

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
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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/BR2019/050520	International filing date (day/month/year) 04.12.2019	Priority date (day/month/year) 04.12.2018
International Patent Classification (IPC) or both national classification and IPC INV. A01N47/38 A01N43/84 A01P13/00		
Applicant UPL CORPORATION LIMITED		

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 Bertrand, Franck 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:

see separate sheet

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, 7</u>
	No: Claims	<u>1, 3-6, 8-10</u>
Inventive step (IS)	Yes: Claims	<u>7</u>
	No: Claims	<u>1-6, 8-10</u>
Industrial applicability (IA)	Yes: Claims	<u>1-10</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 I

Basis of the report

Reference is made to the following documents:

- D1 WO 2015/153281 A1 (FMC CORP [US]) 8 October 2015 (2015-10-08)
- D2 US 2017/223961 A1 (NOGUEIRA ALESSANDRO LEAL [BR] ET AL) 10
 August 2017 (2017-08-10)

Re Item V

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

The present invention is directed to a broad spectrum synergistic herbicide for the control of weeds in agricultural crops.

Novelty (Art.33(2) PCT):

D1 discloses the use of a broad spectrum synergistic herbicide (p.2 l.4-5) selected from the group of photosystem II inhibitors from Triazines (p.2 l.17-18) in combination with the enzyme protoporphyrinogen oxidase inhibitor (p.3 l.13) being flumioxazine (p.2 l.22). D1 thus anticipates the subject-matter of the present claims 1, 5, 6 and 8-10.

D2 mentions the synergistic effect of protoporphyrinogen oxidase and photosystem II inhibitors (p.3 [0027], p.4 [0045]). The herbicide formulation in an aqueous suspension is used for combating undesirable weeds like *Brachiaria decumbens* (p.4 [0034]) or *Panicum maximum* (p.4 [0033]). One herbicide is selected from the triazolinone group and can be amicarbazone (p.4 [0048]) and the second herbicide from the urea group (p. 4 [0047]). D2 thus anticipates the subject-matter of the present claims 1, 3, 4 and 8-10.

The subject-matter of the present claims 2 and 7 is new over the prior art, since neither the ration between the actives nor the combination of amicarbazone with flumioxazin was previously disclosed.

Inventive Step Art 33.3 (PCT):

Any of D1/D2 represents the closest prior art.

Synergism being basically unpredictable makes it likewise impossible to extrapolate results observed for some embodiments. Therefore, only the synergistic effect of an amicarbazine+flumioxazin mixture is presently made plausible.

Hence, the subject-matter of the present claim 7 involves an inventive step.

However, this cannot be extended to other pairs of actives, for which the technical problem is to be seen in the provision of an alternative herbicide. The solution of arbitrarily selecting two known herbicides within either D1 or D2 is trivial in that the skilled artisan would expect some level of herbicidal activity.

The subject matter of the present claim 2 does thus not involve an inventive step.

Re Item VIII

Certain observations on the international application

Clarity Art 6 PCT:

It is unclear to which extent the subject-matter of the present claim 8 is meant to distinguish from the subject-matter of the present claim 1, the objective difference between a vehicle and an excipient not being directly apparent

The wording of the present claim 7 is unclear *per se* as relating to a composition containing a weight of actives per units of surface area.