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(12) **United States Patent**
Tobler et al.(10) **Patent No.:** **US 9,314,022 B2**
(45) **Date of Patent:** **Apr. 19, 2016**(54) **FUNGICIDAL COMPOSITIONS**(71) Applicant: **Syngenta Crop Protection, LLC**,
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Greensboro, NC (US)(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.(21) Appl. No.: **14/031,538**(22) Filed: **Sep. 19, 2013**(65) **Prior Publication Data**

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Related U.S. Application Data

(62) Division

(56)

References Cited

FOREIGN PATENT DOCUMENTS

RU	2237996	10/2004
WO	9533818 A2	12/1995
WO	9619442 A1	6/1996
WO	9846607 A1	10/1998
WO	9914187 A1	3/1999
WO	9942447 A1	8/1999
WO	0187822 A1	11/2001
WO	0194339 A1	12/2001
WO	03070705 A1	8/2003
WO	03074491 A1	9/2003
WO	2004016088 A2	2/2004
WO	2004035589	4/2004
WO	2004067528 A1	8/2004
WO	2005085234 A2	9/2005
WO	2006037632	4/2006
WO	2006108552	10/2006
WO	2006120219 A1	11/2006
WO	2007009661	1/2007

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FUNGICIDAL COMPOSITIONS

This application is a divisional of U.S. patent application Ser. No. 12/597,221 filed Mar. 10, 2010, which was a 371 of International Application No. PCT/EP2008/003279 filed Apr. 23, 2008, which claims priority to EP 07008370.4 filed Apr. 25, 2007, the contents of which are all incorporated herein by reference.

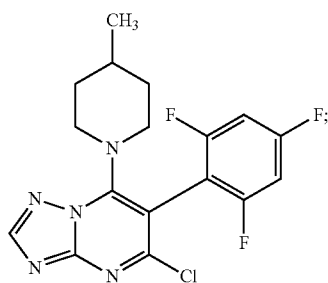
The present invention relates to novel fungicidal compositions suitable for control of diseases caused by phytopathogens, especially phytopathogenic fungi and to a method of controlling diseases on useful plants, especially rust diseases on soybean plants.

It is known from WO 04/35589 and WO 06/37632 that certain tricyclic amine derivatives and mixtures comprising said amine derivatives have biological activity against phytopathogenic fungi. On the other hand various fungicidal compounds of different chemical classes are widely known as plant fungicides for application in various crops of cultivated plants. However, crop tolerance and activity against phytopathogenic plant fungi do not always satisfy the needs of agricultural practice in many incidents and aspects. For example, in the past in the most important regions for soybean cultures no economically significant phytopathogens were known. However, recently there has been an increase in severe rust infections of soybean crops in South America by the harmful fungus *Phakopsora pachyrhizi* resulting in considerable yield losses. Most customary fungicides are unsuitable for controlling rust in soybeans or their action against *Phakopsora pachyrhizi* is unsatisfactory.

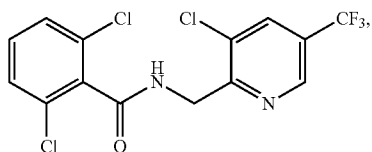
Out of the above-mentioned needs of agricultural practice for increased crop tolerance and/or increased activity against phytopathogenic fungi, such as *Phakopsora pachyrhizi*, there is therefore proposed in accordance with the present invention a novel composition suitable for control of diseases caused by phytopathogens comprising

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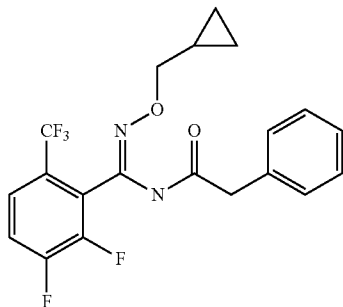
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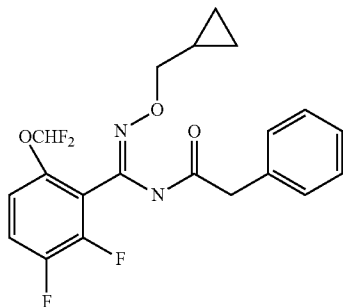
a compound of formula B-5.3



a compound of formula B-5.4



a compound of formula B-5.5



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a compound of formula B-5.6

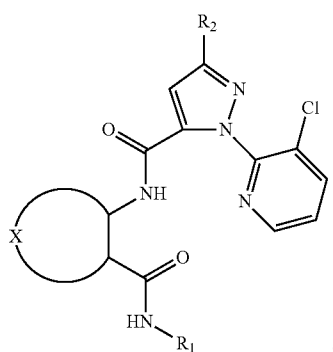
(B-5.2)

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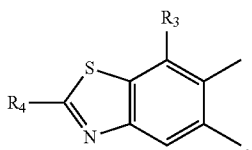
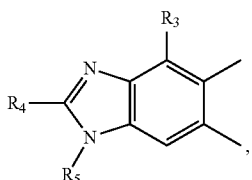
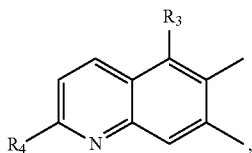
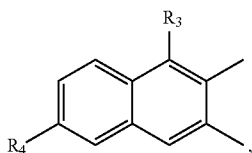
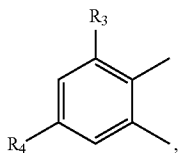
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acibenzolar-S-methyl, chlormequat chloride, ethephon, mepiquat chloride and trinexapc-ethyl;

(B7) an insecticide selected from the group consisting of abamectin, clothianidin, emamectin benzoate, imidacloprid, tefluthrin, thiamethoxam, and a compound of formula IV



wherein X is a bivalent group selected from



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