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**Datasheet for the decision  
of 22 June 2021**

**Case Number:** T 3072/19 - 3.3.02

**Application Number:** 13774599.8

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**IPC:** A01P7/04, A01N47/22, A01N53/02,  
A01N53/00, A01N25/06

**Language of the proceedings:** EN

**Title of invention:**  
INSECTICIDAL AEROSOL

**Applicant:**  
Aragon Net Ltd.

**Headword:**

**Relevant legal provisions:**  
EPC Art. 56

**Keyword:**  
Inventive step

**Decisions cited:**

**Catchword:**



**Beschwerdekammern**

**Boards of Appeal**

**Chambres de recours**

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**Case Number: T 3072/19 - 3.3.02**

**D E C I S I O N**  
**of Technical Board of Appeal 3.3.02**  
**of 22 June 2021**

**Appellant:**  
(Applicant)

Aragon Net Ltd.  
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**Representative:**

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**Decision under appeal:**

**Decision of the Examining Division of the  
European Patent Office posted on 17 June 2019  
refusing European patent application No.  
13774599.8 pursuant to Article 97(2) EPC.**

**Composition of the Board:**

**Chairman**

P. de Heij

**Members:**

S. Bertrand

M. Maremonti

## Summary of Facts and Submissions

I. The appeal by the applicant ("appellant") lies from the decision of the examining division to refuse the European patent application No. 13 774 599.8 on the basis of the claims filed as a main request and an auxiliary request on 17 May 2017.

II. The claim set of the main request contained 11 claims, independent claim 1 of which read as follows:

*"1. Insecticidal aerosol, characterized in that it comprises:*

*00.1 - 0.5 % by weight of alpha cypermethrin,  
00.1 - 0.3 % by weight of permethrin,  
0.01 - 0.5 % by weight of tetramethrin,  
0.1 - 3.0 % by weight of piperonyl butoxide,  
0-0.5 % by weight of a fragrance,  
one or more solvents,  
one or more propellants, and  
0.2 - 0.6 % by weight of a carbamate insecticide."*

III. The claim set of the auxiliary request contained 10 claims, independent claim 1 of which read as follows:

*"1. Insecticidal aerosol, characterized in that it comprises:*

*00.1 - 0.5 % by weight of alpha cypermethrin,  
00.1 - 0.3 % by weight of permethrin,  
0.01 - 0.5 % by weight of tetramethrin,  
0.1 - 3.0 % by weight of piperonyl butoxide,  
0-0.5 % by weight of a fragrance,*

one or more solvents,  
one or more propellants, and  
0.2 - 0.6 % by weight of **bendiocarb**." (emphasis added,  
showing the difference with claim 1 of the main  
request.)

IV. The following documents are referred to in the present  
decision:

- |             |  |
|-------------|--|
| D1          | Safety data sheet of Pro Control FIK 21317<br>48X0,4L GB   |
| D2          | Safety data sheet of Raid® home insect killer  |
| D3          | Safety data sheet of Air Devil HPX Residual<br>with Cypermethrin   |
| D4          | US 4 275 060 A   |
| D5          | CN 1 270 766 A   |
| D6          | Akogbéto M., et al.: "Bendiocarb, a potential<br>alternative against pyrethroid resistant<br><i>Anopheles gambiae</i> in Benin, West Africa",<br>MALARIA JOURNAL, vol. 9, no. 1, 14 July 2010<br>(2010-07-14), 204     |
| Enclosure 6 | Documentation regarding the commercial product<br>"ORO" submitted on 29 April 2019   |
| D7          | Responses of Populations of the Tobacco Budworm<br>(Lepidoptera: Noctuidae) from Northwest Mexico<br>to Pyrethroids, J.L: Martinez-Carrillo, et al.,<br>Journal of Economic Entomology, 1991, vol.84,<br>pages 363-366 |

V. The examining division came to, *inter alia*, the  
conclusion that the subject-matter of the claims  
according to the main request and the auxiliary request  
did not involve an inventive step in view of "ORO" (a  
commercial product) or D4 as the closest prior art  
(Article 56 EPC).

- VI. In its statement setting out the grounds of appeal, the appellant contested the reasoning of the examining division and submitted that the subject-matter of the claims of the main request and the auxiliary request, both corresponding to the requests considered by the examining division in its decision, involved an inventive step in view of the commercial product named "ORO" or D4 as the closest prior art. It submitted document D7.
- VII. On 11 May 2021, the board issued a communication in preparation for the oral proceedings to be scheduled as requested by the appellant. In this communication, the clarity of claims 1, 7 and 8 was objected to.
- VIII. In a further letter dated 8 June 2021, the appellant submitted new sets of claims according to the main request and the auxiliary request to overcome the lack of clarity raised by the board.
- IX. Oral proceedings before the board were held on 22 June 2021 by videoconference.
- X. The appellant's case, where relevant to the present decision, may be summarised as follows.

Main request - Inventive step

- ORO, a commercial aerosol, was considered the closest prior art.
- The distinguishing features of claim 1 of the main request were the presence of alpha cypermethrin in an amount of 0.1-0.5% and a carbamate insecticide in an amount of 0.2-0.6%. Also, ORO contained one different active ingredient (d-phenothrin).

- The examples of the application as filed showed that the insecticidal aerosol according to claim 1 of the main request ("ARAGON") was more efficient in the control of insects than the commercial aerosol ORO.
- The objective technical problem was the provision of an improved insecticidal aerosol.
- The solution would not have been obvious in view of D6, D5, D4 and D1 to D3. The skilled person would not have been motivated to add other ingredients to improve the impact of ORO. With regards D4, the fact that it did not disclose a prejudice against adding bendiocarb to pyrethroids would not have been a motivation to add bendiocarb to an existing mixture. The skilled person could have selected additional insecticides from D4, but they would not necessarily have done so.
- Even if the objective technical were the provision of an alternative, the solution proposed by claim 1 of the main request involved an inventive step. D4 was not focused on the same aim as the subject-matter of claim 1 of the main request. All the examples of D4 were directed to compositions sprayed on cotton or tobacco. There was thus no teaching in D4 to combine the features of this document with the features of ORO as the closest prior art to arrive at the subject-matter of claim 1 of the main request.
- The subject-matter of claim 1 of the main request involved an inventive step.

Auxiliary request - Inventive step

- The reasons given for claim 1 of the main request applied to claim 1 of the auxiliary request.

XI. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the claims of the main request as filed on 8 June 2021 or, alternatively, on the basis of the claims of the auxiliary request also filed on 8 June 2021.

## **Reasons for the Decision**

Main request (claims 1-11 filed on 8 June 2021)

1. Claim 1 of the main request as filed on 8 June 2021 read:

*"1. Insecticidal aerosol, characterized in that it comprises:*

*0.1 - 0.5 % by weight of alpha cypermethrin,  
0.1 - 0.3 % by weight of permethrin,  
0.01 - 0.5 % by weight of tetramethrin,  
0.1 - 3.0 % by weight of piperonyl butoxide,  
0-0.5 % by weight of a fragrance,  
one or more solvents,  
one or more propellants, and  
0.2 - 0.6 % by weight of a carbamate insecticide."*

2. Article 56 EPC

2.1 The invention relates to an insecticidal aerosol comprising a mixture of pyrethroids, piperonyl butoxide and a carbamate insecticide. The aim of the invention is to provide an insecticidal aerosol which is more effective at combating insect pests than the compositions presently used (page 1 of the description).

2.2 Closest prior art

The appellant submitted during the oral proceedings that "ORO" was the closest prior art.

"ORO" is a commercial product and the control insecticide used in the examples of the application as filed. It comprises a mixture of pyrethroids (permethrin, tetramethrin and d-phenothrin) and piperonyl butoxide (bottom of page 7 of the application as filed).

Enclosure 6 further discloses that ORO is an insecticidal aerosol against "all insects".

ORO is an insecticidal aerosol for the control of insects. Since it is directed to the same aim as the claimed subject-matter, the board sees no reason to deviate from the selection of ORO as the closest prior art.

2.3 Distinguishing features

ORO comprises permethrin (0.25%), tetramethrin (0.20%), piperonyl butoxide (0.34%) and d-phenothrin (0.01%) (bottom of page 7 of the application as filed). The composition of ORO is confirmed by enclosure 6 (page 2).

Thus, ORO has the following features falling under claim 1 of the main request:

- (a) 0.25% of permethrin (falling within the range 0.1-0.3%, as required by claim 1 of the main request)
- (b) 0.20% of tetramethrin (falling within the range 0.01-0.5%, as required by claim 1 of the main request)
- (c) 0.34% of piperonyl butoxide (falling within the range 0.1-3.0%, as required by claim 1 of the main request)

The commercial product "ORO" does not comprise any alpha cypermethrin or carbamate insecticide, both required by claim 1 of the main request.

Consequently, the distinguishing features of claim 1 of the main request are:

- (a) alpha cypermethrin in an amount of 0.1-0.5%
- (b) a carbamate insecticide in an amount of 0.2-0.6%

The presence of d-phenothrin in ORO is not a distinguishing feature as claim 1 states "comprises" and therefore does not exclude further active ingredients.

#### 2.4 Technical effects and objective technical problem

The appellant relied on the examples of the application showing an efficacy for the control of insects. In the written submissions, the appellant had also relied on the effect of absence of development of resistance against the insecticidal aerosol, but this alleged effect was not maintained during the oral proceedings.

- 2.4.1 The examples of the application as filed compare the efficacy of an insecticidal aerosol according to claim 1 of the main request ("ARAGON") and ORO ("control insecticide").

Table 1 shows that ARAGON according to claim 1 of the main request exhibits a "total" efficacy of 100% while ORO ("INSECTICIDE CONTROL" [sic]) has a "total" efficacy of 96.25% on the control of mosquitoes.

Table 2 shows for both insecticidal aerosols an efficacy of 100% for the control of flies.

Table 3 shows that ARAGON and ORO have a total efficacy of 74% and 26%, respectively, in the control of cockroaches.

- 2.4.2 The appellant submitted that the examples showed an improved efficacy of ARAGON, according to the invention, in the control of insects when compared to ORO.

- 2.4.3 The board does not agree for the following reasons.

The comparison done in the examples of the application does not show that the improvement is achieved by the distinguishing features.

The compositions compared do not comprise the same amount of active ingredients. ARAGON (the product according to claim 1 of the main request) comprises the following active ingredients: 0.18% of alpha cypermethrin, 0.20% of permethrin, 0.26% of tetramethrin and 0.42% of bendiocarb (see page 7 of the description). The composition, according to claim 1 of the main request, is supposed to further comprise 0.1 to 3.0% of piperonyl butoxide, as required by the claim. Thus, even without considering the implicit

content of piperonyl butoxide, the amount of active ingredient in ARAGON is at least 1.06% ( $0.18 + 0.20 + 0.26 + 0.42$ ).

On the other hand, ORO comprises only 0.80% of active ingredient (0.34% of piperonyl butoxide, 0.01% of d-phenothrin, 0.25% of permethrin and 0.20% of tetramethrin).

Therefore, the overall content of active ingredients in ARAGON (above 1.06%) is markedly higher than in ORO (0.80%).

Consequently, the results of the examples of the application as filed cannot show that the improvement observed in the control of insects has its origin in the distinguishing features of claim 1 of the main request (i.e. alpha cypermethrin and the carbamate insecticide) because the increased control of insects achieved by ARAGON in comparison to ORO can be expected merely from the higher amount of active ingredients present.

Therefore, it cannot be accepted that, with respect to ORO, the presence of the two additional pesticides as required by claim 1 provides an increased control of insects.

2.4.4 Thus, there is no technical effect associated with the distinguishing features. The objective technical problem is therefore the provision of an alternative insecticidal aerosol.

## 2.5 Obviousness

Document D4 relates to methods and compositions for combating pests. The compositions may be for an aerosol (column 2, lines 37-40). The compositions comprises,

*inter alia*, bendiocarb (a carbamate insecticide) and a synthetic pyrethroid (column 1, lines 7-13). The synthetic pyrethroid may be cyano-3-phenoxybenzyl 3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxalate, which is the IUPAC name of alpha cypermethrin (column 1, lines 31-32). Thus, D4 discloses that a carbamate insecticide and alpha cypermethrin are combined to form suitable insecticides for aerosol.

The skilled person, faced with the above-mentioned technical problem, would have added to the composition of ORO any further insecticides suitable for an aerosol. The choice of carbamate insecticide and alpha cypermethrin would therefore have been obvious in view of the teaching of D4. The amounts of carbamate insecticide and alpha cypermethrin in claim 1 of the main request are not linked to any technical effect and thus amount to an arbitrary selection with no inventive merit.

- 2.6 The appellant argued that D4 was concerned with the control of insect eggs and did not focus on the same application as the subject-matter of claim 1 of the main request (aerosol). All the examples of D4 were directed to compositions sprayed on cotton or tobacco. There was thus no teaching in D4 to add the insecticides disclosed in D4 to the composition of ORO as the closest prior art to arrive at the subject-matter of claim 1 of the main request. The skilled person could have selected additional insecticides from D4, but they would not necessarily have done so.

The board is not convinced.

As set out above, D4 discloses an aerosol. However, even if the examples of D4 did not disclose an aerosol,

the teaching of D4 is not limited to the examples and the preferred embodiments and thus is not limited to the treatment of plants. The fact that insecticidal aerosols are not disclosed in the examples of D4 would not have stopped the skilled person from selecting from this document additional insecticides for aerosol applications.

As far as the selection of additional insecticides is concerned, the board is of the view that the skilled person, in their effort to provide an alternative insecticidal aerosol, would have contemplated adding one or more additional insecticides suitable for an aerosol such as the insecticides disclosed in D4. The selection of this strategy and the particular insecticides from a group of equally obvious alternative solutions to the posed problem would have been arbitrary and does not involve an inventive step.

Therefore, the appellant's arguments must fail.

2.7 For these reasons, the subject-matter of claim 1 does not involve an inventive step in view of ORO as the closest prior art in combination with the teaching of D4 (Article 56 EPC).

3. Thus, the main request is not allowable.

Auxiliary request (claims 1-10 filed on 8 June 2021)

4. Claim 1 of the auxiliary request corresponds to the combination of claims 1 and 3 of the main request, i.e. the carbamate insecticide is restricted to bendiocarb.

5. Article 56 EPC

The amended feature of claim 1 of the auxiliary request (bendiocarb) is disclosed in D4 (2.5, *supra*).

Consequently, the reasons given for claim 1 of the main request apply equally to claim 1 of the auxiliary request.

The subject-matter of claim 1 of the auxiliary request therefore does not involve an inventive step either (Article 56 EPC).

6. For this reason, the auxiliary request is not allowable.

## **Order**

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

1. The appeal is dismissed.

The Registrar:

The Chairman:



N. Maslin

P. de Heij

Decision electronically authenticated