

Publication in the Official Journal ~~Yes~~ / No

File Number: T 176/90 - 3.3.1

Application No.: 84 103 313.7

Publication No.: 0 123 160

Title of invention: Triazole compounds, a process for preparing them,
their use as fungicides and plant growth regulators
and compositions containing them

Classification: C07D 249/08

D E C I S I O N
of 30 August 1991

Applicant: Imperial Chemical Industries Plc

Headword: Triazoles/ICI

EPC Articles 76(1) and 56

Keyword: "Divisional application extending beyond content of parent (no.)"

Headnote

Case Number : T 176/90 - 3.3.1

D E C I S I O N
of the Technical Board of Appeal - 3.3.1
of 30 August 1991

Appellant : Imperial Chemical Industries PLC
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Decision under appeal : Decision of Examining Division 006 of the European
Patent Office of 6 July 1989 posted on 30 August 1989
refusing European patent application No. 84 103 313.7
pursuant to Article 97(1) EPC.

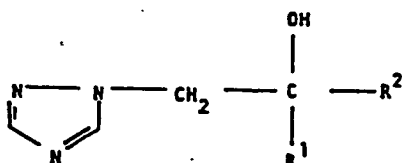
Composition of the Board :

Chairman : K.J.A. Jahn
Members : R.W. Andrews
E.M.C. Holtz

Summary of Facts and Submissions

I. European patent application No. 84 103 313.7 (publication No. 0 123 160), filed as a divisional application on European patent application No. 81 303 753.8 (publication No. 0 047 594) and claiming the priority date of 18 August 1980 from a prior application filed in the United Kingdom, was refused by a decision of the Examining Division 006 delivered orally on 6 July 1989, with written reasons posted on 30 August 1989. The decision was based on Claims 1 to 49 filed on 27 January 1989. Claim 1 of this set of claims reads as follows:

"An ether or ester of a compound of general formula (I):



wherein R¹ is C₁₋₆ alkyl, or cycloalkyl having up to 6 carbon atoms or phenyl, and R² is phenyl or benzyl; the phenyl of R¹ and the phenyl or phenyl moiety of the benzyl or R² being optionally substituted with halogen, C₁₋₆ alkyl, C₁₋₅ alkoxy, C₁₋₁₀ alkoxyalkyl, halo-C₁₋₄ alkyl, halo-C₁₋₄ alkoxy, halo C₁₋₅ alkoxy halo C₁₋₅ alkyl, nitro, phenyl, phenoxy, benzyl, optionally halo-substituted benzyloxy, C₁₋₂ alkylendioxy, acetylamino, halo C₁₋₂ alkylendioxy, amino, mono- or di-C₁₋₄ alkylamino, hydroxy, cyano, morpholino or carboxy or an alkyl ester thereof, and/or the alkyl moiety of the benzyl is optionally substituted with one C₁₋₄ alkyl."

Independent Claims 47, 48 and 49 relate to a plant growth regulating or fungicidal composition comprising the claimed ethers and esters as an active ingredient and to methods of

combating plant fungi and regulating the growth of plants by applying to a plant, a seed of a plant or the locus of a plant or seed one of the claimed ethers or esters.

II. The stated grounds for the refusal was that this application did not comply with Article 76(1) EPC insofar as the subject-matter of Claims 13, 14 and 16 to 46 extended beyond the content of the parent application and that the subject-matter of Claims 1 to 12 and 47 to 49 did not involve an inventive step in the light of the disclosure in

- (A) EP-A-0 015 756
- (B) DE-A-2 737 489 and
- (C) DE-A-2 654 890.

Insofar as these claims relate to ethers, the Examining Division saw the technical problem underlying the disputed application in the light of document (A) as providing new agricultural fungicides and plant growth regulators. The Examining Division held that the proposed solution of this problem to be obvious in view of the teaching of documents (A), (B) and (C). Although the surprising superior fungicidal activity of some of the claimed compounds was acknowledged, an inventive step was not recognised for the whole scope of Claim 1.

With respect to the claimed esters, it was held that the claimed priority date of 18 August 1980 was valid and, therefore, only documents (B) and (C) were relevant prior art. Having regard to the disclosure of these documents, the Examining Division decided that the claimed solution to the technical problem of providing further fungicidal and plant growth regulators was not inventive.

III. An appeal was lodged against this decision on 29 September 1989 with payment of the prescribed fee. In the statement of grounds of appeal filed on 20 December 1989, the Appellant argued that the parent application disclosed not only a generic class of alcohols and ethers and esters of the alcohols but also, if not explicitly then by implication, ethers and esters of each of the specific alcohols listed in Table 1. Therefore, all the claims were clearly derivable directly and unambiguously from the parent application.

With respect to the obviousness of the claimed ethers, the Appellant contended that the Examining Division failed to recognise and point out the real and significant chemical differences between the present compounds and those described in documents (B) and (C) and between the compounds disclosed in documents (B) and those of document (C). In the Appellant's opinion, the Examining Division ignored both the teaching of the prior art as a whole and the effective teaching of the three cited documents and conducted an ex post facto analysis to reach the conclusion of obviousness.

Having regard to the esters, the Appellant maintained that it was unreasonable to combine the teaching of documents (B) and (C). However, if the teaching of these documents were combined each reinforced the other in pointing towards different alcohols from those which are the parent alcohols of the present esters.

Finally, the Appellant argued that the fact that the present compounds have both fungicidal or plant growth regulating activity cannot be derived from the prior art.

IV. In reply to a communication from the Rapporteur dated 28 March 1991 the Appellant filed an amended statement of

claim and requested that the decision under appeal be set aside and a patent granted on the basis of Claims 1 to 50 filed on 26 June 1991. Claims 1 to 46 of this set of claims are identical with Claims 1 to 46 filed on 27 January 1989. Claims 47 and 48 relate respectively to a plant growth regulating composition comprising an ester as ether as claimed in Claims 1 to 48 and a method of regulating plant growth by applying an ester or ether as claimed in Claims 1 to 46 or the composition of Claim 47. Claim 49 concerns a method of combating plant fungi by the application of an ether or ester of a compound of formula I have more restricted definitions of the symbols R¹ and R² or a composition comprises such an ether or ester. Claim 50 relates to a fungicidal composition comprising, as active ingredient, an ether or ester as defined in Claim 50.

Reasons for the Decision

1. The appeal is admissible.
2. The first question to be decided in the appeal is whether or not the present divisional application complies with the provision of Articles 76(1) EPC which requires 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.
 - 2.1 In the decision under appeal the Examining Division held that Claims 1 to 12, 15 and 47 to 49 were based on the application as filed. The Board agrees with this finding with respect to Claims 1 to 12, 15 and 49 and Claim 47 insofar as it relates to a plant growth regulating composition since these claims are supported by Claims 1 to 12 as filed, original Example 9 and the general description of page 2, lines 11 to 14 of the published parent application.

However, fungicidal composition and the method of combating plant fungi were only disclosed in connection with the compounds forming the subject-matter of Claim 15 of the earlier application (cf. Claims 35 and 36 of said application and page 29, line 11 to page 30, line 13). Therefore, the subject-matter of Claim 47 filed on 27 January 1989 extended beyond the content of the earlier application as filed. This objection has been overcome by the present Claims 49 and 50 since they are fairly based on Claims 15, 35 and 36 of the parent application.

- 2.2 In contrast to the Examining Division, the Board holds that the subject-matter of Claims 13, 14 and 16 to 46 does not extend beyond the content of the patent application. This finding is based on the following considerations:

A divisional application does not extend beyond the content of its parent application as filed if the parent application discloses the invention of the divisional application in a manner sufficiently clear and complete for it to be carried out by the skilled person (Article 83 EPC). For an invention relating to a generic class of chemical compounds, as here, this requires the disclosure of the structure of the class, usually by means of a general formula, and an indication of a method of preparation. The only basis for the decision of the first instance to refuse the application was that the ethers and esters referred to in the disputed claims could not be derived from parent application since this only disclosed the corresponding alcohols.

This manner of considering the issue fails to appreciate the true content of the technical teaching disclosed in the

parent application. It is true that on page 4, lines 7 to 25, page 6, lines 7 to 17 and in Table I (Compound Nos. 4, 5, 8, 20, 25, 27 to 29, 34 to 36, 43 to 46, 128, 129, 141, 150, 160, 179, 186, 196, 197, 238, 262, 294, 298 to 300 and 304) only alcohols as individual compounds are described, but this teaching is not restricted to only this. Rather, it also encompasses ethers and esters of the alcohols which are specifically defined by the general formula (I) (cf. Claims 1 and 15 and pages 1, 7 and 8 of the description). Since the specific alcohols referred to in the above-mentioned passages fall within the definition of the general formula (I), and serve to illustrate the general formula, the skilled persons infers from the total disclosure of the parent application the generic ethers and esters of these individual alcohols. Therefore, Claims 16 to 46 are not open to objection under Article 76(1) EPC.

This is also true for Claims 13 and 14, which relate to certain generically defined ethers and esters. These can clearly be inferred from page 2, lines 15 to 19 and page 3, lines 10, 13, 18 and 19 in combination with the general formula (I) (cf. Decision T 12/90 of 23 August 1990, point 2, unpublished, summarised in Rechtsprechungskartei gewerblicher Rechtsschutz, Schulte-Kartei EPÜ 54 Nr. 93).

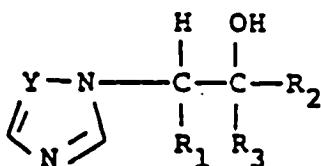
3. The present application relates to triazole compounds having both antifungal and plant growth regulating activities. Document (B), which is considered to represent the closest state of the art, discloses triazoles and imidazoles useful as plant fungicides and growth regulating agents (cf. Claim 1 and 11).

In the light of this closest prior art, The Board sees the technical problem underlying the application in suit in providing further compounds having plant antifungal and plant growth regulating properties.

According to the application this technical problem is solved by the ethers and esters of the alcohols of the general formula I.

In view of the data submitted in documents 18a, 18b and 18c attached to the statement of grounds of appeal, it is considered plausible that the above-defined technical problem has been solved.

- 4. After examination of the cited prior art, the Board has reached the conclusion that the claimed subject-matter is novel. Since novelty is not in dispute, it is not necessary to given detailed reasons for this finding.
- 5. It still remains to be decided whether the subject-matter of the application in suit involves an inventive step.
- 5.1 Document (B) discloses compounds of the general formula I



wherein R₁ is an alkenyl, alkynyl or optionally substituted aralkyl radical, Y is =N- or =CH-, R₂ is a cycloalkyl, alkyl or haloalkyl radical and R₃ is a hydrogen atom or a methyl or alkenyl radical and esters or ether thereof. These compounds possess fungicidal and plant growth regulating activities (cf. Claims 1 and 11).

Thus, the alcohols from which these prior art ethers and esters are derived differ from those from which the present ethers and esters are obtained in the following manner:

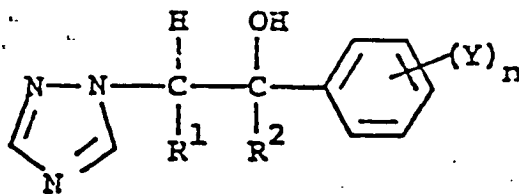
- (a) The symbol R₁ cannot represent a hydrogen atom.

(b) Neither of the symbols R_2 and R_3 can represent a phenyl or benzyl radical, and

(c) The symbol R_3 may represent a hydrogen atom.

In view of these differences in structure of the parent alcohols, it is considered that the teaching of this document by itself would not provide the skilled person with any indication pointing in the direction of the proposed solution to the technical problem underlying the application in suit.

5.2 Document (C) relates to 1.2.4-triazolylalkanols of the general formula



wherein each of R_1 and R_2 , which may be the same or different, is a hydrogen atom or an optionally substituted hydrocarbyl radical; Y is a hydrogen or halogen atom, a nitro lower alkyl, lower alkoxy or optionally substituted amino radical and n is an integer of 1 to 5; each of the groups Y being the same or different when n is greater than 1 and Y being other than a hydrogen atom when R_1 and R_2 are both hydrogen atoms; and salts and metal complexes thereof (cf. Claim 1). However, this document makes no mention of ethers and esters of the compounds disclosed therein. According to this document, these compounds possess anti-fungal activity (cf. Claims 6 and 7) and certain plant growth regulating activities (in particular a stunting effect on the vegetative growth of mono- or dicotyledonous plants) as well as herbicidal activity (cf. 2nd complete paragraph on page 10). However, in the Board's judgment, this disclosure of undesirable stunting

effects and herbicidal activity would not encourage the skilled person to investigate the compounds disclosed in document (C), let alone their ethers and esters, with regard to valuable and useful plant growth regulating effects.

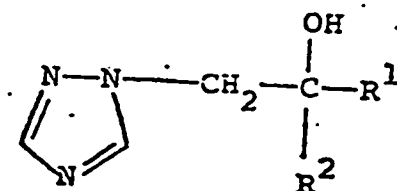
Moreover, a closer examination of this document reveals that, in all the specific examples, the symbol R_2 has a value other than a hydrogen atom. Thus, even if the statement in this document regarding plant growth regulating activity provided the skilled person with sufficient incentive to consider these prior art compounds or their ethers or esters as a possible solution to the present technical problem, he would initially concentrate his efforts on those compounds in which the symbol R_1 represents an optionally substituted hydrocarbyl radical. The skilled person would be further encouraged to follow this line of investigation by the disclosure of document (B) which teaches that the carbon atom adjacent to the triazole ring must carry a substituent to provide compounds having fungicidal and plant growth regulating activities.

Therefore, the teaching of document (C) either alone or combined with that of document (B) would not lead the skilled person to the proposed solution of the technical problem underlying the application in suit.

- 5.3 Since the esters of the present claims are entitled to the claimed priority date of 18 August 1980, document (A), publication date 17 September 1980, only forms part of the state of the art within the meaning of Article 54(3) and (4) EPC, and is, therefore excluded from considerations with respect to inventive step (Article 56 EPC, 2nd sentence). However, since the claimed ethers are not entitled to the claimed priority date, it has to be taken

into consideration in respect of these compounds (cf. point 4.1 of the decision under appeal).

This document discloses compounds of the general formula



wherein R₁ is an alkyl, cycloalkyl or optionally substituted phenyl radical and R₂ is an optionally substituted phenyl or optional substituted benzyl radical and acid addition salts and metal complexes thereof (cf. Claim 1). These compounds are active fungicides (cf. page 9, lines 13 and 14).

Although this document discloses some of the alcohols from which the present ethers are derived, the teaching of this document by itself would not suggest to the skilled person that the etherification of these alcohols would yield triazole derivatives having not only antifungal activity but also plant growth regulating properties.

As mentioned above, document (B) discloses triazolylalkanols and their ethers and esters having both fungicidal and plant growth regulating activities. However, as pointed out in paragraph 5.1 above, there are several significant structural differences between these prior art compounds and those of the present application and document (A). In view of these structural differences the skilled person would not combine the teachings of documents (A) and (B) and, in the absence of this combined teaching, would have no reason to expect that the present ethers would solve the technical problem underlying the application in suit.

5.4 Therefore, the proposed solution to the technical problem of providing further compounds having both antifungal and plant growth regulating properties is inventive. Thus, Claims 1 and 47 to 50 are allowable. Claims 2 to 46, which relate to preferred compounds of the general formula as defined in Claim 1, are also acceptable.

Order

For these reasons, it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance with the order to grant a patent on the basis of Claims 1 to 50 filed on 26 June 1991 and a description to be amended accordingly.

The Registrar



E. Görgmaier

The Chairman



K.J.A. Jahn

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