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**Datasheet for the decision
of 19 November 2008**

Case Number: T 0631/06 - 3.3.01

Application Number: 03000694.4

Publication Number: 1310169

IPC: A01N 43/54

Language of the proceedings: EN

Title of invention:
Fungicidal mixture

Patentee:
E.I. DU PONT DE NEMOURS AND COMPANY

Opponent:

-

Headword:
Fungicidal mixtures/DU PONT DE NEMOURS

Relevant legal provisions:
EPC Art. 123(2), 76(1), 56

Relevant legal provisions (EPC 1973):

-

Keyword:

"Main request and auxiliary request 1 to 3: inventive step (no)
- synergistic effect not credibly shown over the whole scope -
obvious alternative"

"Auxiliary requests 4 to 7: claimed subject-matter extending
beyond the content of the parent application (yes) - selection
out of two lists (not directly and unambiguously disclosed)"

Decisions cited:

T 0423/03, T 0727/00, T 0187/93, T 0068/85

Catchword:

-



Case Number: T 0631/06 - 3.3.01

D E C I S I O N
of the Technical Board of Appeal 3.3.01
of 19 November 2008

Appellant: E.I DU PONT DE NEMOURS AND COMPANY
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 21 November 2005
refusing European application No. 03000694.4
pursuant to Article 97(1) EPC.

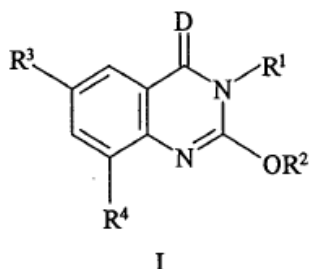
Composition of the Board:

Chairman: P. Ranguis
Members: J.-B. Ousset
C.-P. Brandt

Summary of Facts and Submissions

- I. This appeal lies from the decision of the examining division to refuse the European patent application EP-A-03 000 694.4, which is a divisional application of the European patent application EP-A-98 903 700.7, the latter was published as WO-A-98/33381. The examining division considered that the then pending main and first auxiliary requests lacked inventive step.
- II. Claim 1 of the main request on which the refusal was based read as follows:

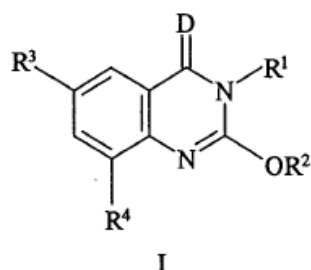
"1. A synergistic fungicidal composition, comprising:
(1) at least one compound selected from the quinazolinones of Formula I, N-oxides, and agriculturally suitable salts thereof,



wherein D is O or S, R¹ is C₁-C₆ alkyl, R² is C₁-C₆ alkyl, R³ is halogen, and R⁴ is hydrogen or halogen;
(2) at least one compound selected from compounds that control fungal diseases by inhibiting sterol biosynthesis; and optionally
(3) at least one of a surfactant, a solid diluent or a liquid diluent; wherein component (1) and component (2) are present in a fungicidally effective amount and the mole ratio of component (1) to component (2) is from 30:1 to 1:30."

Claim 1 of the first auxiliary request reads as follows:

"1. A method for post-infection control of plant diseases caused by fungal plant pathogens, comprising: applying to the plant or portion thereof, or to the plant seed or seedling (1) at least one compound selected from the quinazolinones of Formula I, N-oxides, and agriculturally suitable salts thereof,



wherein D is O or S, R¹ is C₁-C₆ alkyl, R² is C₁-C₆ alkyl, R³ is halogen, and R⁴ is hydrogen or halogen; (2) at least one compound selected from compounds that control fungal diseases by inhibiting sterol biosynthesis; wherein component (1) and component (2) are added in amounts sufficient to provide a fungicidal effectiveness greater than the sum of the fungicidal effectivenesses provided by those amounts of said components taken independently."

III. In its grounds of refusal, the examining division relied on document

(1) WO-A-94/26722

IV. The examining division considered in its decision that the incorporation of the word "synergistic" was based

on the description as filed. Both requests fulfilled the requirements of Article 76 EPC.

With respect to Article 54 EPC, the examining division held that document (1) disclosed the combinations of quinazolinone fungicides for controlling e.g. *Erysiphe graminis*, *Puccinia recondita* falling within the definition of the formula (I), in particular 6-iodo-3-propyl-2-propyloxy-4(3H)-quinazolinone, with other active agents giving a broader spectrum of agricultural protection such as sterol biosynthesis inhibitor fungicides, such as flusilazole, cyproconazole, tetraconazole, fenpropimorph and fenpropidin, namely compound (2) of the main request. Novelty of the subject-matter of the main request could be acknowledged due to the mole ratio of the quinazolinone (component (1) of the present claim 1) to the sterol biosynthesis inhibitor (component (2) of the present claim 1) and due to the technical feature "synergistic".

However, the person skilled in the art, starting from document (1) as representing the closest state of the art, and faced with the technical problem to improve the fungicidal effect of compounds of formula (I) with flusilazole, cyproconazole, tetraconazole, fenpropimorphe and fenpropidine, would optimise the ratios between the components (1) and (2), both disclosed in document (1) in order to obtain the best kill. Such an optimisation was a standard approach within the ambit of the skilled person. The synergistic effect would be the inevitable result of following the teaching of document (1). Moreover, the synergistic effect could not be used as a basis for demonstrating

inventive step, since it was not shown convincingly by the results set out in tables A, B, E, F and G of the description as originally filed that this synergistic effect could be obtained without undue burden over the whole scope of the claims.

Novelty of the subject-matter of the auxiliary request could also be acknowledged due to the characterising feature "wherein component (1) and component (2) are added in amounts sufficient to provide a fungicidal effectiveness greater than the sum of the fungicidal effectivenesses provided by those amounts of said components taken independently".

However the alleged synergistic effect was the direct and inevitable result of the combination of the preferred compound of document (1). Furthermore, only the results set out in Table B referred to a post-infection treatment and as explained for the main request, these results could not demonstrate an inventive step.

V. With the statement of grounds of appeal, the appellant maintained the main request and the first auxiliary request rejected by the examining division and filed two further auxiliary requests respectively 2 and 3. he also provided further data as annex 1:

(2) Appellant's data filed as annex 1 submitted with the statement of grounds of appeal.

VI. The board drew the appellant's attention in its communication annexed to the summons to oral proceedings that the combination in the claims of

several characteristics scattered in the description but not disclosed together might be regarded as contravening the requirements of Article 76(1). Moreover, an objection based on Article 84 EPC was raised due to some expressions present in the claims which rendered them unclear.

VII. At the beginning of the oral proceedings before the board which took place on 19 November 2008, the appellant withdrew the previous requests filed with the statement of grounds of appeal and filed in lieu thereof four requests. The auxiliary request 2 filed with the statement of grounds of appeal was newly filed as main request. The auxiliary request 3 filed with the statement of grounds of appeal was newly filed as auxiliary request 2. Two further requests respectively auxiliary requests 1 and 3 were filed.

Claim 1 of the main request reads as follows:

"1. A method for post-infection control of at least one wheat plant disease selected from the group consisting of powdery mildew and leaf rust, comprising: applying to the wheat plant or portion thereof, or to the wheat seed or seedling (1) 6-iodo-3-propyl-2-propyloxy-4(3H)-quinazolinone; and (2) tebuconazole; wherein component (1) and component (2) are applied in amounts sufficient to provide synergistic fungicidal effectiveness."

Claim 1 of auxiliary request 1 reads as follows:

"1. A method for control of wheat leaf rust, comprising:

applying to the wheat plant or portion thereof, or to the wheat seed or seedling (1) 6-iodo-3-propyl-2-propyloxy-4(3H)-quinazolinone; and (2) tebuconazole; wherein component (1) and component (2) are applied in amounts sufficient to provide synergistic fungicidal effectiveness."

Claim 1 of auxiliary request 2 is identical to claim 1 of the main request.

Claim 1 of auxiliary request 3 is identical to claim 1 of auxiliary request 1.

After an interruption for deliberation on those requests, the board informed the appellant that it had come to the conclusion that none of them met the requirements of Article 56 EPC. The board exercised its discretion to allow the appellant to file further requests since it was the last chance to get a patent for the particular subject-matter. The appellant filed thus four further auxiliary requests:

Claim 1 of auxiliary request 4 reads as follows:

"1. A method for control of wheat leaf rust which comprises applying to the foliage of the plant to be protected a fungicidal combination including (1) 6-iodo-3-propyl-2-propyloxy-4(3H)-quinazolinone; and (2) tebuconazole; wherein the mole ratio of component (1) to component (2) is from 30:1 to 1:4, and wherein the rate of application is from 1 g/ha to 5000 g/ha of aggregate active ingredient."

Claim 1 of auxiliary request 5 is identical to claim 1 of auxiliary request 4.

Claim 1 of auxiliary request 6 reads as follows:

"1. A method for control of wheat leaf rust which comprises applying to the foliage of the plant to be protected a fungicidal combination including (1) 6-iodo-3-propyl-2-propyloxy-4(3H)-quinazolinone; and (2) tebuconazole; wherein the mole ratio of component (1) to component (2) is from 30:1 to 4:1, and wherein the rate of application is from 1 g/ha to 5000 g/ha of aggregate active ingredient."

Claim 1 of auxiliary request 7 is identical to claim 1 of auxiliary request 6.

VIII. At the oral proceedings, the appellant submitted the following arguments:

- Document (2) and the results listed on Table B show synergism for specific examples.
- When both experimental and expected values are 100% (see Table B of the description concerning the wheat leaf rust curative experiments with (1) 6-iodo-3-propyl-2-propyloxy-4(3H)-quinazolinone; and (2) tebuconazole); this does not mean that synergism is absent but only that tebuconazole is responsible for this effect.
- The person skilled in the art would not infer the method currently claimed from the disclosure of document (1), since tebuconazole is not among the preferred compounds of document (1) (see page 33, lines 31 to 35) but appears only in a very long

list of possibilities. The person skilled in the art could have used the method of the present application but would not necessarily select this specific combination in order to obtain the synergistic effect. Decision T 187/93 was cited in that respect.

- A post-infection control is more difficult, since the treatment must cure the disease instead of preventing it.
- In view of the decision T 68/85 (OJ EPO 1987, 228, point 8.4.4) the person skilled in the art can appreciate when synergism takes place. Furthermore, not only the ratio but the amounts of components (1) and (2) were important.

IX. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the main request or in the alternative on the basis of the first to seventh auxiliary requests, all requests dated 19 November 2008 and filed during oral proceedings.

X. At the end of the oral proceedings, the decision of the board was announced.

Reasons for the Decision

1. The appeal is admissible.
2. Main request and auxiliary requests 1 to 3

2.1 Amendments

The amendments made in claim 1 of each request fulfil the requirements of Articles 76(1) and 123(2) EPC (see page 34, lines 7-8; page 20, lines 25 to 30; page 19, line 33 and page 4, lines 2 to 5). In view of the outcome of the decision, it is not necessary to give more details in that respect.

2.2 Novelty

The subject-matters of the respective claims 1 are novel vis-à-vis document (1) since there is no unambiguous disclosure therein of the combination of (1) 6-iodo-3-propyl-2-propyloxy-4(3H)-quinazolinone; and (2) tebuconazole for post-infection control of at least one wheat plant disease and since the amounts of component (1) and component (2) are such that a synergistic effect should be present.

2.3 Inventive step

2.3.1 According to the established jurisprudence of the boards of appeal, it is necessary, in order to assess inventive step, to identify the closest state of the art, to determine in the light thereof the technical problem which the invention addresses and successfully solves, and to examine the obviousness of the claimed solution to this problem in view of the state of the art. This problem-solution approach ensures the assessment of inventive step on an objective basis and avoids an *ex post-facto* analysis.

2.3.2 The first step is thus to identify the closest state of the art. According to the established jurisprudence of the boards of appeal, the closest state of the art is a prior art document disclosing subject-matter aiming at the same objectives as the claimed invention and having the most relevant technical features in common, i.e. requiring the minimum of structural modifications (see Case Law of the Boards of Appeal of the EPO, 5th edition 2006, Section I.D.3.1., "Determination of the closest prior art in general", page 121).

2.3.3 The present application relates to fungicidal combinations of quinazolinones and another fungicide.

Document (1) describes also fungicidal methods and compositions (see page 1, line 4). Compositions containing 6-iodo-3-propyl-2-propyloxy-4(3H)-quinazolinone (see page 9, line 22); and tebuconazole (see page 33, line 24 in conjunction with lines 3 to 7) are within the disclosure of document (1). These methods can be either preventive (pre-infection) or curative (post-infection) (see page 1, line 5 of page 33, lines 36-37). The composition can be applied either to the portion of plants to be protected such as foliage or on seeds of seedlings (see page 32, lines 24-25; page 33, line 38 and page 34, line 2). Foliage can be protected at a rate of from less than 1g/ha to 5,000 g/ha of active ingredient (see page 34, lines 4 to 6). Wheat leaf rust was also specifically envisaged in document (1) as a disease to be treated by the compositions of document (1) (see page 32, line 36, "*Puccinia recondita*" and page 34, Test B).

- 2.3.4 The board concurs with the appellant that document (1) represents the closest prior art.
- 2.3.5 The appellant in that respect submitted that the problem underlying the present application was to be seen in the provision of a method to cure wheat leaf rust with active compounds having a synergistic effect (see point VIII above).
- 2.3.6 Hence, starting from document (1), the technical effects or results successfully achieved by the claimed subject-matter are to be determined for defining the objective technical problem to be solved.
- 2.3.7 Table B of the application describes the results of treatment of wheat seedlings after infection with *Puccinia recondita* (the causal agent of wheat leaf rust) with eight compositions of 6-iodo-3-propyl-2-propyloxy-4(3H)-quinazolinone, i.e. component (1), and tebuconazole, i.e. component (2), in different ratios and various doses (g a.i/ha).

Two examples respectively at 5g component (1) and 1g component (2)/ha and 25g component (1) and 1g component (2)/ha show a synergism.

The other experiments which involve 5, 25 or 100g/ha of component (2) exhibit 100% of control, whereas the expected results are also 100%.

The appellant's argument that synergism is hidden by the too high dose of tebuconazole is unsubstantiated. According to the description, synergism can be assessed by the use of the Colby's method when the observed

activity is higher than the expected result (see bridging paragraph, pages 19-20 of the description). This is not the case for six out of eight examples related to the control of wheat leaf rust in which the expected and experimental values are both identical to 100%.

- 2.3.8 Since no synergistic effect can be acknowledged on the whole claimed scope for the control of wheat leaf rust which is one of the two diseases recited in claim 1 of each request, the technical problem to be solved can only be seen in the provision of an alternative method for control of wheat leaf rust (see auxiliary requests 1 and 3) or for post-infection control of wheat leaf rust (see main request and auxiliary request 2), using a quinazolinone compound and another fungicide, whatever the results are in the control of wheat powdery mildew (see main and auxiliary requests 2).
- 2.3.9 As a solution to this problem, the present application in the form of the present requests proposes to apply to the plant 6-iodo-3-propyl-2-propyloxy-4(3H)-quinazolinone, i.e. component (1), and tebuconazole, i.e. component (2). Given that both compounds are known fungicides, the board considers that the problem has been solved. It remains to be decided whether this solution is obvious in view of the prior art cited.
- 2.3.10 In a case where the problem to be solved consists merely to provide an alternative, all the information contained in a document is treated equally by the person skilled in the art, notwithstanding whether it is preferred or not, or whether the implementation of

some of the said information presents some difficulties. The so called "could-would" approach, applies when the technical problem to be solved relates in the provision of an improvement or in the suppression of disadvantages, not in the provision of an alternative (see Case Law of the Boards of Appeal 5th 2006 I.D.5, page 132, second paragraph). Neither can the board apply the same criteria as those used in the decision T 187/93 dated 5 March 1997, cited by the appellant since this case referred to the use of a known method for a different purpose.

2.3.11 In view of the disclosure of document (1), which teaches that 6-iodo-3-propyl-2-propyloxy-4(3H)-quinazolinone, i.e. component (1), can be used for controlling plant diseases caused by pathogens such as *Puccinia recondita* (the causal agent of wheat leaf rust) by treatment either pre- or post-infection (see page 33, lines 36 to 38) to the plant to be protected and that such a component (1) can also be mixed with one or more other fungicides including tebuconazole, it would have been envisaged by the person skilled in the art without inventive ingenuity as a solution to the technical problem defined above a method involving 6-iodo-3-propyl-2-propyloxy-4(3H)-quinazolinone and tebuconazole for controlling wheat leaf rust, for instance in post-infection control and, therefore, the person skilled in the art would arrive at an embodiment falling within the claimed subject-matter of claim 1 of the main request and auxiliary requests 1 to 3. Claim 1 of the main request and the first to third auxiliary requests do not involve an inventive step in the sense of Article 56 EPC.

2.3.12 Since the board can only decide on a request as whole, those requests are to be rejected.

3. *Auxiliary requests 4 to 7*

3.1 *Amendments*

3.2 The filing of a divisional application is governed by Article 76 EPC which stipulates in paragraph 1, second sentence that a divisional application "may be filed only in respect of subject-matter which does not extend beyond the content of the earlier application as filed". Thus, in case of a divisional application, the requirement of Article 76(1) EPC is to be satisfied separately from and supplementary to that of Article 123(2) EPC. While the former ensures that a divisional application does not extend beyond the content of the earlier parent application, the latter ensures that, once the provisions of Article 76(1) have been met, the divisional application may not be amended after its filing in such a way that it contains subject-matter extending beyond the content of the divisional application as filed (see e.g. decision T 423/03, point 3 of the reasons, not published in OJ EPO).

3.3 In order to determine whether or not the divisional application, in particular claim 1 thereof, offends against the provisions of Article 76(1) EPC, in accordance with the established jurisprudence it has to be examined whether technical information has been introduced into that divisional application which a skilled person would not have objectively and

unambiguously derived from the earlier parent application as filed.

- 3.4 All the requests concern a method to control **wheat leaf rust** by application to the **foliage** of a specified ratio and amount of components (1) and (2), respectively 30:1 to 1:4 and 30:1 to 4:1. However, the content of the parent application does not disclose directly and unambiguously a method in which the specific disease wheat leaf rust can be treated specifically by application on its foliage of the fungicidal composition made out 6-iodo-3-propyl-2-propyloxy-4(3H)-quinazolinone and tebuconazole. Wheat leaf rust is one of the different diseases to be treated by the compositions of the current application (e.g. wheat powdery mildew, wheat glume blotch, wheat leaf rust..) and treatment of the foliage is one out of several treatments mentioned in the description as originally filed (see page 34, lines 7 to 11). Therefore, there is no technical information in the description as originally filed of the parent application, which is provided to the person skilled in the art from which he can directly and unambiguously derive the currently claimed method as set out in claims 1 of these requests (see T 727/00, point 1.1.4 of the reasons, not published in the OJ EPO).

- 3.5 The appellant referred to the examples on page 35 to justify the amendments carried out.

This argument is not convincing, because the experimental protocols for treating wheat leaf rust are run on seedlings, which are allowed to grow six days after treatment, and not on foliage. Hence, the person

skilled in the art cannot derive directly and unambiguously from these experimental protocols the methods of claims 1 of these requests.

3.6 The board concluded therefore that the method for treating wheat leaf rust by application of the fungicidal composition on the foliage of the plant extends the subject-matter claimed in these requests beyond the content of the parent application as filed, thus contravening the requirements of Article 76(1) EPC.

3.7 Since no request meets the requirements of the EPC, the appeal is to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

M. Schalow

P. Ranguis