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28 December 2006

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(54) Title: SCARECROW-LIKE STRESS-RELATED POLYPEPTIDES AND METHOD SOF USE IN PLANTS

(57) Abstract: A transgenic plant transformed with an 'SLSRP coding nucleic acid, wherein expression of the nucleic acid sequence in the plant results in increased growth under water-limited conditions and/or increased tolerance to an environmental stress as compared to a wild type variety of the plant. Also provided are agricultural products, including seeds, produced by the transgenic plants. Also provided are isolated SLSRPs, and isolated SLSRP coding nucleic acids, and vectors and host cells containing the latter.

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**INTERNATIONAL SEARCH REPORT**

International application No <b>PCT/US2005/037478</b>
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**A. CLASSIFICATION OF SUBJECT MATTER**  
 INV. C12N15/29 C12N15/82 A01H5/00

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)  
**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 practical, search terms used)  
**EPO-Internal, BIOSIS, Sequence Search, WPI Data**

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/019927 A1 (SHERMAN BRADLEY K ET AL) 29 January 2004 (2004-01-29) page 364; table 6	1-17
X	WO 03/008540 A (SYNGENTA PARTICIPATIONS AG; KREPS, JOEL; BRIGGS, STEVEN, P; COOPER, BR) 30 January 2003 (2003-01-30) page 62, line 21 - page 63, line 24; sequences 5123,5210,5525,9180	1-17
X	WO 02/16655 A (THE SCRIPPS RESEARCH INSTITUTE; SYNGENTA PARTICIPATIONS AG; HARPER, JE) 28 February 2002 (2002-02-28) page 101; claims 42,43; sequence 1111	1-17
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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	"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
"E" earlier document but published on or after the international filing date	"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
"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)	"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.
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search <b>28 April 2006</b>	Date of mailing of the international search report <b>- 1. 09. 2006</b>
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer  <b>Maddox, A</b>
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## INTERNATIONAL SEARCH REPORT

International application No

PCT/US2005/037478

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE EMBL [Online]  10 October 2003 (2003-10-10),  "Physcomitrella patens subsp. patens cDNA  clone:pphn7k07, 3' end, single read."  XP002378825  retrieved from EBI accession no.  EM_EST:BJ602203  Database accession no. BJ602203  the whole document</p> <p style="text-align: center;">-----</p>	1-4,6, 8-13
X	<p>DATABASE EMBL [Online]  27 April 2000 (2000-04-27), "gb03c10.y1  Moss EST library PPN Physcomitrella patens  cDNA clone PEP_SOURCE_ID:PPN070619 5',  mRNA sequence."  XP002378826  retrieved from EBI accession no.  EM_EST:AW738856  Database accession no. AW738856  the whole document</p> <p style="text-align: center;">-----</p>	1-4,6, 8-13
A	<p>JEANNEAU M ET AL: "Improvement of drought  tolerance in maize: Towards the functional  validation of the Zm-Asr1 gene and  increase of water use efficiency by  over-expressing C4-PEPC."  BIOCHIMIE (PARIS),  vol. 84, no. 11, November 2002 (2002-11),  pages 1127-1135, XP002378820  ISSN: 0300-9084  the whole document</p> <p style="text-align: center;">-----</p>	1-17
A	<p>SIVAMANI E ET AL: "IMPROVED BIOMASS  PRODUCTIVITY AND WATER USE EFFICIENCY  UNDER WATER DEFICIT CONDITIONS IN  TRANSGENIC WHEAT CONSTITUTIVELY EXPRESSING  THE BARLEY HVA1 GENE"  PLANT SCIENCE, LIMERICK, IE,  vol. 155, no. 1, 2000, pages 1-9,  XP000983688  ISSN: 0168-9452  the whole document</p> <p style="text-align: center;">-----</p>	1-17
A	<p>WO 01/77311 A (BASF PLANT SCIENCE GMBH; DA  COSTA SILVA, OSWALDO; BOHNERT, HANS, J;  VA) 18 October 2001 (2001-10-18)  the whole document</p> <p style="text-align: center;">-----</p> <p style="text-align: center;">-/--</p>	1-17

INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2005/037478

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>PYSH L D ET AL: "The GRAS gene family in Arabidopsis: Sequence characterization and basic expression analysis of the SCARECROW-LIKE genes"                      PLANT JOURNAL, BLACKWELL SCIENTIFIC PUBLICATIONS, OXFORD, GB,                      vol. 18, no. 1, April 1999 (1999-04), pages 111-119, XP002277092                      ISSN: 0960-7412                      the whole document                      -----</p>	1-17

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2005/037478

## Box 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 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 fee, this Authority did not invite payment of any additional fee.
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.:

1-17 all partially

### Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- 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: 1-17 all partially

Transgenic plant transformed with a nucleic acid encoding a polypeptide defined by SEQ ID NOS:1 and 2, nucleic acid defined by reference to SEQ ID NOS:1 and 2, methods for producing a transgenic plant based on SEQ ID NOS:1 and 2.

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2. claims: 1-17 all partially

Transgenic plant transformed with a nucleic acid encoding a polypeptide defined by SEQ ID NOS:3 and 4, nucleic acid defined by reference to SEQ ID NOS:3 and 4, methods for producing a transgenic plant based on SEQ ID NOS:3 and 4.

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3. claims: 1-17 all partially

Transgenic plant transformed with a nucleic acid encoding a polypeptide defined by SEQ ID NOS:5 and 6, nucleic acids defined by reference to SEQ ID NOS:5 and 6, methods for producing a transgenic plant based on SEQ ID NOS:5 and 6

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4. claims: 1-17 all partially

Transgenic plant transformed with a nucleic acid encoding a polypeptide defined by SEQ ID NOS:7 and 8, nucleic acid defined by reference to SEQ ID NOS:7 and 8, methods for producing a transgenic plant based on SEQ ID NOS:7 and 8

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## INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2005/037478

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2004019927	A1	29-01-2004	NONE
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WO 03008540	A	30-01-2003	EP 1402042 A2 31-03-2004
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WO 0216655	A	28-02-2002	AU 8681101 A 04-03-2002 CA 2420555 A1 28-02-2002 EP 1313867 A2 28-05-2003
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