blotch, Fusarium, soft rot, powdery mildew, foliar blight, leaf mould etc.
systemic acquired resistance (SAR) genes	viral, bacterial, fungal and nematodal pathogens
chitinases	bacterial and fungal pathogens such as, for example, bacterial blotch, Fusarium, soft rot, powdery mildew, foliar blight, leaf mould etc.
barnase	bacterial and fungal pathogens such as, for example, bacterial blotch, Fusarium, soft rot, powdery mildew, foliar blight, leaf mould etc.
glucanases	bacterial and fungal pathogens such as, for example, bacterial blotch, Fusarium, soft rot, powdery mildew, foliar blight, leaf mould etc.
double-strand ribonuclease	viruses such as, for example, PLRV, PVY and ToMoV
envelope proteins	viruses such as, for example, PLRV, PVY and ToMoV
17kDa or 60 kDa protein	viruses such as, for example, PLRV, PVY and ToMoV
nuclear inclusion proteins e.g. a or b or	viruses such as, for example, PLRV, PVY and ToMoV
nucleoprotein	TRV
pseudoubiquitin	viruses such as, for example, PLRV, PVY and

Structure affected/ principle expressed	Feature of the plant / tolerance to
replicase	ToMoV viruses such as, for example, PLRV, PVY and ToMoV
toxins of <i>Bacillus thuringiensis</i> , VIP 3, <i>Bacillus cereus</i> toxins, <i>Photorhabdus</i> and <i>Xenorhabdus</i> toxins	Lepidoptera e.g. <i>Heliothis</i> , whitefly aphids
3-hydroxysteroid oxidase	Lepidoptera e.g. <i>Heliothis</i> , whitefly, aphids
peroxidase	Lepidoptera e.g. <i>Heliothis</i> , whitefly, aphids
aminopeptidase inhibitors, e.g. leucine aminopeptidase inhibitor	Lepidoptera e.g. <i>Heliothis</i> , whitefly, aphids
lectins	Lepidoptera e.g. <i>Heliothis</i> , whitefly, aphids
protease inhibitors, e.g. cystatin, patatin	Lepidoptera e.g. <i>Heliothis</i> , whitefly, aphids
ribosome-inactivating protein	Lepidoptera e.g. <i>Heliothis</i> , whitefly, aphids
stilbene synthase	Lepidoptera e.g. <i>Heliothis</i> , whitefly, aphids
HMG-CoA reductase	Lepidoptera e.g. <i>Heliothis</i> , whitefly, aphids
hatching factor for cyst nematodes	cyst nematodes
barnase	nematodes, e.g. root-knot nematodes and cyst nematodes
principles for preventing food uptake	nematodes, e.g. root-knot nematodes and cyst nematodes

Plant: Bell Pepper

Structure affected / protein expressed	Feature of the plant / tolerance to
acetolactate synthase (ALS)	sulphonylurea compounds, imidazolinones triazolopyrimidines, pyrimidyl-oxybenzoates, phthalides
acetyl-CoA carboxylase (ACCase)	aryloxyphenoxyalkancarboxylic acids,

Structure affected / protein expressed	Feature of the plant / tolerance to
hydroxyphenylpyruvate dioxygenase (HPPD)	cyclohexanediones isoxazoles such as, for example, isoxaflutole or isoxachlortole, triones such as, for example, mesotrione or sulcotrione
phosphinothricin acetyltransferase	phosphinothricin
O-methyl transferase	modified lignin content
glutamine synthetase	glufosinate, bialaphos
adenylosuccinate lyase (ADSL)	inhibitors of IMP and AMP synthesis
adenylosuccinate synthase	inhibitors of adenylosuccinate synthesis
anthranilate synthase	inhibitors of tryptophan synthesis and degradation
nitrilase	3,5-dihalo-4-hydroxybenzonitriles such as bromoxynil and loxynil
5-enolpyruvyl-3-phosphoshikimate synthase (EPSPS)	glyphosate or sulphosate
glyphosate oxidoreductase	glyphosate or sulphosate
protoporphyrinogen oxidase (PROTOX)	diphenyl ethers, cyclic imides, phenylpyrazoles, pyridine derivatives, phenopylate, oxadiazoles etc.
cytochrome P450 e.g. P450 SU1 or selection	xenobiotics and herbicides such as, for example, sulphonylurea compounds
polyphenol oxidase or polyphenol oxidase (antisense)	bacterial and fungal pathogens
metallothionein	bacterial and fungal pathogens
ribonuclease	bacterial and fungal pathogens
antifungal polypeptid AlyAFP	bacterial and fungal pathogens
oxalate oxidase	bacterial and fungal pathogens
glucose oxidase	bacterial and fungal pathogens
pyrrolnitrin synthesis genes	bacterial and fungal pathogens
serine/threonine kinases	bacterial and fungal pathogens
cecropin B	bacterial and fungal pathogens, rot, leaf mould, etc.
phenylalanine ammonia lyase (PAL)	bacterial and fungal pathogens
Cf genes, e.g. Cf 9 Cf5 Cf4 Cf2	bacterial and fungal pathogens
osmotin	bacterial and fungal pathogens

Structure affected / protein expressed	Feature of the plant / tolerance to
alpha hordothionine	bacterial and fungal pathogens
systemin	bacterial and fungal pathogens
polygalacturonase inhibitors	bacterial and fungal pathogens
Prf control gene	bacterial and fungal pathogens
12 Fusarium resistance site	Fusarium
phytoalexins	bacterial and fungal pathogens
B-1,3-glucanase (antisense)	bacterial and fungal pathogens
receptor kinase	bacterial and fungal pathogens
polypeptide having the effect of triggering a hypersensitivity reaction	bacterial and fungal pathogens
systemic acquired resistance (SAR) genes	viral, bacterial, fungal and nematodal pathogens
chitinases	bacterial and fungal pathogens
barnase	bacterial and fungal pathogens
glucanases	bacterial and fungal pathogens
double-strand ribonuclease	viruses such as, for example, CMV, TEV
envelope proteins	viruses such as, for example, CMV, TEV
17kDa or 60 kDa protein	viruses such as, for example, CMV, TEV
nuclear inclusion proteins e.g. a or b or nucleoprotein	viruses such as, for example, CMV, TEV
pseudoubiquitin	viruses such as, for example, CMV, TEV
replicase	viruses such as, for example, CMV, TEV
toxins of Bacillus thuringiensis, VIP 3, Bacillus cereus toxins, Photorhabdus and Xenorhabdus toxins	Lepidoptera, whitefly, aphids
3-hydroxysteroid oxidase	Lepidoptera, whitefly, aphids
peroxidase	Lepidoptera, whitefly, aphids
aminopeptidase inhibitors, e.g. leucine	Lepidoptera, whitefly, aphids
aminopeptidase inhibitor	Lepidoptera, whitefly, aphids
lectins	Lepidoptera, whitefly, aphids
protease inhibitors, e.g. cystatin, patatin	Lepidoptera, whitefly, aphids
ribosome-inactivating protein	Lepidoptera, whitefly, aphids
stilbene synthase	Lepidoptera, whitefly, aphids
HMG-CoA reductase	Lepidoptera, whitefly, aphids
hatching factor for cyst nematodes	cyst nematodes

Structure affected / protein expressed	Feature of the plant / tolerance to
barnase	nematodes, e.g. root-knot nematodes and cyst nematodes
principles for preventing food uptake	nematodes, e.g. root-knot nematodes and cyst nematodes

Plant: Grapevines

Structure affected/ principle expressed	Feature of the plant / tolerance to
acetolactate synthase (ALS)	sulphonylurea compounds, imidazolinones triazolopyrimidines, pyrimidylloxybenzoates, phthalides
acetyl-CoA carboxylase (ACCase)	aryloxyphenoxyalkanecarboxylic acids, cyclohexanediones
hydroxyphenylpyruvate dioxygenase (HPPD)	isoxazoles such as, for example, isoxaflutole or isoxachlortole, triones such as, for example, mesotrione or sulcotrione
phosphinothricin acetyltransferase	phosphinothricin
O-methyl transferase	modified lignin content
glutamine synthetase	glufosinate, bialaphos
adenylosuccinate lyase (ADSL)	inhibitors of IMP and AMP synthesis
adenylosuccinate synthase	inhibitors of adenylosuccinate synthesis
anthranilate synthase	inhibitors of tryptophan synthesis and degradation
nitrilase	3,5-dihalo-4-hydroxybenzonitriles such as bromoxynil and loxynil
5-enolpyruvyl-3-phosphoshikimate synthase (EPSPS)	glyphosate or sulphosate
glyphosate oxidoreductase	glyphosate or sulphosate
protoporphyrinogen oxidase (PROTOX)	diphenyl ethers, cyclic imides, phenylpyrazoles, pyridine derivatives, phenopylate, oxadiazoles etc.
cytochrome P450 e.g. P450 SU1 or selection	xenobiotics and herbicides such as, for example, sulphonylurea compounds
polyphenol oxidase or polyphenol oxidase (antisense)	bacterial and fungal pathogens such as Botrytis and powdery mildew

Structure affected/ principle expressed	Feature of the plant / tolerance to
metallothionein	bacterial and fungal pathogens such as Botrytis and powdery mildew
ribonuclease	bacterial and fungal pathogens such as Botrytis and powdery mildew
antifungal polypeptide AlyAFP	bacterial and fungal pathogens such as Botrytis and powdery mildew
oxalate oxidase	bacterial and fungal pathogens such as Botrytis and powdery mildew
glucose oxidase	bacterial and fungal pathogens such as Botrytis and powdery mildew
pyrrolnitrin synthesis genes	bacterial and fungal pathogens such as Botrytis and powdery mildew
serine/threonine kinases	bacterial and fungal pathogens such as Botrytis and powdery mildew
cecropin B	bacterial and fungal pathogens such as Botrytis and powdery mildew
phenylalanine ammonia lyase (PAL)	bacterial and fungal pathogens such as Botrytis and powdery mildew
Cf genes, e.g. Cf 9 Cf5 Cf4 Cf2	bacterial and fungal pathogens such as Botrytis and powdery mildew
osmotin	bacterial and fungal pathogens such as Botrytis and powdery mildew
alpha hordothionine	bacterial and fungal pathogens such as Botrytis and powdery mildew
systemin	bacterial and fungal pathogens such as Botrytis and powdery mildew
polygalacturonase inhibitors	bacterial and fungal pathogens such as Botrytis and powdery mildew
Prf control gene	bacterial and fungal pathogens such as Botrytis and powdery mildew
phytoalexins	bacterial and fungal pathogens such as Botrytis and powdery mildew
B-1,3-glucanase (antisense)	bacterial and fungal pathogens such as Botrytis and powdery mildew
receptor kinase	bacterial and fungal pathogens such as

Structure affected/ principle expressed	Feature of the plant / tolerance to
polypeptide having the effect of triggering a hypersensitivity reaction	Botrytis and powdery mildew
systemic acquired resistance (SAR) genes	bacterial and fungal pathogens such as Botrytis and powdery mildew
chitinases	viral, bacterial, fungal and nematodal pathogens
barnase	bacterial and fungal pathogens such as Botrytis and powdery mildew
glucanases	bacterial and fungal pathogens such as Botrytis and powdery mildew
double-strand ribonuclease	viruses
envelope proteins	viruses
17kDa or 60 kDa protein	viruses
nuclear inclusion proteins e.g. a or b or nucleoprotein	viruses
pseudoubiquitin	viruses
replicase	viruses
toxins of Bacillus thuringiensis, VIP 3, Bacilluscereus toxins, Photorabdus and Xenorhabdus toxins	Lepidoptera, aphids
3-hydroxysteroid oxidase	Lepidoptera, aphids
peroxidase	Lepidoptera, aphids
aminopeptidase inhibitors, e.g. leucine aminopeptidase inhibitor	Lepidoptera, aphids
lectins	Lepidoptera, aphids
protease inhibitors, e.g. cystatin, patatin	Lepidoptera, aphids
ribosome-inactivating protein	Lepidoptera, aphids
stilbene synthase	Lepidoptera, aphids, diseases
HMG-CoA reductase	Lepidoptera, aphids
hatching factor for cyst nematodes	cyst nematodes
barnase	nematodes, e.g. root-knot nematodes and cyst nematodes or general diseases
CBI	root-knot nematodes
principles for preventing food uptake	nematodes, e.g. root-knot nematodes

Structure affected/ principle expressed	Feature of the plant / tolerance to or root-cyst nematodes
Plant: Oilseed rape	
Structure affected / protein expressed	Feature of the plant / tolerance to
acetolactate synthase (ALS)	sulphonylurea compounds, imidazolinones triazolopyrimidines, pyrimidyl-oxybenzoates, phthalides
acetyl-CoA carboxylase (ACCase)	aryloxyphenoxyalkancarboxylic acids, cyclohexanediones
hydroxyphenylpyruvate dioxygenase (HPPD)	isoxazoles such as, for example, isoxaflutole or isoxachlortole, triones such as, for example, mesotrione or sulcotrione
phosphinothricin acetyltransferase	phosphinothricin
O-methyl transferase	modified lignin content
glutamine synthetase	glufosinate, bialaphos
adenylosuccinate lyase (ADSL)	inhibitors of IMP and AMP synthesis
adenylosuccinate synthase	inhibitors of adenylosuccinate synthesis
anthranilate synthase	inhibitors of tryptophan synthesis and degradation
nitrilase	3,5-dihalo-4-hydroxybenzonitriles such as bromoxynil and loxynil
5-enolpyruvyl-3-phosphoshikimate synthase (EPSPS)	glyphosate or sulphosate
glyphosate oxidoreductase	glyphosate or sulphosate
protoporphyrinogen oxidase (PROTOX)	diphenyl ethers, cyclic imides, phenylpyrazoles, pyridine derivatives, phenopylate, oxadiazoles etc.
cytochrome P450 e.g. P450 SU1 or selection	xenobiotics and herbicides such as, for example, sulphonylurea compounds
polyphenol oxidase or polyphenol oxidase (antisense)	bacterial and fungal pathogens such as Cylindrosporium, Phoma, Sclerotinia
metallothionein	bacterial and fungal pathogens such as Cylindrosporium, Phoma, Sclerotinia
ribonuclease	bacterial and fungal pathogens such as

Structure affected / protein expressed	Feature of the plant / tolerance to
antifungal polypeptid AlyAFP	Cylindrosporium, Phoma, Sclerotinia bacterial and fungal pathogens such as Cylindrosporium, Phoma, Sclerotinia
oxalate oxidase	bacterial and fungal pathogens such as Cylindrosporium, Phoma, Sclerotinia
glucose oxidase	bacterial and fungal pathogens such as Cylindrosporium, Phoma, Sclerotinia
pyrrolnitrin synthesis genes	bacterial and fungal pathogens such as Cylindrosporium, Phoma, Sclerotinia
serine/threonine kinases	bacterial and fungal pathogens such as Cylindrosporium, Phoma, Sclerotinia
cecropin B	bacterial and fungal pathogens such as Cylindrosporium, Phoma, Sclerotinia
phenylalanine ammonia lyase (PAL)	bacterial and fungal pathogens such as Cylindrosporium, Phoma, Sclerotinia
Cf genes, e.g. Cf 9 Cf5 Cf4 Cf2	bacterial and fungal pathogens such as Cylindrosporium, Phoma, Sclerotinia
osmotin	bacterial and fungal pathogens such as Cylindrosporium, Phoma, Sclerotinia
alpha hordothionine	bacterial and fungal pathogens such as Cylindrosporium, Phoma, Sclerotinia
systemin	bacterial and fungal pathogens such as Cylindrosporium, Phoma, Sclerotinia
polygalacturonase inhibitors	bacterial and fungal pathogens such as Cylindrosporium, Phoma, Sclerotinia
Prf control gene	bacterial and fungal pathogens such as Cylindrosporium, Phoma, Sclerotinia
phytoalexins	bacterial and fungal pathogens such as Cylindrosporium, Phoma, Sclerotinia
B-1,3-glucanase (antisense)	bacterial and fungal pathogens such as Cylindrosporium, Phoma, Sclerotinia
receptor kinase	bacterial and fungal pathogens such as Cylindrosporium, Phoma, Sclerotinia
polypeptide having the effect of triggering a hypersensitivity reaction	bacterial and fungal pathogens such as Cylindrosporium, Phoma, Sclerotinia
systemic acquired resistance (SAR) genes	viral, bacterial, fungal and nematodal pathogens
chitinases	bacterial and fungal pathogens such as Cylindrosporium, Phoma, Sclerotinia
barnase	bacterial and fungal pathogens such as Cylindrosporium, Phoma, Sclerotinia

Structure affected / protein expressed	Feature of the plant / tolerance to
glucanases	nematodes bacterial and fungal pathogens such as Cylindrosporium, Phoma, Sclerotinia
double-strand ribonuclease	viruses
envelope proteins	viruses
17kDa or 60 kDa protein	viruses
nuclear inclusion proteins e.g. a or b or nucleoprotein	viruses
pseudoubiquitin	viruses
replicase	viruses
toxins of Bacillus thuringiensis, VIP 3, Bacillus cereus toxins, Photorhabdus and Xenorhabdus toxins	Lepidoptera, aphids
3-hydroxysteroid oxidase	Lepidoptera, aphids
peroxidase	Lepidoptera, aphids
aminopeptidase inhibitors, e.g. leucine aminopeptidase inhibitor	Lepidoptera, aphids
lectins	Lepidoptera, aphids
protease inhibitors, e.g. cystatin, patatin, CPTI	Lepidoptera, aphids
ribosome-inactivating protein	Lepidoptera, aphids
stilbene synthase	Lepidoptera, aphids, diseases
HMG-CoA reductase	Lepidoptera, aphids
hatching factor for cyst nematodes	cyst nematodes
barnase	nematodes, e.g. root-knot nematodes and cyst nematodes
CBI	root-knot nematodes
principles for preventing food uptake induced at nematode feeding sites	nematodes, e.g. root-knot nematodes and root-cyst nematodes

Plant: Brassica vegetables (cabbage, Brussels sprouts etc.)

Structure affected / protein expressed	Feature of the plant / tolerance to
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Structure affected / protein expressed	Feature of the plant / tolerance to
acetolactate synthase (ALS)	sulphonylurea compounds, imidazolinones triazolopyrimidines, pyrimidylloxybenzoates, phthalides
acetyl-CoA carboxylase (ACCase)	aryloxyphenoxyalkanecarboxylic acids, cyclohexanediones
hydroxyphenylpyruvate dioxygenase (HPPD)	isoxazoles such as, for example, isoxaflutole or isoxachlortole, triones such as, for example, mesotrione or sulcotrione
phosphinothricin acetyltransferase	phosphinothricin
O-methyl transferase	modified lignin content
glutamine synthetase	glufosinate, bialaphos
adenylosuccinate lyase (ADSL)	inhibitors of IMP and AMP synthesis
adenylosuccinate synthase	inhibitors of adenylosuccinate synthesis
anthranilate synthase	inhibitors of tryptophan synthesis and degradation
nitrilase	3,5-dihalo-4-hydroxybenzonitriles such as bromoxynil and loxynil
5-enolpyruvyl-3-phosphoshikimate synthase (EPSPS)	glyphosate or sulphosate
glyphosate oxidoreductase	glyphosate or sulphosate
protoporphyrinogen oxidase (PROTOX)	diphenyl ethers, cyclic imides, phenylpyrazoles, pyridine derivatives, phenopylate, oxadiazoles etc.
cytochrome P450 e.g. P450 SU1 or selection	xenobiotics and herbicides such as, for example, sulphonylurea compounds
polyphenol oxidase or polyphenol oxidase (antisense)	bacterial and fungal pathogens
metallothionein	bacterial and fungal pathogens
ribonuclease	bacterial and fungal pathogens
antifungal polypeptid AlyAFP	bacterial and fungal pathogens
oxalate oxidase	bacterial and fungal pathogens
glucose oxidase	bacterial and fungal pathogens
pyrrolnitrin synthesis genes	bacterial and fungal pathogens
serine/threonine kinases	bacterial and fungal pathogens
cecropin B	bacterial and fungal pathogens

Structure affected / protein expressed	Feature of the plant / tolerance to
phenylalanine ammonia lyase (PAL)	bacterial and fungal pathogens
Cf genes, e.g. Cf 9 Cf5 Cf4 Cf2	bacterial and fungal pathogens
osmotin	bacterial and fungal pathogens
alpha hordothionine	bacterial and fungal pathogens
systemin	bacterial and fungal pathogens
polygalacturonase inhibitors	bacterial and fungal pathogens
Prf control gene	bacterial and fungal pathogens
phytoalexins	bacterial and fungal pathogens
B-1,3-glucanase (antisense)	bacterial and fungal pathogens
receptor kinase	bacterial and fungal pathogens
polypeptide having the effect of triggering a hypersensitivity reaction	bacterial and fungal pathogens
systemic acquired resistance (SAR) genes	viral, bacterial, fungal and nematodal pathogens
chitinases	bacterial and fungal pathogens
barnase	bacterial and fungal pathogens
glucanases	bacterial and fungal pathogens
double-strand ribonuclease	viruses
envelope proteins	viruses
17kDa or 60 kDa protein	viruses
nuclear inclusion proteins e.g. a or b or nucleoprotein	viruses
pseudoubiquitin	viruses
replicase	viruses
toxins of Bacillus thuringiensis, VIP 3, Bacillus cereus toxins, Photorabdus and Xenorhabdus toxins	Lepidoptera, aphids
3-hydroxysteroid oxidase	Lepidoptera, aphids
peroxidase	Lepidoptera, aphids
aminopeptidase inhibitors, e.g. leucine aminopeptidase inhibitor	Lepidoptera, aphids
lectins	Lepidoptera, aphids
protease inhibitors, e.g. cystatin, patatin, CPTI	Lepidoptera, aphids
ribosome-inactivating protein	Lepidoptera, aphids

Structure affected / protein expressed	Feature of the plant / tolerance to
stilbene synthase	Lepidoptera, aphids, diseases
HMG-CoA reductase	Lepidoptera, aphids
hatching factor for cyst nematodes	cyst nematodes
barnase	nematodes, e.g. root-knot nematodes and cyst nematodes
CBI	root-knot nematodes
principles for preventing food uptake	nematodes, e.g. root-knot nematodes and
induced at nematode feeding sites	root-cyst nematodes
	cyst nematodes

Plants: Pomaceous fruit, e.g. apples, pears

Structure affected / protein expressed	Feature of the plant / tolerance to
acetolactate synthase (ALS)	sulphonylurea compounds, imidazolinones triazolopyrimidines, pyrimidylloxybenzoates, phthalides
acetyl-CoA carboxylase (ACCase)	aryloxyphenoxyalkanecarboxylic acids, cyclohexanediones
hydroxyphenylpyruvate dioxygenase (HPPD)	isoxazoles such as, for example, isoxaflutole or isoxachlortole, triones such as, for example, mesotrione or sulcotrione
phosphinothricin acetyltransferase	phosphinothricin
O-methyl transferase	modified lignin content
glutamine synthetase	glufosinate, bialaphos
adenylosuccinate lyase (ADSL)	inhibitors of IMP and AMP synthesis
adenylosuccinate synthase	inhibitors of adenylosuccinate synthesis
anthranilate synthase	inhibitors of tryptophan synthesis and degradation
nitrilase	3,5-dihalo-4-hydroxybenzonitriles such as bromoxynil and loxynil
5-enolpyruvyl-3-phosphoshikimate synthase (EPSPS)	glyphosate or sulphosate
glyphosate oxidoreductase	glyphosate or sulphosate
protoporphyrinogen oxidase (PROTOX)	diphenyl ethers, cyclic imides, phenylpyrazoles, pyridine derivatives,

Structure affected / protein expressed	Feature of the plant / tolerance to
	phenopylate, oxadiazoles etc.
cytochrome P450 e.g. P450 SU1 or selection	xenobiotics and herbicides such as, for example, sulphonylurea compounds
polyphenol oxidase or polyphenol oxidase (antisense)	bacterial and fungal pathogens such as storage scab on apples or fire-blight
metallothionein	bacterial and fungal pathogens such as storage scab on apples or fire-blight
ribonuclease	bacterial and fungal pathogens such as storage scab on apples or fire-blight
antifungal polypeptid AlyAFP	bacterial and fungal pathogens such as storage scab on apples or fire-blight
oxalate oxidase	bacterial and fungal pathogens such as storage scab on apples or fire-blight
glucose oxidase	bacterial and fungal pathogens such as storage scab on apples or fire-blight
pyrrolnitrin synthesis genes	bacterial and fungal pathogens such as storage scab on apples or fire-blight
serine/threonine kinases	bacterial and fungal pathogens such as storage scab on apples or fire-blight
cecropin B	bacterial and fungal pathogens such as storage scab on apples or fire-blight
phenylalanine ammonia lyase (PAL)	bacterial and fungal pathogens such as storage scab on apples or fire-blight
Cf genes, e.g. Cf 9 Cf5 Cf4 Cf2	bacterial and fungal pathogens such as storage scab on apples or fire-blight
osmotin	bacterial and fungal pathogens such as storage scab on apples or fire-blight
alpha hordothionine	bacterial and fungal pathogens such as storage scab on apples or fire-blight
systemin	bacterial and fungal pathogens such as storage scab on apples or fire-blight
polygalacturonase inhibitors	bacterial and fungal pathogens such as storage scab on apples or fire-blight
Prf control gene	bacterial and fungal pathogens such as storage scab on apples or fire-blight

Structure affected / protein expressed	Feature of the plant / tolerance to
phytoalexins	bacterial and fungal pathogens such as storage scab on apples or fire-blight
B-1,3-glucanase (antisense)	bacterial and fungal pathogens such as storage scab on apples or fire-blight
receptor kinase	bacterial and fungal pathogens such as storage scab on apples or fire-blight
polypeptide having the effect of triggering a hypersensitivity reaction	bacterial and fungal pathogens such as storage scab on apples or fire-blight
systemic acquired resistance (SAR) genes	viral, bacterial, fungal and nematodal pathogens
lytic protein	bacterial and fungal pathogens such as storage scab on apples or fire-blight
lysozyme	bacterial and fungal pathogens such as storage scab on apples or fire-blight
chitinases	bacterial and fungal pathogens such as storage scab on apples or fire-blight
barnase	bacterial and fungal pathogens such as storage scab on apples or fire-blight
glucanases	bacterial and fungal pathogens such as storage scab on apples or fire-blight
double-strand ribonuclease	viruses
envelope proteins	viruses
17kDa or 60 kDa protein	viruses
nuclear inclusion proteins e.g. a or b or nucleoprotein	viruses
pseudoubiquitin	viruses
replicase	viruses
toxins of <i>Bacillus thuringiensis</i> , VIP 3, <i>Bacillus cereus</i> toxins, <i>Photorhabdus</i> and <i>Xenorhabdus</i> toxins	Lepidoptera, aphids, mites
3-hydroxysteroid oxidase	Lepidoptera, aphids, mites
peroxidase	Lepidoptera, aphids, mites
aminopeptidase inhibitors, e.g. leucine aminopeptidase inhibitor	Lepidoptera, aphids, mites
lectins	Lepidoptera, aphids, mites

BCS 08-3018-Foreign Countries

- 61 -

Structure affected / protein expressed	Feature of the plant / tolerance to
protease inhibitors, e.g. cystatin, patatin, CPTI	Lepidoptera, aphids, mites
ribosome-inactivating protein	Lepidoptera, aphids, mites
stilbene synthase	Lepidoptera, aphids, diseases, mites
HMG-CoA reductase	Lepidoptera, aphids, mites
hatching factor for cyst nematodes	cyst nematodes
barnase	nematodes, e.g. root-knot nematodes and cyst nematodes
CBI	root-knot nematodes
principles for preventing food uptake induced at nematode feeding sites	nematodes, e.g. root-knot nematodes and root-cyst nematodes
Plant: Melon	
Structure affected / protein expressed	Feature of the plant / tolerance to
acetolactate synthase (ALS)	sulphonylurea compounds, imidazolinones triazolopyrimidines, pyrimidyloxybenzoates, phthalides
acetyl-CoA carboxylase (ACCase)	aryloxyphenoxyalkanecarboxylic acids, cyclohexanediones
hydroxyphenylpyruvate dioxygenase (HPPD)	isoxazoles such as, for example, isoxaflutole or isoxachlortole, triones such as, for example, mesotrione or sulcotrione
phosphinothricin acetyltransferase	phosphinothricin
O-methyl transferase	modified lignin content
glutamine synthetase	glufosinate, bialaphos
adenylosuccinate lyase (ADSL)	inhibitors of IMP and AMP synthesis
adenylosuccinate synthase	inhibitors of adenylosuccinate synthesis
anthranilate synthase	inhibitors of tryptophan synthesis and degradation
nitrilase	3,5-dihalo-4-hydroxybenzonitriles such as bromoxynil and loxynil
5-enolpyruvyl-3-phosphoshikimate synthase (EPSPS)	glyphosate or sulphosate
glyphosate oxidoreductase	glyphosate or sulphosate

Structure affected / protein expressed	Feature of the plant / tolerance to
protoporphyrinogen oxidase (PROTOX)	diphenyl ethers, cyclic imides, phenylpyrazoles, pyridine derivatives, phenopylate, oxadiazoles etc.
cytochrome P450 e.g. P450 SU1 or selection	xenobiotics and herbicides such as, for example, sulphonylurea compounds
polyphenol oxidase or polyphenol oxidase (antisense)	bacterial or fungal pathogens such as Phytophthora
metallothionein	bacterial or fungal pathogens such as Phytophthora
ribonuclease	bacterial or fungal pathogens such as Phytophthora
antifungal polypeptid AlyAFP	bacterial or fungal pathogens such as Phytophthora
oxalate oxidase	bacterial or fungal pathogens such as Phytophthora
glucose oxidase	bacterial or fungal pathogens such as Phytophthora
pyrrolnitrin synthesis genes	bacterial or fungal pathogens such as Phytophthora
serine/threonine kinases	bacterial or fungal pathogens such as Phytophthora
cecropin B	bacterial or fungal pathogens such as Phytophthora
phenylalanine ammonia lyase (PAL)	bacterial or fungal pathogens such as Phytophthora
Cf genes, e.g. Cf 9 Cf5 Cf4 Cf2	bacterial or fungal pathogens such as Phytophthora
osmotin	bacterial or fungal pathogens such as Phytophthora
alpha hordothionine	bacterial or fungal pathogens such as Phytophthora
systemin	bacterial or fungal pathogens such as Phytophthora
polygalacturonase inhibitors	bacterial or fungal pathogens such as Phytophthora

Structure affected / protein expressed	Feature of the plant / tolerance to
Prf control gene	bacterial or fungal pathogens such as Phytophthora
phytoalexins	bacterial or fungal pathogens such as Phytophthora
B-1,3-glucanase (antisense)	bacterial or fungal pathogens such as Phytophthora
receptor kinase	bacterial or fungal pathogens such as Phytophthora
polypeptide having the effect of triggering a hypersensitivity reaction	bacterial or fungal pathogens such as Phytophthora
systemic acquired resistance (SAR) genes	viral, bacterial, fungal and nematodal pathogens
lytic protein	bacterial or fungal pathogens such as Phytophthora
lysozyme	bacterial or fungal pathogens such as Phytophthora
chitinases	bacterial or fungal pathogens such as Phytophthora
barnase	bacterial or fungal pathogens such as Phytophthora
glucanases	bacterial or fungal pathogens such as Phytophthora
double-strand ribonuclease	viruses such as CMV, PRSV, WMV2, SMV, ZYMV
envelope proteins	viruses such as CMV, PRSV, WMV2, SMV, ZYMV
17kDa or 60 kDa protein	viruses such as CMV, PRSV, WMV2, SMV, ZYMV
nuclear inclusion proteins e.g. a or b or nucleoprotein	viruses such as CMV, PRSV, WMV2, SMV, ZYMV
pseudoubiquitin	viruses such as CMV, PRSV, WMV2, SMV, ZYMV
replicase	viruses such as CMV, PRSV, WMV2, SMV, ZYMV
toxins of <i>Bacillus thuringiensis</i> , VIP 3,	Lepidoptera, aphids, mites

Structure affected / protein expressed	Feature of the plant / tolerance to
Bacillus cereus toxins, Photorhabdus and Xenorhabdus toxins	
3-hydroxysteroid oxidase	Lepidoptera, aphids, mites, whitefly
peroxidase	Lepidoptera, aphids, mites, whitefly
aminopeptidase inhibitors, e.g. leucine aminopeptidase inhibitor	Lepidoptera, aphids, mites, whitefly
lectins	Lepidoptera, aphids, mites, whitefly
protease inhibitors, e.g. cystatin, patatin, CPTI, virgiferin	Lepidoptera, aphids, mites, whitefly
ribosome-inactivating protein	Lepidoptera, aphids, mites, whitefly
stilbene synthase	Lepidoptera, aphids, mites, whitefly
HMG-CoA reductase	Lepidoptera, aphids, mites, whitefly
hatching factor for cyst nematodes	cyst nematodes
barnase	nematodes, e.g. root-knot nematodes and cyst nematodes
CBI	root-knot nematodes
principles for preventing food uptake induced at nematode feeding sites	nematodes, e.g. root-knot nematodes and root-cyst nematodes

Plant: Banana

Structure affected / protein expressed	Feature of the plant / tolerance to
acetolactate synthase (ALS)	sulphonylurea compounds, imidazolinones triazolopyrimidines, pyrimidylxybenzoates, phthalides
acetyl-CoA carboxylase (ACCase)	aryloxyphenoxyalkanecarboxylic acids, cyclohexanediones
hydroxyphenylpyruvate dioxygenase (HPPD)	isoxazoles such as, for example, isoxaflutole or isoxachlortole, triones such as, for example, mesotrione or sulcotrione
phosphinothricin acetyltransferase	phosphinothricin
O-methyl transferase	modified lignin content
glutamine synthetase	glufosinate, bialaphos
adenylosuccinate lyase (ADSL)	inhibitors of IMP and AMP synthesis
adenylosuccinate synthase	inhibitors of adenylosuccinate synthesis

Structure affected / protein expressed	Feature of the plant / tolerance to
anthranilate synthase	inhibitors of tryptophan synthesis and degradation
nitrilase	3,5-dihalo-4-hydroxybenzonitriles such as bromoxynil and loxynil
5-enolpyruvyl-3-phosphoshikimate synthase (EPSPS)	glyphosate or sulphosate
glyphosate oxidoreductase	glyphosate or sulphosate
protoporphyrinogen oxidase (PROTOX)	diphenyl ethers, cyclic imides, phenylpyrazoles, pyridine derivatives, phenopylate, oxadiazoles etc.
cytochrome P450 e.g. P450 SU1 or selection	xenobiotics and herbicides such as, for example, sulphonylurea compounds
polyphenol oxidase or polyphenol oxidase (antisense)	bacterial or fungal pathogens
metallothionein	bacterial or fungal pathogens
ribonuclease	bacterial or fungal pathogens
antifungal polypeptid AlyAFP	bacterial or fungal pathogens
oxalate oxidase	bacterial or fungal pathogens
glucose oxidase	bacterial or fungal pathogens
pyrrolnitrin synthesis genes	bacterial or fungal pathogens
serine/threonine kinases	bacterial or fungal pathogens
cecropin B	bacterial or fungal pathogens
phenylalanine ammonia lyase (PAL)	bacterial or fungal pathogens
Cf genes, e.g. Cf 9 Cf5 Cf4 Cf2	bacterial or fungal pathogens
osmotin	bacterial or fungal pathogens
alpha hordothionine	bacterial or fungal pathogens
systemin	bacterial or fungal pathogens
polygalacturonase inhibitors	bacterial or fungal pathogens
Prf control gene	bacterial or fungal pathogens
phytoalexins	bacterial or fungal pathogens
B-1,3-glucanase (antisense)	bacterial or fungal pathogens
receptor kinase	bacterial or fungal pathogens
polypeptide having the effect of triggering a hypersensitivity reaction	bacterial or fungal pathogens
systemic acquired resistance (SAR) genes	viral, bacterial, fungal and nematodal

Structure affected / protein expressed	Feature of the plant / tolerance to
	pathogens
lytic protein	bacterial or fungal pathogens
lysozyme	bacterial or fungal pathogens
chitinases	bacterial or fungal pathogens
barnase	bacterial or fungal pathogens
glucanases	bacterial or fungal pathogens
double-strand ribonuclease	viruses such as the Banana Bunchy Top Virus (BBTV)
envelope proteins	viruses such as the Banana Bunchy Top Virus (BBTV)
17kDa or 60 kDa protein	viruses such as the Banana Bunchy Top Virus (BBTV)
nuclear inclusion proteins e.g. a or b or nucleoprotein	viruses such as the Banana Bunchy Top Virus (BBTV)
pseudoubiquitin	viruses such as the Banana Bunchy Top Virus (BBTV)
replicase	viruses such as the Banana Bunchy Top Virus (BBTV)
toxins of <i>Bacillus thuringiensis</i> , VIP 3, <i>Bacillus cereus</i> toxins, <i>Photorhabdus</i> and <i>Xenorhabdus</i> toxins	Lepidoptera, aphids, mites, nematodes
3-hydroxysteroid oxidase	Lepidoptera, aphids, mites, nematodes
peroxidase	Lepidoptera, aphids, mites, nematodes
aminopeptidase inhibitors, e.g. leucine aminopeptidase inhibitor	Lepidoptera, aphids, mites, nematodes
lectins	Lepidoptera, aphids, mites, nematodes
protease inhibitors, e.g. cystatin, patatin, CPTI, virgiferin	Lepidoptera, aphids, mites, nematodes
ribosome-inactivating protein	Lepidoptera, aphids, mites, nematodes
stilbene synthase	Lepidoptera, aphids, mites, nematodes
HMG-CoA reductase	Lepidoptera, aphids, mites, nematodes
hatching factor for cyst nematodes	cyst nematodes
barnase	nematodes, e.g. root-knot nematodes and cyst nematodes
CBI	root-knot nematodes

Structure affected / protein expressed	Feature of the plant / tolerance to
principles for preventing food uptake induced at nematode feeding sites	nematodes, e.g. root-knot nematodes and root-cyst nematodes
Plant: Cotton	
Structure affected / protein expressed	Feature of the plant / tolerance to
acetolactate synthase (ALS)	sulphonylurea compounds, imidazolinones triazolopyrimidines, pyrimidylloxybenzoates, phthalides
acetyl-CoA carboxylase (ACCase)	aryloxyphenoxyalkanecarboxylic acids, cyclohexanediones
hydroxyphenylpyruvate dioxygenase (HPPD)	isoxazoles such as, for example, isoxaflutole or isoxachlortole, triones such as, for example, mesotrione or sulcotrione
phosphinothricin acetyltransferase	phosphinothricin
O-methyl transferase	modified lignin content
glutamine synthetase	glufosinate, bialaphos
adenylosuccinate lyase (ADSL)	inhibitors of IMP and AMP synthase
adenylosuccinate synthase	inhibitors of adenylosuccinate synthesis
anthranilate synthase	inhibitors of tryptophan synthesis and degradation
nitrilase	3,5-dihalo-4-hydroxybenzonitriles such as bromoxynil and loxynil
5-enolpyruvyl-3-phosphoshikimate synthase (EPSPS)	glyphosate or sulphosate
glyphosate oxidoreductase	glyphosate or sulphosate
protoporphyrinogen oxidase (PROTOX)	diphenyl ethers, cyclic imides, phenylpyrazoles, pyridine derivatives, phenopylate, oxadiazoles etc.
cytochrome P450 e.g. P450 SU1 or selection	xenobiotics and herbicides such as, for example, sulphonylurea compounds
polyphenol oxidase or polyphenol oxidase (antisense)	bacterial or fungal pathogens
metallothionein	bacterial or fungal pathogens
ribonuclease	bacterial or fungal pathogens

antifungal polypeptid AlyAFP	bacterial or fungal pathogens
oxalate oxidase	bacterial or fungal pathogens
glucose oxidase	bacterial or fungal pathogens
pyrrolnitrin synthesis genes	bacterial or fungal pathogens
serine/threonine kinases	bacterial or fungal pathogens
cecropin B	bacterial or fungal pathogens
phenylalanine ammonia lyase (PAL)	bacterial or fungal pathogens
Cf genes, e.g. Cf 9 Cf5 Cf4 Cf2	bacterial or fungal pathogens
osmotin	bacterial or fungal pathogens
alpha hordothionine	bacterial or fungal pathogens
systemin	bacterial or fungal pathogens
polygalacturonase inhibitors	bacterial or fungal pathogens
Prf control gene	bacterial or fungal pathogens
phytoalexins	bacterial or fungal pathogens
B-1,3-glucanase (antisense)	bacterial or fungal pathogens
receptor kinase	bacterial or fungal pathogens
polypeptide having the effect of triggering a hypersensitivity reaction	bacterial or fungal pathogens
systemic acquired resistance (SAR) genes	viral, bacterial, fungal and nematodal pathogens
lytic protein	bacterial or fungal pathogens
lysozyme	bacterial or fungal pathogens
chitinases	bacterial or fungal pathogens
barnase	bacterial or fungal pathogens
glucanases	bacterial or fungal pathogens
double-strand ribonuclease	viruses such as the wound tumour virus (WTV)
envelope proteins	viruses such as the wound tumour virus (WTV)
17kDa or 60 kDa protein	viruses such as the wound tumour virus (WTV)
nuclear inclusion proteins e.g. a or b or nucleoprotein	viruses such as the wound tumour virus (WTV)
pseudoubiquitin	viruses such as the wound tumour virus (WTV)
replicase	viruses such as the wound tumour virus (WTV)
toxins of Bacillus thuringiensis, VIP 3, Bacillus cereus toxins, Photorhabdus and Xenorhabdus toxins	Lepidoptera, aphids, mites, nematodes, whitefly
3-hydroxysteroid oxidase	Lepidoptera, aphids, mites, nematodes,

peroxidase	whitefly Lepidoptera, aphids, mites, nematodes, whitefly
aminopeptidase inhibitors, e.g. leucine aminopeptidase inhibitor	Lepidoptera, aphids, mites, nematodes, whitefly
lectins	Lepidoptera, aphids, mites, nematodes, whitefly
protease inhibitors, e.g. cystatin, patatin, CPTI, virgiferin	Lepidoptera, aphids, mites, nematodes, whitefly
ribosome-inactivating protein	Lepidoptera, aphids, mites, nematodes, whitefly
stilbene synthase	Lepidoptera, aphids, mites, nematodes, whitefly
HMG-CoA reductase	Lepidoptera, aphids, mites, nematodes, whitefly
hatching factor for cyst nematodes	cyst nematodes
barnase	nematodes, e.g. root-knot nematodes and cyst nematodes
CBI	root-knot nematodes
principles for preventing food uptake induced at nematode feeding sites	nematodes, e.g. root-knot nematodes and root-cyst nematodes
Plant: Sugar cane	
Feature affected / protein expressed	Feature of the plant / tolerance to
acetolactate synthase (ALS)	sulphonylurea compounds, imidazolinones triazolopyrimidines, pyrimidylloxybenzoates, phthalides
acetyl-CoA carboxylase (ACCase)	aryloxyphenoxyalkanecarboxylic acids, cyclohexanediones
hydroxyphenylpyruvate dioxygenase (HPPD)	isoxazoles such as, for example, isoxaflutole or isoxachlortole, triones such as, for example, mesotrione or sulcotrione
phosphinothricin acetyltransferase	phosphinothricin
O-methyl transferase	modified lignin content
glutamine synthetase	glufosinate, bialaphos

Feature affected / protein expressed	Feature of the plant / tolerance to
adenylosuccinate lyase (ADSL)	inhibitors of IMP and AMP synthesis
adenylosuccinate synthase	inhibitors of adenylosuccinate synthesis
anthranilate synthase	inhibitors of tryptophan synthesis and degradation
nitrilase	3,5-dihalo-4-hydroxybenzonitriles such as bromoxynil and loxynil
5-enolpyruvyl-3-phosphoshikimate synthase (EPSPS)	glyphosate or sulphosate
glyphosate oxidoreductase	glyphosate or sulphosate
protoporphyrinogen oxidase (PROTOX)	diphenyl ethers, cyclic imides, phenylpyrazoles, pyridine derivatives, phenopylate, oxadiazoles etc.
cytochrome P450 e.g. P450 SU1 or selection	xenobiotics and herbicides such as, for example, sulphonylurea compounds
polyphenol oxidase or polyphenol oxidase (antisense)	bacterial or fungal pathogens
metallothionein	bacterial or fungal pathogens
ribonuclease	bacterial or fungal pathogens
antifungal polypeptid AlyAFP	bacterial or fungal pathogens
oxalate oxidase	bacterial or fungal pathogens
glucose oxidase	bacterial or fungal pathogens
pyrrolnitrin synthesis genes	bacterial or fungal pathogens
serine/threonine kinases	bacterial or fungal pathogens
cecropin B	bacterial or fungal pathogens
phenylalanine ammonia lyase (PAL)	bacterial or fungal pathogens
Cf genes, e.g. Cf 9 Cf5 Cf4 Cf2	bacterial or fungal pathogens
osmotin	bacterial or fungal pathogens
alpha hordothionine	bacterial or fungal pathogens
systemin	bacterial or fungal pathogens
polygalacturonase inhibitors	bacterial or fungal pathogens
Prf control gene	bacterial or fungal pathogens
phytoalexins	bacterial or fungal pathogens
B-1,3-glucanase (antisense)	bacterial or fungal pathogens
receptor kinase	bacterial or fungal pathogens
polypeptide having the effect of triggering	bacterial or fungal pathogens

Feature affected / protein expressed	Feature of the plant / tolerance to
a hypersensitivity reaction	
systemic acquired resistance (SAR) genes	viral, bacterial, fungal and nematodal pathogens
lytic protein	bacterial or fungal pathogens
lysozyme	bacterial or fungal pathogens, e.g. Clavibacter
chitinases	bacterial or fungal pathogens
barnase	bacterial or fungal pathogens
glucanases	bacterial or fungal pathogens
double-strand ribonuclease	viruses such as SCMV, SrMV
envelope proteins	viruses such as SCMV, SrMV
17kDa or 60 kDa protein	viruses such as SCMV, SrMV
nuclear inclusion proteins e.g. a or b or nucleoprotein	viruses such as SCMV, SrMV
pseudoubiquitin	viruses such as SCMV, SrMV
replicase	viruses such as SCMV, SrMV
toxins of Bacillus thuringiensis, VIP 3, Bacillus cereus toxins, Photorhabdus and Xenorhabdus toxins	Lepidoptera, aphids, mites, nematodes, whitefly, beetles such as e.g. the Mexican rice borer
3-hydroxysteroid oxidase	Lepidoptera, aphids, mites, nematodes, whitefly, beetles such as e.g. the Mexican rice borer
peroxidase	Lepidoptera, aphids, mites, nematodes, whitefly, beetles such as e.g. the Mexican rice borer
aminopeptidase inhibitors, e.g. leucine aminopeptidase inhibitor	Lepidoptera, aphids, mites, nematodes, whitefly, beetles such as e.g. the Mexican rice borer
lectins	Lepidoptera, aphids, mites, nematodes, whitefly, beetles such as e.g. the Mexican rice borer
protease inhibitors, e.g. cystatin, patatin, CPTI, virgiferin	Lepidoptera, aphids, mites, nematodes, whitefly, beetles such as e.g. the Mexican rice borer
ribosome-inactivating protein	Lepidoptera, aphids, mites, nematodes,

Feature affected / protein expressed	Feature of the plant / tolerance to
stilbene synthase	whitefly, beetles such as e.g. the Mexican rice borer Lepidoptera, aphids, mites, nematodes, whitefly, beetles such as e.g. the Mexican rice borer
HMG-CoA reductase	Lepidoptera, aphids, mites, nematodes, whitefly, beetles such as e.g. the Mexican rice borer
hatching factor for cyst nematodes	cyst nematodes
barnase	nematodes, e.g. root-knot nematodes and cyst nematodes
CBI	root-knot nematodes
principles for preventing food uptake induced at nematode feeding sites	nematodes, e.g. root-knot nematodes and root-cyst nematodes

Plant: Sunflower

Structure affected / protein expressed	Feature of the plant / tolerance to
acetolactate synthase (ALS)	sulphonylurea compounds, imidazolinones triazolopyrimidines, pyrimidylxybenzoates, phthalides
acetyl-CoA carboxylase (ACCase)	aryloxyphenoxyalkanecarboxylic acids, cyclohexanediones
hydroxyphenylpyruvate dioxygenase (HPPD)	isoxazoles such as, for example, isoxaflutole or isoxachlortole, triones such as, for example, mesotrione or sulcotrione
phosphinothricin acetyltransferase	phosphinothricin
O-methyl transferase	modified lignin content
glutamine synthetase	glufosinate, bialaphos
adenylosuccinate lyase (ADSL)	inhibitors of IMP and AMP synthesis
adenylosuccinate synthase	inhibitors of adenylosuccinate synthesis
anthranilate synthase	inhibitors of tryptophan synthesis and degradation
nitrilase	3,5-dihalo-4-hydroxybenzonitriles such as bromoxynil and loxynil

Structure affected / protein expressed	Feature of the plant / tolerance to
5-enolpyruvyl-3-phosphoshikimate synthase (EPSPS)	glyphosate or sulphosate
glyphosate oxidoreductase	glyphosate or sulphosate
protoporphyrinogen oxidase (PROTOX)	diphenyl ethers, cyclic imides, phenylpyrazoles, pyridine derivatives, phenopylate, oxadiazoles etc.
cytochrome P450 e.g. P450 SU1 or selection	xenobiotics and herbicides such as, for example, sulphonylurea compounds
polyphenol oxidase or polyphenol oxidase (antisense)	bacterial or fungal pathogens
metallothionein	bacterial or fungal pathogens
ribonuclease	bacterial or fungal pathogens
antifungal polypeptid AlyAFP	bacterial or fungal pathogens
oxalate oxidase	bacterial or fungal pathogens, e.g. Sclerotinia
glucose oxidase	bacterial or fungal pathogens
pyrrolnitrin synthesis genes	bacterial or fungal pathogens
serine/threonine kinases	bacterial or fungal pathogens
cecropin B	bacterial or fungal pathogens
phenylalanine ammonia lyase (PAL)	bacterial or fungal pathogens
Cf genes, e.g. Cf 9 Cf5 Cf4 Cf2	bacterial or fungal pathogens
osmotin	bacterial or fungal pathogens
alpha hordothionine	bacterial or fungal pathogens
systemin	bacterial or fungal pathogens
polygalacturonase inhibitors	bacterial or fungal pathogens
Prf control gene	bacterial or fungal pathogens
phytoalexins	bacterial or fungal pathogens
B-1,3-glucanase (antisense)	bacterial or fungal pathogens
receptor kinase	bacterial or fungal pathogens
polypeptide having the effect of triggering a hypersensitivity reaction	bacterial or fungal pathogens
systemic acquired resistance (SAR) genes	viral, bacterial, fungal and nematodal pathogens
lytic protein	bacterial or fungal pathogens

Structure affected / protein expressed	Feature of the plant / tolerance to
lysozyme	bacterial or fungal pathogens
chitinases	bacterial or fungal pathogens
barnase	bacterial or fungal pathogens
glucanases	bacterial or fungal pathogens
double-strand ribonuclease	viruses such as CMV, TMV
envelope proteins	viruses such as CMV, TMV
17kDa or 60 kDa protein	viruses such as CMV, TMV
nuclear inclusion proteins e.g. a or b or nucleoprotein	viruses such as CMV, TMV
pseudoubiquitin	viruses such as CMV, TMV
replicase	viruses such as CMV, TMV
toxins of <i>Bacillus thuringiensis</i> , VIP 3, <i>Bacillus cereus</i> toxins, <i>Photorhabdus</i> and <i>Xenorhabdus</i> toxins	Lepidoptera, aphids, mites, nematodes, whitefly, beetles
3-hydroxysteroid oxidase	Lepidoptera, aphids, mites, nematodes, whitefly, beetles
peroxidase	Lepidoptera, aphids, mites, nematodes, whitefly, beetles
aminopeptidase inhibitors, e.g. leucine aminopeptidase inhibitor	Lepidoptera, aphids, mites, nematodes, whitefly, beetles
lectins	Lepidoptera, aphids, mites, nematodes, whitefly, beetles
protease inhibitors, e.g. cystatin, patatin, CPTI, virgiferin	Lepidoptera, aphids, mites, nematodes, whitefly, beetles
ribosome-inactivating protein	Lepidoptera, aphids, mites, nematodes, whitefly, beetles
stilbene synthase	Lepidoptera, aphids, mites, nematodes, whitefly, beetles
HMG-CoA reductase	Lepidoptera, aphids, mites, nematodes, whitefly, beetles
hatching factor for cyst nematodes	cyst nematodes
barnase	nematodes, e.g. root-knot nematodes and cyst nematodes
CBI	root-knot nematodes
principles for preventing food uptake	nematodes, e.g. root-knot nematodes and

Structure affected / protein expressed	Feature of the plant / tolerance to
induced at nematode feeding sites	root-cyst nematodes
Plants: Sugar beet, turnips	
Structure affected / protein expressed	Feature of the plant / tolerance to
acetolactate synthase (ALS)	sulphonylurea compounds, imidazolinones triazolopyrimidines, pyrimidylxybenzoates, phthalides
acetyl-CoA carboxylase (ACCase)	aryloxyphenoxyalkanecarboxylic acids, cyclohexanediones
hydroxyphenylpyruvate dioxygenase (HPPD)	isoxazoles such as, for example, isoxaflutole or isoxachlortole, triones such as, for example, mesotrione or sulcotrione
phosphinothricin acetyltransferase	phosphinothricin
O-methyl transferase	modified lignin content
glutamine synthetase	glufosinate, bialaphos
adenylosuccinate lyase (ADSL)	inhibitors of IMP and AMP synthesis
adenylosuccinate synthase	inhibitors of adenylosuccinate synthesis
anthranilate synthase	inhibitors of tryptophan synthesis and degradation
nitrilase	3,5-dihalo-4-hydroxybenzonitriles such as bromoxynil and loxynil
5-enolpyruvyl-3-phosphoshikimate synthase (EPSPS)	glyphosate or sulphosate
glyphosate oxidoreductase	glyphosate or sulphosate
protoporphyrinogen oxidase (PROTOX)	diphenyl ethers, cyclic imides, phenylpyrazoles, pyridine derivatives, phenopylate, oxadiazoles etc.
cytochrome P450 e.g. P450 SU1 or selection	xenobiotics and herbicides such as, for example, sulphonylurea compounds
polyphenol oxidase or polyphenol oxidase (antisense)	bacterial or fungal pathogens
metallothionein	bacterial or fungal pathogens
ribonuclease	bacterial or fungal pathogens
antifungal polypeptid AlyAFP	bacterial or fungal pathogens

Structure affected / protein expressed	Feature of the plant / tolerance to
oxalate oxidase	bacterial or fungal pathogens, e.g. Sclerotinia
glucose oxidase	bacterial or fungal pathogens
pyrrolnitrin synthesis genes	bacterial or fungal pathogens
serine/threonine kinases	bacterial or fungal pathogens
cecropin B	bacterial or fungal pathogens
phenylalanine ammonia lyase (PAL)	bacterial or fungal pathogens
Cf genes, e.g. Cf 9 Cf5 Cf4 Cf2	bacterial or fungal pathogens
osmotin	bacterial or fungal pathogens
alpha hordothionine	bacterial or fungal pathogens
systemin	bacterial or fungal pathogens
polygalacturonase inhibitors	bacterial or fungal pathogens
Prf control gene	bacterial or fungal pathogens
phytoalexins	bacterial or fungal pathogens
B-1,3-glucanase (antisense)	bacterial or fungal pathogens
AX + WIN-proteins	bacterial and fungal pathogens such as Cercospora beticola
receptor kinase	bacterial or fungal pathogens
polypeptide having the effect of triggering a hypersensitivity reaction	bacterial or fungal pathogens
systemic acquired resistance (SAR) genes	viral, bacterial, fungal and nematodal pathogens
lytic protein	bacterial or fungal pathogens
lysozyme	bacterial or fungal pathogens
chitinases	bacterial or fungal pathogens
barnase	bacterial or fungal pathogens
glucanases	bacterial or fungal pathogens
double-strand ribonuclease	viruses such as, for example, BNYVV
envelope proteins	viruses such as, for example, BNYVV
17kDa or 60 kDa protein	viruses such as, for example, BNYVV
nuclear inclusion proteins e.g. a or b or nucleoprotein	viruses such as, for example, BNYVV
pseudoubiquitin	viruses such as, for example, BNYVV
replicase	viruses such as, for example, BNYVV
toxins of Bacillus thuringiensis, VIP 3,	Lepidoptera, aphids, mites, nematodes,

BCS 08-3018-Foreign Countries

- 77 -

Structure affected / protein expressed	Feature of the plant / tolerance to
Bacillus cereus toxins, Photorhabdus and Xenorhabdus toxins	whitefly, beetles, root-flies
3-hydroxysteroid oxidase	Lepidoptera, aphids, mites, nematodes, whitefly, beetles, root-flies
peroxidase	Lepidoptera, aphids, mites, nematodes, whitefly, beetles, root-flies
aminopeptidase inhibitors, e.g. leucine aminopeptidase inhibitor	Lepidoptera, aphids, mites, nematodes, whitefly, beetles, root-flies
lectins	Lepidoptera, aphids, mites, nematodes, whitefly, beetles, root-flies
protease inhibitors, e.g. cystatin, patatin, CPTI, virgiferin	Lepidoptera, aphids, mites, nematodes, whitefly, beetles, root-flies
ribosome-inactivating protein	Lepidoptera, aphids, mites, nematodes, whitefly, beetles, root-flies
stilbene synthase	Lepidoptera, aphids, mites, nematodes, whitefly, beetles, root-flies
HMG-CoA reductase	Lepidoptera, aphids, mites, nematodes, whitefly, beetles, root-flies
hatching factor for cyst nematodes	cyst nematodes
barnase	nematodes, e.g. root-knot nematodes and cyst nematodes
beet cyst nematode resistance site	cyst nematodes
CBI	root-knot nematodes
principles for preventing food uptake induced	nematodes, e.g. root-knot nematodes and root-cyst nematodes

Table 2

In the table, the following abbreviations were used:

active principle of the transgenic plant: AP

Photorhabdus luminescens: PL

5 Xenorhabdus nematophilus: XN

proteinase inhibitors: Plnh.

plant lectins PLec.

agglutinines: Aggl.

3-hydroxysteroid oxidase: HO

10 cholesterol oxidase: CO

chitinase: CH

glucanase: GL

stilbene synthase: SS

AP	Control of
CryIA(a)	Adoxophyes spp.
CryIA(a)	Agrotis spp.
CryIA(a)	Alabama argillaceae
CryIA(a)	Anticarsia gemmatilis
CryIA(a)	Chilo spp.
CryIA(a)	Clysia ambiguella
CryIA(a)	Crocidolomia binotalis
CryIA(a)	Cydia spp.
CryIA(a)	Diparopsis castanea
CryIA(a)	Earias spp.
CryIA(a)	Ephestia spp.
CryIA(a)	Heliothis spp.
CryIA(a)	Heliula undalis
CryIA(a)	Keiferia lycopersicella
CryIA(a)	Leucoptera scitella
CryIA(a)	Lithocollethis spp.
CryIA(a)	Lobesia botrana
CryIA(a)	Ostrinia nubilalis
CryIA(a)	Pandemis spp.
CryIA(a)	Pectinophora gossyp.

BCS 08-3018-Foreign Countries

- 79 -

AP	Control of
CryIA(a)	Phyllocnistis citrella
CryIA(a)	Pieris spp.
CryIA(a)	Plutella xylostella
CryIA(a)	Scirpophaga spp.
CryIA(a)	Sesamia spp.
CryIA(a)	Sparganothis spp.
CryIA(a)	Spodoptera spp.
CryIA(a)	Tortrix spp.
CryIA(a)	Trichoplusia ni
CryIA(a)	Agriotes spp.
CryIA(a)	Anthonomus grandis
CryIA(a)	Curculio spp.
CryIA(a)	Diabrotica balteata
CryIA(a)	Leptinotarsa spp.
CryIA(a)	Lissorhoptrus spp.
CryIA(a)	Otiorhynchus spp.
CryIA(a)	Aleurothrixus spp.
CryIA(a)	Aleyrodes spp.
CryIA(a)	Aonidiella spp.
CryIA(a)	Aphididea spp.
CryIA(a)	Aphis spp.
CryIA(a)	Bemisia tabaci
CryIA(a)	Empoasca spp.
CryIA(a)	Mycus spp.
CryIA(a)	Nephotettix spp.
CryIA(a)	Nilaparvata spp.
CryIA(a)	Pseudococcus spp.
CryIA(a)	Psylla spp.
CryIA(a)	Quadraspidotus spp.
CryIA(a)	Schizaphis spp.
CryIA(a)	Trialeurodes spp.
CryIA(a)	Lyriomyza spp.
CryIA(a)	Oscinella spp.

BCS 08-3018-Foreign Countries

- 80 -

AP	Control of
CryIA(a)	Phorbia spp.
CryIA(a)	Frankliniella spp.
CryIA(a)	Thrips spp.
CryIA(a)	Scirtothrips aurantii
CryIA(a)	Aceria spp.
CryIA(a)	Aculus spp.
CryIA(a)	Brevipalpus spp.
CryIA(a)	Panonychus spp.
CryIA(a)	Phyllocoptruta spp.
CryIA(a)	Tetranychus spp.
CryIA(a)	Heterodera spp.
CryIA(a)	Meloidogyne spp.
CryIA(b)	Adoxophyes spp
CryIA(b)	Agrotis spp
CryIA(b)	Alabama argillaceae
CryIA(b)	Anticarsia gemmatalis
CryIA(b)	Chilo spp.
CryIA(b)	Ciysia ambiguella
CryIA(b)	Crocidolomia binotalis
CryIA(b)	Cydia spp.
CryIA(b)	Diparopsis castanea
CryIA(b)	Earias spp.
CryIA(b)	Ephestia spp.
CryIA(b)	Heliothis spp.
CryIA(b)	Hellula undalis
CryIA(b)	Keiferia lycopersicella
CryIA(b)	Leucoptera scitella
CryIA(b)	Lithocolletis spp.
CryIA(b)	Lobesia botrana
CryIA(b)	Ostrinia nubilalis
CryIA(b)	Pandemis spp.
CryIA(b)	Pectinophora gossyp.
CryIA(b)	Phyllocnistis citrella

BCS 08-3018-Foreign Countries

- 81 -

AP	Control of
CrylA(b)	Pieris spp.
CrylA(b)	Plutelia xyiostella
CrylA(b)	Scirpophaga spp.
CrylA(b)	Sesamia spp.
CrylA(b)	Sparganothis spp.
CrylA(b)	Spodoptera spp.
CrylA(b)	Tortrix spp.
CrylA(b)	Trichoplusia ni
CrylA(b)	Agriotes spp.
CrylA(b)	Anthonomus grandis
CrylA(b)	Curculio spp.
CrylA(b)	Diabrotica balteata
CrylA(b)	Leptinotarsa spp.
CrylA(b)	Lissorhoptrus spp.
CrylA(b)	Otiorhynchus spp.
CrylA(b)	Aleurothrixus spp.
CrylA(b)	Aleyrodes spp.
CrylA(b)	Aonidiella spp.
CrylA(b)	Aphididae spp.
CrylA(b)	Aphis spp.
CrylA(b)	Bemisia tabaci
CrylA(b)	Empoasca spp.
CrylA(b)	Mycus spp.
CrylA(b)	Nephotettix spp.
CrylA(b)	Nilaparvata spp.
CrylA(b)	Pseudococcus spp.
CrylA(b)	Psylla spp.
CrylA(b)	Quadraspidotus spp.
CrylA(b)	Schizaphis spp.
CrylA(b)	Trialeurodes spp.
CrylA(b)	Lyriomyza spp.
CrylA(b)	Oscinella spp.
CrylA(b)	Phorbia spp.

BCS 08-3018-Foreign Countries

- 82 -

AP	Control of
CryIA(b)	Frankliniella spp.
CryIA(b)	Thrips spp.
CryIA(b)	Scirtothrips aurantii
CryIA(b)	Aceria spp.
CryIA(b)	Aculus spp.
CryIA(b)	Brevipalpus spp.
CryIA(b)	Panonychus spp.
CryIA(b)	Phyllocoptruta spp.
CryIA(b)	Tetranychus spp.
CryIA(b)	Heterodera spp.
CryIA(b)	Meloidogyne spp.
CryIA(c)	Adoxophyes spp.
CryIA(c)	Agrotis spp.
CryIA(c)	Alabama argillaceae
CryIA(c)	Anticarsia gemmatalis
CryIA(c)	Chilo spp.
CryIA(c)	Ciysia ambiguella
CryIA(c)	Crocidolomia binotalis
CryIA(c)	Cydia spp.
CryIA(c)	Diparopsis castanea
CryIA(c)	Earias spp.
CryIA(c)	Ephestia spp.
CryIA(c)	Heliothis spp.
CryIA(c)	Hellula undalis
CryIA(c)	Keiferia lycopersicella
CryIA(c)	Leucoptera scitella
CryIA(c)	Lithocollethis spp.
CryIA(c)	Lobesia botrana
CryIA(c)	Ostrinia nubilalis
CryIA(c)	Pandemis spp.
CryIA(c)	Pectinophora gossypiella.
CryIA(c)	Phyllocnistis citrella
CryIA(c)	Pieris spp.

BCS 08-3018-Foreign Countries

- 83 -

AP	Control of
CrylA(c)	Plutella xylostella
CrylA(c)	Scirpophaga spp.
CrylA(c)	Sesamia spp.
CrylA(c)	Sparganothis spp.
CrylA(c)	Spodoptera spp.
CrylA(c)	Tortrix spp.
CrylA(c)	Trichoplusia ni
CrylA(c)	Agriotes spp.
CrylA(c)	Anthonomus grandis
CrylA(c)	Curculio spp.
CrylA(c)	Diabrotica baiteata
CrylA(c)	Leptinotarsa spp.
CrylA(c)	Lissorhoptrus spp.
CrylA(c)	Otiorhynchus spp.
CrylA(c)	Aleurothrixus spp.
CrylA(c)	Aleyrodes spp.
CrylA(c)	Aonidiella spp.
CrylA(c)	Aphididae spp.
CrylA(c)	Aphis spp.
CrylA(c)	Bemisia tabaci
CrylA(c)	Empoasca spp.
CrylA(c)	Mycus spp.
CrylA(c)	Nephotettix spp.
CrylA(c)	Nilaparvata spp.
CrylA(c)	Pseudococcus spp.
CrylA(c)	Psylla spp.
CrylA(c)	Quadraspidiotus spp.
CrylA(c)	Schizaphis spp.
CrylA(c)	Trialeurodes spp.
CrylA(c)	Lyriomyza spp.
CrylA(c)	Oscinelia spp.
CrylA(c)	Phorbia spp.
CrylA(c)	Frankliniella spp.

BCS 08-3018-Foreign Countries

- 84 -

AP	Control of
CryIA(c)	Thrips spp.
CryIA(c)	Scirtothrips aurantii
CryIA(c)	Aceria spp.
CryIA(c)	Aculus spp.
CryIA(c)	Brevipalpus spp.
CryIA(c)	Panonychus spp.
CryIA(c)	Phyllocoptruta spp.
CryIA(c)	Tetranychus spp.
CryIA(c)	Heterodera spp.
CryIA(c)	Meloidogyne spp.
CryIIA	Adoxophyes spp.
CryIIA	Agrotis spp.
CryIIA	Alabama argillaceae
CryIIA	Anticarsia gemmatalis
CryIIA	Chilo spp.
CryIIA	Clysia ambiguella
CryIIA	Crocidolomia binotalis
CryIIA	Cydia spp.
CryIIA	Diparopsis castanea
CryIIA	Earias spp.
CryIIA	Ephestia spp.
CryIIA	Heliothis spp.
CryIIA	Hellula undalis
CryIIA	Keiferia lycopersicella
CryIIA	Leucoptera scitella
CryIIA	Lithocoliethis spp.
CryIIA	Lobesia botrana
CryIIA	Ostrinia nubilalis
CryIIA	Pandemis spp.
CryIIA	Pectinophora gossyp.
CryIIA	Phyllocnistis citrella
CryIIA	Pieris spp.
CryIIA	Plutella xylostella

BCS 08-3018-Foreign Countries

- 85 -

AP	Control of
CrylIA	Scirpophaga spp.
CrylIA	Sesamia spp.
CrylIA	Sparganothis spp.
CrylIA	Spodoptera spp.
CrylIA	Tortrix spp.
CrylIA	Trichoplusia ni
CrylIA	Agriotes spp.
CrylIA	Anthonomus grandis
CrylIA	Curculio spp.
CrylIA	Diabrotica balteata
CrylIA	Leptinotarsa spp.
CrylIA	Lissorhoptrus spp.
CrylIA	Otiorhynchus spp.
CrylIA	Aleurothrixus spp.
CrylIA	Aleyrodes spp.
CrylIA	Aonidiella spp.
CrylIA	Aphididae spp.
CrylIA	Aphis spp.
CrylIA	Bemisia tabaci
CrylIA	Empoasca spp.
CrylIA	Mycus spp.
CrylIA	Nephotettix spp.
CrylIA	Nilaparvata spp.
CrylIA	Pseudococcus spp.
CrylIA	Psylla spp.
CrylIA	Quadraspidiotus spp.
CrylIA	Schizaphis spp.
CrylIA	Trialeurodes spp.
CrylIA	Lyriomyza spp.
CrylIA	Oscinella spp.
CrylIA	Phorbia spp.
CrylIA	Frankliniella spp.
CrylIA	Thrips spp.

BCS 08-3018-Foreign Countries

- 86 -

AP	Control of
CryIIA	Scirtothrips aurantii
CryIIA	Aceria spp.
CryIIA	Acutus spp.
CryIIA	Brevipalpus spp.
CryIIA	Panonychus spp.
CryIIA	Phyllocoptruta spp.
CryIIA	Tetranychus spp.
CryIIA	Heterodera spp.
CryIIA	Meloidogyne spp.
CryIIIA	Adoxophyes spp.
CryIIIA	Agrotis spp.
CryIIIA	Alabama argillaceae
CryIIIA	Anticarsia gemmatilis
CryIIIA	Chilo spp.
CryIIIA	Ciysia ambigua
CryIIIA	Crocodylomia binotalis
CryIIIA	Cydia spp.
CryIIIA	Diparopsis castanea
CryIIIA	Earias spp.
CryIIIA	Ephesia spp.
CryIIIA	Heliothis spp.
CryIIIA	Hellula undalis
CryIIIA	Keiferia lycopersicella
CryIIIA	Leucoptera scitella
CryIIIA	Lithocolletis spp.
CryIIIA	Lobesia botrana
CryIIIA	Ostrinia nubilalis
CryIIIA	Pandemis spp.
CryIIIA	Pectinophora gossypi.
CryIIIA	Phyllocnistis citrella
CryIIIA	Pieris spp.
CryIIIA	Plutella xylostella
CryIIIA	Scirpophaga spp.

BCS 08-3018-Foreign Countries

- 87 -

AP	Control of
CryIIIA	Sesamia spp.
CryIIIA	Sparganothis spp.
CryIIIA	Spodoptera spp.
CryIIIA	Tortrix spp.
CryIIIA	Trichoplusia ni
CryIIIA	Agriotes spp.
CryIIIA	Anthonomus grandis
CryIIIA	Curculio spp.
CryIIIA	Diabrotica balteata
CryIIIA	Leptinotarsa spp.
CryIIIA	Lissorhoptrus spp.
CryIIIA	Otiorhynchus spp.
CryIIIA	Aleurothrixus spp.
CryIIIA	Aleyrodes spp.
CryIIIA	Aonidiella spp.
CryIIIA	Aphididae spp.
CryIIIA	Aphis spp.
CryIIIA	Bemisia tabaci
CryIIIA	Empoasca spp.
CryIIIA	Mycus spp.
CryIIIA	Nephotettix spp.
CryIIIA	Nilaparvata spp.
CryIIIA	Pseudococcus spp.
CryIIIA	Psylla spp.
CryIIIA	Quadraspidiotus spp.
CryIIIA	Schizaphis spp.
CryIIIA	Trialeurodes spp.
CryIIIA	Lyriomyza spp.
CryIIIA	Oscinella spp.
CryIIIA	Phorbia spp.
CryIIIA	Frankliniella spp.
CryIIIA	Thrips spp.
CryIIIA	Scirtothrips aurantii

BCS 08-3018-Foreign Countries

- 88 -

AP	Control of
CryIIIA	Aceria spp.
CryIIIA	Aculus spp.
CryIIIA	Brevipalpus spp.
CryIIIA	Panonychus spp.
CryIIIA	Phyllocoptruta spp.
CryIIIA	Tetranychus spp.
CryIIIA	Heterodera spp.
CryIIIA	Meloidogyne spp.
CryIIIB2	Adoxophyes spp.
CryIIIB2	Agrotis spp.
CryIIIB2	Alabama argillaceae
CryIIIB2	Anticarsia gemmatilis
CryIIIB2	Chilo spp.
CryIIIB2	Clysia ambiguella
CryIIIB2	Crocidolomia binotaiis
CryIIIB2	Cydia spp.
CryIIIB2	Diparopsis castanea
CryIIIB2	Earias spp.
CryIIIB2	Ephestia spp.
CryIIIB2	Heliothis spp.
CryIIIB2	Hellula undalis
CryIIIB2	Keiferia lycopersicella
CryIIIB2	Leucoptera sectelia
CryIIIB2	Lithocollethis spp.
CryIIIB2	Lobesia botrana
CryIIIB2	Ostrinia nubilalis
CryIIIB2	Pandemis spp.
CryIIIB2	Pectinophora gossyp.
CryIIIB2	Phyllocnistis citrella
CryIIIB2	Pieris spp.
CryIIIB2	Plutella xylostella
CryIIIB2	Scirpophaga spp.
CryIIIB2	Sesamia spp.

BCS 08-3018-Foreign Countries

- 89 -

AP	Control of
CrylIIIB2	Sparganothis spp.
CrylIIIB2	Spodoptera spp.
CrylIIIB2	Tortrix spp.
CrylIIIB2	Trichoplusia ni
CrylIIIB2	Agriotes spp.
CrylIIIB2	Anthonomus grandis
CrylIIIB2	Curculio spp.
CrylIIIB2	Diabrotica balteata
CrylIIIB2	Leptinotarsa spp.
CrylIIIB2	Lissorhoptrus spp.
CrylIIIB2	Otiorhynchus spp.
CrylIIIB2	Aleurothrixus spp.
CrylIIIB2	Aleyrodes spp.
CrylIIIB2	Aonidiella spp.
CrylIIIB2	Aphididae spp.
CrylIIIB2	Aphis spp.
CrylIIIB2	Bemisia tabaci
CrylIIIB2	Empoasca spp.
CrylIIIB2	Mycus spp.
CrylIIIB2	Nephotettix spp.
CrylIIIB2	Nilaparvata spp.
CrylIIIB2	Pseudococcus spp.
CrylIIIB2	Psylla spp.
CrylIIIB2	Quadraspidotus spp.
CrylIIIB2	Schizaphis spp.
CrylIIIB2	Trialeurodes spp.
CrylIIIB2	Lyriornyza spp.
CrylIIIB2	Oscinella spp.
CrylIIIB2	Phorbia spp.
CrylIIIB2	Frankliniella spp.
CrylIIIB2	Thrips spp.
CrylIIIB2	Scirtothrips aurantii
CrylIIIB2	Aceria spp.

BCS 08-3018-Foreign Countries

- 90 -

AP	Control of
CryIIIB2	Acutus spp.
CryIIIB2	Brevipalpus spp.
CryIIIB2	Panonychus spp.
CryIIIB2	Phyllocoptruta spp.
CryIIIB2	Tetranychus spp.
CryIIIB2	Heterodera spp.
CryIIIB2	Meloidogyne spp.
CytA	Adoxophyes spp.
CytA	Agrotis spp.
CytA	Alabama argillaceae
CytA	Anticarsia gemmatilis
CytA	Chilo spp.
CytA	Clysia ambiguella
CytA	Crocidolomia binotaiis
CytA	Cydia spp.
CytA	Diparopsis castanea
CytA	Earias spp.
CytA	Ephestia spp.
CytA	Heliothis spp.
CytA	Hellula undalis
CytA	Keiferia lycopersicella
CytA	Leucoptera scitelia
CytA	Lithocollethis spp.
CytA	Lobesia botrana
CytA	Ostrinia nubilalis
CytA	Pandemis spp.
CytA	Pectinophora gossyp.
CytA	Phyllocnistis citrella
CytA	Pieris spp.
CytA	Plutella xylostella
CytA	Scirpophaga spp.
CytA	Sesamia spp.
CytA	Sparganothis spp.

BCS 08-3018-Foreign Countries

- 91 -

AP	Control of
CytA	Spodoptera spp.
CytA	Tortrix spp.
CytA	Trichoplusia ni
CytA	Agriotes spp.
CytA	Anthonomus grandis
CytA	Curculio spp.
CytA	Diabrotica balteata
CytA	Leptinotarsa spp.
CytA	Lissorhoptrus spp.
CytA	Otiorhynchus spp.
CytA	Aleurothrixus spp.
CytA	Aleyrodes spp.
CytA	Aonidielia spp.
CytA	Aphididae spp.
CytA	Aphis spp.
CytA	Bemisia tabaci
CytA	Empoasca spp.
CytA	Mycus spp.
CytA	Nephotettix spp.
CytA	Nilaparvata spp.
CytA	Pseudococcus spp.
CytA	Psylla spp.
CytA	Quadraspidiotus spp.
CytA	Schizaphis spp.
CytA	Trialeurodes spp.
CytA	Lyriomyza spp.
CytA	Oscinella spp.
CytA	Phorbia spp.
CytA	Frankliniella spp.
CytA	Thrips spp.
CytA	Scirtothrips aurantii
CytA	Aceria spp.
CytA	Acutus spp.

BCS 08-3018-Foreign Countries

- 92 -

AP	Control of
CytA	Brevipalpus spp.
CytA	Panonychus spp.
CytA	Phyllocoptruta spp.
CytA	Tetranychus spp.
CytA	Heterodera spp.
CytA	Meloidogyne spp.
VIP3	Adoxophyes spp.
VIP3	Agrotis spp.
VIP3	Alabama argillaceae
VIP3	Anticarsia gemmatalis
VIP3	Chilo spp.
VIP3	Clysia ambiguella
VIP3	Crocidolomia binotalis
VIP3	Cydia spp.
VIP3	Diparopsis castanea
VIP3	Earias spp.
VIP3	Ephesia spp.
VIP3	Heliothis spp.
VIP3	Hellula undalis
VIP3	Keiferia lycopersicella
VIP3	Leucoptera scitella
VIP3	Lithocollethis spp.
VIP3	Lobesia botrana
VIP3	Ostrinia nubilalis
VIP3	Pandemis spp.
VIP3	Pectinophora gossyp.
VIP3	Phyllocnistis citrella
VIP3	Pieris spp.
VIP3	Piutella xylostella
VIP3	Scirpophaga spp.
VIP3	Sesamia spp.
VIP3	Sparganothis spp.

BCS 08-3018-Foreign Countries

- 93 -

AP	Control of
VIP3	Spodoptera spp.
VIP3	Tortrix spp.
VIP3	Trichoplusia ni
VIP3	Agriotes spp.
VIP3	Anthonomus grandis
VIP3	Curculio spp.
VIP3	Diabrotica balteata
VIP3	Leptinotarsa spp.
VIP3	Lissorhoptrus spp.
VIP3	Otiorhynchus spp.
VIP3	Aleurothrixus spp.
VIP3	Aleyrodes spp.
VIP3	Aonidiella spp.
VIP3	Aphididae spp.
VIP3	Aphis spp.
VIP3	Bemisia tabaci
VIP3	Empoasca spp.
VIP3	Mycus spp.
VIP3	Nephotettix spp.
VIP3	Niiaparvata spp.
VIP3	Pseudococcus spp.
VIP3	Psylla spp.
VIP3	Quadraspidiotus spp.
VIP3	Schizaphis spp.
VIP3	Trialeurodes spp.
VIP3	Lyriomyza spp.
VIP3	Oscinella spp.
VIP3	Phorbia spp.
VIP3	Frankliniella spp.
VIP3	Thrips spp.
VIP3	Scirtothrips aurantii
VIP3	Aceria spp.
VIP3	Acutus spp.

BCS 08-3018-Foreign Countries

- 94 -

AP	Control of
VIP3	Brevipalpus spp.
VIP3	Panonychus spp.
VIP3	Phyllocoptruta spp.
VIP3	Tetranychus spp.
VIP3	Heterodera spp.
VIP3	Meloidogyne spp.
GL	Adoxophyes spp.
GL	Agrotis spp.
GL	Alabama argillaceae
GL	Anticarsia gemmatalis
GL	Chilo spp.
GL	Clysia ambiguella
GL	Crocidolomia binotaiis
GL	Cydia spp.
GL	Diparopsis castanea
GL	Earias spp.
GL	Ephestia spp.
GL	Heliothis spp.
GL	Hellula undalis
GL	Keiferia lycopersicella
GL	Leucoptera scitella
GL	Lithocollethis spp.
GL	Lobesia botrana
GL	Ostrinia nubilalis
GL	Pandemis spp.
GL	Pectinophora gossyp.
GL	Phyllocnistis citrella
GL	Pieris spp.
GL	Plutella xylostella
GL	Scirpophaga spp.
GL	Sesamia spp.
GL	Sparganothis spp.
GL	Spodoptera spp.

BCS 08-3018-Foreign Countries

- 95 -

AP	Control of
GL	Tortrix spp.
GL	Trichoplusia ni
GL	Agriotes spp.
GL	Anthonomus grandis
GL	Curculio spp.
GL	Diabrotica balteata
GL	Leptinotarsa spp.
GL	Lissorhoptrus spp.
GL	Otiorhynchus spp.
GL	Aleurothrixus spp.
GL	Aleyrodes spp.
GL	Aonidiella spp.
GL	Aphididae spp.
GL	Aphis spp.
GL	Bemisia tabaci
GL	Empoasca spp.
GL	Mycus spp.
GL	Nephotettix spp.
GL	Nilaparvata spp.
GL	Pseudococcus spp.
GL	Psylla spp.
GL	Quadraspidiotus spp.
GL	Schizaphis spp.
GL	Trialeurodes spp.
GL	Lyriomyza spp.
GL	Oscinella spp.
GL	Phorbia spp.
GL	Frankliniella spp.
GL	Thrips spp.
GL	Scirtothrips aurantii
GL	Aceria spp.
GL	Aculus spp.
GL	Brevipalpus spp.

BCS 08-3018-Foreign Countries

- 96 -

AP	Control of
GL	Panonychus spp.
GL	Phyllocoptruta spp.
GL	Tetranychus spp.
GL	Heterodera spp.
GL	Meioidogyne spp.
PL	Adoxophyes spp.
PL	Agrotis spp.
PL	Alabama argillaceae
PL	Anticarsia gemmatilis
PL	Chilo spp.
PL	Clysia ambiguella
PL	Crocidolomia binotalis
PL	Cydia spp.
PL	Diparopsis castanea
PL	Earias spp.
PL	Ephestia spp.
PL	Heliothis spp.
PL	Hellula undalis
PL	Keiferia lycopersicella
PL	Leucophaea scitella
PL	Lithocolletis spp.
PL	Lobesia botrana
PL	Ostrinia nubilalis
PL	Pandemis spp.
PL	Pectinophora gossypiella
PL	Phyllocnistis citrella
PL	Pieris spp.
PL	Plutella xylostella
PL	Scirpophaga spp.
PL	Sesamia spp.
PL	Sparganothis spp.
PL	Spodoptera spp.
PL	Tortrix spp.

BCS 08-3018-Foreign Countries

- 97 -

AP	Control of
PL	Trichoplusia ni
PL	Agriotes spp.
PL	Anthonomus grandis
PL	Curculio spp.
PL	Diabrotica balteata
PL	Leptinotarsa spp.
PL	Lissorhoptrus spp.
PL	Otiorhynchus spp.
PL	Aleurothrixus spp.
PL	Aleyrodes spp.
PL	Aonidiella spp.
PL	Aphididae spp.
PL	Aphis spp.
PL	Bemisia tabaci
PL	Empoasca spp.
PL	Mycus spp.
PL	Nephotettix spp.
PL	Nilaparvata spp.
PL	Pseudococcus spp.
PL	Psylla spp.
PL	Quadraspidotus spp.
PL	Schizaphis spp.
PL	Trialeurodes spp.
PL	Lyriomyza spp.
PL	Oscinella spp.
PL	Phorbia spp.
PL	Frankliniella spp.
PL	Thrips spp.
PL	Scirtothrips aurantii
PL	Aceria spp.
PL	Aculus spp.
PL	Brevipalpus spp.
PL	Panonychus spp.

BCS 08-3018-Foreign Countries

- 98 -

AP	Control of
PL	Phyllocoptruta spp.
PL	Tetranychus spp.
PL	Heterodera spp.
PL	Meloidogyne spp.
XN	Adoxophyes spp.
XN	Agrotis spp.
XN	Alabama argillaceae
XN	Anticarsia gemmatilis
XN	Chilo spp.
XN	Clysia ambiguella
XN	Crocidolomia binotalis
XN	Cydia spp.
XN	Diparopsis castanea
XN	Earias spp.
XN	Ephestia spp.
XN	Heliothis spp.
XN	Helluia undalis
XN	Keiferia lycopersicella
XN	Leucoptera scitella
XN	Lithocolletis spp.
XN	Lobesia botrana
XN	Ostrinia nubilalis
XN	Pandemis spp.
XN	Pectinophora gossypi.
XN	Phyllocnistis citrella
XN	Pieris spp.
XN	Plutella xylostella
XN	Scirpophaga spp.
XN	Sesamia spp.
XN	Sparganothis spp.
XN	Spodoptera spp.
XN	Tortrix spp.
XN	Trichoplusia ni

BCS 08-3018-Foreign Countries

- 99 -

AP	Control of
XN	Agriotes spp.
XN	Anthonomus grandis
XN	Curculio spp.
XN	Diabrotica balteata
XN	Leptinotarsa spp.
XN	Lissorhoptrus spp.
XN	Otiorhynchus spp.
XN	Aleurothrixus spp.
XN	Aleyrodes spp.
XN	Aonidiella spp.
XN	Aphididae spp.
XN	Aphis spp.
XN	Bemisia tabaci
XN	Empoasca spp.
XN	Mycus spp.
XN	Nephotettix spp.
XN	Nilaparvata spp.
XN	Pseudococcus spp.
XN	Psylla spp.
XN	Quadraspidiotus spp.
XN	Schizaphis spp.
XN	Trialeurodes spp.
XN	Lyriomyza spp.
XN	Oscinella spp.
XN	Phorbia spp.
XN	Frankliniella spp.
XN	Thrips spp.
XN	Scirtothrips aurantii
XN	Aceria spp.
XN	Aculus spp.
XN	Brevipalpus spp.
XN	Panonychus spp.
XN	Phyllocoptruta spp.

BCS 08-3018-Foreign Countries

- 100 -

AP	Control of
XN	Tetranychus spp.
XN	Heterodera spp.
XN	Meloidogyne spp.
Plnh.	Adoxophyes spp.
Plnh.	Agrotis spp.
Plnh.	Alabama argillaceae
Plnh.	Anticarsia gemmatilis
Plnh.	Chilo spp.
Plnh.	Clysia ambiguella
Plnh.	Crocidolomia
	binotalis
Plnh.	Cydia spp.
Plnh.	Diparopsis castanea
Plnh.	Earias spp.
Plnh.	Ephestia spp.
Plnh.	Heliothis spp.
Plnh.	Heliuia undalis
Plnh.	Keiferia lycopersicella
Plnh.	Leucoptera scitella
Plnh.	Lithocollethis spp.
Plnh.	Lobesia botrana
Plnh.	Ostrinia nubilalis
Plnh.	Pandemis spp.
Plnh.	Pectinophora gossyp.
Plnh.	Phyllocnistis citrella
Plnh.	Pieris spp.
Plnh.	Plutella xylostella
Plnh.	Scirpophaga spp.
Plnh.	Sesamia spp.
Plnh.	Sparganothis spp.
Plnh.	Spodoptera spp.
Plnh.	Tortrix spp.
Plnh.	Trichoplusia ni

BCS 08-3018-Foreign Countries

- 101 -

AP	Control of
Plnh.	Agriotes spp.
Plnh.	Anthonomus grandis
Plnh.	Curculio spp.
Plnh.	Diabrotica balteata
Plnh.	Leptinotarsa spp.
Plnh.	Lissorhoptrus spp.
Plnh.	Otiorhynchus spp.
Plnh.	Aleurothrixus spp.
Plnh.	Aleyrodes spp.
Plnh.	Aonidiella spp.
Plnh.	Aphididae spp.
Plnh.	Aphis spp.
Plnh.	Bemisia tabaci
Plnh.	Empoasca spp.
Plnh.	Mycus spp.
Plnh.	Nephotettix spp.
Plnh.	Nilaparvata spp.
Plnh.	Pseudococcus spp.
Plnh.	Psylla spp.
Plnh.	Quadraspidiotus spp.
Plnh.	Schizaphis spp.
Plnh.	Trialeurodes spp.
Plnh.	Lyriomyza spp.
Plnh.	Oscinella spp.
Plnh.	Phorbia spp.
Plnh.	Frankliniella spp.
Plnh.	Thrips spp.
Plnh.	Scirtothrips aurantii
Plnh.	Aceria spp.
Plnh.	Acutus spp.
Plnh.	Brevipalpus spp.
Plnh.	Panonychus spp.
Plnh.	Phyllocoptruta spp.

BCS 08-3018-Foreign Countries

- 102 -

AP	Control of
Plnh.	Tetranychus spp.
Plnh.	Heterodera spp.
Plnh.	Meloidogyne spp.
PLec.	Adoxophyes spp.
PLec.	Agrotis spp.
PLec.	Alabama argillaceae
PLec.	Anticarsia gemmatalis
PLec.	Chilo spp.
PLec.	Clysia ambiguella
PLec.	Crocidolomia binotalis
PLec.	Cydia spp.
PLec.	Diparopsis castanea
PLec.	Earias spp.
PLec.	Ephestia spp.
PLec.	Heliothis spp.
PLec.	Hellula undalis
PLec.	Keiferia lycopersicella
PLec.	Leucoptera scitella
PLec.	Lithocollethis spp.
PLec.	Lobesia botrana
PLec.	Ostrinia nubilalis
PLec.	Pandemis spp.
PLec.	Pectinophora gossyp.
PLec.	Phyllocnistis citrella
PLec.	Pieris spp.
PLec.	Plutella xylostella
PLec.	Scirpophaga spp.
PLec.	Sesamia spp.
PLec.	Sparganothis spp.
PLec.	Spodoptera spp.
PLec.	Tortrix spp.
PLec.	Trichoplusia ni
PLec.	Agriotes spp.

BCS 08-3018-Foreign Countries

- 103 -

AP	Control of
PLec.	Anthonomus grandis
PLec.	Curculio spp.
PLec.	Diabrotica balteata
PLec.	Leptinotarsa spp.
PLec.	Lissorhoptrus spp.
PLec.	Otiorhynchus spp.
PLec.	Aleurothrixus spp.
PLec.	Aleyrodes spp.
PLec.	Aonidiella spp.
PLec.	Aphididae spp.
PLec.	Aphis spp.
PLec.	Bemisia tabaci
PLec.	Empoasca spp.
PLec.	Mycus spp.
PLec.	Nephotettix spp.
PLec.	Nilaparvata spp.
PLec.	Pseudococcus spp.
PLec.	Psyllia spp.
PLec.	Quadraspidiotus spp.
PLec.	Schizaphis spp.
PLec.	Trialeurodes spp.
PLec.	Lyriomyza spp.
PLec.	Oscinella spp.
PLec.	Phorbia spp.
PLec.	Frankliniella spp.
PLec.	Thrips spp.
PLec.	Scirtothrips aurantii
PLec.	Aceria spp.
PLec.	Aculus spp.
PLec.	Brevipalpus spp.
PLec.	Panonychus spp.
PLec.	Phyllocoptruta spp.
PLec.	Tetranychus spp.

BCS 08-3018-Foreign Countries

- 104 -

AP	Control of
PLec.	Heterodera spp.
PLec.	Meloidogyne spp.
Aggl.	Adoxophyes spp.
Aggl.	Agrotis spp.
Aggl.	Alabama
	argillaceae
Aggl.	Anticarsia gemmatalis
Aggl.	Chilo spp.
Aggl.	Clysia ambiguella
Aggl.	Crocidolomia
	binotalis
Aggl.	Cydia spp.
Aggl.	Diparopsis
	castanea
Aggl.	Earias spp.
Aggl.	Ephestia spp.
Aggl.	Heliothis spp.
Aggl.	Hellula undalis
Aggl.	Keiferia
	lycopersicella
Aggl.	Leucoptera scitella
Aggl.	Lithocollethis spp.
Aggl.	Lobesia botrana
Aggl.	Ostrinia nubilalis
Aggl.	Pandemis spp.
Aggl.	Pectinophora
	gossyp.
Aggl.	Phyllocnistis citrella
Aggl.	Pieris spp.
Aggl.	Plutia xylostella
Aggl.	Scirpophaga spp.
Aggl.	Sesamia spp.
Aggl.	Sparganothis spp.

BCS 08-3018-Foreign Countries

- 105 -

AP	Control of
Aggl.	Spodoptera spp.
Aggl.	Tortrix spp.
Aggl.	Trichoplusia ni
Aggl.	Agriotes spp.
Aggl.	Anthonomus grandis
Aggl.	Curculio spp.
Aggl.	Diabrotica balteata
Aggl.	Leptinotarsa spp.
Aggl.	Lissorhoptrus spp.
Aggl.	Otiorhynchus spp.
Aggl.	Aleurothrixus spp.
Aggl.	Aleyrodes spp.
Aggl.	Aonidiella spp.
Aggl.	Aphididae spp.
Aggl.	Aphis spp.
Aggl.	Bemisia tabaci
Aggl.	Empoasca spp.
Aggl.	Mycus spp.
Aggl.	Nephotettix spp.
Aggl.	Nilaparvata spp.
Aggl.	Pseudococcus spp.
Aggl.	Psylla spp.
Aggl.	Quadraspidotus spp.
Aggl.	Schizaphis spp.
Aggl.	Trialeurodes spp.
Aggl.	Lyriomyza spp.
Aggl.	Oscinella spp.
Aggl.	Phorbia spp.
Aggl.	Frankliniella spp.
Aggl.	Thrips spp.
Aggl.	Scirtothrips auranti
Aggl.	Aceria spp.
Aggl.	Aculus spp.

BCS 08-3018-Foreign Countries

- 106 -

AP	Control of
Aggl.	Brevipalpus spp.
Aggl.	Panonychus spp.
Aggl.	Phyllocoptruta spp
Aggl.	Tetranychus spp.
Aggl.	Heterodera spp.
Aggl.	Meloidogyne spp.
CO	Adoxophyes spp.
CO	Agrotis spp.
CO	Alabama argillaceae
CO	Anticarsia gemmatilis
CO	Chilo spp.
CO	Ciysia ambiguella
CO	Crocidolomia binotalis
CO	Cydia spp.
CO	Diparopsis castanea
CO	Earias spp.
CO	Ephestia spp.
CO	Heliothis spp.
CO	Hellula undalis
CO	Keiferia lycopersicella
CO	Leucoptera scitella
CO	Lithocollethis spp.
CO	Lobesia botrana
CO	Ostrinia nubilalis
CO	Pandemis spp.
CO	Pectinophora gossyp.
CO	Phyllocnistis citrella
CO	Pieris spp.
CO	Plutella xylostella
CO	Scirpophaga spp.
CO	Sesamia spp.
CO	Sparganothis spp.
CO	Spodoptera spp.

BCS 08-3018-Foreign Countries

- 107 -

AP	Control of
CO	Tortrix spp.
CO	Trichoplusia ni
CO	Agriotes spp.
CO	Anthonomus grandis
CO	Curculio spp.
CO	Diabrotica balteata
CO	Leptinotarsa spp.
CO	Lissorhoptrus spp.
CO	Otiorhynchus spp.
CO	Aleurothrixus spp.
CO	Aleyrodes spp.
CO	Aonidielia spp.
CO	Aphididae spp.
CO	Aphis spp.
CO	Bemisia tabaci
CO	Empoasca spp.
CO	Mycus spp.
CO	Nephotettix spp.
CO	Nilaparvata spp.
CO	Pseudococcus spp.
CO	Psylla spp.
CO	Quadraspidiotus spp.
CO	Schizaphis spp.
CO	Trialeturodes spp.
CO	Lyriomyza spp.
CO	Oscinella spp.
CO	Phorbia spp.
CO	Frankliniella spp.
CO	Thrips spp.
CO	Scirtothrips aurantii
CO	Aceria spp.
CO	Acutus spp.
CO	Brevipalpus spp.

BCS 08-3018-Foreign Countries

- 108 -

AP	Control of
CO	Panonychus spp.
CO	Phyllocoptruta spp.
CO	Tetranychus spp.
CO	Heterodera spp.
CO	Meloidogyne spp.
CH	Adoxophyes spp.
CH	Agrotis spp.
CH	Alabama argillaceae
CH	Anticarsia
	gemmatalis
CH	Chilo spp.
CH	Clysia ambiguella
CH	Crocidolomia binotalis
CH	Cydia spp.
CH	Diparopsis castanea
CH	Earias spp.
CH	Ephestia spp.
CH	Heliothis spp.
CH	Hellula undalis
CH	Keiferia lycopersicella
CH	Leucoptera scitella
CH	Lithocollethis spp.
CH	Lobesia botrana
CH	Ostrinia nubilalis
CH	Pandemis spp.
CH	Pectinophora gossyp.
CH	Phyllocnistis citrella
CH	Pieris spp.
CH	Plutella xylostella
CH	Scirpophaga spp.
CH	Sesamia spp.
CH	Sparganothis spp.
CH	Spodoptera spp.

BCS 08-3018-Foreign Countries

- 109 -

AP	Control of
CH	Tortrix spp.
CH	Trichoplusia ni
CH	Agriotes spp.
CH	Anthonomus
	grandis
CH	Curculio spp.
CH	Diabrotica balteata
CH	Leptinotarsa spp.
CH	Lissorhoptrus spp.
CH	Otiorhynchus spp.
CH	Aleurothrixus spp.
CH	Aleyrodes spp.
CH	Aonidiella spp.
CH	Aphididae spp.
CH	Aphis spp.
CH	Bemisia tabaci
CH	Empoasca spp.
CH	Mycus spp.
CH	Nephotettix spp.
CH	Nilaparvata spp.
CH	Pseudococcus spp.
CH	Psylla spp.
CH	Quadraspidiotus spp.
CH	Schizaphis spp.
CH	Trialeurodes spp.
CH	Lyriomyza spp.
CH	Oscinella spp.
CH	Phorbia spp.
CH	Frankliniella spp.
CH	Thrips spp.
CH	Scirtothrips aurantii
CH	Aceria spp.
CH	Aculus spp.

BCS 08-3018-Foreign Countries

- 110 -

AP	Control of
CH	Brevipalpus spp.
CH	Panonychus spp.
CH	Phyllocoptruta spp.
CH	Tetranychus spp.
CH	Heterodera spp.
CH	Meloidogyne spp.
SS	Adoxophyes spp.
SS	Agrotis spp.
SS	Alabama argillaceae
SS	Anticarsia gemmatilis
SS	Chilo spp.
SS	Clysia ambiguella
SS	Crocidolomia binotalis
SS	Cydia spp.
SS	Diparopsis castanea
SS	Earias spp.
SS	Ephestia spp.
SS	Heliothis spp.
SS	Hellula undalis
SS	Keiferia lycopersicella
SS	Leucoptera scitella
SS	Lithocolletis spp.
SS	Lobesia botrana
SS	Ostrinia nubilalis
SS	Pandemis spp.
SS	Pectinophora gossyp.
SS	Phyllocnistis citrella
SS	Pieris spp.
SS	Plutella xylostella
SS	Scirpophaga spp.
SS	Sesamia spp.
SS	Sparganothis spp.
SS	Spodoptera spp.

BCS 08-3018-Foreign Countries

- 111 -

AP	Control of
SS	Tortrix spp.
SS	Trichopiusia ni
SS	Agriotes spp.
SS	Anthonomus grandis
SS	Curculio spp.
SS	Diabrotica balteata
SS	Leptinotarsa spp.
SS	Lissorhoptrus spp.
SS	Otiorhynchus spp.
SS	Aleurothrixus spp.
SS	Aleyrodes spp.
SS	Aonidielia spp.
SS	Aphididae spp.
SS	Aphis spp.
SS	Bemisia tabaci
SS	Empoasca spp.
SS	Mycus spp.
SS	Nephotettix spp.
SS	Nilaparvata spp.
SS	Pseudococcus spp.
SS	Psylla spp.
SS	Quadraspidiotus spp.
SS	Schizaphis spp.
SS	Trialeurodes spp.
SS	Lyriomyza spp.
SS	Oscinella spp.
SS	Phorbia spp.
SS	Frankliniella spp.
SS	Thrips spp.
SS	Scirtothrips aurantii
SS	Aceria spp.
SS	Aculus spp.
SS	Brevipalpus spp.

BCS 08-3018-Foreign Countries

- 112 -

AP	Control of
SS	Panonychus spp.
SS	Phyllocoptruta spp.
SS	Tetranychus spp.
SS	Heterodera spp.
SS	Meloidogyne spp.
HO	Adoxophyes spp.
HO	Agrotis spp.
HO	Alabama argillaceae
HO	Anticarsia gemmatalis
HO	Chilo spp.
HO	Clysia ambiguella
HO	Crocidolomia binotalis
HO	Cydia spp.
HO	Diparopsis castanea
HO	Earias spp.
HO	Ephestia spp.
HO	Heliothis spp.
HO	Hellula undalis
HO	Keiferia lycopersicella
HO	Leucoptera scitella
HO	Lithocollethis spp.
HO	Lobesia botrana
HO	Ostrinia nubilalis
HO	Pandemis spp.
HO	Pectinophora gossypiella
HO	Phyllocnistis citrella
HO	Pieris spp.
HO	Plutella xylostella
HO	Scirpophaga spp.
HO	Sesamia spp.
HO	Sparganothis spp.
HO	Spodoptera spp.
HO	Tortrix spp.

BCS 08-3018-Foreign Countries

- 113 -

AP	Control of
HO	Trichoplusia ni
HO	Agriotes spp.
HO	Anthonomus grandis
HO	Curculio spp.
HO	Diabrotica balteata
HO	Leptinotarsa spp.
HO	Lissorhoptrus spp.
HO	Otiorhynchus spp.
HO	Aleurothrixus spp.
HO	Aleyrodes spp.
HO	Aonidiella spp.
HO	Aphididae spp.
HO	Aphis spp.
HO	Bemisia tabaci
HO	Empoasca spp.
HO	Mycus spp.
HO	Nephotettix spp.
HO	Nilaparvata spp.
HO	Pseudococcus spp.
HO	Psylla spp.
HO	Quadraspidiotus spp.
HO	Schizaphis spp.
HO	Trialeurodes spp.
HO	Lyriomyza spp.
HO	Oscinella spp.
HO	Phorbia spp.
HO	Frankliniella spp.
HO	Thrips spp.
HO	Scirtothrips aurantii
HO	Aceria spp.
HO	Acutus spp.
HO	Brevipalpus spp.
HO	Panonychus spp.

BCS 08-3018-Foreign Countries

- 114 -

AP	Control of
HO	Phyllocoptruta spp.
HO	Tetranychus spp.
HO	Heterodera spp.
HO	Meloidogyne spp.

Table 3:

Abbreviations:

acetyl-CoA carboxylase: ACCase

acetolactate synthase: ALS

5 hydroxyphenylpyruvate dioxygenase: HPPD

inhibition of protein synthesis: IPS

hormone imitation: HO

glutamine synthetase: GS

protoporphyrinogen oxidase: PROTOX

10 5-enolpyruvyl-3-phosphoshikimate synthase: EPSPS

Principle	Tolerance to	Plant
ALS	sulphonylurea compounds etc.***	cotton
ALS	sulphonylurea compounds etc.***	rice
ALS	sulphonylurea compounds etc.***	Brassica
ALS	sulphonylurea compounds etc.***	potatoes
ALS	sulphonylurea compounds etc.***	tomatoes
ALS	sulphonylurea compounds etc.***	pumpkin
ALS	sulphonylurea compounds etc.***	soya beans
ALS	sulphonylurea compounds etc.***	maize
ALS	sulphonylurea compounds etc.***	wheat
ALS	sulphonylurea compounds etc.***	pome fruit
ALS	sulphonylurea compounds etc.***	stone fruit
ALS	sulphonylurea compounds etc.***	citrus fruit
ACCase	+++	cotton
ACCase	+++	rice
ACCase	+++	Brassica
ACCase	+++	potato
ACCase	+++	tomatoes
ACCase	+++	pumpkin
ACCase	+++	soya beans
ACCase	+++	maize
ACCase	+++	wheat
ACCase	+++	pome fruit

Principle	Tolerance to	Plant
ACCase	+++	stone fruit
ACCase	+++	citrus fruit
HPPD	isoxaflutole, isoxachlortole, sulcotrione, mesotrione	cotton
HPPD	isoxaflutole, isoxachlortole, sulcotrione, mesotrione	rice
HPPD	isoxaflutole, isoxachlortole, sulcotrione, mesotrione	Brassica
HPPD	isoxaflutole, isoxachlortole, sulcotrione, mesotrione	potatoes
HPPD	isoxaflutole, isoxachlortole, sulcotrione, mesotrione	tomatoes
HPPD	isoxaflutole, isoxachlortole, sulcotrione, mesotrione	pumpkin
HPPD	isoxaflutole, isoxachlortole, sulcotrione, mesotrione	soya beans
HPPD	isoxaflutole, isoxachlortole, sulcotrione, mesotrione	maize
HPPD	isoxaflutole, isoxachlortole, sulcotrione, mesotrione	wheat
HPPD	isoxaflutole, isoxachlortole, sulcotrione, mesotrione	pome fruit
HPPD	isoxaflutole, isoxachlortole, sulcotrione, mesotrione	stone fruit
HPPD	isoxaflutole, isoxachlortole, sulcotrione, mesotrione	citrus fruit
nitrilase	bromoxynil, loxynil	cotton
nitrilase	bromoxynil, loxynil	rice
nitrilase	bromoxynil, loxynil	Brassica
nitrilase	bromoxynil, loxynil	potatoes
nitrilase	bromoxynil, loxynil	tomatoes
nitrilase	bromoxynil, loxynil	pumpkin
nitrilase	bromoxynil, loxynil	soya beans

Principle	Tolerance to	Plant
nitrilase	bromoxynil, loxynil	maize
nitrilase	bromoxynil, loxynil	wheat
nitrilase	bromoxynil, loxynil	pome fruit
nitrilase	bromoxynil, loxynil	stone fruit
nitrilase	bromoxynil, loxynil	citrus fruit
IPS	chloroactanilides &&&	cotton
IPS	chloroactanilides &&&	rice
IPS	chloroactanilides &&&	Brassica
IPS	chloroactanilides &&&	potatoes
IPS	chloroactanilides &&&	tomatoes
IPS	chloroactanilides &&&	pumpkin
IPS	chloroactanilides &&&	soya beans
IPS	chloroactanilides &&&	maize
IPS	chloroactanilides &&&	wheat
IPS	chloroactanilides &&&	pome fruit
IPS	chloroactanilides &&&	stone fruit
IPS	chloroactanilides &&&	citrus fruit
HOM	2,4-D, mecoprop-P	cotton
HOM	2,4-D, mecoprop-P	rice
HOM	2,4-D, mecoprop-P	Brassica
HOM	2,4-D, mecoprop-P	potatoes
HOM	2,4-D, mecoprop-P	tomatoes
HOM	2,4-D, mecoprop-P	pumpkin
HOM	2,4-D, mecoprop-P	soya beans
HOM	2,4-D, mecoprop-P	maize
HOM	2,4-D, mecoprop-P	wheat
HOM	2,4-D, mecoprop-P	pome fruit
HOM	2,4-D, mecoprop-P	stone fruit
HOM	2,4-D, mecoprop-P	citrus fruit
PROTOX	Protox inhibitors ///	cotton
PROTOX	Protox inhibitors ///	rice
PROTOX	Protox inhibitors ///	Brassica
PROTOX	Protox inhibitors ///	potatoes

Principle	Tolerance to	Plant
PROTOX	Protox inhibitors ///	tomatoes
PROTOX	Protox inhibitors ///	pumpkin
PROTOX	Protox inhibitors ///	soya beans
PROTOX	Protox inhibitors ///	maize
PROTOX	Protox inhibitors ///	wheat
PROTOX	Protox inhibitors ///	pome fruit
PROTOX	Protox inhibitors ///	stone fruit
PROTOX	Protox inhibitors ///	citrus fruit
EPSPS	glyphosate and/or sulphosate	cotton
EPSPS	glyphosate and/or sulphosate	rice
EPSPS	glyphosate and/or sulphosate	Brassica
EPSPS	glyphosate and/or sulphosate	potatoes
EPSPS	glyphosate and/or sulphosate	tomatoes
EPSPS	glyphosate and/or sulphosate	pumpkin
EPSPS	glyphosate and/or sulphosate	soya beans
EPSPS	glyphosate and/or sulphosate	maize
EPSPS	glyphosate and/or sulphosate	wheat
EPSPS	glyphosate and/or sulphosate	pome fruit
EPSPS	glyphosate and/or sulphosate	stone fruit
EPSPS	glyphosate and/or sulphosate	citrus fruit
GS	gluphosinate and/or bialaphos	cotton
GS	gluphosinate and/or bialaphos	rice
GS	gluphosinate and/or bialaphos	Brassica
GS	gluphosinate and/or bialaphos	potatoes
GS	gluphosinate and/or bialaphos	tomatoes
GS	gluphosinate and/or bialaphos	pumpkin
GS	gluphosinate and/or bialaphos	soya beans
GS	gluphosinate and/or bialaphos	maize
GS	gluphosinate and/or bialaphos	wheat
GS	gluphosinate and/or bialaphos	pome fruit
GS	gluphosinate and/or bialaphos	stone fruit
GS	gluphosinate and/or bialaphos	citrus fruit

*** included are sulphonylurea compounds, imidazolinones, triazolopyrimidines, dimethoxypyrimidines and N-acylsulphonamides:

5 sulphonylurea compounds such as chlorsulfuron, chlorimuron, ethamethsulfuron, metsulfuron, primisulfuron, prosulfuron, triasulfuron, cinosulfuron, trifusulfuron, oxasulfuron, bensulfuron, tribenuron, ACC 322140, fluzasulfuron, ethoxysulfuron, fluzadsulfuron, nicosulfuron, rimsulfuron, thifensulfuron, pyrazosulfuron, clopyrasulfuron, NC 330, azimsulfuron, imazosulfuron, sulfosulfuron, amidosulfuron, flupyrsulfuron, CGA 362622

imidazolinones such as imazamethabenz, imazaquin, imazamethypyr, imazethapyr, imazapyr and imazamox;

10 triazolopyrimidines such as DE 511, flumetsulam and chloransulam;

dimethoxypyrimidines such as, for example, pyriithiobac, pyriminobac, bispyribac and pyribenzoxim.

+++ Tolerance to diclofop-methyl, fluazifop-P-butyl, haloxyfop-P-methyl, haloxyfop-P-ethyl, quizalafop-P-ethyl, clodinafop-propargyl, fenoxaprop-ethyl, tepraloxydim, alloxydim, sethoxydim, 15 cycloxydim, cloproxydim, tralkoxydim, butoxydim, caloxydim, clefoxydim, clethodim.

&&& chloroacetanilides such as, for example, alachlor, acetochlor, dimethenamid

/// Protox inhibitors: for example diphenyl ethers such as, for example, acifluorfen, aclonifen, bifenox, chlornitrofen, ethoxyfen, fluoroglycofen, fomesafen, lactofen, oxyfluorfen; imides such as, for example, azafenidin, carfentrazone-ethyl, cinidon-ethyl, flumiclorac-pentyl, flumioxazin, 20 fluthiacet-methyl, oxadiargyl, oxadiazon, pentoxazone, sulfentrazone, imides and other compounds such as, for example, flumipropyn, flupropacil, nipyraclufen and thidiazimin; and also fluazola and pyraflufen-ethyl.

Table 4

List of examples of transgenic plants having modified properties:

Transgenic plants	Transgenically modified properties
Dianthus caryophyllus (carnation) line 66 [Florigene Pty. Ltd.]	Longer-lasting as a result of reduced ethylene accumulation owing to the expression of ACC synthase; tolerant to sulphonylurea herbicides
Dianthus caryophyllus (carnation) lines 4, 11, 15, 16 [Florigene Pty. Ltd.]	Modified flower colour; tolerant to sulphonylurea herbicides
Dianthus caryophyllus (carnation) lines 959A, 988A, 1226A, 1351A, 1363A, 1400A [Florigene Pty. Ltd.]	Modified flower colour; tolerant to sulphonylurea herbicides
Brassica napus (Argentine oilseed rape) lines 23-18-17, 23-198 [Monsanto Company]	Modified fatty acid content in the seeds
Zea mays L. (maize) lines REN-ØØØ38-3 (LY038) [Monsanto Company]	Elevated lysine content
Zea mays L. (maize) lines REN-ØØØ38-3, MON-ØØ81Ø-6 (MON-ØØ81Ø-6 x LY038) [Monsanto Company]	Elevated lysine content, corn borer resistant
Cucumis melo (melon) lines A, B [AgriTope Inc.]	Delayed maturity as a result of the expression of S-adenosylmethionine hydrolase

Carica papaya (papaya) lines 55-1/63-1 [Cornell University]	Resistant to the papaya ring spot virus (PRSV)
Solanum tuberosum L. (potato) lines RBMT21-129, RBMT21-350, RBMT22-082 [Monsanto Company]	Resistant to the Colorado beetle and the potato leaf roll virus (PLRV)
Solanum tuberosum L. (potato) lines RBMT15-101, SEMT15-02, SEMT15-15 [Monsanto Company]	Resistant to the Colorado beetle and the potato virus Y (PVY)
Glycine max L. (soya bean) lines DD-Ø26ØØ5-3 (G94-1, G94-19, G168 [DuPont Canada Agricultural Products]	Modified fatty acid content in the seeds, in particular elevated oleic acid content
Glycine max L. (soya bean) lines OT96-15 [Agriculture & Agri-Food Canada]	Modified fatty acid content in the seeds, in particular reduced linolenic acid content
Cucurbita pepo (pumpkin) line ZW20 [Upjohn (USA); Seminis Vegetable Inc. (Canada)]	Resistant to viral infections, watermelon mosaic virus (WMV) 2 and zucchini yellow mosaic virus (ZYMV)
Cucurbita pepo (pumpkin) line CZW-3 [Asgrow (USA); Seminis Vegetable Inc. (Canada)]	Resistance to viral infections, cucumber mosaic virus (CMV), watermelon mosaic virus (WMV) 2 and zucchini yellow mosaic virus (ZYMV)
Nicotiana tabacum L. (tobacco) line Vector 21-41 [Vector Tobacco]	Reduced nicotine content

Lycopersicon esculentum (tomato) line 1345-4 [DNA Plant Technology]	Longer lasting as a result of reduced ethylene accumulation owing to the expression of ACC synthase
Lycopersicon esculentum (tomato) line 35 1 N [Agritope Inc.]	Delayed maturity as a result of the expression of S-adenosylmethionine hydrolase
Lycopersicon esculentum (tomato) line CGN-89322-3 (8338) [Monsanto Company]	Delayed maturity as a result of the expression of ACCd
Lycopersicon esculentum (tomato) lines B, Da, F [Zeneca Seeds]	Delayed softening as a result of a reduced expression of polygalacturonase
Lycopersicon esculentum (tomato) line CGN-89564-2 (FLAVR SAVR) [Calgene Inc.]	Delayed softening as a result of a reduced expression of polygalacturonase

The good effect of the present invention's combinations of insecticides and transgenic plants is apparent from the examples which follow. The combinations display an effect which exceeds a simple summing of effects.

- 5 A synergistic effect in insecticides and acaricides is always present when the effect of the present invention's combinations is greater than the expected effect, which for a given combination can be calculated after S.R. Colby, Weeds 15 (1967), 20-22 as follows:

when

10 X is the kill rate expressed in % of the untreated control on using active compound A at an application rate of m g/ha or in a concentration of m ppm,

Y is the kill rate expressed in % of the untreated control on using active compound B at an

- 123 -

application rate of $\underline{n}$ g/ha or in a concentration of $\underline{n}$ ppm and

Z is the kill rate expressed in % of the untreated control on using active compound C at an application rate of $\underline{r}$ g/ha or in a concentration of $\underline{r}$ ppm,

5

E is the efficacy on using active compounds A and B and C in application rates of $\underline{m}$ and $\underline{n}$ and $\underline{r}$ g/ha

then

$$E = X + Y + Z - \frac{(X \cdot Y + X \cdot Z + Y \cdot Z)}{100} + \frac{X \cdot Y \cdot Z}{10\,000}$$

10

If the actual kill rate is greater than calculated, then the killing effect of the combination is superadditive, i.e., a synergistic effect is present. In this case, the actually observed kill rate has to be greater than that calculated from the above-recited formula for the expected kill rate (E).

Examples

The invention is more particularly elucidated by the examples which follow without being restricted by them.

Example 1: Leaf application for *Aphis gossypii*/cotton

- 5 Individually potted transgenic cotton plants with Lepidoptera resistance and herbicide resistance (line DP444 BG/RR) are treated with the desired product against the cotton aphid (*Aphis gossypii*).

After the desired time, the kill in % is determined. 100% means that all the aphids were killed; 0% means that no aphids were killed.

- 10 Compared with the control plants not treated according to the invention, a distinct improvement in the control of the pests is evident.

Table B1-1: *Aphis gossypii* – test (leaf application)

<u>Active compound</u>	<u>Concentration</u> <u>in ppm</u>	<u>Kill</u> <u>in % after 4 d</u>
(I-1)	0.16	0
Fipronil	4	25
DP 444 BG/RR Cry1Ac&cp4 epsps		0
(I-1) + Fipronil 1 : 25 onto DP 444 BG/RR according to the invention	0.16 + 4	obs.* calc.** 80 25

*obs. = activity observed

** calc. = activity calculated by Colby formula

Example 2: Leaf application for *Heliothis armigera*/cotton

Individually potted transgenic cotton plants with Lepidoptera resistance and herbicide resistance (line DP444 BG/RR) are treated with the desired product against the cotton ball worm (*Heliothis armigera*).

- 5 After the desired time, the kill in % is determined. 100% means that all the caterpillars were killed; 0% means that no caterpillars were killed.

Compared with the control plants not treated according to the invention, a distinct improvement in the control of the pests is evident.

Table B2-1: *Heliothis armigera* – test (leaf application)

<u>Active compound</u>	<u>Concentration</u> <u>in ppm</u>	<u>Kill</u> <u>in % after 4 d</u>
(I-1)	0.032	50
Abamectin	0.16	30
Clothianidin	0.16	0
Spinosad	0.16	20
DP 444 BG/RR Cry1Ac&cp4 epsps		0
(I-1) + Abamectin 1 : 5 onto DP 444 BG/RR according to the invention	0.032 + 0.16	<u>obs.*</u> <u>calc.**</u> 90 65

- 126 -

<u>Active compound</u>	<u>Concentration</u> <u>in ppm</u>	<u>Kill</u> <u>in % after 4 d</u>
(I-1) + Clothianidin 1 : 5 onto DP 444 BG/RR according to the invention	0.032 + 0.16	<u>obs.*</u> <u>calc.**</u> 100 50
(I-1) + Spinosad 1 : 5 onto DP 444 BG/RR according to the invention	0.032 + 0.16	<u>obs.*</u> <u>calc.**</u> 80 60

*obs. = activity observed

** calc. = activity calculated by Colby formula

- 127 -

Example 3: Leaf application for *Spodoptera frugiperda*/cotton

Individually potted transgenic cotton plants with Lepidoptera resistance and herbicide resistance (line DP444 BG/RR) are treated with the desired product against the army worm (*Spodoptera frugiperda*)

- 5 After the desired time, the kill in % is determined. 100% means that all the caterpillars were killed; 0% means that no caterpillars were killed.

Compared with the control plants not treated according to the invention, a distinct improvement in the control of the pests is evident.

Table B3-1: *Spodoptera frugiperda* – test (leaf application)

<u>Active compound</u>	<u>Concentration</u> <u>in ppm</u>	<u>Kill</u> <u>in % after 4 d</u>
(I-1)	0.032	70
Clothianidin	0.16	0
DP 444 BG/RR Cry1Ac&cp4 epsps		0
(I-1) + Clothianidin 1 : 5 onto DP 444 BG/RR according to the invention	0.032 + 0.16	obs.* calc.** 100 70

Table B3-2: *Spodoptera frugiperda* – test (leaf application)

<u>Active compound</u>	<u>Concentration</u> <u>in ppm</u>	<u>Kill</u> <u>in % after 6 d</u>
(I-1)	0.032	15
Imidacloprid	4	10
DP 444 BG/RR Cry1Ac&cp4 epsps		0
(I-1) + Imidacloprid onto DP 444 BG/RR according to the invention	0.032 + 4	<u>obs.*</u> <u>calc.**</u> 40 23.5

*obs. = activity observed

** calc. = activity calculated by Colby formula

Example 4: Leaf application for Spodoptera exigua/maize

Pots each holding 5 transgenic maize plants with Lepidoptera, Coleoptera and/or herbicide resistance are treated in 2 replications against the small mottled willow (*Spodoptera exigua*).

After the desired time, the kill in % is determined. 100% means that all the caterpillars were killed;

5 0% means that no caterpillars were killed.

Compared with the control plants not treated according to the invention, a distinct improvement in the control of the pests is evident.

Table B4-1: *Spodoptera exigua* – test (leaf application)

<u>Active compound</u>	<u>Concentration</u> <u>in ppm</u>	<u>Kill</u> <u>in % after 1 d</u>
(I-1)	0.16	0
Clothianidin	4	0
Imidacloprid	4	0
VSN-BT Bt MON 810		10
HCL201CRW2RR2xLH324 Cry3Bb1&cp4 epsps		0
FR1064LLxFR 2108 (Liberty Link) herbicide resistance		0
(I-1) + Clothianidin 1 : 25 onto HCL201CRW2RR2xLH324 according to the invention	0.16 + 4	<u>obs.*</u> <u>calc.**</u> 20 0

- 130 -

<u>Active compound</u>	<u>Concentration</u> <u>in ppm</u>	<u>Kill</u> <u>in % after 1 d</u>
(I-1) + Clothianidin 1 : 25 onto FR1064LLxFR 2108 according to the invention	0.16 + 4	<u>obs.*</u> <u>calc.**</u> 20 0
(I-1) + Imidacloprid 1 : 25 onto VSN-BT according to the invention	0.16 + 4	<u>obs.*</u> <u>calc.**</u> 30 10

Table B4-2: *Spodoptera exigua* – test (leaf application)

<u>Active compound</u>	<u>Concentration</u> <u>in ppm</u>	<u>Kill</u> <u>in % after 4 d</u>
(I-1)	0.16	0
	0.032	0
Abamectin	0.16	35
Fipronil	4	0
Spinosad	0.16	20
VSN-RR BT Cry1Ab&cp4 epsps		40
VSN-RR cp4 epsps		0
VSN-BTCRW Cry1Ab&Cry3Bb1		50
VSN-BT Bt MON810		55
HCL201CRW2RR2xLH324 Cry3Bb1&cp4 epsps		0
FR1064LLxFR 2108 (Liberty Link) herbicide resistance		0
(I-1) + Abamectin 1 : 1 onto VSN-RR BT according to the invention	0.16 + 0.16	<u>obs.*</u> <u>calc.**</u> 80 61

<u>Active compound</u>	<u>Concentration</u> <u>in ppm</u>	<u>Kill</u> <u>in % after 4 d</u>
(I-1) + Abamectin 1 : 1 onto VSN-RR according to the invention	0.16 + 0.16	<u>obs.*</u> <u>calc.**</u> 80 35
(I-1) + Abamectin 1 : 1 onto VSN-BTCRW according to the invention	0.16 + 0.16	<u>obs.*</u> <u>calc.**</u> 90 67.5
(I-1) + Abamectin 1 : 1 onto VSN-BT according to the invention	0.16 + 0.16	<u>obs.*</u> <u>calc.**</u> 80 70.75
(I-1) + Abamectin 1 : 1 onto HCL201CRW2RR2xLH324 according to the invention	0.16 + 0.16	<u>obs.*</u> <u>calc.**</u> 90 35
(I-1) + Abamectin 1 : 1 onto FR1064LLXFR 2108 according to the invention	0.16 + 0.16	<u>obs.*</u> <u>calc.**</u> 100 35
(I-1) + Fipronil 1 : 125 onto HCL201CRW2RR2xLH324 according to the invention	0.032 + 4	<u>obs.*</u> <u>calc.**</u> 50 0
(I-1) + Fipronil 1 : 125 onto FR1064LLXFR 2108 according to the invention	0.032 + 4	<u>obs.*</u> <u>calc.**</u> 50 0
(I-1) + Spinosad 1 : 5 onto VSN-RR BT according to the invention	0.032 + 0.16	<u>obs.*</u> <u>calc.**</u> 80 52
(I-1) + Spinosad 1 : 5 onto VSN-RR according to the invention	0.032 + 0.16	<u>obs.*</u> <u>calc.**</u> 80 20

<u>Active compound</u>	<u>Concentration</u> <u>in ppm</u>	<u>Kill</u> <u>in % after 4 d</u>
(I-1) + Spinosad 1 : 5 onto VSN-BTCRW according to the invention	0.032 + 0.16	<u>obs.*</u> <u>calc.**</u> 90 60
(I-1) + Spinosad 1 : 5 onto HCL201CRW2RR2xLH324 according to the invention	0.032 + 0.16	<u>obs.*</u> <u>calc.**</u> 70 20
(I-1) + Spinosad 1 : 5 onto FR1064LLXFR 2108 according to the invention	0.032 + 0.16	<u>obs.*</u> <u>calc.**</u> 90 20

*obs. = activity observed

** calc. = activity calculated by Colby formula

Example 5: Leaf application for Spodoptera frugiperda/maize

Pots each holding 5 transgenic maize plants with Lepidoptera, Coleoptera and/or herbicide resistance are treated in 2 replications against the army worm (*Spodoptera frugiperda*).

After the desired time, the kill in % is determined. 100% means that all the caterpillars were killed; 0% means that no caterpillars were killed.

Compared with the control plants not treated according to the invention, a distinct improvement in the control of the pests is evident.

10 Table B5-1: *Spodoptera frugiperda* – test (leaf application)

<u>Active compound</u>	<u>Concentration</u> <u>in ppm</u>	<u>Kill</u> <u>in % after 1 d</u>
(I-1)	0.16	0
Abamectin	0.16	10

<u>Active compound</u>	<u>Concentration</u> <u>in ppm</u>	<u>Kill</u> <u>in % after 1 d</u>
Imidacloprid	4	0
HCL201CRW2RR x LH 324 Cry3Bb1&CP4epsps		0
FR1064LLxFR 2108 (Liberty Link) herbicide resistance		0
(I-1) + Abamectin 1 : 1 onto FR1064LLXFR 2108 according to the invention	0.16 + 0.16	<u>obs.*</u> <u>calc.**</u> 40 10
(I-1) + Imidacloprid 1 : 25 onto HCL201CRW2RRxLH 324 according to the invention	0.16 + 4	<u>obs.*</u> <u>calc.**</u> 20 0

Table B5-2: *Spodoptera frugiperda* – test (leaf application)

<u>Active compound</u>	<u>Concentration</u> <u>in ppm</u>	<u>Kill</u> <u>in % after 4 d</u>
(I-1)	0.0064	0
Spinosad	0.16	0
VSN-RR BT Cry1Ab&cp4 epsps		0
VSN-RR cp4 epsps		0
VSN-BT Bt MON810		85
HCL201CRW2RR2xLH324 Cry3Bb1&cp4 epsps		0
FR1064LLxFR 2108 (Liberty Link) herbicide resistance		0
(I-1) + Spinosad 1 : 5 onto VSN- RR BT according to the invention	0.0064 + 0.16	<u>obs.*</u> <u>calc.**</u> 100 0

- 136 -

<u>Active compound</u>	<u>Concentration</u> <u>in ppm</u>	<u>Kill</u> <u>in % after 4 d</u>
(I-1) + Spinosad 1 : 5 onto VSN-RR according to the invention	0.0064 + 0.16	<u>obs.*</u> <u>calc.**</u> 65 0
(I-1) + Spinosad 1 : 5 onto VSN-BT according to the invention	0.0064 + 0.16	<u>obs.*</u> <u>calc.**</u> 100 85
(I-1) + Spinosad 1 : 5 onto HCL201CRW2RR2xLH324 according to the invention	0.0064 + 0.16	<u>obs.*</u> <u>calc.**</u> 85 0
(I-1) + Spinosad 1 : 5 onto FR1064LLXFR 2108 according to the invention	0.0064 + 0.16	<u>obs.*</u> <u>calc.**</u> 100 0

*obs. = activity observed

** calc. = activity calculated by Colby formula

Example 6: Drench application for *Spodoptera frugiperda*/maize

The earth of the pots each with 5 transgenic maize plants with Lepidoptera, Coleoptera and/or herbicide resistance is drenched with the desired product. Then, the plants are infected with larvae of the army worm (*Spodoptera frugiperda*).

- 5 After the desired time, the kill in % is determined. 100% means that all the caterpillars were killed; 0% means that no caterpillars were killed.

Compared with the control plants not treated according to the invention, a distinct improvement in the control of the pests is evident.

Table B6-1: *Spodoptera frugiperda* – test (drench application)

<u>Active compound</u>	<u>Concentration</u> <u>in ppm</u>	<u>Kill</u> <u>in % after 1 d</u>
(I-1)	20	30
Abamectin	4	0
HCL201CRW2RR x LH 324 Cry3Bb1&CP4epsps		0
(I-1) + Abamectin 5 : 1 onto HCL201CRW2RRxLH 324 according to the invention	20 + 4	<u>obs.*</u> <u>calc.**</u> 60 30

10 *obs. = activity observed

** calc. = activity calculated by Colby formula

Table B6-2: *Spodoptera frugiperda* – test (drench application)

<u>Active compound</u>	<u>Concentration</u> <u>in ppm</u>	<u>Kill</u> <u>in % after 3 d</u>
(I-1)	20	45
Imidacloprid	4	0
HCL201CRW2RR x LH 324 Cry3Bb1&CP4epsps		0
(I-1) + Imidacloprid 5 : 1 onto HCL201CRW2RRxLH 324 according to the invention	20 + 4	<u>obs.*</u> <u>calc.**</u> 65 45

*obs. = activity observed

** calc. = activity calculated by Colby formula

Table B6-3: *Spodoptera frugiperda* – test (drench application)

<u>Active compound</u>	<u>Concentration</u> <u>in ppm</u>	<u>Kill</u> <u>in % after 4 d</u>
(I-1)	20	50
	4	0
Abamectin	4	0
Clothianidin	4	10
Fipronil	20	0
Spinosad	4	0
VSN-RR BT Cry1Ab&cp4 epsps		55
VSN-RR cp4 epsps		0
VSN-BTCRW Cry1Ab&Cry3Bb1		30
VSN-BT Bt MON810		40

<u>Active compound</u>	<u>Concentration</u> <u>in ppm</u>	<u>Kill</u> <u>in % after 4 d</u>
HCL201CRW2RR2xLH324 Cry3Bb1&cp4 epsps		0
(I-1) + Abamectin 1 : 1 onto VSN-RR BT according to the invention	4 + 4	<u>obs.*</u> <u>calc.**</u> 90 55
(I-1) + Abamectin 1 : 1 onto VSN-RR according to the invention	4 + 4	<u>obs.*</u> <u>calc.**</u> 60 0
(I-1) + Abamectin 1 : 1 onto VSN-BT according to the invention	4 + 4	<u>obs.*</u> <u>calc.**</u> 70 40
(I-1) + Clothianidin 1 : 1 onto VSN-BT according to the invention	4 + 4	<u>obs.*</u> <u>calc.**</u> 70 46
(I-1) + Fipronil 1 : 1 onto VSN- RR according to the invention	20 + 20	<u>obs.*</u> <u>calc.**</u> 90 50
(I-1) + Fipronil 1 : 1 onto HCL201CRW2RR2xLH324	20 + 20	<u>obs.*</u> <u>calc.**</u> 80 50

- 141 -

according to the invention		
(I-1) + Spinosad 1 : 1 onto VSN-RR according to the invention	4 + 4	<u>obs.</u>* <u>calc.</u>** 60 0
(I-1) + Spinosad 1 : 1 onto VSN-BTCRW according to the invention	20 + 4	<u>obs.</u>* <u>calc.</u>** 80 65
(I-1) + Spinosad 1 : 1 onto VSN-BT according to the invention	4 + 4	<u>obs.</u>* <u>calc.</u>** 60 40
(I-1) + Spinosad 1 : 1 onto HCL201CRW2RR2xLH324 according to the invention	4 + 4	<u>obs.</u>* <u>calc.</u>** 70 0

*obs. = activity observed

** calc. = activity calculated by Colby formula

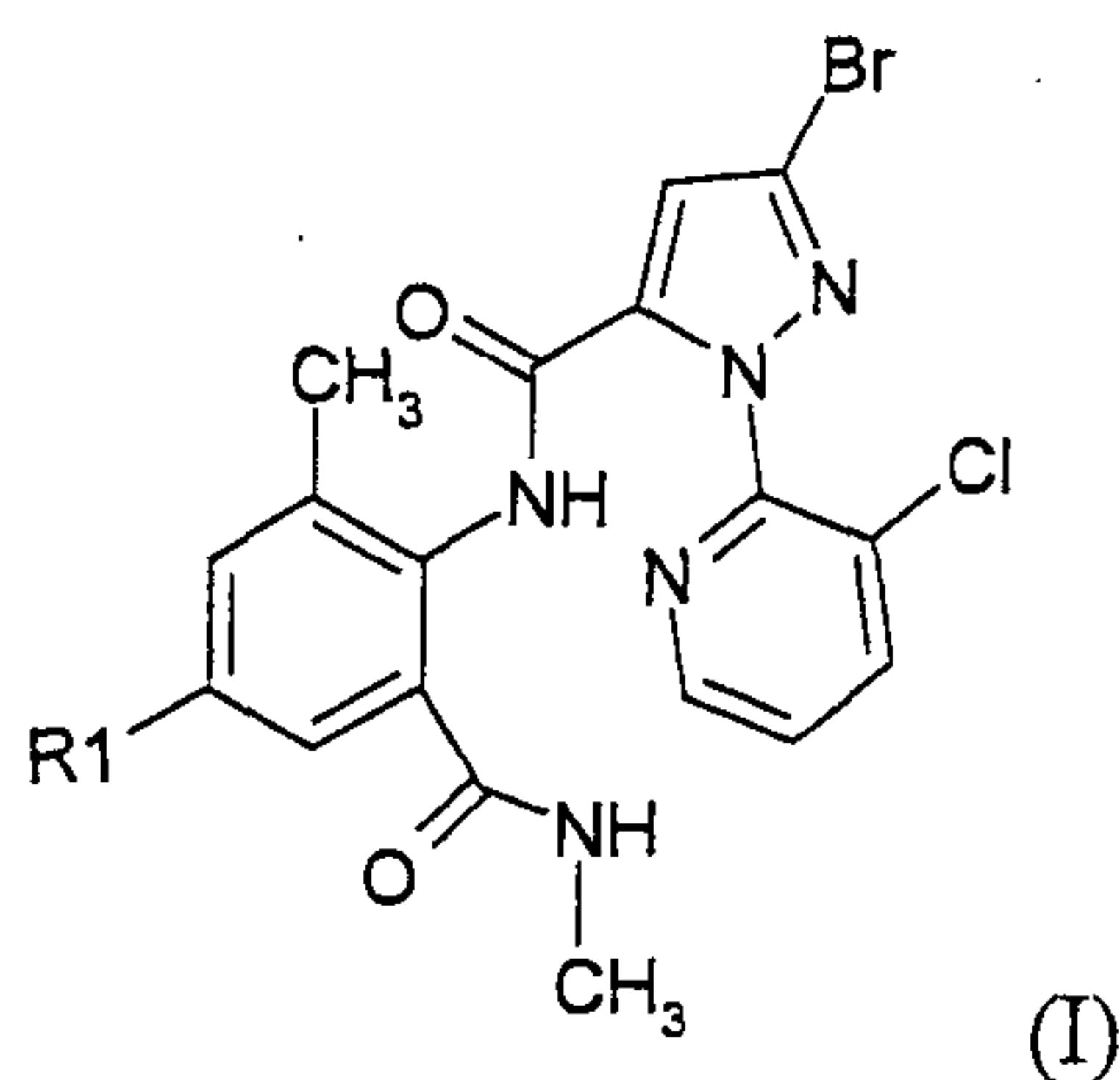
30725-943

- 142 -

CLAIMS:

1. Method for improving the utilization of the production potential of a transgenic plant by controlling harmful pests, the method comprising treating the transgenic plant by leaf- or drench-application with an effective amount of a mixture of:

5 (i) at least one compound of the formula (I)



where R¹ represents chlorine or cyano; and

(ii) at least one compound selected from: abamectin, beta-cyfluthrin, clothianidin, fipronil, imidacloprid, and spinosad,

10 wherein the transgenic plant contains at least one gene for one or more *Bacillus thuringiensis* (Bt) toxins selected from the Cry family, and wherein the at least one gene is selected from cry1Ab, cry1Ac, cry3A, cry3B and cry9C.

2. Method according to claim 1, wherein R¹ represents chlorine.

3. Method according to claim 1 or 2, wherein (ii) is beta-cyfluthrin.

15 4. Method according to any one of claims 1 to 3, wherein the transgenic plant is selected from vegetables, maize, soya bean, cotton, rice, tobacco, rape, potatoes, sugar beet and sunflowers.

5. Method according to any one of claims 1 to 4, wherein the transgenic plant, in addition to the genes for one or more Bt toxins, expresses or contains

30725-943

- 143 -

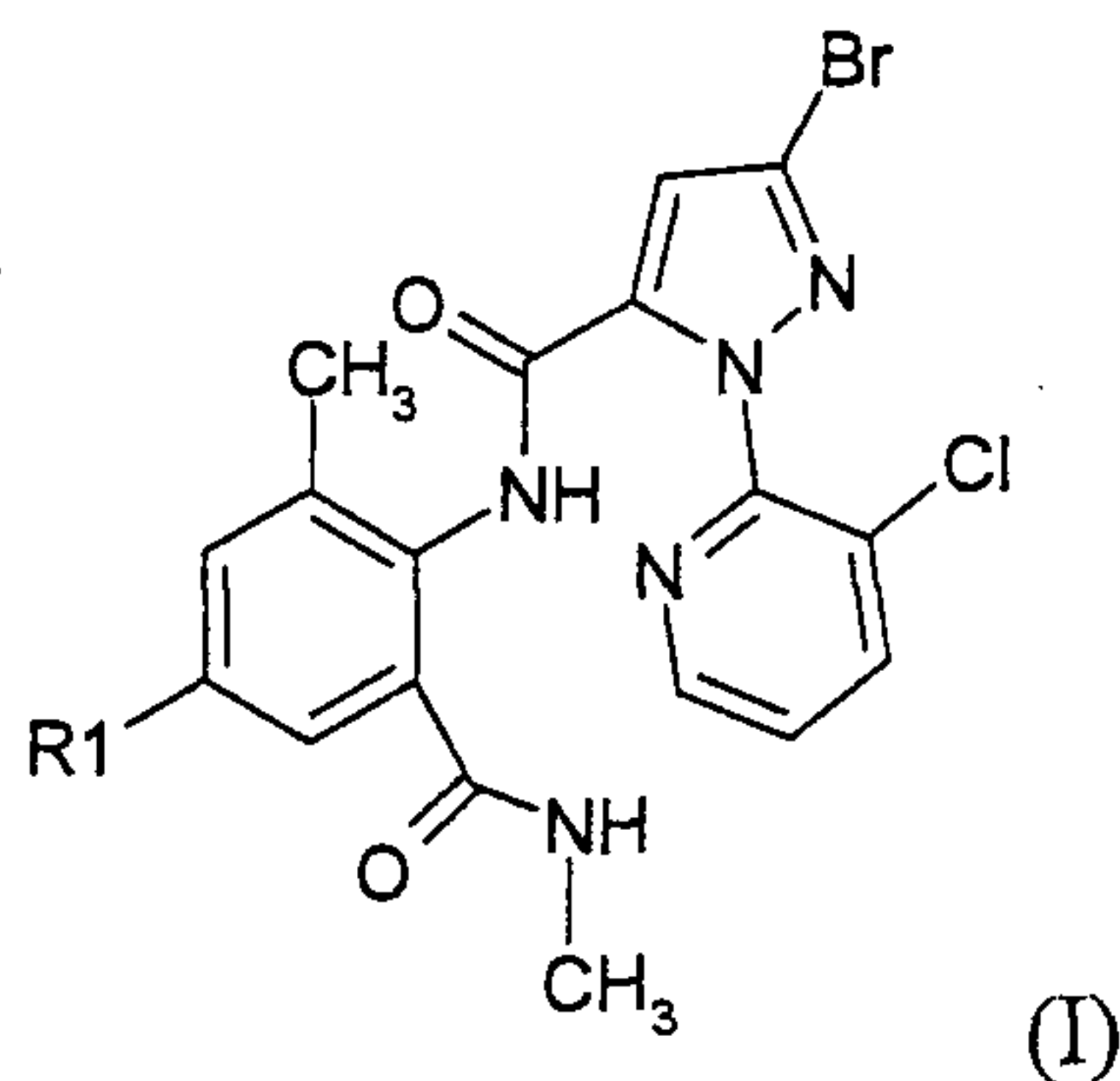
- genes for expressing a protease or peptidase inhibitor,

- genes of herbicide resistance to glufosinate or glyphosate by expression of the pat gene or bar gene, or

5 - genes for becoming resistant to nematodes, fungi or viruses by expressing a gluconase, chitinase.

6. A mixture of:

(i) a compound of the formula (I)



wherein R¹ represents chlorine or cyano; and

10 (ii) the compound abamectin, beta-cyfluthrin, clothianidin, fipronil, imidacloprid, or spinosad,

for use in controlling a harmful pest on a transgenic plant, wherein the transgenic plant contains a gene for a *Bacillus thuringiensis* toxin, wherein the gene is selected from cry1Ab, cry1Ac, cry3A, cry3B or cry9C.

15 7. A mixture according to claim 6; wherein R¹ represents chlorine.

8. A mixture according to claim 6 or 7, wherein (ii) is beta-cyfluthrin.