

**Internal distribution code:**

- (A) [ ] Publication in OJ  
(B) [ ] To Chairmen and Members  
(C) [X] To Chairmen  
(D) [ ] No distribution

**Datasheet for the decision  
of 9 October 2008**

**Case Number:** T 0290/06 - 3.3.01

**Application Number:** 00951283.1

**Publication Number:** 1185173

**IPC:** A01N 35/04

**Language of the proceedings:** EN

**Title of invention:**  
Fungicidal combinations

**Patentee:**  
Syngenta Participations AG

**Opponent:**  
BASF SE

**Headword:**  
Fungicidal combinations/SYNGENTA

**Relevant legal provisions:**  
EPC Art. 100(a), 54(3)

**Relevant legal provisions (EPC 1973):**  
-

**Keyword:**  
"Novelty (yes) - correction of a manifest error a document of the state of the art not evident"  
"Inventive step (no) - obvious alternative combination of fungicides"

**Decisions cited:**  
-

**Catchword:**  
-



Case Number: T 0290/06 - 3.3.01

**DECISION**  
of the Technical Board of Appeal 3.3.01  
of 9 October 2008

**Appellant:** BASF SE  
(Opponent) D-67056 Ludwigshafen (DE)

**Representative:** Langfinger, Klaus Dieter  
Dres. Fitzner & Partner  
Hauser Ring 10  
D-40878 Ratingen (DE)

**Respondent:** Syngenta Participations AG  
(Patent Proprietor) CH-4058 Basel (CH)

**Representative:** Gaal, Jozsef Christopher  
Syngenta Limited  
Intellectual Property Department  
PO Box No 3538  
Jealott's Hill International, Research Centre  
Bracknell  
Berkshire RG42 6YA (GB)

**Decision under appeal:** Interlocutory decision of the Opposition  
Division of the European Patent Office posted  
8 December 2005 concerning maintenance of  
European patent No. 1185173 in amended form.

**Composition of the Board:**

**Chairman:** P. Ranguis  
**Members:** C. M. Radke  
R. Menapace

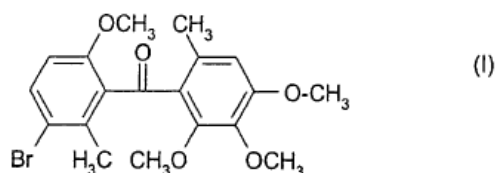
## Summary of Facts and Submissions

I. On 17 February 2006 the opponent lodged an appeal against the decision of the opposition division posted on 08 December 2005 that the European patent no. 1 185 173 amended according to the third auxiliary request filed during the oral proceedings of 22 November 2005 met the requirements of the EPC, and paid the appeal fee on the same day. The statement setting out the grounds of appeal was received by the EPO on 18 April 2006.

II. The third auxiliary request was based on six claims, claim 1 reading as follows:

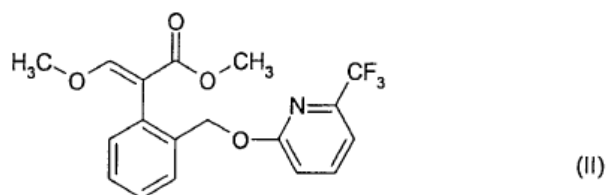
1. A method of combating phytopathogenic diseases on crop plants which comprises applying to the crop plants or the locus thereof being infested with said phytopathogenic disease an effective amount of a combination of

c) 5-bromo-6,6'-dimethyl-2,2',3',4'-tetramethoxybenzophenone (I)

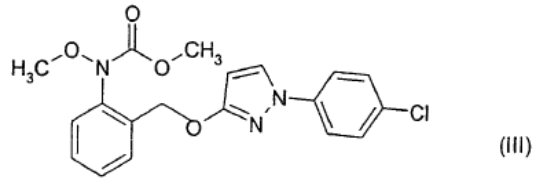


in association with

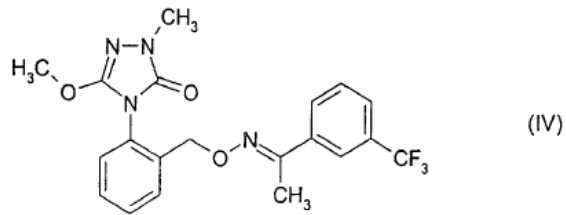
d) the strobilurin of formula II



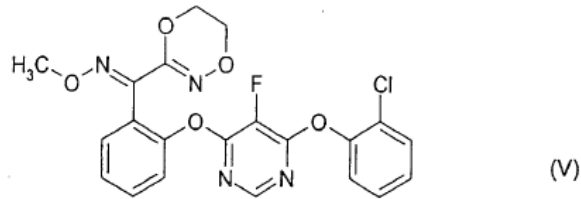
or with the strobilurin of formula III



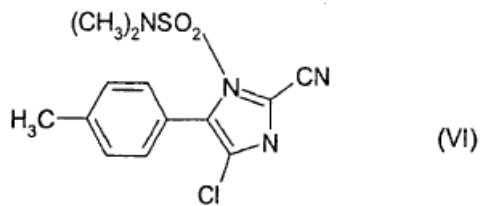
or with the strobilurin of formula IV



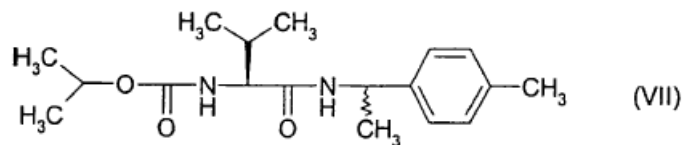
or with the strobilurin of formula V



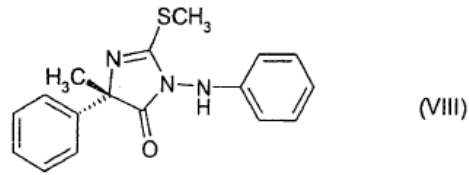
or with the cyanoimidazole of formula VI



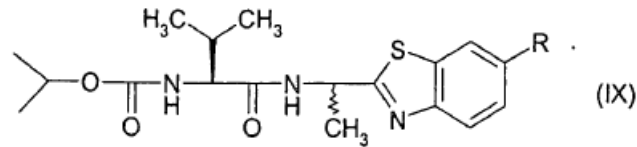
or with the carbonic acid amide of formula VII



or with the carbonic acid amide of formula VIII

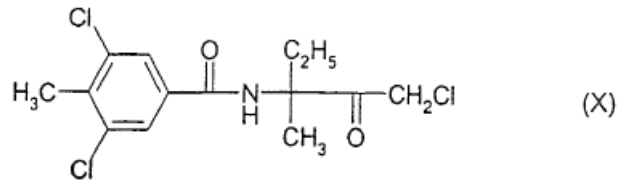


or with the carbonic acid amide of formula IX



wherein R is chloro or fluoro,

or with the carbonic acid amide of formula X



III. The following documents were cited during the opposition procedure:

- (D1) EP-A-0 897 904
- (D2) EP-A-0 899 255
- (D3) EP-A-1 023 835
- (D4) EP-A-1 023 834

IV. The opposition division considered the subject-matter of the claims of the third auxiliary request to be novel as documents (D1) to (D4) did not disclose a component d) as defined in claim 1 of the patent in suit.

It held that document (D1) represented the closest prior art. This document disclosed the fungicidal activity of certain benzophenone derivatives in general and of component c) of claim 1 in particular, and that combinations of such benzophenone derivatives with other biologically active agents might broaden the spectrum of activity. The problem to be solved in view of document (D1) was to provide further combinations for combating phytopathogenic diseases on crop plants. Due to the fungicidal effect of component c) this problem was solved. Document (D1) disclosed classes of fungicides as mixing partners for component c). However, neither (D1) nor (D2) disclosed a component d) as defined in claim 1 of the patent in suit, so that the subject-matter of the claims of the third auxiliary request was not obvious.

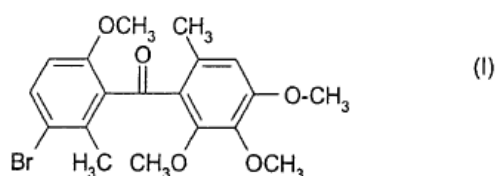
- V. The claims upheld in the appeal proceedings are claims 1 - 6 of the Main Request and claims 1 - 5 of the Auxiliary Request, both filed with the letter dated 20 August 2008, with the following correction of clerical errors in the claims of the Main Request requested during the oral proceedings before the Board:
- In claim 3: Replacement of "claims 2 to 3" by  
"claims 1 or 2";
- in claim 5: Replacement of "claim 5 wherein" by  
"claim 4 wherein"; and
- in claim 6: Replacement of "claims 5 to 6" by  
"claims 4 or 5".

The claims of the Main Request differ from the ones held to be allowable in the decision under appeal in that in claim 1, c) and d) were replaced by a) and b), respectively.

Claim 1 of the Auxiliary Request reads as follows:

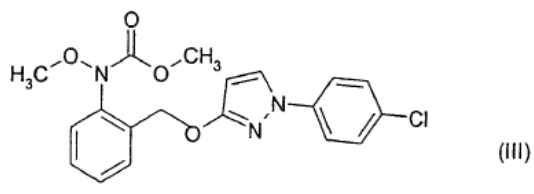
"1. A method of combatting phytopathogenic diseases on crop plants which comprises applying to the crop plants or the locus thereof being infested with said phytopathogenic disease an effective amount of a combination of

- a) 5-bromo-6,6'-dimethyl-2,2',3',4'-tetramethoxybenzophenone (I)



in association with

- b) the strobilurin of formula III



VI. During the oral proceedings before the Board, the Appellant withdrew his objection under Article 123(2) EPC raised in writing against amended claim 1 of the Main Request.

He argued that the subject-matter of present claims 1 to 6 was not novel in view of the disclosure of document (D3), where the most preferred compound BB-4 was named erroneously "3-bromo-2',6-dimethyl-2,4',5',6'-tetramethoxybenzophenone (coded BB-4)" in paragraph [0014]. Correctly it should read "5-bromo-

..." as was evident from formula (IA), so that document (D3) disclosed component a) of present claim 1 as being the most preferred benzophenone component. It also disclosed to combine this component with fenamidone, IKF-916, iprovalicarb or RH-7281 which are the compounds of formulae (VIII), (VI), (VII) and (X) as defined in claim 1 of the patent in suit.

The Appellant considered document (D1) to represent the closest prior art. Among the fungicides disclosed in this document, metrafenone (i.e. component a) according to present claim 1) was shown to be the most effective. This document also disclosed compositions containing benzophenone type fungicides, such as metrafenone, in combination with further fungicides which can broaden the spectrum of activity or give rise to synergetic effects. The further fungicides mentioned comprised several strobilurines. So, the problem to be solved in view of document (D1) was to provide alternative combinations of metrafenone with strobilurines. The replacement of the strobilurines mentioned in (D1) by the one of formula III was obvious as the latter was known from document

(D5) WO-A-96 01 256 .

The same applied to the other combinations.

He considered the experimental report submitted by the Respondent under cover of the letter dated 26 September 2005 not to be relevant. This report only covered in vitro tests which gave no reliable indication whether or not the combination tested showed the same effect on the plant, i.e. in vivo.



VII. The Respondent argued that the Appellant had not shown that the name of the compound BB-4 in document (D3) was obviously erroneous, nor that nothing else than the 5-bromo-derivative would have been intended. The question was whether the 5-bromo derivative was unambiguously derivable from document (D3), which he denied.

The Respondent considered document (D1) as the closest prior art; the problem to be solved was to provide alternative combinations for combating phytopathogenic diseases on crop plants. This problem was solved by providing the combinations of claim 1. While document (D1) indicated classes of fungicides to be combined with the benzophenone derivatives it was silent about the proposed solution. In order to come to this solution, the person skilled in the art had to select metrafenone (i.e. compound a) according to claim 1 of both requests) out of the many benzophenone derivatives disclosed in documents (D1) and (D2), to select the compound of formula (III) according to claim 1 of both requests out of the many compounds disclosed in document (D5) and to combine these two compounds. Therefore, he contended that the subject-matter claimed involved an inventive step. As to the experimental report submitted under cover of the letter dated 26 September 2005, he confirmed that compounds showing promising results in vitro may fail in vivo, e.g. if they turn out to be photosensible.

VIII. The Appellant requested that the decision under appeal be set aside and the patent be revoked.

The Respondent requested that the decision under appeal be set aside and that the patent be maintained on the basis of claims 1 to 6 of the Main Request or on the basis of claims 1 to 5 of the Auxiliary Request, both requests filed with the letter dated 20 August 2008, with the amendments in claims 3, 5 and 6 of the Main Request as outlined in the first paragraph under point V above.

IX. At the end of the oral proceedings the decision of the Board was announced.

### **Reasons for the Decision**

1. The appeal is admissible.

2. *Article 123 EPC*

2.1 *Article 123(2) EPC*

Present claim 1 of both the Main Request and the Auxiliary Request is based on claim 1 as originally filed in combination with page 6, lines 2-3 of the original description. Present claims 2-6 of the Main Request are based on original claims 2 and 4-7 respectively, while claims 2-5 of the Auxiliary Request are based on original claims 2 and 5-7 respectively.

2.2 *Article 123(3) EPC*

The claims of the Main Request differ from those as granted in that in claim 1

- the compound of formula (I) is now restricted to 5-bromo-6,6'-dimethyl-2,2',3',4'-tetramethoxy-benzophenone, and
- formula (XI) was deleted.

Claims 3 as granted was deleted.

The claims of the Auxiliary Request further limit the claims by deleting formulae (II) and (IV) to (X).

These amendments thus limit the protection conferred by the claims as granted.

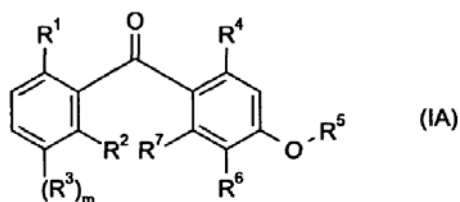
### 3. *Novelty*

- 3.1 Document (D3) forms part of the state of the art under Article 54(3) and (4) EPC 1973 (which is applicable in view of the filing date of the application underlying the patent in suit).

The question in dispute was whether or not this document disclosed compound a) according to present claim 1, namely **5-bromo-6,6'-dimethyl-2,2',3',4'-tetramethoxy-benzophenone**.

The document explicitly discloses on page 3, line 57 a compound named **3-bromo-2',6-dimethyl-2,4',5',6'-tetramethoxy-benzophenone** (denoted as "BB-4"). This compound differs from compound a) according to present claim 1 in that the bromine atom is in the **3-position**, namely in a vicinal position to the **2-methoxy** group.

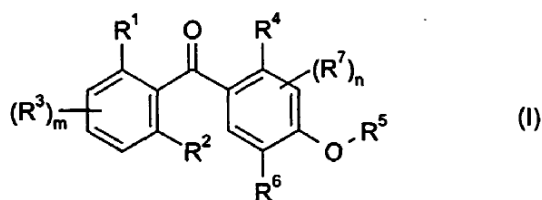
- 3.2 The name given to compound "BB-4" in document (D3) is not in line with formula (IA)



depicted on page 3 of the same document because this formula requires that a bromine atom directly attached to one of the benzene rings (i.e. the radical  $R^3$  where  $m$  equals 1) be in a vicinal position with respect to the radical  $R^2$  which represents a **chlorine atom or a methyl group**.

- 3.3 Hence it is evident that there is an error in document (D3).
- 3.3.1 This error could well be corrected by replacing "3-bromo-..." by "5-bromo-..." on page 3, line 57 of the document, as suggested by the Appellant (see the second paragraph under point VI above).
- 3.3.2 However, a meaningful correction could also be to adapt formula (IA) or the definitions of the radicals depicted therein.

The formula could, e.g., be adapted by shifting the radical  $R^3$  to the vicinal position with respect to the radical  $R^1$ . This amendment would be consistent both  
- with the general formula (I)



where the radical  $R^3$  may be at the 3-, 4- or 5-position on the benzene ring (see page 2 of (D3)), and

- with the other specific compounds BB-1 to BB-3 mentioned on page 3, lines 55-58 (which do not contain a radical  $R^3$ , i.e. for which the index m in formulae (I) and (IA) means zero).

3.3.3 Hence, it is not immediately evident that the error was to be corrected as outlined under point 3.3.1 above.

3.4 Therefore, document (D3) does not unambiguously disclose compound a) of the present claims of both requests.

3.5 The Appellant did not base his objection as to novelty on any other document, nor is the Board aware of a document the teaching of which might deprive the subject-matter of any of the present claims of novelty.

3.6 For these reasons, the subject-matter of the claims of the Main Request and of the Auxiliary Request is novel.

4. Inventive step

4.1 The closest prior art

The Board agrees with the parties that document (D1) represents the closest prior art for assessing inventive step.

This document discloses certain benzophenone compounds in general and 5-bromo-6,6'-dimethyl-2,2',3',4'-tetramethoxy-benzophenone (metrafenone) in particular, i.e. compound a) of present claim 1, and their use as fungicides on plants ((see (D1), the third compound listed in claim 4, example 6 on pages 13 and 14,

example 63 on pages 17-18 and claim 11). The results of in vivo tests presented in this document show that metrafenone is very effective against wheat, barley and cucumber powdery mildews (see tables IV to VI on pages 22 to 24 as far as they refer to the product of example 6).

The respective fungicidal compositions  
" ... can also comprise other compounds having biological activity, e.g. compounds having similar or complementary pesticidal activity or compounds having plant growth regulating, fungicidal or insecticidal activity. These mixtures of pesticides can have a broader spectrum of activity than the compound of general formula I alone. Furthermore, the other pesticide can have a synergistic effect on the pesticidal activity of the compound of general formula I." (see paragraph [0061]). Paragraph [0063] gives examples of such other fungicidal compounds, including azoxystrobin, kresoxim-methyl and SSF-126, which all belong to the class of strobilurines (see page 11, lines 8, 17 and 22).

#### 4.2 The technical problem to be solved

##### 4.2.1 The patent in suit mentions that the combinations claimed exhibited synergetic fungicidal activities (see page 4, lines 28-29). However, it does not contain any quantitative data on the fungicidal effect of the claimed combination(s) of compounds.

The only quantitative tests provided were the in **vitro** tests submitted under cover of the letter dated 26 September 2005. It was undisputed that these tests

do not give reliable information on the effects of the combination in **vivo**, namely on the crop plant.

Therefore, there is no evidence that the fungicidal combinations defined in the present claims show synergy. Hence, the problem to be solved is considered to be a less ambitious one.

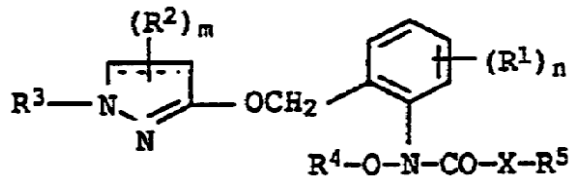
- 4.2.2 The problem to be solved by the subject-matter claimed in view of document (D1) can only be seen in the provision of alternative combinations of compounds comprising metrafenone and a further fungicidal compound for combating phytopathogenic diseases on crop plants in order achieve a complementary action or to broaden the spectrum of activity of metrafenone (see paragraph [0016] of the patent in suit).

Normally a mixture of fungicides provides a complementary effect (see the expected additive action according to Colby mentioned in paragraph [0048] of the patent in suit). Quite often the different fungicides to be combined have different spectra of activity, so that this complementary effect broadens the spectrum of activity of the mixture with respect to a single active agent contained therein. Therefore, the Board considers that the problem has been plausibly solved.

- 4.3 Hence it has to be decided here whether or not the person skilled in the art
- starting from document (D1) which discloses metrafenone and combinations thereof with other fungicides,
  - trying to find alternative combinations of compounds comprising metrafenone and a further

fungicidal compound for combating phytopathogenic diseases on crop plants in order to achieve a complementary action or to broaden the spectrum of activity of metrafenone, and  
- considering the state of the art under Article 54(2) EPC as a whole would have selected the combination defined in claim 1 of both the Main Request and the Auxiliary Request.

4.3.1 Document (D5) relates to compounds of the formula



and to their use as fungicides (see claims 1, 9 and 10). The document explicitly discloses the strobilurin-type compound of the formula (III) depicted in claim 1 of both requests (see compound no. 2 listed in the table on page 62 of document (D5)).

Blending the compounds claimed in this document with further fungicides results in many cases in a broadening of the fungicidal spectrum of activity (see page 56, line 45 to page 57, line 2: "Beim Vermischen mit Fungiziden oder Insektiziden erhält man dabei in vielen Fällen eine Vergrößerung des fungiziden Wirkungsspektrums.")

4.3.2 The Respondent argued that the selection of the compound of formula (III) according to claim 1 of both requests out of the many compounds disclosed in document (D5) contributed to the presence of an inventive step (see the second paragraph under point VII above).



However, the only compounds disclosed in document (D5) for which physical properties are given are the 56 compounds listed in the table on pages 62 to 66.

Pages 67 to 69 of the document reports on tests of many of these compounds - including compound no. 2 - against certain fungi on wheat, grapes and bell peppers.

The results of the tests are presented in a general way, none of the compounds tested being preferred (see, e.g., page 69, lines 11-16 where it is mentioned that 15 % of the plants treated with 63 ppm of any of the compounds 1-7, 10, 13, 14, 18-20, 27-29, 34, 36, 41 or 56 were infested with the fungus).

Thus it is evident that compound no. 2 (namely the compound of formula (III) of present claim 1) was one of that part of the 56 compounds listed in the table on pages 62 to 66 which were tested as fungicides, i.e. one of a limited number of preferred fungicides. Hence, the Board does not share the view of the Respondent.

4.3.3 Therefore, the person skilled in the art looking for a fungicide to be combined with metrafenone in order to achieve a complementary effect or to broaden the spectrum of activity of metrafenone and knowing that metrafenone can be associated with strobilurine-type fungicides such as azoxystrobin, kresoxim-methyl or SSF-126 to broaden the spectrum of activity of metrafenone would

- have consulted document (D5)(see point 4.3.1 above),

- would have considered a combination of metrafenone with any of the 56 compounds listed in the table on pages 62 to 66 of document (D5) which were tested as fungicides (which include the strobilurine-type compound no. 2) to represent an equally well suited solution to the problem posed (see point 4.3.2 above), so that
- the selection of the combination of metrafenone with compound no. 2 was obvious to him.

In consequence, the person skilled in the art would have combined without inventive ingenuity metrafenone, i.e. compound a) of present claim 1 of both requests, with the compound no. 2 disclosed in document (D5), which is the compound of formula (III) of claim 1 of both the Main and the Auxiliary Requests, and would have used this combination for combating fungi on crop plants by applying it to the plant infested.

- 4.4 Therefore, the subject-matter of claim 1 of both the Main Request and the Auxiliary Request does not involve an inventive step. Hence, grounds of opposition under Article 100(a) EPC prejudice the maintenance of the patent (see Article 101(2) EPC).

**Order**

**For these reasons it is decided that:**

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:

M. Schalow

P. Ranguis