

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/EP2024/082339

International filing date (day/month/year)
14.11.2024

Priority date (day/month/year)
15.11.2023

International Patent Classification (IPC) or both national classification and IPC
INV. A01N43/80 A01N25/14 A01P7/04

Applicant
SYNGENTA CROP PROTECTION AG

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ 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 Rule 43bis.1(a)(i) 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

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA:



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

Date of completion of
this opinion

see form
PCT/ISA/210

Authorized Officer

Galley, Carl

Telephone No. -0



Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:
- ☒ 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)).
2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))
3. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:
- a. ☐ forming part of the international application as filed.
 - b. ☐ furnished subsequent to the international filing date for the purposes of international search (Rule 13ter.1(a)),
 - ☐ accompanied by a statement to the effect that the sequence listing does not go beyond the disclosure in the international application as filed.
4. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, this opinion has been established to the extent that a meaningful opinion could be formed without a WIPO Standard ST.26 compliant sequence listing.
5. Additional comments:

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	<u>2, 6, 12, 13, 15</u>
	No: Claims	<u>1, 3-5, 7-11, 14</u>
Inventive step (IS)	Yes: Claims	
	No: Claims	<u>1-15</u>
Industrial applicability (IA)	Yes: Claims	<u>1-15</u>
	No: Claims	

2. Citations and explanations

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 CN 116 941 623 A (JIANGXI HAIKUO LISI BIOTECHNOLOGY CO LTD) 27 October 2023
- D2 CN 116 849 224 A (TAIAN KAIJIE AGRICULTURAL CO LTD ET AL.) 10 October 2023
- D3 WO 2023/202966 A1 (SYNGENTA CROP PROTECTION AG [CH]) 26 October 2023
- D4 Gary Braness: "[Choosing Insecticides] Tough Decision?", Pest Control Technology Magazine, February 2012, pages 1-14, XP093163398, OH (USA) Retrieved from the Internet: URL:<https://www.pctonline.com/article/pct0212-selecting-insecticides/>
- D5 Ana Paula S. A. Corrêa: "Efficacy of insecticides used in indoor residual spraying for malaria control: an experimental trial on various surfaces in a "test house"", Malaria Journal, vol. 18, no. 1, 1 December 2019, XP093163376
- D6 WO 2007/107745 A2 (SYNGENTA LTD [GB]) 27 September 2007

- 1 The present application relates to pesticidal compositions comprising (a) isocycloseram, (b) a solvent, (c) an absorptive carrier and (d) a surfactant, and methods of controlling insects, in particular, mosquitoes as an indoor residual spray.
- 2 D1 discloses compositions for controlling and preventing plant pest mites, comprising the combination of isocycloseram and nicofluprole in various formulations, including wettable powders and water-dispersible granules (claims). Solvents (including vegetable oils), surfactants (including wetting agents, such as sodium alkyl sulfate, and dispersants, such as naphthalene sulfonate salt condensates), and absorptive carriers (including bentonite and cellulose) are generally listed. Example 8 teaches a dispersible oil suspension, comprising 15% isocycloseram, 12% castor oil, rem. corn oil, dispersant and wetting agents, as well as 1% bentonite. Example 9 teaches a suspension, comprising 12% isocycloseram, dispersants and wetting agents, silicone oil and

rem. water, as well as 1% magnesium aluminium silicate. Example 10 teaches a wettable powder, comprising 5% isocycloseram, dispersant and wetting agent, 3% silica, rem. starch and kaolin. Thus, the subject-matter of at least claims 1, 3, 4, 8, 9, 11 and 14 does not appear to be novel within the meaning of Article 33(2) PCT.

Furthermore, given the lack of clarity over the overlapping features of the solvent and surfactant (see Item VIII), and that D1 teaches the use of silica and kaolin in a wettable powder, the burden lies with the applicant to show that silica (preferred in the present application) and kaolin do not have a DOA absorption of 200–300 mL/100g. Thus, D1 is also considered to anticipate the subject-matter of claims 5, 7 and 10 (Article 33(2) PCT).

- 3 D2 discloses as example 11, water-dispersible granules comprising isocycloseram and fluxametamide, comprising 5% isocycloseram, 1% fluxametamide, 5% sodium alkylnaphthalene sulfonate condensate dispersant, 5% sodium lignosulfonate dispersant, 2% sodium methylene bisnaphthalene sulfonate wetting agent, ammonium sulfate disintegrant, 30% white carbon black (precipitated silica) and remainder calcium carbonate. Said granules were dispersed in water and used to control corn borers (Table 5). Again, given the lack of clarity over the features of the solvent and surfactant and that the formulations were dispersed in water (solvent), the subject-matter of claims 1, 3–5, 7–11 and 14 is not considered novel within the meaning of Article 33(2) PCT.
- 4 D3 discloses the combination of the suspension concentrate formulation of isocycloseram (VIRANTRA SC400) with the wettable granule formulation of *Bacillus thuringiensis* (COSTAR WG) that provides a synergistic insecticidal effect (examples). As it is highly likely that COSTAR WG comprises a absorptive carrier, said disclosure is likely to anticipate the subject-matter of at least claims 1 and 14 (Article 33(2) PCT).
- 5 The subject-matter of claims 2, 6, 12, 13 and 15 appears to be novel within the meaning of Article 33(2) PCT.

- 6 D1 is considered to represent the closest prior art to the claimed subject-matter. The present examples demonstrate that a WP formulation provides better control, including residual control, than an SC formulation of isocycloseram on concrete and glazed surfaces (example 3). However, no effect has been shown for the use of an alternative solvent, that may include an alternative vegetable oil solvent (claim 2) or more preferably a lactam solvent (claim 6). The objective problem to be solved by subject-matter is the provision of an alternative solvent. However, not only are lactam solvents suggested to be used in D3 (paragraph [0061]), but also D6 teaches that the lactam solvents to reduce the toxicity of pesticidal formulations (claims). Thus, it is considered that the skilled person would reach the subject-matter of claims 2 and 6 without the use of inventive skill (Article 33(3) PCT).
- 7 With respect to the subject-matter of claims 12, 13 and 15, the objective problem to be solved is the provision of an improved formulation for indoor use with residual effect. However, it appears well known that the effectiveness of the formulation type is dependent on the area or surface on which it is applied. D4 teaches that formulations such as WP are not easily absorbed by porous surfaces and so remain on the surface and are more readily "picked up" by crawling insect pests (page 3, Section 4. Will the formulation perform well on the surfaces to be treated?). Similarly, D5 is a study of the efficacy of insecticides for indoor residual spraying for malaria control (i.e. control of mosquitoes), and teaches that water-dispersible granules performed best, with a residual efficacy of 8 months, followed by wettable powder, and both performed better than suspension concentrate formulations (Tables 1 and 2; Conclusions).
- 8 As a result, it is considered that the skilled person, looking to improve the efficacy and residual effect of isocycloseram for indoor use against mosquitoes, would prepare a WP or preferably a WG formulations and thus reach the subject-matter of claims 12, 13 and 15 without the use of inventive skill. As a result, inventive step within the meaning of Article 33(3) PCT cannot be acknowledged for the entire claimed subject-matter.
- 9 The industrial applicability of the claimed subject-matter is evident from the application, so that the requirements of Article 33(4) PCT are considered met.

Re Item VIII

Certain observations on the international application

- 10 The feature of "solvent" and "surfactant" may be considered to overlap, resulting in a lack of clarity for the skilled reader (Article 6 PCT). For example, *N,N*-dimethyloctanamide (Stepasol) and *N,N*-dimethyldecanamide (Armid), listed in claim 2 as suitable solvents, are commercially sold as surfactants.

- 11 The subject-matter of claims 14 and 15 encompasses the treatment of the human or animal body. Indeed, the locus that is an area of potential or known interaction between a human or mammal and a mosquito is the skin. As such, the claims relate to subject-matter that is considered by this Authority to be covered by the proviso in Rules 39.1(iv) and 67.1(iv) PCT and the patentability of this subject-matter depends on the formulation of said claims; for example, the EPO does not consider claims directed to the use of a compound in medical treatment as patentable, but claims directed to a product for use in a first or further medical treatment may be permitted.