

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/EP2019/064795	International filing date (day/month/year) 06.06.2019	Priority date (day/month/year) 06.06.2018
International Patent Classification (IPC) or both national classification and IPC INV. C07D487/04 A01N43/90		
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 Fax: +49 89 2399 - 4465	Date of completion of this opinion see form PCT/ISA/210	Authorized Officer Sáez Díaz, R Telephone No. +49 89 2399-0	
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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:
 - ☐ in the form of an Annex C/ST.25 text file.
 - ☐ on paper or in the form of an image file.
 - b. ☐ furnished together with the international application under PCT Rule 13ter.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.
 - c. ☐ furnished subsequent to the international filing date for the purposes of international search only:
 - ☐ in the form of an Annex C/ST.25 text file (Rule 13ter.1(a)).
 - ☐ on paper or in the form of an image file (Rule 13ter.1(b) and Administrative Instructions, Section 713).
4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
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>1-20</u>
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	<u>1-20</u>
Industrial applicability (IA)	Yes: Claims	<u>1-20</u>
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

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

- 1 The present application relates to heterocyclic derivatives of formula (I) for use as pesticides.
- 2 Reference is made to the following document; the numbering will be adhered to in the rest of the procedure.

D1 EP 3 252 046 A1

The family member WO2016/121997 of document D1 has been cited by the applicant in the description (Rule 5.1(a)(ii)PCT).

- 3 No prior art document discloses derivatives of the present formula (I). The structurally closest compounds can be found in document D1 (example 3). This prior art compound differs from the ones presently claimed through the sulfone moiety (instead of the present sulfoximine moiety).

Therefore, the subject-matter of claims 1-20 is novel and meets the requirements of Article 33(2) PCT.

- 4 Document D1 is considered to be the closest prior art to the subject-matter of claims 1-20 as it discloses heterocyclic derivatives of formula (I) for use as pesticides (claims 1-9, example 3, test examples 1-3). The difference between the example of D1 and the presently claimed compounds resides in the sulfone moiety. The problem to be solved by the present application is seen in the provision of alternative heterocyclic derivatives for use as pesticides.

The compounds described in present claims 1-20 are structurally very similar to the ones described in D1. Since no effect seems to be associated to the minor structural variations (replacement of O by N in the sulfone moiety), no inventive step can be recognized on the basis of such variations.

Even if an unexpected effect of the present compounds vs. the compound of D1 would be shown, it is noted that according to the problem solution approach, all alternatives of a claim should solve the technical problem underlying the claimed invention. In the present case, the number of alternative compounds falling within the scope of the present claims is such that it is unlikely that all of them possess the type and level of activity required to achieve the technical effect essential for the resolution of the problem. Moreover, the tested examples relate mainly to heterocyclic derivatives of

formula (I), wherein R_1 is ethyl, R_2 is H, R_4 includes a CF_3 moiety and $n = 1$, making not credible that all embodiments embraced by the scope of present claims solve the posed problem.

Thus, at present the subject-matter of claims 1-20 does not meet the requirements of Article 33(3) PCT.