

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 PCT-2021-010		FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/IB2022/057750	International filing date (<i>day/month/year</i>) 18-08-2022	Priority date (<i>day/month/year</i>) 19-08-2021	
International Patent Classification (IPC) or national classification and IPC A01N25/00 Version=2023.01			
Applicant DOSHI, HITESHKUMAR ANILKANT, RATHOD, RAJIV			

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>5</u> sheets, including this cover sheet. 3. This report is also accompanied by ANNEXES, comprising: a. ☐ a total of _____ 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which have been amended and/or sheets containing rectifications authorized by this Authority, unless those sheets were superseded or cancelled, and any accompanying letters (see Rules 46.5, 66.8, 70.16, 91.2, and Section 607 of the Administrative Instructions).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 ☐ superseded sheets and any accompanying letters, where this Authority either considers that the superseding sheets contain an amendment that goes beyond the disclosure in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 and 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
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Date of submission of the demand 17-01-2023	Date of completion of this report 13-04-2023
Name and mailing address of the IPEA/ Indian Patent Office Plot No. 32, Sector 14, Dwarka, New Delhi - 110075 Facsimile No.	Authorized officer Ankur Bikash Pradhan Telephone No. +91-1125300200

Box No. I Basis of the report1. 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 (Rules 12.3(a) and 23.1(b)).
- ☐ publication of the international application (Rule 12.4(a)).
- ☐ international preliminary examination (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*):

- ☒ the international application as originally filed/furnished, or
- ☐ the description: pages _____ as originally filed/furnished.
pages* _____ received by this Authority on _____
pages* _____ received by this Authority on _____
- ☐ the claims: Nos. _____ as originally filed/furnished.
Nos.* _____ as amended (together with any statement) under Article 19
Nos.* _____ received by this Authority on _____
- ☐ the drawings: pages _____ as originally filed/furnished.
pages* _____ received by this Authority on _____
pages* _____ received by this Authority on _____
- ☐ 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 66.1ter and 70.2(f)):

- ☐ A top-up search was carried out by this Authority on _____
- ☐ 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 and industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1-21</u>	YES
	Claims		NO
Inventive step (IS)	Claims	<u>1-21</u>	YES
	Claims		NO
Industrial applicability (IA)	Claims	<u>1-21</u>	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

The documents filed by the applicant under Article 34 via demand for International Preliminary Examination dated 19-01-2023 have been duly considered. The reply is not found persuasive in view of the observations communicated via the Written Opinion dated 21-11-2022. Therefore, IPEA-408 had been generated on 03/03/2023 and the Applicant had requested to attend hearing under rule 66.6 of PCT. Accordingly, hearing was offered on 28/03/2023. The hearing was attended and written submission was submitted. Considering the submission the observations communicated in IPEA-408 are addressed. So in view of the facts and circumstances and submission of the application the observations communicated in IPEA-408 have been waived.

Reference is made to the following documents:

D1: WO 2018/162999 A1 (UPL LTD [IN]) 13 September, 2018

D2: WO 2012/016972 A2 (BAYER CROPSOURCE AG [DE]) 09 February, 2012

D3: WO 2012/101660 A1 (SHAH DEEPAK PRANJIVANDAS [IN]) 02 August, 2012

The subject-matter of the present application relates to a pesticidal composition comprising elemental sulphur, fluxapyroxad, prothioconazole and at least one agrochemically acceptable excipient. The present application also relates to a process to prepare the said composition and a method of controlling fungal disease, crop protection or improving the plant health and yield by applying the said composition.

Novelty: Under Article 33(2) of PCT

The subject-matter of claims 1-21 of the instant application is

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

Continuation of Citation and Explanation(Box5)

considered new, since none of the cited prior art documents D1-D3 solely disclose all the components with specified amount of pesticidal combination as well as the process to prepare the said combination thereof as claimed in the instant application. Therefore, in view of the disclosure of D1-D3, the subject-matter of claims 1-21 is novel within the meaning of Article 33(2) of PCT.

Inventive step: Under Article 33(3) of PCT

Regarding claims 1-21, both D1 and D2 are considered to be the closest prior art documents. D1 discloses (page 5: lines 19-22; page 153: lines 3-7; page 154: lines 1-13) a fungicidal combination comprising (a) at least one multi-site fungicide; (b) at least one succinate dehydrogenase inhibitor fungicide; and (c) at least a third fungicide and (d) at least one agrochemically acceptable excipient. The multi-site fungicide may be sulphur (page 6: line 26; page 123: lines 28-29; page 127: line 28). The succinate dehydrogenase inhibitor fungicide may be fluxapyroxad (page 7: lines 1-2). The third fungicide may be selected from sterol biosynthesis inhibitors, ergosterol biosynthesis inhibitors such as prothioconazole (page 11: line 26; page 13: line 16). The combination of D1 may be formulated in the form of granules (page 154: line 29). Further, D1 suggests that the amount of the fungicides (page 154: lines 8-13) which is within the scope of the instant application.

D2 discloses (page 1: lines 2-4) active compound combinations, in particular within a fungicide composition, which comprises (A) prothioconazole and (B) fluxapyroxad and optionally (C) a further fungicidally active compound. The component (C) may be selected from compounds capable to have a multisite action such as sulphur (page 3: lines 20-24).

The subject-matter of D1 and D2 differ from the subject-matter of instant application in that, D1 and D2 do not teach that, the composition comprising elemental sulphur, fluxapyroxad and prothioconazole, wherein particle size of the composition is in the range of 0.1 micron to 50 microns. Although D2 suggests that the component (C) may be sulphur, but it fails to disclose an example where sulphur has been used along with prothioconazole and fluxapyroxad. Further, the present application demonstrates (Table 1-Table 5) the synergistic effect in terms of pest control and yield of the crops. Consequently, the subject-matter of claims 1-21 meet the requirement of inventive step in the sense of Article 33(3) of PCT.

Industrial Applicability: Under Article 33(4) of PCT

The subject matter of claims 1-21 can be made or used in industry. Therefore, claims 1-21 are industrially applicable, and meet the criteria of Article 33(4) of PCT.