

# 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/EP2020/057725

International filing date (day/month/year)  
20.03.2020

Priority date (day/month/year)  
22.03.2019

International Patent Classification (IPC) or both national classification and IPC  
INV. C07C69/736 C07C251/44 C07C255/46 A01N37/36 A01N37/50

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  
P.B. 5818 Patentlaan 2  
NL-2280 HV Rijswijk - Pays Bas  
Tel. +31 70 340 - 2040  
Fax: +31 70 340 - 3016

Date of completion of  
this opinion

see form  
PCT/ISA/210

Authorized Officer

Lacombe, Céline

Telephone No. +31 70 340-0



---

**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:
    - ☐ 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>1-15</u> |
|                               | No: Claims  |             |
| Inventive step (IS)           | Yes: Claims | <u>1-15</u> |
|                               | No: Claims  |             |
| Industrial applicability (IA) | Yes: Claims | <u>1-15</u> |
|                               | No: Claims  |             |

2. Citations and explanations

**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**

**Re Item V**

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

**1 Documents**

Reference is made to the following documents:

- D1        EP 0 212 859 A2 (ICI PLC [GB]) 4 March 1987 (1987-03-04)  
             cited in the application
- D2        WO 01/00562 A1 (SUMITOMO CHEMICAL CO [JP]; SAKAGUCHI  
             HIROSHI [JP]) 4 January 2001 (2001-01-04)

**2 Novelty**

- 2.1       D1 and D2 disclose compounds of formula (I) wherein R<sup>4</sup> is **phenyl** (optionally substituted) for use as fungicide (see D1: claims 1, 8, 9 and table 1; D2: pages 57-59, 62, claim 1 and pages 26-27 corresponding to §181 of the automatic translation attached to this communication).

The subject-matter of claims 1 - 15 is therefore new (Article 33(2) PCT).

**3 Inventive step**

- 3.1       D1 regarded as being the prior art closest to the subject-matter of claim 1, since it discusses the same problem.
- 3.2       The subject-matter of claim 1 therefore differs from this known compounds in that R<sup>4</sup> is C3 - C7 cycloalkyl or cycloalkenyl (optionally substituted with 1 - 3 R<sup>5</sup> substituents as defined in claim 1) and is therefore new (Article 33(2) PCT).

- 3.3 No effect caused by this difference is disclosed in the application since the applicant has not provided experimental data comparing the activity of compounds wherein R<sup>4</sup> is phenyl to the claimed compounds. However, the applicant has demonstrated that the prepared compounds (E1 - E23 and F1 - F10, with a wide variety of cycles and substituents) have fungicidal activity against a variety of fungus in the examples.
- 3.4 The problem to be solved by the present invention may therefore be regarded as the provision of further fungicidal compounds
- The solution proposed by the applicant is the compounds of formula (I) as defined in claim 1.
- 3.5 The solution to this problem proposed in claim 1 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons: starting from D1, the skilled person would find no hints that replacing the phenyl group by various cycloalk(en)yl groups can yield fungicidally active compounds. None of the prior art documents retrieved during the search, taken alone or in combination with D1, would lead to this technical solution. Therefore, the problem has been solved in a non-obvious manner and inventive activity can be acknowledged.
- 3.6 Claims 2 - 11 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.
- 3.7 The same reasoning applies, mutatis mutandis, to the subject-matter of the corresponding independent claims 12 (as well as its dependent claim 13), 14 and 15, which therefore is also considered inventive, since they relate respectively to agrochemical compositions containing compounds of formula (I), methods of controlling plant infestation by using compounds of formula (I) and use of compounds of formula (I) as fungicides..

**Re Item VII**

**Certain defects in the international application**

- 1      The subject-matter described on page 2 line 26 ("*According to this particular aspect of the invention, the use **may** exclude methods for the treatment of the human or animal body by surgery or therapy*") suggests that the claims could also cover methods of treatment for humans and animals. 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).
  
- 2      Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in D2 is not mentioned in the description, nor is this document identified therein.