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- with information concerning incorporation by reference of missing parts and/or elements (Rule 20.6)

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(54) Title: PLANTS RESISTANT TO INSECT PESTS

(57) Abstract: The present invention relates to genetic control of infestation by insect pest species, particularly prevention and/or control of pest infestation of plants, using interfering ribonucleic acid (RNA) molecules. The invention provides transgenic plants that (i) express or are capable of expressing interfering RNAs of the invention and (ii) are resistant to infestation by insect pest species.



INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2012/057333

A. CLASSIFICATION OF SUBJECT MATTER INV. C12N15/82 C07K14/435 A01H5/00 A01H5/10 ADD.		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) C07K C12N A01H		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) EPO-Internal, BIOSIS, EMBASE, WPI Data, Sequence Search		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE EMBL [Online] 21 October 2005 (2005-10-21), "NADBB46TR Aedes aegypti infected with Dengue virus Pool library Aedes aegypti cDNA clone NADBB46, mRNA sequence.", XP002681238, retrieved from EBI accession no. EM EST:DV392288 Database accession no. DV392288 abstract; sequence	36-42,44
X	----- WO 2009/091864 A2 (PIONEER HI BRED INT [US]; DU PONT [US]; HERRMANN RAFAEL [US]; LASSNER) 23 July 2009 (2009-07-23) cited in the application the whole document -----	1-35
☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.		
* Special categories of cited documents : "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search 2 August 2012		Date of mailing of the international search report 07/11/2012
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016		Authorized officer Oderwald, Harald

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2012/057333

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of Item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-42, 44(all partially)

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-42, 44(all partially)

A transgenic plant, material thereof and plant cell expressing an interfering ribonucleic acid (RNAi) comprising a double-stranded silencing element wherein the target gene has a nucleotide sequence of SEQ ID NO: 1. Transgenic plants, seeds, hybrid seeds, methods for generating said transgenic plant, methods for preventing and/or controlling insect pest infestation, polynucleotides and hosts relating to said nucleotide sequence.

2-279. claims: 1-44(partially)

same as invention 1, but relating to a nucleotide sequence in the order given in claim 1, i.e. invention relates to SEQ ID NO: 174, ..., and invention 279 relates to SEQ ID NO: 389.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2012/057333

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2009091864 A2	23-07-2009	AU 2009206127 A1	23-07-2009
		CN 102007215 A	06-04-2011
		US 2009192117 A1	30-07-2009
		WO 2009091864 A2	23-07-2009
