1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).

2. This REPORT consists of a total of 9 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. 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 or 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

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis.2).

Date of issuance of this report
18 April 2017 (18.04.2017)

Authorized officer
Nora Lindner
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The International Bureau of WIPO
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Form PCT/IB/373 (January 2004)
# PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

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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

<table>
<thead>
<tr>
<th>International application No.</th>
<th>International filing date (day/month/year)</th>
<th>Priority date (day/month/year)</th>
</tr>
</thead>
</table>

International Patent Classification (IPC) or both national classification and IPC
INV. A01N37/24 A01N37/34 A01N43/22 A01N43/54 A01N43/56 A01N43/65 A01N43/90 A01N47/14 A01N47/18 A01N47/24 A01N47/38 A01N51/00 A01N53/00 A01N55/00 A01N57/04

Applicant
BASF SE

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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 66.1 bis(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.

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Name and mailing address of the ISA:
European Patent Office
D-80296 Munich
Tel.: +49 89 2399 - 0
Fax: +49 89 2399 - 4465

Date of completion of this opinion
see form PCT/ISA/210

Authorized Officer
Zanobini, Alessandra
Telephone No. +49 89 2399-0

Form PCT/ISA/237 (Cover Sheet) (January 2015)
Box No. 1  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:
      - ☐ 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. II  Priority

1. ☑ The validity of the priority claim has not been considered because the International Searching Authority does not have in its possession a copy of the earlier application whose priority has been claimed or, where required, a translation of that earlier application. This opinion has nevertheless been established on the assumption that the relevant date (Rules 43bis.1 and 64.1) is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43bis.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

   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  1-22
   No:  Claims

   Inventive step (IS)  
   Yes: Claims  1-22
   No:  Claims

   Industrial applicability (IA)  
   Yes: Claims  1-22
   No:  Claims

2. Citations and explanations

   see separate sheet

Box No. VI  Certain documents cited

1. Certain published documents (Rules 43bis.1 and 70.10)

   and / or

2. Non-written disclosures (Rules 43bis.1 and 70.9)

   see form 210
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
Reference is made to the following documents:

D6 CN 1 398 524 A (INST OF PLANT PROT ZHEJIANG PR [CN]) 26 February 2003 (2003-02-26)

The present application discloses a method for controlling pests from the family of Pentatomidae, by contacting them with a composition comprising at least a component (I) and at least a component (II) and/or at least a component (III) wherein component (I) can be bilobalide or a ginkolide A, B, C, J or M and component (II) and (III) are selected from long lists of pesticidal agents. Preferred compounds from group (II) are thiamethoxam, acetamiprid, chlothianidin, dinofuran, imidachloprid, nitenpyram and thiachloprid, spinosad abamectin or microbial pesticides. Preferred compounds from group (III) are pyraclostrobin, fluxapyroxad, mancozeb, amencotradin, carbendazin, iprodion, prochloraz, chlorothalonil, azoxystrobin, trifloxystrobin, fenhexamid, pymethanil, epoxiconazole, difenoconazole.

1 Preliminary Observations

The application appears to lack unity. An official objection is not raised at this stage but it could be raised in the European Phase when document D2 will be used in the assessment of novelty. This document is not relevant for the novelty of claims 1 to 22. Nevertheless, it renders the general inventive concept that is shared by the six inventions on which this disclosure is based. They all refer to compositions comprising a derivative obtained from the ginko tree and at least one further pesticidally active compound to be used in the control of insect pests. This general concept is in fact rendered not novel by D2 wherein bilobalide is combined to a carboxamide insecticide to kill Vetch aphids.
Re Item II
See re Item VI for observations on documents D1 and D2.

Re Item V
2 Novelty
The attention of the applicant is drawn to the following documents of prior-art:

D1 describes bilobalide and ginkolide derivatives that are used to treat pests of the class of the Pentatomidae. They are combined among each other (see page 1, line 3 - page 3, line 11; page 4, line 20 - page 5, line 7; page 17 - page 21).

D2 discloses combinations of a carboxamide insecticide with further insecticides and in particular with bilobalide to kill Vetch aphid (see page 1, line 29 - page 9, line 24; page 31, line 23 - line 34; table B.1).

D3 describes ginkolides and bilobalide that are used for their inhibitory activity against Pityrosporum ovale (dandruff in humans) but also as a biological pesticide to kill pests affecting plants as for example Tetranychus urticae, Spodoptera litura or Myzus persicae (see page 1, paragraph 1; paragraphs [0014] - [0016], [0025] - [0031], [0153] - [0169]).

D4 describes ginkolic acid and other ginkolides that are applied on apple trees to prevent infestation by codling moth. Synthetic terpene trilactones and extracts are used. (see figure 1; paragraphs [0003], [0010] - [0012], [0024] - [0025]; examples 2-7).

D5 discloses ginko extracts that are obtained in the form of a powder. A solution is obtained (200 to 25 ppm) and toxicity against mosquito larvae is tested.

D6 shows the pest repellent effect of Ginko extracts on several type of insects. Formulations and examples are provided. Brown planthopper, green peach aphid, are treated (see paragraphs [0002], [0006] - [0009], [0031] - [0034], [0054], [0081]; examples 1-4).

The present application meets the criteria of Article 33(1) PCT, because the subject-matter of claims 1 to 22 is new in the sense of Article 33(2) PCT.

None of the prior-art documents discloses ginkolide A, B, C, M or J or bilobalide in combination with compounds from groups (II) or (III) of the present application.

3 Inventive Step
The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1 to 22 does not involve an inventive step in the sense of Article 33(3) PCT.
D3 is regarded as being the prior art closest to the subject-matter of claims 1 to 22, and discloses the control of insect pest with compositions comprising derivatives from group (I). D4 could be also equally considered the closest-prior-art.

The subject-matter of claims 1 to 22 therefore differs from this known D3/D4 in that bilobalide or the other extracts from the ginko tree are used in a composition that comprises further actives that are synergistic with the compounds of group (I). The compositions of claims 1 to 22 are used against Pentatomidae insects.

According to the application, the combination of compounds of group (I) with compounds of group (II) or/and group (III) allows the control of Pentatomidae insects with a synergistic effect. The effect has been disclosed for compositions of ginkolide A or bilobalide with thiamethoxam, dinotefuran, imidachloprid, spinosad abamectin, Beauveria bassiana, strain PRRI5339, from group (III) are pyraclostrobin, fluxapyroxad, mancozeb, amecotradin, carbendazin, iprodion, prochloraz, chlorothalonil, azoxystrobin, trifloxystrobin, fenhexamid, pyrimethanil, epoxiconazole, difenoconazole. No synergistic effect for ternary mixtures have been disclosed either. The synergistic effect has been therefore not disclosed over the whole scope claimed, since many more combinations of active ingredients are described in claim 1 or claim 17. Since the synergistic effect has not been disclosed over the whole scope, the problem solved by the present application cannot be considered as an improved method of treatment.

The problem to be solved by the present invention may therefore be regarded as how to provide a method of control of insect pests of the class of Pentatomidae.

The solution proposed in claims 1 to 22 of the present application cannot be considered to involve an inventive step (Article 33(3) PCT). Synergistic effects are generally not predictable and thus not obvious and surprising but this property for numerous mixtures, if not plausibly demonstrated, cannot be regarded as inventive. The person skilled in the art is aware of the insect control activity of ginko derivatives on different type of insects. Looking for an alternative treatment, in view of diminishing resistance he would have certainly tried to combine the ginko derivatives of D3 with further active ingredients, resulting in the present disclosure without any inventive step.

4 Industrial Applicability

The subject matter of claims from 1 to 22 is considered as industrially applicable.

Re Item VI

5 Priority
The priority document pertaining to the present application was not available at the time of establishing this written opinion. Hence, it is based on the assumption that all claims enjoy priority rights from the filing date of the priority document (16.10.2014). If it later turns out that this is not correct, the documents indicated in the International Report as P could become relevant to assess whether claims 1 to 22 satisfy the criteria set forth in Article 33(1) PCT. However, in the European Procedure D1 and D2 will be considered as prior art for the assessment of novelty, according to Article 54(3) EPC, since D1 and D2 claim the earlier priorities of 27.02.2014 and 18.10.2013 respectively.

Re Item VII

6 Acknowledgement of the Prior Art

Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in D3 and D4 is not mentioned in the description, nor are these documents identified therein.