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Datasheet for the decision of 18 April 2023

Case Number: T 0256/20 - 3.3.09

Application Number: 14707722.6

Publication Number: 3027055

IPC: A23L27/22, A23L27/10

Language of the proceedings: EN

Title of invention:
POTATO DERIVED FLAVOUR ENHANCING COMPOSITION AND METHOD FOR THE MANUFACTURE THEREOF

Patent Proprietor:
Unilever IP Holdings B.V.

Opponent:
Coöperatie Koninklijke Avebe U.A.

Headword:
Potato derived flavour enhancing composition/UNILEVER

Relevant legal provisions:
EPC Art. 100(b)

Keyword:
Grounds for opposition - insufficiency of disclosure (no)
Remittal - (yes)

Decisions cited:

Catchword:

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

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Case Number: T 0256/20 - 3.3.09

D E C I S I O N
of Technical Board of Appeal 3.3.09
of 18 April 2023

Appellant: (Patent Proprietor)	Unilever IP Holdings B.V. Weena 455 3013 AL Rotterdam (NL)
Representative:	van den Brom, Coenraad Richard Unilever Patent Group Bronland 14 6708 WH Wageningen (NL)
Respondent: (Opponent)	Coöperatie Koninklijke Avebe U.A. Prins Hendrikplein 20 9641 GK Veendam (NL)
Representative:	V.O. P.O. Box 87930 Carnegieplein 5 2508 DH Den Haag (NL)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 28 November 2019 revoking European patent No. 3027055 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman	A. Haderlein
Members:	M. Ansorge
	W. Sekretaruk

Summary of Facts and Submissions

I. The proprietor (appellant) lodged an appeal against the opposition division's decision revoking the European patent.

II. With the notice of opposition, the opponent had requested that the patent be revoked, *inter alia*, on the ground for opposition under Article 100(b) EPC.

III. The opposition division decided that the invention could not be carried out by a skilled person and that the ground for opposition under Article 100(b) EPC thus prejudiced the maintenance of the patent.

IV. The following documents were cited in the present case:

D1: J.J.M. Swinkels, "De chemische samenstelling van de aardappel", 1982, selected pages, including an English translation thereof

D37: Experimental report having the title "Various attempts to obtain a potato-derived composition according to claim 1 of EP 3 027 055 by the methods described therein"

D57: Experimental report having the title "Reworking patent example EP 3027055 B1"

D70: Experimental report having the title "Potato-derived amino acid composition from industrial potato juice"

V. Claim 1 of the patent as granted (main request) reads as follows:

"A potato derived flavour enhancing composition having a dry matter content of at least 3 wt.% and containing per kg of dry matter:
• 150-900 g of proteinaceous matter selected from amino acids, oligopeptides, polypeptides and combinations thereof;
• 0-100 g of starch;
• 0-300 g of non-starch polysaccharides;
• 0-330 g of saccharides selected from fructose, glucose, sucrose and combinations thereof;
• 0.01-300 g of minerals selected from potassium, sodium, calcium, magnesium and combinations thereof;
• 0-5 mg of chlorogenic acid;
• 0-30 mg of glycoalkaloid selected from α-solanine, α-chaconine and combinations thereof;
wherein free amino acids represent at least 80 wt.% of the proteinaceous matter, said free amino acids comprising:
• a first group of free amino acids selected from asparagine (Asn), aspartate (Asp), glutamate (Glu), glutamine (Gln), pyroglutamate (pGlu) and combinations thereof, said first group of free amino acids representing at least 45-95 wt.% of the free amino acids;
• a second group of free amino acids selected from glycine (Gly), leucine (Leu), lysine (Lys), serine (Ser), isoleucine (Ile) and combinations thereof, said second group of free amino acids representing 1-20 wt.% of the free amino acids;
• at least 3.5 wt.% Glu;
wherein the first group of free amino acids and the second group of free amino acids are present in a weight ratio of at least 4:1."

Claims 2 to 15 of the patent as granted are directly or indirectly dependent on claim 1.

VI. The parties' relevant arguments, submitted in writing and during the oral proceedings, are reflected in the reasons for the decision below.

VII. Requests

The appellant requested that the decision be set aside and that the patent be maintained as granted (main request) or on the basis of one of the first to eleventh auxiliary requests, filed with the grounds of appeal.

The opponent (respondent) requested that the appeal be dismissed.

Reasons for the Decision

MAIN REQUEST (claims of the patent as granted)

1. Admittance of D70

1.1 The respondent filed the experimental report D70 in response to the board's communication pursuant to Rule 100(2) EPC, in which the board pointed out that the probative value of the experimental report D37, insofar as the amino-acid profile and the free amino acid (FAA) content were concerned, was considered questionable.

1.2 The respondent requested that D70 should be admitted into the proceedings and it argued that D70 was filed in a reaction to the board's doubts regarding the probative value of D37. D70 further supported the view that the claimed composition could not be reliably obtained. In the respondent's view, the only difference between the experiments carried out in D70 and the previous experimental report D37 was that an industrial potato waste stream was used in D70, whereas in D37 a different origin of potatoes was used.

1.3 For the following reasons, D70 is not admitted into the proceedings.

1.3.1 The filing of D70 constitutes an amendment of the respondent's appeal case. According to Article 13(1) RPBA, the document D70 may be admitted only at the discretion of the board. Article 12, paragraphs 4 to 6, RPBA applies *mutatis mutandis*.

1.3.2 In the communication pursuant to Rule 100(2) EPC the board pointed out that the probative value of the experimental report D37, insofar as the amino-acid profile and the FAA content were concerned, was considered questionable. However, this issue was not raised on the board's own motion, but, instead, assesses the appellant's arguments with respect to the FAA content determined in D37, this objection raised by the appellant having been on file for a long time (see point 4.5.2. of the statement setting out the grounds of appeal).

1.3.3 Furthermore, D70 is not directed to supplementing the missing amino-acid profile in the experiments carried out in D37, but instead it represents a completely new experimental report using a different origin of

potatoes, i.e. industrial potato waste streams. In addition, in D70 for the first time during the entire proceedings the criticism was raised that the glycoalkaloid content required in claim 1 could not be achieved, meaning that D70 refers to entirely new facts as well.

1.3.4 The experimental report D70 is complex, raises new issues and admitting it would be detrimental to the procedural economy of the present case.

Under these circumstances, D70 is not admitted into the proceedings.

2. Sufficiency

2.1 In the appellant's view the opposition division erred in concluding that the invention could not be carried out by a skilled person.

2.2 The respondent argued - in line with the opposition division's conclusion given in the decision - that the invention could not be carried out by a skilled person. In particular, the patent failed to provide guidance concerning how to reliably obtain the claimed composition. The claims of the patent dictated that the composition of claim 1 should be obtainable from almost any batch of potatoes, regardless of variety, harvest time, growth conditions and many more factors. In the respondent's view, a considerable stroke of luck was required in order to obtain a composition according to claim 1. There was no teaching in the patent regarding the composition of the potato starting material. The skilled person's common general knowledge did not allow the suitability of an individual potato for achieving the claimed composition to be predicted. Since many

factors influenced the composition of the ingredients present in potatoes, it was not straightforward to predict the specific composition of a potato and its suitability for producing the claimed composition. The experimental report D37 raised serious doubts as to whether the invention could be carried out, in particular since the required saccharide and/or FAA content could not be achieved. The FAA content was calculated in D37 without including pyroglutamate, since pyroglutamate was not a free amino acid, but an amino-acid derivative, as was clear in particular from paragraph [0035] of the patent. The experiment in the proprietor's experimental report D57 which did not apply a glutaminase treatment also raised serious doubts as to whether the invention could be carried out.

2.3 For the following reasons, the board does not agree with the appellant's view.

2.3.1 Examples 1 and 2 of the patent uncontestedly demonstrate that, when using the potato varieties Folva and Belana, the claimed composition can be obtained. These examples demonstrate ways to carry out the invention. These successful experiments can also be generalised when taking into account the guidance provided in the patent and the skilled person's common general knowledge.

2.3.2 Claim 1, which relates to a potato derived flavour enhancing composition, does not require any conceivable potato variety to be suited to achieving the claimed composition. Therefore, the board does not agree with the respondent that the composition of claim 1 needs to be obtainable from almost any batch of potatoes, regardless of variety, harvest time and growth

conditions. What is required is that a skilled person having knowledge of the information given in the patent, taking into account their common general knowledge, is in a position to produce the claimed composition.

2.3.3 The respondent argued that the experimental report D37 raised serious doubts as to whether the invention could be carried out. In its view, D37 showed that it was not possible to achieve the claimed composition when starting from the potato varieties Aveka, Toscana and Annabelle (see products 1 to 6 of D37), since the saccharide level of the obtained composition was too high and in some experiments the FAA content was too low.

2.3.4 As stated in point 2.3.1, above, when using the potato varieties Folva and Belana, the claimed composition can be successfully obtained. Even if, for the sake of argument, it were necessary for a skilled person to be in a position to find potato varieties other than Folva and Belana to successfully produce the claimed composition, this is considered a routine task for a skilled person and not an undue burden, for the following reasons. More precisely, although the attempts in D37 uncontestedly did not lead to the claimed composition in terms of saccharide level, there is sufficient guidance for a skilled person concerning how to successfully and reliably produce the claimed composition. Two successful ways are demonstrated by examples 1 and 2 of the patent. As outlined below, a skilled person is in a position to find further ways to produce the claimed composition.

2.3.5 In D37, a specific amino-acid profile is not given and the content of pyroglutamate that was part of the first

group of FAA in claim 1 was not determined. In the experimental report D37, the FAA content was calculated without including pyroglutamate.

Although pyroglutamate is an amino-acid derivative and, strictly speaking, is not a free amino acid, according to claim 1 pyroglutamate is undoubtedly part of the first group of free amino acids. This does not contradict paragraph [0035] of the patent, to which the respondent referred, either. As pyroglutamate is not determined in D37 (although it is inherently present in the composition), it cannot be derived from D37 that the required FAA content is not achieved. Thus, D37 does not raise serious doubts as to whether the specific amino-acid profile of claim 1 or the FAA content can be achieved.

The only relevant conclusion that can be drawn from the experiments in D37 is that the saccharide level of the obtained compositions is higher than required in claim 1 (see products 1 to 6 of D37). This is also conceded by the appellant.

2.3.6 However, finding appropriate potato varieties and processing conditions that lead to the desired saccharide level amounts to a routine measure for a skilled person.

As can be derived, for instance, from Table M on page 17 of D1, the level of fructose, glucose and sucrose, i.e. the saccharides defined in claim 1, in potatoes varies on average between 70 and 500 g/kg, which broadly overlaps with the content of 0 to 330 g/kg required in claim 1. It is considered a routine measure for a skilled person to select types of

potatoes having an appropriate initial saccharide level.

2.3.7 The respondent alleged in this respect that the saccharide content of potatoes may vary significantly depending on numerous factors, including harvest time, growth conditions, storage, the processing of the potatoes etc. However, no evidence was submitted by the respondent which could support its allegation that the variation in the saccharide content between the starting material and the final composition may be so significant, due to the processing of the potato to form the claimed composition, that a skilled person would not be in a position to predict generally the saccharide level in the final composition. Determining the sugar level of the potato starting material amounts to a routine measure for a skilled person.

2.3.8 A skilled person in the present technical field is aware of the fact that, when carrying out the process of claim 11 of the patent, which is a process for producing the claimed composition, in particular the content of saccharides does not significantly change. Thus, it is not an undue burden for a skilled person who is aware of the patent to select appropriate potato varieties which lead to the required level of saccharides and free amino acids, whereby only the saccharide level is shown to need particular consideration. The patent itself mentions the varieties Folva and Belana as being appropriate. Based on this knowledge, finding other appropriate potato varieties is considered a routine measure for a skilled person.

2.3.9 In view of the above, D37 does not raise serious doubts as to whether the invention can be carried out.

2.3.10 In addition to the process mentioned in claim 11, the patent provides further guidance concerning how to obtain the claimed composition. As explained in paragraph [0042] of the patent, the flavour-enhancing composition of the present invention is preferably obtained by an isolation process that commences shortly after grating of the potatoes and that employs minimal thermal treatment. The patent further explains that the rapid processing of grated potatoes under mild conditions minimises conversion of glutamine to pyroglutamate, thereby preserving glutamine as a substrate that can be enzymatically converted to glutamate with the help of glutaminase (emphasis added).

Thus, the patent provides guidance concerning how to process potatoes and, for instance, how to avoid the formation of pyroglutamate. In case the desired level of glutamate is not achieved automatically, the patent provides guidance that glutamine can be enzymatically converted to glutamate with the help of glutaminase. The success of this glutaminase treatment is, e.g., demonstrated in examples 1 and 2 of the patent and in the experimental report D57.

2.3.11 With respect to the appellant's own experimental report D57, the respondent argued that this report also raised serious doubts as to whether the invention could be carried out insofar as it related to the experiment in which no glutaminase treatment was carried out.

However, as outlined above in point 2.3.10, the patent teaches that a glutaminase treatment may be applied to increase the content of glutamate (see paragraph [0042] and examples 1 and 2 of the patent). Already for this reason, the respondent's objection relating to the

experimental report D57 fails, since the patent provides guidance concerning how to achieve the required glutamate content.

In view of the above, the invention can be carried out. The ground for opposition under Article 100(b) EPC does not prejudice the maintenance of the opposed patent.

3. Remittal to the opposition division

The opposition division did not decide on the issue of novelty and inventive step of the claimed subject-matter. The parties agreed that the case should be remitted to the opposition division for further prosecution. Under these circumstances, the case is remitted to the opposition division for further prosecution.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the opposition division for further prosecution.

The Registrar: The Chairman:

M. Schalow A. Haderlein

Decision electronically authenticated