

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(PCT Rule 71.1)

To:

AWA Switzerland
Case Postale 2243
2800 Delémont 2
SUISSE

Date of mailing
(day/month/year)

04.10.2023

Applicant's or agent's file reference
SPAGSU0005PC00

IMPORTANT NOTIFICATION

International application No.
PCT/EP2022/068489

International filing date (day/month/year)
04.07.2022

Priority date (day/month/year)
05.07.2021

Applicant
AgroSustain SA

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary report on patentability and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the international
preliminary examining authority:



European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0
Fax: +49 89 2399 - 4465

Authorized Officer

Pfau, Andrea

Tel. +49 89 2399-6731



PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference SPAGSU0005PC00	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/EP2022/068489	International filing date (day/month/year) 04.07.2022	Priority date (day/month/year) 05.07.2021	
International Patent Classification (IPC) or national classification and IPC INV. A01N47/40			
Applicant AgroSustain SA			
1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of <u>7</u> sheets, including this cover sheet. 3. This report is also accompanied by ANNEXES, comprising: a. ☒ a total of <u>10</u> sheets, as follows: ☒ sheets of the description, claims and/or drawings which have been amended and/or sheets containing rectifications authorized by this Authority, unless those sheets were superseded or cancelled, and any accompanying letters (see Rules 46.5, 66.8, 70.16, 91.2, and Section 607 of the Administrative Instructions). ☐ sheets containing rectifications, where the decision was made by this Authority not to take them into account because they were not authorized by or notified to this Authority at the time when this Authority began to draw up this report, and any accompanying letters (Rules 66.4bis, 70.2(e), 70.16 and 91.2). ☐ superseded sheets and any accompanying letters, where this Authority either considers that the superseding sheets contain an amendment that goes beyond the disclosure in the international application as filed, or the superseding sheets were not accompanied by a letter indicating the basis for the amendments in the application as filed, as indicated in item 4 of Box No. I and the Supplemental Box (see Rule 70.16(b)). b. ☐ a separate electronic file containing a sequence listing (<i>sent to the International Bureau only</i>)			
4. This report contains indications relating to the following items: ☒ Box No. I Basis of the report ☐ Box No. II Priority ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability ☐ Box No. IV Lack of unity of invention ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement ☐ Box No. VI Certain documents cited ☒ Box No. VII Certain defects in the international application ☒ Box No. VIII Certain observations on the international application			
Date of submission of the demand 28.04.2023		Date of completion of this report 04.10.2023	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Fax: +49 89 2399 - 4465		Authorized officer Lorenzo Varela, M Telephone No. +49 89 2399-8239 	

Box No. I Basis of the report

1. With regard to the **language**, this report is based on
- ☒ the international application in the language in which it was filed
 - ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of:
 - ☐ international search (under Rules 12.3(a) and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4(a))
 - ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a) and (b))
2. With regard to the **elements*** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

Description, Pages

1-11, 13-32	as originally filed	
12	filed in electronic form on	28-04-2023

Claims, Numbers

1-21	filed in electronic form on	28-04-2023
------	-----------------------------	------------

Drawings, Sheets

1/10-10/10	as originally filed
------------	---------------------

- ☐ a sequence listing - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since either they are considered to go beyond the disclosure as filed, or they were not accompanied by a letter indicating the basis for the amendments in the application as filed, as indicated in the Supplemental Box (Rules 70.2(c) and (c-bis)):
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
5. ☐ This report has been established:
- ☐ taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rules 66.1(d-bis) and 70.2(e)).
 - ☐ without taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91(Rules 66.4bis and 70.2(e)).

6. ☒ With regard to top-up searches (Rules 66.1 *ter* and 70.2(f)):
- ☒ A top-up search was carried out by this Authority on 01.06.2023 (all discovered documents are listed in the Supplemental Box Relating to Top-up Search).
 - ☐ Additional relevant documents have been discovered during the top-up search.
 - ☐ No top-up search was carried out by this Authority because it would serve no useful purpose.
7. ☐ Supplementary international search report(s) from Authority(ies) has/have been received and taken into account in establishing this report (Rule 45bis.8(b) and (c)).

* If item 4 applies, some or all of those sheets may be marked "superseded".

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	<u>1-21</u>
	No: Claims	
Inventive step (IS)	Yes: Claims	<u>1-21</u>
	No: Claims	
Industrial applicability (IA)	Yes: Claims	<u>1-21</u>
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following documents; the numbering will be adhered to in the rest of the procedure.

- D1 WO 2020/011750 A1 (UNIV LAUSANNE [CH]) 16 January 2020
(2020-01-16)
- D2 CAROLINE MUELLER: "Role of glucosinolates in plant invasiveness",
PHYTOCHEMISTRY REVIEWS, KLUWER ACADEMIC PUBLISHERS,
DO,
vol. 8, no. 1, 28 October 2008 (2008-10-28), pages 227-242,
XP019686442,
ISSN: 1572-980X
- D3 WO 2018/204435 A1 (DOW AGROSCIENCES LLC [US]) 8 November
2018 (2018-11-08)

1. The present claims relate to 1) a synergistic fungicidal composition comprising: (a) at least one component being the mixture of 1- isothiocyanate-8(methylsulfonyl)-octane (8MSOOH) and 1-isothiocyanate-8- (methylsulfinyl)-octane (8MSOH); and (b) at least one additional synthetic fungicidal component selected from Mancozeb, Dodine, Chlorothalonil, Tebuconazole, Captan, Cyprodinil, Fludioxonil, Fluxypyroxad and Pyrimethanil, and salts thereof or mixtures thereof; 2) a method for controlling a plant disease caused by a fungal plant pathogen comprising applying to the plant or portion thereof, or to the plant seed, a fungicidal effective amount of the mentioned synergistic fungicidal composition, and 3) use of the mentioned synergistic composition in the prevention or treatment of fungal pathogens in plants.

Prior art

2. D1 discloses synergistic fungicidal compositions comprising the mixture of 8-methylsulfonyloctyl isothiocyanate and 8-methylsulfinyloctyl isothiocyanate and the use of such synergistic fungicide composition against plant fungal pathogens, for example selected from the phylum comprising Basidiomycota, Zygomyceta, Oomycota or Ascomycota (see the passages mentioned in the search report).

3. D2 discloses that 8-methyl sulfinyloctyl, 8-methylsulfonyloctyl, 9-methylsulfonylnonyl, 9-methylsulfinylnonyl, 10-methylsulfinyldecyl, and 10-methylsulfonyldecyl isothiocyanate were isolated from roots of *Rorippa indica* Hiern. and their role to inhibit plant invasiveness. The inhibition of lettuce seed germination by these isothiocyanates decreased with increasing values of carbons in the side-chain. In contrast, seedling growth was not affected. In the natural system, different isothiocyanates might even act additively or synergistically (see the passages mentioned in the search report).

4. D3 discloses synergistic fungicidal compositions comprising (5)-1,1-bis(4-fluorophenyl)propan-2-yl (3-acetoxy-4-methoxypicolinoyl)-L-alaninate and tebuconazole or chlorothalonil or mancozeb inter alia (see the passages mentioned in the search report).

Novelty

5. The subject-matter of claims 1-21 is novel in the sense of Art. 33(2) PCT. None of the available documents of the state of the art discloses 1) a synergistic fungicidal composition comprising: (a) at least one component being the mixture of 1-isothiocyanate-8(methylsulfonyl)-octane (8MSOOH) and 1-isothiocyanate-8-(methylsulfinyl)-octane (8MSOH); and (b) at least one additional synthetic fungicidal component selected from Mancozeb, Dodine, Chlorothalonil, Tebuconazole, Captan, Cyprodinil, Fludioxonil, Fluxapyroxad and Pyrimethanil, phosphorous acid and salts thereof or mixtures thereof; 2) a method for controlling a plant disease caused by a fungal plant pathogen comprising applying to the plant or portion thereof, or to the plant seed, a fungicidal effective amount of the mentioned synergistic fungicidal composition, or 3) use of the mentioned synergistic composition in the prevention or treatment of fungal pathogens in plants (see paragraphs 2-4 herein above).

Sufficiency of disclosure

6. In the present case the technical effect of being synergistic a composition comprising (a) at least one component being the mixture of 1-isothiocyanate-8(methylsulfonyl)-octane (8MSOOH) and 1-isothiocyanate-8-(methylsulfinyl)-octane (8MSOH); and (b) at least one additional synthetic fungicidal component selected from Pyrimethanil, Tebuconazole, Chlorothalonil, Dodine, Cyprodinil, Fluxapyroxad, Fluazinam, Captan, Mancozeb, Propiconazole, Fludioxonil, phosphorous acid and salts thereof or mixtures thereof is in the claims. Therefore, the fact of determining if the technical effect is achieved over the whole scope of protection needs to be tackled under sufficiency of disclosure (Art. 5 PCT). In view of the available data on synergy, the requirements of sufficiency of disclosure (Art. 5 PCT) are fulfilled.

Inventive step

7. The subject-matter of claims 1-21 seems to involve an inventive step in the sense of Art. 33(3) PCT.

The closest state of the art can be considered D1/D2 disclosing synergistic composition for the control of fungal pathogens in plants in which component a) is present (see the passages mentioned in the search report).

D3 discloses synergistic fungicidal compositions comprising (5)-1,1-bis(4-fluorophenyl)propan-2-yl (3-acetoxy-4-methoxypicolinoyl)-L-alaninate and tebuconazole or chlorothalonil or mancozeb inter alia (see the passages mentioned in the search report).

The technical problem to be solved is seen in the provision of alternative synergistic compositions for controlling fungal pathogens in plants.

The solution is the composition according to the present claims. Taking into account that synergy is considered to be unpredictable and none of the documents of the state of the art provides any hint to the present claimed compositions, an inventive step is acknowledged (Art. 33(3) PCT).

Re Item VII

Re Item VIII

Certain defects in and observations on the international application

1. The subject-matter in the description referring not to compositions of components (a) and (b) but merely to mixtures and the application of components (a) and (b) separately does not fall within the scope of the claims. This inconsistency between the claims and the description leads to doubt concerning the matter for which protection is sought, thereby rendering the claims unclear (Article 6 PCT). These statements should not have been used in the description to avoid this inconsistency.

2. There are several vague and imprecise statements in the description such as paragraphs 18, 30-36, 82 (separate application, which means no composition), and 119 implying that the subject-matter for which protection is sought may be different to that defined by the claims, thereby resulting in a lack of clarity of the claims (Article 6 PCT) when the description is used to interpret the claims. These statements should not have been used in the description to avoid this inconsistency.

3. The terms "incorporated herein by reference" used in the description are vague and unclear and leave the reader in doubt as to the meaning of the technical features to which they refer, thereby rendering the scope of the protection unclear, contrary to Art. 6 PCT. This expression should not have been used in the description.

4. The term "etc." used in the description is vague and unclear and leaves the reader in doubt as to the meaning of the technical feature to which it refers, thereby rendering the definition of the subject-matter for which protection is desired unclear (Article 6 PCT).



AWA Switzerland Ltd.

Case Postale 2243
CH-2800 Delémont 2 (Switzerland)
Tel.: +41 78 734 52 51
E-mail: switzerland@awa.com
Website: <https://www.awa.com>
V.A.T.: CHE-324.167.922 MwSt
Company Id. No.: CHE-324.167.922

European Patent Attorneys
European Trademark Attorneys
Belgian Patent Attorneys
Luxembourg Patent Attorneys
Swiss Patent Attorneys
Benelux Trademark Attorneys

EUROPEAN PATENT OFFICE
D – 80298 MÜNCHEN
GERMANY

Via Online Filing

Delémont, 28 April 2023

Y/ref.: PCT/EP2022/068489
O/ref.: SPAGSU0005PC00

Re: International preliminary examination – PCT Chapter II
Application No.: PCT/EP2022/068489 - Filing date: 4 July 2022
Applicant: AgroSustain SA
Title: Synergy between mixtures of Isothiocyanates and commercial fungicides

Dear Sir,

This is in annex to the Demand for International Preliminary Examination filed **today** in relation to the above referenced international application.

With reference to the written opinion of the international searching authority dated November 2, 2022, Applicants would like to proceed further with the amended set of claims set forth below.

In reply to the written opinion as well as the International search report, Applicants submit an amended set of claims and requests that further prosecution be based on these amended claims 1 to 21. For your convenience, please find herewith enclosed the amended claims (clear and marked-up versions).

AMENDMENTS - SUPPORT:

The terms “phosphorous acid” was deleted from claim 1 because no phosphorous acid from the at least one additional synthetic fungicidal component selected from Mancozeb, Dodine, Chlorothalonil, Tebuconazole, Captan, Cyprodinil, Fludioxonil, Fluxypyroxad and Pyrimethanil was tested in the working examples.

The terms: 1- isothiocyanato-8(methylsulfonyl)-octane (8MSOOH) and 1-isothiocyanato-8-(methylsulfinyl)-octane (8MSOH) in previous claims 1, 4, 18 and 19 are correct.

Small explanation on the name of the molecule: If we take 1-isothiocyanato-8- (methylsulfinyl)-octane (8MSOH) as an example but it is the same for 1- isothiocyanato-8(methylsulfonyl)-octane (8MSOOH). There are two ways to name this molecule, depending on whether one "starts" (following the IUPAC nomenclature - International Union of Pure and Applied Chemistry) with the 8-carbon chain (octane) or the isothiocyanate functional group (N =C=S). The -yl ending simply indicates a substituent.

i) If we start with the 8-carbon chain octane, as Applicants have done it, the correct name is 1-isothiocyanato-8-(methylsulfinyl) octane. This means that there is an octane chain substituted in the 1st position (carbon N°1 of the chain) with an isothiocyanate group (and in this case it should be

written isothiocyanato to indicate that this functional group is a substituent of the chain) and in the 8th position (carbon N° 8 of the chain) by a methylsulfinyl group (which takes a -yl for the same reason). This name is also used by the examiner at the beginning of point VI of his report without underlining.

ii) If one starts with the isothiocyanate group, as the Examiner indicates in his report a little further down where the name is underlined, then the name becomes 8-methylsulfinyloctyl isothiocyanate. The 8-methylsulfinyloctane becomes an 8-methylsulfinyloctyl because in this case, the chain and its methylsulfinyl substituent are considered as a substituent of the isothiocyanate group, which therefore does not take an o at the end.

To summarize simply:

8MSOH = 1-isothiocyanato-8-(methylsulfinyl) octane = 8-methylsulfinyloctyl isothiocyanate.

8MSOOH = 1-isothiocyanato-8-(methylsulfonyl) octane = 8-methylsulfonyloctyl isothiocyanate.

INVENTIVE STEP (Art. 33(3) PCT) AND SUFFICIENCY OF DISCLOSURE, Item V:

In point V.5 of the written opinion, it was acknowledged that the subject-matter of independent claims 1-21 is considered new in the sense of Article 33(2) PCT but it is concluded in point V.6 that the same are not inventive in the sense of Article 33(3) PCT because synergy is unpredictable and the technical effect is not achieved for the whole scope of protection leading to an insufficiency of disclosure objection according to Article 5 PCT.

From the examiner's comments, it was understood that the specific combination of component a) with component b) being Pyrimethanil was not found synergistic.

In addition, phosphorous acids from the at least one additional synthetic fungicidal component selected from Mancozeb, Dodine, Chlorothalonil, Tebuconazole, Captan, Cyprodinil, Fludioxonil, Fluxpyroxad and Pyrimethanil were not tested, therefore a synergistic effect cannot be acknowledged. For this reason, these terms have been deleted from current claim 1.

Regarding the synergistic effect of Pyrimethanil :

Example 1 as set forth in the original international application as filed (see page 26→30 of the PCT application) describes a synergistic combination of two 1- isothiocyanato-8(methylsulfonyl)- octane (8MSOOH) and 1-isothiocyanato-8- (methylsulfinyl)-octane (8MSOH), at a ratio of 99/1 vol./vol. (called "ITC"), and the commercial fungicide Pyrimethanil ; this combination is referred to as "combo" in the example. The experiment demonstrates the synergistic effect between the components of the combo against the fungal pathogens *Alternaria radicina* and *Rhizoctonia solani*.

First, the ITC and the fungicide were tested alone against the two fungi. The EC50 values of the ITC were found to be 260 mM and 276 mM against *A. radicina* and *R. solani*, respectively. The EC50 values of the pyrimethanil fungicide were 3 mM and 28 mM against *A. radicina* and *R. solani*, respectively.

Next, the concentration of the fungicide was fixed at a level below the EC50 value in order to show that it can still have a synergistic effect when combined with the ITC at suboptimal concentrations. The fixed concentration was 3 mM and 35 mM for *A. radicina* and *R. solani*, respectively. However, for *R. solani*, the fit of the EC50 value was not optimal. Therefore, the concentration was fixed at 35 mM, slightly above the EC50 fitted value, but correct from an experimental point of view, since the pathogen did not grow *in-vitro* at a pyrimethanil concentration of 35 mM.

The EC50 values of the combo were found to be 137 mM and 189 mM for *A. radicina* and *R. solani*, respectively. These values are lower than the EC50 values obtained for the ITC alone. This is illustrated in Figure 1 and Figure 2 of the present application. These figures were included as subfigure in Figure 2, page 43 and Figure 3, page 44 of the PCT application, for *R. solani* and *A. radicina* respectively).

The synergistic fungitoxic activities of the combination were estimated with the CompuSyn software (Chou et al. 2005, Chou 2006), which calculates the Combination Index (CI) for combinations of fungicides. The CI values indicate the presence and strength of synergism, with values between 0.1-0.3 considered as strong synergism and values <0.1 as very strong synergism (Chou 2008). The obtained CI values for the synergy between the ITC and pyrimethanil were **0.043** and **0.038** for *A. radicina* and *R. solani*, respectively, indicating a very strong synergistic effect between the two components.

The use of the CompuSyn software to calculate the CI provides a rigorous and quantitative approach for assessing the degree of synergism between the two compounds a) and b), and can help guide the optimal concentrations of the components in the mixture for maximal efficacy against the fungal pathogens. Therefore, the results of the CompuSyn analysis are a critical aspect of the demonstrated synergistic fungitoxic activities between the ITC and pyrimethanil in example 1.

To avoid confusion regarding the fixed concentration, Applicants have provided explicit rationale for choosing the concentration in each case. The concentration was fixed below the fitted EC50 in one case (*A. radicina*) and above the fitted EC50 in the other case (*R. solani*) due to experimental constraints, but corresponds for both cases to a synergistic effect at suboptimal concentrations. This approach ensures that the results are interpreted correctly and the experimental design is fully understood. The idea of using suboptimal concentrations of the synthetic fungicide is to show that when combined with the ITC it can still be efficient and have a synergistic effect (see the figures below).

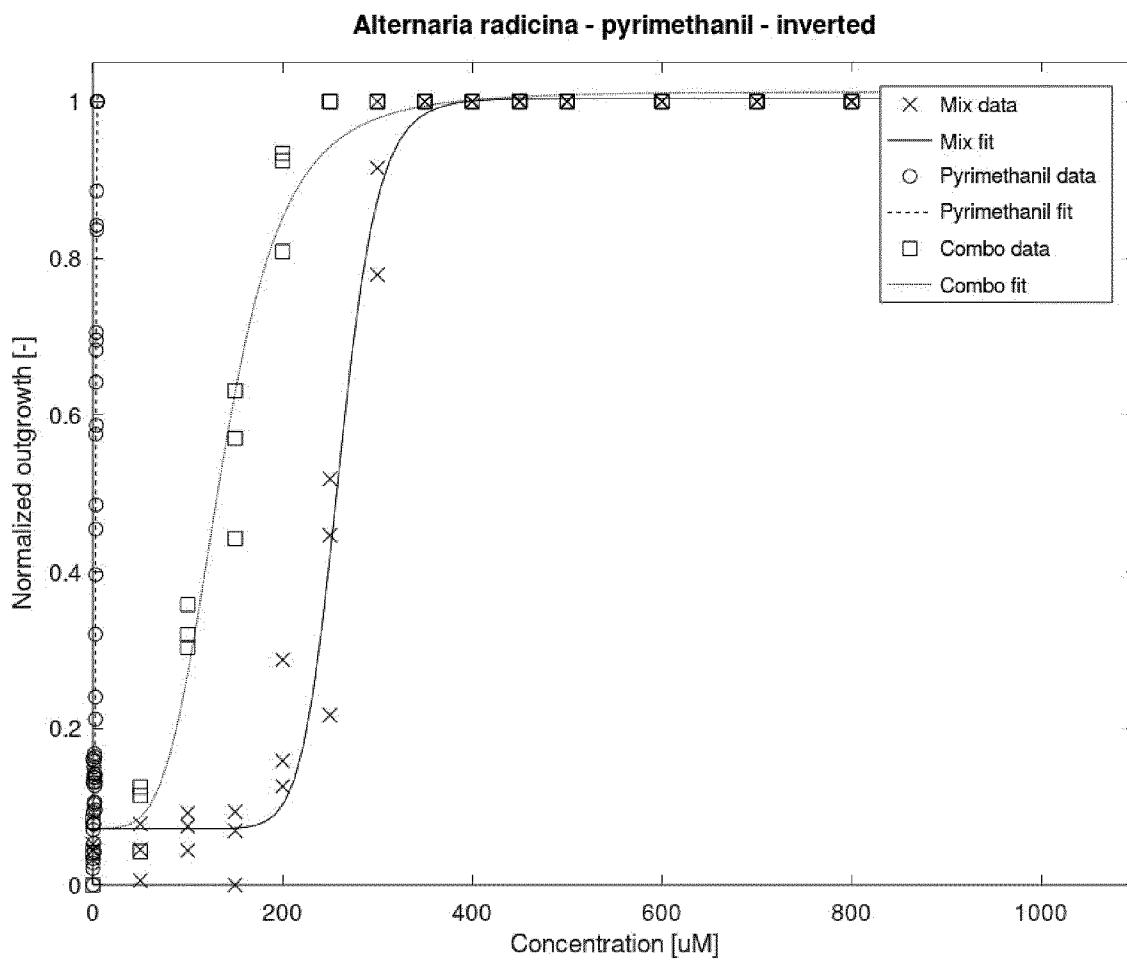


Figure 1: Pyrimethanil and ITC synergy against *Alternaria radicina*

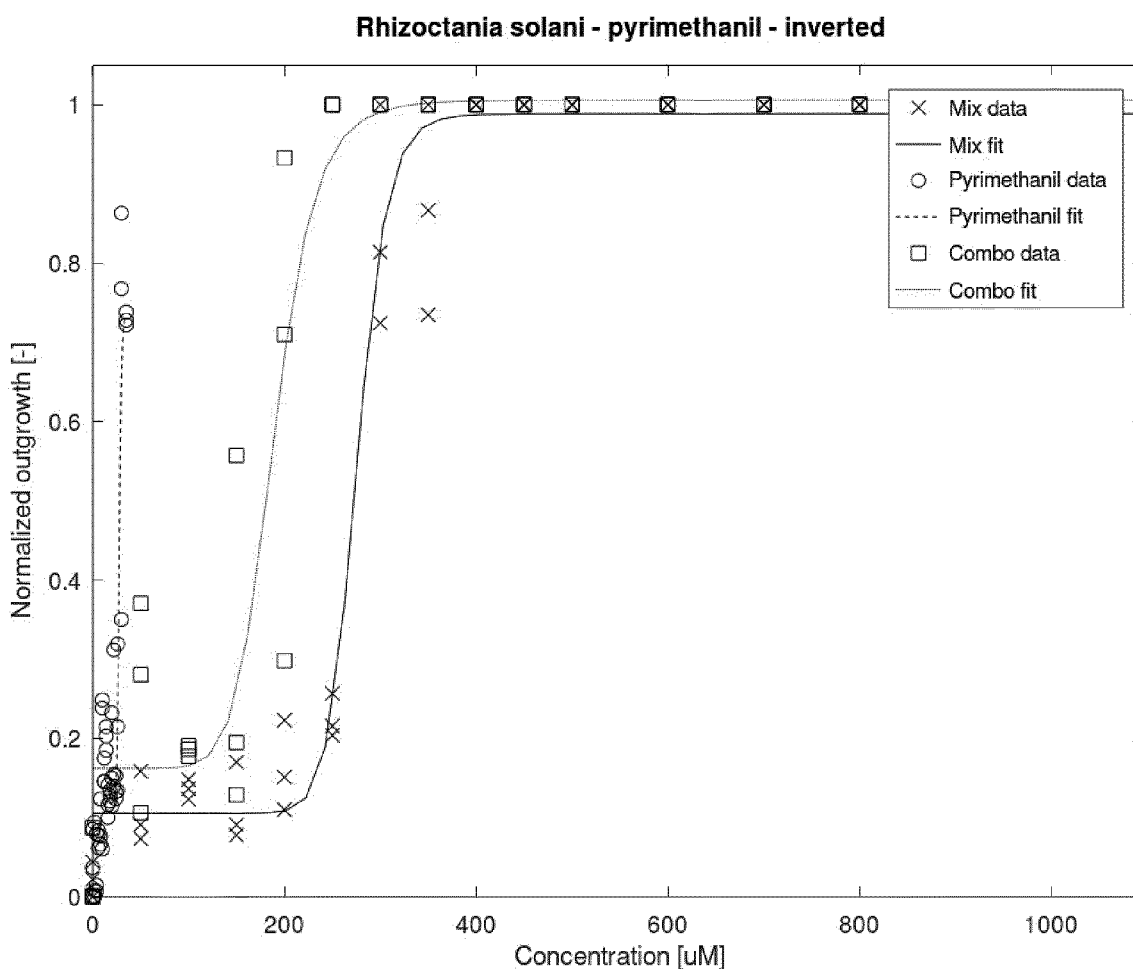


Figure 2 : Pyrimethanil and ITC synergy against *Rhizoctania solani*

In conclusion, in view of the obtained CI values for the synergy between the ITC (component a)) and component b) being pyrimethanil (namely **0.043** and **0.038** for *A. radicina* and *R. solani*, respectively), there is no discussion that a skilled person would definitely acknowledge an unexpected and surprising synergistic effect for the combination of the two components.

Item VIII: Certain defects and observations on the international application:

Regarding Item VIII 1., it appears from the above that the examiner's observations are not justified in view of the amendments done in the international application compared to the EP priority application. However since the examiner did not give any indication on the various passages it is referred to, correction of these inconsistencies appear to be difficult to the Applicants. However it appears that the passage on page 12, chapter [00082] line 7 is still unclear. Applicants propose to correct the same in the new substitute sheet 12.

Point VIII 2. concerns an indefinite and vague objection that some parts of the description contain imprecise statements that render the subject matter unclear. Without giving to the applicants more details on the passages that are of concern, this objection cannot be seriously treated. We assume that the examiner is referring to the passage on page 21 from lines 26-35 dealing with the "spirit of the invention". Once again this is a current practice at the US PTO which is not acknowledged at the

EPO. In case Applicants decide to enter the EP regional phase, this passage will be deleted from the description.

VIII 3. The use of the terms “incorporated herein by reference” depends on the jurisdictions, it is true that this practice is not accepted at the EPO but is currently used in the US. Since this concerns an international PCT application being recognized in all the PCT member states, correction is not justified at this stage. Once again if Applicants decide to enter the EP regional phase, those terms will be deleted from the description.

As none of the combined features of the invention are mentioned or suggested in the cited prior art, it is respectfully submitted that on the basis of the known disclosures and additional data the skilled person would not be able to arrive at the claimed invention without exercising an inventive activity.

Applicant believes that the invention as disclosed and claimed is now patentable.

On the basis of the above submissions, the Applicant hereby requests reexamination of the new amended claims.

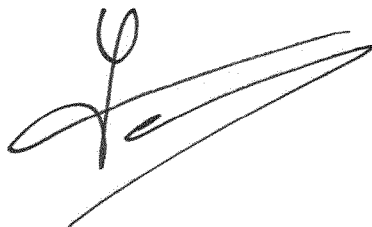
Conclusion

The applicant concludes that the application is now complying with the patentability requirements of the PCT and requests issuance of a positive international preliminary examination report. Should the international preliminary examining authority disagree with this position, a second written opinion with opportunity of reply is requested.

Very truly yours,

AWA Switzerland Ltd.

/Emmanuel E. JELSCH/
Association No. 1102
PACS

A handwritten signature in black ink, consisting of a stylized 'E' followed by a series of loops and a long horizontal stroke.

Enclosure:

- Description as amended on p.12 (clean and marked-up copies)
- Claims as amended (clean and marked-up copies)

component selected from the group consisting of surfactants, solid diluents and liquid diluents, formulants, excipients, which serve as a carrier. The formulation or composition ingredients are selected to be consistent with the physical properties of the active ingredients, mode of application and environmental factors such as soil type, moisture and temperature.

5 [00082] According to one embodiment, component (a) and component (b) and one or more other biologically active compound or agent can be formulated separately and applied in an appropriate weight ratio, e.g., as a tank mix; or

[00083] (ii) component (a) and component (b) and/or one or more other biologically active compound or agent can be formulated together in the proper weight ratio.

10 [00084] Preferably, carriers or diluents to be used in the present invention are phytologically-acceptable.

[00085] As used herein, the term "phytologically-acceptable" formulations refer to compositions, diluents, excipients, and/or carriers that are generally applicable for use with any part of a plant during any part of its life cycle, including but not limited to seeds, seedlings, 15 plant cells, plants, or flowers. The formulations can be prepared according to procedures, methods and formulas that are conventional in the agricultural arts. Following the teachings of the present invention, the person skilled in the agricultural and/or chemical arts can readily prepare a desired composition. Most commonly, the fungicide composition of the present invention can be formulated to be stored, and/or applied, as aqueous or non-aqueous 20 suspensions or emulsions prepared neat or from concentrated formulations of the compositions. Water-soluble, water-suspendable or emulsifiable formulations can also be converted into or formulated as solids (e.g., wettable powders), which can then be diluted into a final formulation. In certain formulations, the synergistic fungicidal composition of the present invention can also be provided in growth media, e.g., in vitro media for growth of 25 plant or other types of cells, in laboratory plant growth media, in soil, or for spraying on seeds, seedlings, roots, stems, stalks, leaves, flowers or the entire plant.

[00086] These phytologically-acceptable formulations are produced in a known manner, for example by mixing the synergistic fungicidal composition of the invention with extenders, that is liquid solvents, liquefied gases under pressure, and/or solid carriers, optionally with 30 the use of surfactants, that is emulsifiers and/or dispersants, and/or foam formers. If the extender used is water, it is also possible to use, for example, organic solvents as auxiliary solvents. Essentially, suitable liquid solvents include: aromatics such as xylene, toluene or alkylnaphthalenes, chlorinated aromatics or chlorinated aliphatic hydrocarbons such as chlorobenzenes, chloroethylenes or methylene chloride, aliphatic hydrocarbons such as 35 cyclohexane or paraffins, for example petroleum fractions, alcohols such as butanol or glycol and their ethers and esters, ketones such as acetone, methyl ethyl ketone, methyl isobutyl ketone or cyclohexanone, strongly polar solvents such as dimethylformamide and dimethyl

CLAIMS

1. A synergistic fungicidal composition comprising:
 - (a) at least one component being the mixture of 1- isothiocyanato-8(methylsulfonyl)-octane (8MSOOH) and 1-isothiocyanato-8- (methylsulfinyl)-octane (8MSOH); and
 - (b) at least one additional synthetic fungicidal component selected from Mancozeb, Dodine, Chlorothalonil, Tebuconazole, Captan, Cyprodinil, Fludioxonil, Fluxypyroxad and Pyrimethanil, salts thereof or mixtures thereof.
2. The synergistic fungicidal composition of claim 1, wherein component (b) is selected from Mancozeb, Dodine, Chlorothalonil, Tebuconazole, Captan, Cyprodinil, Fludioxonil, Fluxypyroxad and Pyrimethanil.
3. The synergistic fungicidal composition of claim 2, wherein component (b) is selected from Tebuconazole, Captan, Cyprodinil and Dodine.
4. A synergistic fungicidal composition of any of claims 1-3, wherein component (a) is present at a ratio 1-isothiocyanato methyl sulfinyl-octane / 1-isothiocyanato methyl sulfonyl-octane of 99/1 vol./vol.
5. The synergistic fungicidal composition of any of claims 1-4, further comprising at least one additional component selected from the group consisting of a surfactant, a solid diluent and/or a liquid diluent.
6. The synergistic fungicidal composition of any of claims 1-5, wherein the weight ratio of component (a) to component (b) is from 1:5 to 3137:1.
7. The synergistic fungicidal composition of any of claims 1-5, wherein the weight ratio of component (a) to pyrimethanil is from 6:1 to 980:1.
8. The synergistic fungicidal composition of any of claims 1-5, the wherein weight ratio of component (a) to Tebuconazole is from 2:1 to 2500:1.
9. The synergistic fungicidal composition of any of claims 1-5, wherein the weight ratio of component (a) to dodine is from 1:1 to 103:1.

10. The synergistic fungicidal composition of any of claims 1-5, wherein the weight ratio of component (a) to mancozeb is from 1:1 to 10:1.
- 5 11. The synergistic fungicidal composition of any of claims 1-5, wherein the weight ratio of component (a) to captan is from 1:1 to 2:1.
12. The synergistic fungicidal composition of any of claims 1-5, wherein the weight ratio of component (a) to cyprodinil is from 22:1 to 207:1.
- 10 13. The synergistic fungicidal composition of any of claims 1-5, wherein the weight ratio of component (a) to fludioxonil is from 398:1 to 3137:1.
14. The synergistic fungicidal composition of any of claims 1-5, wherein weight ratio of component (a) to fluxapyroxad is from 4:1 to 31:1.
- 15 15. The synergistic fungicidal composition of any of claims 1-5, wherein the weight ratio of component (a) to chlorothalonil is from 1:5 to 880:1.
16. A method for controlling a plant disease caused by a fungal plant pathogen
- 20 comprising applying to the plant or portion thereof, or to the plant seed, a fungicidally effective amount of the synergistic fungicidal composition of any of claims 1 to 15.
17. The method of claim 16, wherein the fungal plant pathogen is selected from the group consisting of *Fusarium spp.*, *Geotrichum candidum*, *Botrytis cinerea*,
- 25 *Rhizoctonia solani*, *Penicillium digitatum* *Alternaria radicina*, *Fusarium verticilloides*, *Penicillium commune*, *Plectosphaerella cucumerina*, *Colletotrichum acutatum* and *Lasiodiplodia pseudotheobromae*.
18. Use of a synergistic composition comprising the combination of:
- 30 (a) at least one component being the mixture of 1- isothiocyanato-8(methylsulfonyl)-octane (8MSOOH) and 1-isothiocyanato-8- (methylsulfinyl)-octane (8MSOH); and
- (b) at least one additional synthetic fungicidal component selected from Mancozeb, Dodine, Chlorothalonil, Tebuconazole, Captan, Cyprodinil, Fludioxonil, Fluxypyroxad and Pyrimethanil, in the prevention or treatment of fungal pathogens in plants.
- 35

19. The use of the synergistic composition according to claim 18, wherein component (a) is present at a ratio 1-isothiocyanato methyl sulfinyl-octane / 1-isothiocyanato methyl sulfonyl-octane of 99/1 vol./vol.
- 5 20. The use of the synergistic composition of any of claims 18 to 19, further comprising at least one additional component selected from the group consisting of a surfactant, a solid diluent and/or a liquid diluent.
- 10 21. The use of the synergistic composition of any of claims 18-20, wherein the weight ratio of component (a) to component (b) is from 1:5 to 3137:1.