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- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))
- with sequence listing part of description (Rule 5.2(a))

(88) Date of publication of the international search report:

22 July 2010

(54) Title: ISOLATED POLYNUCLEOTIDES AND POLYPEPTIDES AND METHODS OF USING SAME FOR INCREASING PLANT YIELD

(57) Abstract: Provided are methods of increasing yield, biomass, growth rate, vigor, oil content, abiotic stress tolerance and/or nitrogen use efficiency of a plant by expressing within the plant an exogenous polynucleotide comprising a nucleic acid sequence at least 80 % identical to SEQ ID NO: 905, 882, 1-12, 15-105, 203-297, 299-523, 845-881, 883-904, 906-925 or 933; or an exogenous polynucleotide encoding a polypeptide at least 80 % identical to SEQ ID NO: 172, 146, 106-117, 120-145, 147-171, 173-202, 524-616, 621-844, 926-931 or 932. Also provided isolated polynucleotide comprising a nucleic acid sequence selected from the group consisting of SEQ ID NOs: 905, 882, 1-13, 15-105, 203-523, 845-881, 883-904, 906-925 and 933, which can be used to increase yield, biomass, growth rate, vigor, oil content, abiotic stress tolerance and/or nitrogen use efficiency of a plant.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB 09/54774

A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - C12Q 1/68, C07H 21/04; C12N 15/82 (2010.01) USPC - 435/6, 536/23.6, 800/278, 800/295 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) USPC: 435/6, 536/23.6, 800/278, 800/295 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched USPC: 435/6; 536/23.6; 800/287, 281, 284, 278, 295 Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) Electronic data bases searched: PubWEST (EPAB, PGPB, USPT, JPAB); Google Scholar; GenCore Sequence Search (NT,AA) Search Terms: transgenic plant, yield, biomass, growth rate, abiotic stress, exogenous(nucleic or polynucleotide or polypeptide or peptide or protein), arabidopsis, SEQ ID NOs: 1,106,146,172, 882,905		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2006/0143729 A1 (ALEXANDROV et al.) 29 June 2006 (29.06.2006). Especially SEQ ID NO: 2623, para [0009], [0030], [0057].	1, 5
X	US 2008/0072340 A1 (TROUKHAN et al.) 20 March 2008 (20.03.2008). Especially pg 51 table 1 SEQ ID NO: 1206, para [0010], [0043], [0044], [0052], [0072]-[0090]], [0175].	3, 4, 7-11, 13, 19
X ----- Y	GenBank: BT029447. Arabidopsis thaliana At5g06690 mRNA, complete cds. [online] 15 November 2006 [retrieved 25 May 2010]. Available on the internet: < http://www.ncbi.nlm.nih.gov/nuccore/117958720 >. Especially pg 1.	6 --- 2
Y	US 2002/0160378 A1 (HARPER et al.) 31 October 2002 (31.01.2002). Especially SEQ ID NO: 148, para [0011].	2
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/>		
* 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 25 May 2010 (25.05.2010)		Date of mailing of the international search report 02 JUN 2010
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201		Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB 09/54774

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.: 12,14-18,20,21
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:

- 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 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.:

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.