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(54) Title: BIODIESEL SOLVENTS IN PESTICIDE COMPOSITIONS

(57) Abstract: Disclosed are pesticide compositions that utilize biodiesel as a solvent. The disclosed compositions may be utilized for controlling pests., such as nematodes and weeds, and for enhancing growth of plants.

# INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER				
INV.	A01N25/04	A01N25/32	A01N31/06	A01N31/08
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According to International Patent Classification (IPC) or to both national classification and IPC

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Minimum documentation searched (classification system followed by classification symbols)

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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, 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	WO 2008/151725 A1 (BAYER CROPSCIENCE AG [DE]; VERMEER RONALD [DE]; EBERHARD MANUELA [DE]); 18 December 2008 (2008-12-18) page 4, line 18 - page 5, line 15 page 19; example 1 page 17, line 15 - line 25 page 6, line 10 - line 22 page 29; table 7	1,2,6-9, 15-17
Y	----- US 7 314 848 B1 (KILLIK ROBERT W [AU] ET AL) 1 January 2008 (2008-01-01)	3-5, 10-13,18
X	----- column 2, line 33 - line 48 column 2, line 12 - line 27 column 6; table 1	1,6-8, 12,13, 15-17
Y	----- -/-	2-5, 9-11,18

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Date of the actual completion of the international search	Date of mailing of the international search report
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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, Fax: (+31-70) 340-3016	Authorized officer  Sawicki, Marcin

## INTERNATIONAL SEARCH REPORT

International application No PCT/US2011/026986
---

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2008/300318 A1 (WANG YUEH [US] ET AL) 4 December 2008 (2008-12-04)	14,16
Y	page 2, paragraphs 14, 24, 26 ----- US 5 057 141 A (RODRIQUEZ-KABANA R [US] ET AL) 15 October 1991 (1991-10-15) column 1 - column 2 -----	1-5, 9-13, 15-18 1-5,12, 13,15-18
Y	R. W. SMILEY ET AL: "Anhydrous ammonia as soil fungicide against Fusarium and fungicidal activity in the ammonia retention zone", PHYTOPATHOLOGY, vol. 60, 31 August 1970 (1970-08-31), pages 1227-1231, XP055013072, DOI: <a href="http://www.apsnet.org/publications/phytopathology/backissues/Documents/1970Articles/Phyto60n08_1227.pdf">http://www.apsnet.org/publications/phytopathology/backissues/Documents/1970Articles/Phyto60n08_1227.pdf</a> abstract -----	9,10
Y	US 6 524 998 B1 (KLOEPPER JOSEPH W [US] ET AL) 25 February 2003 (2003-02-25) column 7, line 29 - line 63 column 6, line 60 - line 66 column 17; table 8 -----	1-18
Y	US 2006/089263 A1 (RODRIGUEZ-KABANA RODRIGO [US] ET AL) 27 April 2006 (2006-04-27) page 1, paragraph 6 page 3, paragraph 34 - page 4, paragraph 54 -----	1-8, 11-18
Y	US 2009/275474 A1 (RODRIGUEZ-KABANA RODRIGO [US] ET AL) 5 November 2009 (2009-11-05) paragraph [0006] -----	1-8, 11-18
Y	DAVID J. CHITWOOD: "1", ANNUAL REVIEW OF PHYTOPATHOLOGY, vol. 40, no. 1, 1 September 2002 (2002-09-01), pages 221-249, XP055013075, ISSN: 0066-4286, DOI: 10.1146/annurev.phyto.40.032602.130045 the whole document -----	1-5, 11-18
	-/-	

## INTERNATIONAL SEARCH REPORT

International application No
PCT/US2011/026986

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	T. M. MCCALLA ET AL: "Phytotoxic substances from soil microorganisms and crop residues", BACTERIOLOGICAL REVIEWS, vol. 28, no. 2, 1 June 1964 (1964-06-01), pages 181-207, XP055013076, page 186 -----	1,6-8, 11-18
Y	DAVIS E L ET AL: "Nematicidal activity of fatty acid esters on soybean cyst and root-knot nematodes", JOURNAL OF NEMATOLOGY, vol. 29, no. 4S, 1 December 1997 (1997-12-01), pages 677-684, XP002095791, SOCIETY OF NEMATOLOGISTS, COLLEGE PARK, MD, US ISSN: 0022-300X abstract -----	1-5, 11-18
Y	DATABASE WPI Week 200740 Thomson Scientific, London, GB; AN 2007-417171 XP002664553, & KR 2006 0118867 A (KOREA RES INST BIOSCIENCE & BIOTECHNOLOG) 24 November 2006 (2006-11-24) abstract -----	1,9-18

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2011/026986

Patent document cited in search report	Publication date	Patent family member(s)			Publication date
WO 2008151725	A1 18-12-2008	AR 066934 A1 AU 2008261348 A1 CA 2694028 A1 CN 101677528 A CO 6241135 A2 EP 2002719 A1 EP 2157852 A2 JP 2010530365 A KR 20100046110 A TW 200906296 A US 2010179228 A1 WO 2008151725 A1			23-09-2009 18-12-2008 18-12-2008 24-03-2010 20-01-2011 17-12-2008 03-03-2010 09-09-2010 06-05-2010 16-02-2009 15-07-2010 18-12-2008
US 7314848	B1 01-01-2008	US 7314848 B1 WO 0067573 A1			01-01-2008 16-11-2000
US 2008300318	A1 04-12-2008	AR 066623 A1 EP 2150108 A1 JP 2010528006 A TW 200913893 A US 2008300318 A1 WO 2008143961 A1 ZA 200907727 A			02-09-2009 10-02-2010 19-08-2010 01-04-2009 04-12-2008 27-11-2008 28-07-2010
US 5057141	A 15-10-1991	NONE			
US 6524998	B1 25-02-2003	AR 029620 A1 AT 301398 T AU 3385500 A DE 60021867 D1 DE 60021867 T2 DK 1168922 T3 EP 1168922 A1 ES 2246834 T3 IL 145131 A JP 2003529539 A TW 1262764 B US 6524998 B1 WO 0051435 A1			10-07-2003 15-08-2005 21-09-2000 15-09-2005 08-06-2006 19-12-2005 09-01-2002 01-03-2006 05-10-2006 07-10-2003 01-10-2006 25-02-2003 08-09-2000
US 2006089263	A1 27-04-2006	US 2006089263 A1 US 2008312087 A1			27-04-2006 18-12-2008
US 2009275474	A1 05-11-2009	NONE			
KR 20060118867	A 24-11-2006	NONE			