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**Datasheet for the decision
of 8 February 2019**

Case Number: T 1218/14 - 3.3.02

Application Number: 05810988.5

Publication Number: 1812548

IPC: C12C5/00, C12C12/00, A23L2/84,
A23L1/05

Language of the proceedings: EN

Title of invention:

PROLAMIN-REDUCED BEVERAGES AND METHODS FOR THE PREPARATION
THEREOF

Patent Proprietor:

Döhler GmbH

Opponent:

DuPont Nutrition Biosciences ApS

Headword:

Relevant legal provisions:

EPC Art. 54, 56

Keyword:

Novelty - accidental disclosure

Decisions cited:

G 0001/03, G 0001/16

Catchword:

The requirement in G 1/03 that an accidental novelty-destroying disclosure has to be completely irrelevant for assessing inventive step is to be understood not as an alternative, or additional criterion, but as a **consequence** of the criterion that, from a technical point of view, said disclosure is so unrelated and remote that the person skilled in the art would never have taken it into consideration when making or working on the invention (points 2 and 7).



Beschwerdekammern

Boards of Appeal

Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0
Fax +49 (0)89 2399-4465

Case Number: T 1218/14 - 3.3.02

D E C I S I O N
of Technical Board of Appeal 3.3.02
of 8 February 2019

Appellant: Döhler GmbH
(Patent Proprietor) Riedstrasse 7-9
64295 Darmstadt (DE)

Representative: dompatent von Kreisler Selting Werner -
Partnerschaft von Patent- und Rechtsanwälten mbB
Deichmannhaus am Dom
Bahnhofsvorplatz 1
50667 Köln (DE)

Appellant: DuPont Nutrition Biosciences ApS
(Opponent) Langebrogade 1
P.O. Box 17
1001 Copenhagen K (DK)

Representative: Inspicos P/S
Kogle Allé 2
2970 Hørsholm (DK)

Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
26 March 2014 concerning maintenance of the
European Patent No. 1812548 in amended form.**

Composition of the Board:

Chairman M. O. Müller
Members: P. O'Sullivan
L. Bühler

Summary of Facts and Submissions

- I. Appeals were filed by the patent proprietor and the opponent against the interlocutory decision of the opposition division finding that, on the basis of the (then) fifth auxiliary request, the European patent 1 812 548 in suit (hereinafter "the patent") met the requirements of the EPC.
- II. With letter dated 10 September 2015, the opponent withdrew its appeal. Accordingly, hereinafter, the patent proprietor will be referred to as "appellant" and the opponent as "respondent".
- III. According to the decision under appeal:
- (a) The claims of the main request (claims as granted) met the requirements of Article 123(2) EPC and the invention defined in the claims was sufficiently disclosed. Claims 1 and 11 lacked novelty over D1. In particular the starch and syrup products of examples 1 and 2 of D1 respectively were seen as suitable beverage bases, beverage concentrates or beverage additives.
 - (b) The sole independent claim 1 of the fifth auxiliary request was novel over D1, D9, D10 and D18 and involved an inventive step over D2 as closest prior art.
- IV. The following evidence *inter alia* was cited in opposition proceedings:
- D1: WO 02/15713
 - D2: EP 0949329
 - D3: DE 10163964

D6: WO 02/051873
D9: WO 95/21240
D10: WO 97/29179
D15: WO 96/22366
D17: WO 00/70064
D18: Kunze, "Technology Brewing and Malting", VLB
Berlin, 1996, p. 83-87.

The following evidence was filed with the appellant's statement setting out the grounds of appeal:

D19: Excerpt from Südzucker Handbuch,
"Erfrischungsgetränke", 2000
D20: Leitsatz für Erfrischungsgetränke
D21: Merriam-Webster online dictionary, definition of
"additive"

V. The appellant requested that the decision under appeal be set aside and that the opposition be rejected (main request), or, alternatively, that the patent be maintained in amended form according to one of the sets of claims of the auxiliary requests I - VII filed with the statement setting out the grounds of appeal.

The respondent (opponent) did not file any requests. Submissions from the respondent in appeal are on file in the form of a statement setting out the grounds of appeal. As set out above, this appeal was subsequently withdrawn.

VI. A communication of the board was sent in preparation for oral proceedings. Therein the board *inter alia* noted that in the assessment of novelty vis-à-vis D1 it would need to be determined whether the starting material and products in the process of D1 fell within

the definition of those recited in the process of claim 1.

VII. Independent claim 1 of the main request (the claims as granted) reads as follows:

"1. A process for the preparation of a beverage, a beverage base, a beverage concentrate or a beverage additive having a reduced prolamin content from prolamin-containing raw materials, comprising the following steps:

(a) contacting the beverage or a precursor of the beverage with cross-linking enzymes to obtain modified prolamin;

(b) removing the modified prolamin at least partially."

Claim 1 of auxiliary request I corresponds to claim 1 of the main request with the following additional text:

"with the proviso of excluding a method for the separation of wheat flour into one gluten fraction and at least one other fraction, comprising the steps of: a) mixing the flour and a liquid and a transglutaminase enzyme obtaining a dough, b) separating the dough into a fraction comprising gluten and at least one other fraction, c) recovering at least the gluten fraction."

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

Claim 1 of auxiliary request III differs from claim 1 of the main request by the deletion of the alternative "beverage additive" from line 2 thereof.

Claim 1 of auxiliary request IV differs from claim 1 of the main request by the limitation to a process for the preparation of "a beverage", and the deletion of the alternatives "a beverage base, a beverage concentrate or a beverage additive".

Independent claim 11 of auxiliary request IV reads as follows:

"Use of cross-linking enzymes for the reduction of prolamin in beverages made from prolamin-containing cereals."

VIII. Oral proceedings were held before the board on 8 February 2019 in the respondent's absence.

IX. The appellant's arguments, insofar as relevant to the present decision, can be summarised as follows:

Main request - Novelty vis-à-vis D1

The subject-matter of claim 1 was novel over the disclosure in D1. Since the term "precursor of a beverage" was not defined in the patent, the general technical meaning of the term, as something within the production of a beverage (i.e. an intermediate product in the process), had to be considered. Thus a precursor of a beverage was not equivalent to an ingredient thereof. Consequently, the wheat flour of examples 1 and 2 of D1 would not be considered as a "precursor of a beverage".

Further, the liquefied and saccharified syrup product of example 2 of D1 would not be considered as a "beverage additive" in the context of claim 1 at issue. An "additive", defined as set out in dictionary entry

D21, was a substance added to another in relatively small amounts to effect a desired change in properties, i.e. having functional characteristics (D21, "Full definition of A[dditive]").

Auxiliary request I - Article 123(2) EPC

The undisclosed disclaimer introduced into claim 1 at issue was intended to delimit the subject-matter of the claim from the disclosure in D1, which was to be considered as an accidental anticipation. The disclaimer was consequently allowable under G 1/16 and G 1/03.

Auxiliary request III - Novelty vis-à-vis D1

The subject-matter of claim 1 was novel over the disclosure in D1. In particular, referring to D19 (section 2.4.2 entitled "Getränkegrundstoffe"), the syrup product of example 2 of D1 was not to be considered as a beverage base or a beverage concentrate.

Auxiliary request IV

The final product in claims 1 and 11 was limited to "a beverage". The claims at issue were consequently novel over both D1 and D9. Furthermore, the claims involved an inventive step starting from D2 or D3 as closest prior art, and the invention defined in the claims was sufficiently disclosed.

- X. The respondent's arguments, submitted with the statement setting out the grounds of appeal (subsequently withdrawn, supra) were made with reference to the (then) fifth auxiliary request found

allowable by the opposition division. Insofar as relevant to the present decision and the requests on file, those arguments can be summarised as follows:

Novelty (Article 54 EPC)

The syrup product of D1, example 2 is to be considered as a beverage as recited in the claims at issue, since a beverage is defined broadly in the patent as a food which can be ingested in liquid form. Thus D1 discloses the subject-matter of the respective independent claims at issue. Furthermore, the subject-matter of the independent claims lacks novelty over the disclosure in D9.

Inventive step (Article 56 EPC)

Any of D2, D3, D15 or D17 may be seen as the closest prior art. Taking D2 or D3 as closest prior art in combination with D1 or D6, which teach the application of gluten-reducing technology to food, the skilled person would have been led to the claimed subject-matter without exercising inventive step.

Sufficiency of disclosure

The terms "cross-linking enzymes" and "beverage" in claim 1 are broad to the extent that a lack of sufficiency of disclosure arises. Furthermore, the skilled person would be unable to choose a (mixture of) suitable enzymes for the claimed process given the information in the patent, since the plural "enzymes" in claim 1 has the consequence that at least two distinct enzymes must be employed in the process, and the patent provided no guidance in this respect.

Reasons for the Decision

General

The terms "prolamins" and "gluten" are used interchangeably in the patent as well as in the submissions of the parties, and in the following are to be considered identical in meaning. The term "gliadins" refers to prolamins in wheat (paragraph [0002] of the patent).

Main request

1. Novelty (Article 54 EPC)

1.1 Claim 1 at issue comprises the following features:

A process for the preparation of

- a beverage,
- a beverage base,
- a beverage concentrate or
- a beverage additive

having a reduced prolamins content from prolamins-containing raw materials, comprising the following steps:

- (a) contacting the beverage or a precursor of the beverage with cross-linking enzymes to obtain modified prolamins;
- (b) removing the modified prolamins at least partially

1.2 Interpretation of terms

"Beverage"

- 1.2.1 A beverage is defined in the patent as "a food which can be ingested in liquid form" (paragraph [0028]). The board finds a literal interpretation of this definition, as proposed by the respondent, too broad (statement of grounds, page 5, second full paragraph). In the view of the board, not all foods which (physically) **can** be ingested as a liquid are necessarily to be considered as beverages. A good example of such a food which would not be considered a beverage was provided by the respondent (see grounds of appeal, page 5, third full paragraph). Thus, in arguing that grenadine syrup was to be considered as a beverage, it was submitted that in the American television comedy "The Office", Michael Scott stated that his drink is "just grenadine". However, this quotation is considered amusing precisely because of the fact that a syrup per se, such as grenadine, would itself not normally be considered as a liquid which one would consume directly. Thus a beverage is to be understood a food which can be ingested as a liquid **and** which furthermore would be considered by a skilled person as a liquid which one would consume directly. In this context, it is the view of the board that the "skilled person" is not limited to the skilled practitioner in the technical field of beverage development for commercial gain, but also includes non-professional individuals. Thus a beverage is also that which a non-professional individual would consider to constitute a liquid which one would reasonably contemplate consuming directly. Such a liquid is thus not limited to beverages developed as commercially

exploitable products, but would include, for example, simple beverages such as sugar water.

"Beverage concentrate"

- 1.2.2 A beverage concentrate is defined in the patent as being synonymous with a beverage base, both denoting "a precursor for the preparation of a food in solid or liquid form, which can be ingested as a food after further processing" (paragraph [0029]). This definition is however rather vague, since the description lacks a definition of a precursor, and the fact that the food is not specified as a liquid. The term "concentrate" on the other hand is well defined in the art as referring to a substance which has (at least some of) the solvent removed therefrom. In the context of a beverage therefore, a "beverage concentrate" is to be understood as referring to a substance which, when diluted with water, becomes a beverage.

"Beverage base"

- 1.2.3 The appellant submitted, referring to D19 (paragraph 2.4.2) that a beverage base (D19: "Getränkegrundstoffe") must be understood as a mixture of different substances such as those listed in D19, i.e. a semi-finished product for the production of a beverage. Accordingly, mere ingredients would not qualify as beverage bases.
- 1.2.4 The board notes however that D19 is a handbook relating specifically to soft or refreshing drinks (DE: "Erfrischungsgetränke") whereas the claims are not limited in this regard. The examples of the patent focus on the production of gluten-free beer. According to D20 (page 1, section B "Beschaffenheitsmerkmale",

point 1) "Erfrischungsgetränke" comprise at the most 2 g/L alcohol, corresponding to approximately 0.2% wt, thereby excluding beers and other beverages comprising standard levels of alcohol. Furthermore, even if D19 were generally applicable, it still does not support the argument of the appellant that a beverage base must necessarily be understood as a mixture of different substances, since the relevant section of D19 (paragraph 2.4.2) merely lists potential main ingredients ("Hauptbestandteile"), which may, depending on the type of drink, be chosen from those listed. It is not stated in D19 that necessarily more than one of the listed substance must be present in order for the substance to qualify as a beverage base. Finally, D19 concerns the preparation of beverage bases for commercial exploitation. In the view of the board, the term "beverage base", similarly to the term "beverage" must be construed more broadly as not only limited to commercially available or exploitable products.

- 1.2.5 For these reasons the board does not consider D19 as relevant to the interpretation of the term "beverage base". In the view of the board, a beverage base is to be understood as a substance which can be made into a beverage, optionally with the addition of further substances, or optionally after further processing. Thus, a beverage concentrate may be considered as a specific sub-type of beverage base.

"Beverage additive"

- 1.2.6 The description of the patent does not provide any guidance as to how this term is to be interpreted. The board understands it to define any substance, the addition of which to a beverage would be considered technically sensible. With the statement of grounds the

appellant filed a dictionary definition of the term "additive" in support of his arguments (D21, "Full definition of additive"), the term being defined therein as "*a substance added to another in relatively small amounts to effect a desired change in properties*". This definition is not more limitative than the understanding provided by the board, above. Thus, in D21, a "relatively small amount" can only be seen as undefined and unclear, and "to effect a desired change in properties" merely defines any substance the addition of which would make technical sense, since if a substance were to have no effect, it would not be technically sensible to add it at all.

"Precursor of a beverage"

- 1.2.7 This term is not defined in the patent. The term "precursor" is used in relation to the definitions provided for the terms "beverage base" and "beverage concentrate" (paragraph [0029]), but this cannot directly be equated with a specific definition attributable to the term "precursor of a beverage" in the claim, which must be given its broadest, technically sensible interpretation.
- 1.2.8 The appellant held the view that the term should be understood as something within the production of a beverage, i.e. an intermediate product in the process for the production of a beverage, and not merely an ingredient thereof.
- 1.2.9 In the view of the board, the term must not only make technical sense in general, but also in the context of the claims in which it is employed. Thus claim 1 at issue concerns a process whereby either "a beverage or a precursor of a beverage" are processed to provide "a

beverage, a beverage base, a beverage concentrate or a beverage additive". Since according to that claim a beverage additive can be produced from a precursor of a beverage, it follows that the latter term would not make technical sense if it were to be understood as being limited only to intermediate products in the production of a beverage, since according to that definition, it would not be possible to produce a beverage additive (which is not an intermediate product in the production of a beverage) therefrom. The term must consequently be understood in a broader sense to refer to **any** precursor material suitable for preparing any of the products of the process as listed in claim 1. It follows that if the prior art discloses a process for the production of one of those products, the starting material in that process must necessarily be considered as a "precursor of a beverage".

- 1.2.10 The board notes that the apparent inconsistency between the starting material of claim 1 being "a precursor of a beverage", while a potential product may be, for example, "a beverage additive", may be due to an inherent lack of clarity in the claim. Although clarity is not at issue in opposition (appeal) proceedings (insofar as the lack of clarity was already present in the granted claims, G 3/14), an unclear term, or in the present case, combination of terms, must be interpreted broadly for the purpose of novelty. Interpreting the term more narrowly would not be consistent with the presence of, for example, a beverage additive in the claim as one of the possible products of the process.

1.3 Novelty vis-à-vis D1

1.3.1 D1 discloses a method for the separation of wheat flour into one gluten fraction and at least one other fraction (a starch fraction) comprising the steps of

- (a) mixing the wheat flour, a liquid and a transglutaminase enzyme obtaining a dough,
- (b) separating the dough into a fraction comprising gluten and at least one other fraction, and
- (c) recovering at least the gluten fraction (D1, claim 1 and page 2, line 30 - page 3, line 5).

In example 2, a dough is formed from wheat flour, water and transglutaminase enzyme and a supernatant liquid gluten-containing fraction is separated from a starch-containing "pellet fraction". The latter fraction is then liquefied and subsequently saccharified and made into a syrup.

1.3.2 It was undisputed by the appellant that the water and flour mixture of example 2 of D1 is contacted with cross-linking enzymes to obtain modified prolamin and that the thus modified prolamin is removed at least partially, corresponding to steps (a) and (b) of claim 1 at issue.

1.3.3 At issue is whether the wheat flour/water dough starting material in example 2 of D1 corresponds to those recited in claim 1, step (a), and secondly, whether the syrup obtained in example 2 of D1 falls within the definition of (at least one of) the products of the process recited in claim 1.

1.3.4 According to example 2 of D1, the sedimental starch fraction is "liquefied and subsequently saccharified

and made into syrup" (page 15, lines 26-27). During oral proceedings, the appellant did not disagree with the board's opinion that the term "saccharified" was to be understood in the art as meaning that the starch had been hydrolysed into its constituent sugar monomers, comprising mostly glucose. Thus, the syrup product of example 2 of D1 is considered to be a glucose-rich syrup corresponding to that mentioned in the description (D1, page 6, line 11).

- 1.3.5 There is no doubt that the skilled person would understand the syrup product of example 2 to represent a suitable beverage additive falling within the definition therefor provided above. Such additives are well known in the art, one such analogous additive being, for example, corn syrup, a well known glucose-containing additive derived from corn starch and widely employed in the food industry, including as a beverage additive. This understanding is also not in contradiction with the definition provided for "beverage additive" in D21, since the addition of a relatively small amount of glucose syrup to a beverage will indeed affect a change in properties, for example in sweet taste, or viscosity.
- 1.3.6 Since the product of the process of example 2 of D1 is a beverage additive as required by claim 1, it follows in line with the definition provided above, that the wheat flour and water starting material in said example is to be considered as a "precursor of the beverage", equally as required by claim 1.
- 1.3.7 Consequently, the subject-matter of claim 1 at issue lacks novelty over the disclosure of example 2 of D1.

Auxiliary request I

2. Allowability of the disclaimer, Article 123(2) EPC

2.1 *Claim 1 of auxiliary request 1 contains the following disclaimer:*

"with the proviso of excluding a method for the separation of wheat flour into one gluten fraction and at least one other fraction, comprising the steps of: a) mixing the flour and a liquid and a transglutaminase enzyme obtaining a dough, b) separating the dough into a fraction comprising gluten and at least one other fraction, c) recovering at least the gluten fraction."

This disclaimer is an undisclosed disclaimer by way of which the appellant attempted to exclude the relevant disclosure of D1 from the scope of claim 1 in order to establish novelty over this document.

2.2 According to G 1/16, order, first paragraph:

"For the purpose of considering whether a claim amended by the introduction of an undisclosed disclaimer is allowable under Article 123(2) EPC, the disclaimer must fulfill one of the criteria set out in point 2.1 of the order of decision G 1/03."

2.2.1 One of those criteria concerns the situation in which an undisclosed disclaimer is introduced in order to restore novelty by delimiting a claim against an accidental anticipation under Article 54(2) EPC (G 1/16: point 45; G 1/03: order, point 2.1, second indent, Reason point 2.2 and sub-points).

2.2.2 G 1/16 (reasons, point 45) states explicitly that the relevant test for assessing whether an anticipation is accidental is *"if it is so unrelated to and remote from the claimed invention that the person skilled in the art would never have taken it into consideration when making the invention"*.

Apart from this specific statement, G 1/16 also refers to the reasons of G 1/03, point 2.2 and sub-points, which provide a more detailed explanation of the circumstances under which an anticipation may be considered accidental.

2.2.3 According to G 1/03 (reasons, point 2.2.2):

*"Different definitions of accidental anticipation have been put forward ... [several decisions including the referring decision are cited]. These say in similar terms that a disclosure is accidentally novelty-destroying, if it was disregarded by the skilled person faced with the problem underlying the application, either because it belonged to a remote technical field or because its subject-matter suggested it would not help to solve the problem. Thus, according to these decisions, **the disclosure has to be completely irrelevant for assessing inventive step.** The individual elements of these and other attempts to find an adequate definition cannot be taken in isolation. The fact that the technical field is remote or non-related may be important but is not decisive because there are situations in which the skilled person would also consult documents in a remote field. ... What counts is that from a technical point of view, the disclosure in question must be so unrelated and remote that the person skilled in the art **would never have taken it into consideration when working on the invention** (In*

this direction see T 608/96, supra, Reasons, point 6, cited in the referring decision T 507/99, Reasons, point 7.3.1). This should be ascertained without looking at the available further state of the art because a related document does not become an accidental anticipation merely because there are other disclosures which are even more closely related. In particular, the fact that a document is not considered to be the closest prior art is not sufficient to accept an accidental anticipation" (emphasis added by the board)

2.2.4 In a subsequent paragraph of the the same discussion in G 1/03 (reasons 2.2.2), the Enlarged board states:

*"It is true that the European patent system must be consistent and the concept of disclosure must be the same for the purposes of Articles 54, 87 and 123 EPC. However, this does not prejudice the question of what is to be considered as technical information disclosing the invention. **In the case of an accidental anticipation, its definition (see above) makes clear that it has nothing to do with the teaching of the claimed invention, since it cannot be relevant for examining inventive step.** Therefore, a mere disclaimer excluding the subject-matter of an accidental anticipation may be assumed not to change the technical information in the application as filed and, for this reason, also not to change the subject-matter of the application as filed, within the meaning of Article 123(2) EPC." (emphasis added by the board)*

2.2.5 It follows from both G 1/16 and G 1/03 that an anticipation is accidental if from a technical point of view it is so unrelated and remote that the person skilled in the art would never have taken it into

consideration when making or working on the invention. In addition to the explicit wording contained in G 1/16, G 1/03 requires that the accidental disclosure should be completely irrelevant for assessing inventive step.

2.3 In the present case, it needs to be assessed whether taking G 1/16 and G 1/03 into account, D1 qualifies as an accidental anticipation.

2.3.1 D1 concerns a method for the separation of gluten and starch from wheat flour using a transglutaminase enzyme (D1, claim 1). It is true, as submitted by the appellant, that the main focus of D1 is the separation of gluten (prolamins) from wheat flour with a view to adding it subsequently to flour of poor quality to improve the baking properties thereof (D1, page 1, lines 3-8 and 26-29; page 2, lines 2-7). The field of flours is entirely unrelated to the field relevant to the claimed invention, i.e. beverages, beverage bases, beverage concentrates and beverage additives.

However D1 also discusses the starch fraction obtained from the separation, and the uses thereof (page 5, line 31 - page 6, line 9). In particular, it is stated that "*[t]here are a vast number of areas in which starches may be applied, such as **glucose syrup production** and in sweetening production in general*" (page 6, lines 10-12; emphasis added by the board). Furthermore, example 2, as discussed above, is an embodiment of the process of D1 according to which in addition to a gluten fraction, a starch sediment is obtained, liquefied, saccharified and made into syrup. As established above, the resultant syrup is a glucose-rich syrup which the skilled person would consider as a suitable beverage additive.

2.3.2 Consequently D1 deals in a side aspect with the production of a beverage additive. It therefore does not fulfill the criterion in G 1/16 and G 1/03 that it must be so unrelated to and remote from the claimed invention that the person skilled in the art would never have taken it into consideration when making or working on the invention.

2.4 It follows that D1 cannot be regarded as an accidental anticipation and the disclaimer of claim 1 at issue does not meet the criteria set out for undisclosed disclaimers in G 1/16 (reasons, point 45) and G 1/03 (headnote, 2.1). Claim 1 thus fails to meet the requirements of Article 123(2) EPC.

Auxiliary request II

3. Novelty (Article 54 EPC)

3.1 Claim 1 of auxiliary request II is identical to that of the main request, and consequently lacks novelty with respect to D1 for the same reasons as provided above.

Auxiliary request III

4. Novelty (Article 54 EPC)

4.1 Claim 1 of auxiliary request III differs from claim 1 of the main request by the deletion of the alternative "beverage additive". It thus only encompasses the alternatives concerning the preparation of a beverage, a beverage base or a beverage concentrate.

4.2 In view of the definitions of the respective terms provided above, the glucose-rich syrup of example 2 of

D1 is considered to represent both a beverage concentrate and a beverage base, since at least water may be added thereto to provide a simple beverage, namely sugar water. There is no reason to exclude said syrup as a beverage base just because it does not comprise other components, since those components are optional (see definition, *supra*) and are not necessary for preparing sugar water. As discussed above, it is immaterial whether sugar water is a commercially interesting product - what matters is that - for a non-professional individual - it is sensible to consider it as a beverage. It follows furthermore, in accordance with the definition provided therefor above, that the wheat flour/water starting material in example 2 of D1 is considered to be a "precursor of the beverage" in accordance with claim 1 at issue.

- 4.3 Consequently, the subject-matter of claim 1 of auxiliary request III lacks novelty over D1.

Auxiliary request IV

5. Novelty (Article 54 EPC)

5.1 Vis-à-vis D1

5.1.1 Claim 1 at issue is limited to a process for the preparation of a beverage, the alternatives "beverage base, beverage concentrate or a beverage additive" having been deleted.

5.1.2 The board is in no doubt that the glucose-rich syrup of example 2 of D1 cannot be considered as a beverage *per se*, since the skilled person would not recognise it as being suitable for this purpose. This is consistent with the definition provided for the term "beverage",

supra. As a consequence of this, the wheat flour/water mixture is also not to be considered as a "precursor of a beverage", since it does not lead to a product of the process of claim 1 at issue.

- 5.1.3 The same applies *mutatis mutandis* to the subject-matter of claim 11, which is directed to the use of cross-linking enzymes for the reduction of prolamins in beverages, the further alternatives having been deleted when compared to granted claim 11.

Consequently, the subject-matter of claims 1 and 11 at issue and linked thereto of dependent claims 2 to 10 is novel vis-à-vis D1.

5.2 Vis-à-vis D9

- 5.2.1 In the statement setting out the grounds of appeal, (subsequently withdrawn, supra), the respondent, in arguing a lack of novelty, also invoked D9 (with respect to the claims of the (then) fifth auxiliary request on file before the opposition division.
- 5.2.2 The respondent conceded that D9 did not explicitly disclose the modification of prolamin and the at least partial removal thereof, but contended that these steps were intrinsic to the method disclosed therein. Thus, the cross-linking laccase enzyme added to the beer according to the method of D9 (albeit for a different purpose) would react with the prolamins which are necessarily comprised therein, subsequent to which removal thereof would be effected by standard beer filtration steps.
- 5.2.3 D9 discloses the use of microbial laccase in order to produce a storage stable beer (page 1, lines 3-4).

Laccase is mentioned in the patent in a list of typical cross-linking enzymes (paragraph [0012]). According to D9, the laccase added to the beer removes excess oxygen (for the purpose of stability) and at the same time some of the polyphenols, which complex with the laccase and may be removed by filtration or other means of separation (page 4, lines 15-27). However, the board notes that D9 lacks a conclusive indication that prolamins are present at all. Even if assumed to be present, there is no indication in D9 that the laccase enzyme will react therewith: it is at least conceivable that the laccase could preferentially remove oxygen and react with polyphenols as intended, and not react with prolamins at all.

5.2.4 Consequently D9 fails to directly and unambiguously disclose the process of claim 1 nor the use according to claim 11 at issue.

5.2.5 It follows that the subject-matter of independent claims 1 and 11, and linked thereto of dependent claims 2 to 10 is novel vis-à-vis D9.

6. Inventive step (Article 56 EPC)

6.1 Closest prior art

6.1.1 According to the contested decision D2 was the closest prior art for claim 1 of the (then) fifth auxiliary request. The appellant agrees with this choice. The respondent appears to propose D1, D2 or D3 as potential closest prior art documents, but also suggests that either of D15 or D17 may be chosen as alternatives.

6.1.2 According to established jurisprudence, in selecting the closest prior art, a central consideration is that

it must be directed to the same purpose or effect as the invention, and ideally should relate to the same or a similar technical problem, otherwise it cannot lead the skilled person in an obvious way to the claimed invention.

6.1.3 D1 concerns a method for the separation of gluten and starch from wheat flour using a transglutaminase enzyme (D1, claim 1). The main focus of D1 is the separation of gluten (prolamins) from wheat flour with a view to adding it subsequently to flour of poor quality to improve the baking properties thereof (D1, page 1, lines 3-8 and 26-29; page 2, lines 2-7). D1 also discusses the starch fraction obtained and the potential uses thereof, including the preparation of a syrup therefrom (example 2), discussed in detail above. However, D1 is completely silent with regard to beverage production to which claim 1 at issue is directed, and consequently is not a promising springboard for the skilled person and does not qualify as the closest prior art.

6.1.4 D15 concerns the preparation of specific transglutaminases. It is generally stated that said transglutaminases may be useful in *inter alia* reducing the allergenicity of food products containing gluten (page 27, lines 32-38). "Cheese and other milk products" are mentioned in a list of suitable food products for which the claimed transglutaminases may be used, although no examples concerning the reduction of allergenicity are provided. The transaminases appear to be employed to achieve deamidation (page 27, lines 24-28). The removal of modified prolamin is not addressed, nor is the production of gluten-free beverages.

6.1.5 D17 concerns polypeptides with protein disulfide reducing properties (page 1, lines 4-5). The polypeptides are employed to reduce disulfide bonding in proteins responsible for allergic reactions, resulting in changes to their allergic properties (page 1, lines 12-16), and can be applied to food items such as gluten, milk, and milk supplements for infants (page 29, line 15 - page 30, line 11). The reduction of allergens in gluten is mentioned (page 30, lines 8-11). The allergen reduction disclosed in D17 appears to be achieved by reducing the allergic effect of proteins through reduction of disulfide bonds (the breaking of disulfide cross-links within proteins), and not by removing the relevant proteins, meaning that proteins, such as prolamins, will remain.

6.1.6 Thus neither of D15 and D17 are directly concerned with the preparation of a beverage with a reduced prolamins content, with the consequence that they also represent unlikely starting points for the skilled person.

6.1.7 D2 and D3 on the other hand are both concerned with the provision of gluten-free beer. The board therefore considers either of these documents to represent the most promising springboard for the skilled person.

6.2 Problem solved

6.2.1 According to the application as filed, the general object of the invention is to provide *inter alia* a reduced prolamins beverage from prolamins-containing raw materials (paragraph [0023]).

6.2.2 Claim 1 differs from D2 or D3 in that a reduced-prolamins beverage product is prepared from prolamins-containing raw materials, while according to D2 and D3,

gluten-free raw materials are required (D2, paragraph [0005] and D3, paragraph [0004]). Furthermore, D2 and D3 do not disclose contacting with cross-linking enzymes nor that the modified prolamins are at least partially removed as required by steps a) and b) of claim 1 at issue.

6.2.3 The application comprises examples which demonstrate the effectiveness of the claimed process, in particular in terms of the removal of gliadins from Weizenbier as a function of enzyme concentration, incubation time and temperature (paragraphs [0048]-[0050] and figures 2a-c), the action of transglutaminases on commercial beers (paragraph [0053]) and the preparation of a gliadin-free beverage (paragraphs [0054] and [0055]). The effect demonstrated by these examples has not been called into question by the respondent.

6.2.4 The board furthermore sees no reason to doubt that the process of the examples demonstrated exclusively for beer could be plausibly applied generally to the preparation of beverages other than beer from prolamins-containing raw materials.

6.2.5 The technical problem underlying the subject-matter of claim 1 may consequently be seen as the provision of further beverages having a reduced prolamins content.

6.3 Obviousness

6.3.1 The respondent argues that starting at D2 or D3, the skilled person would have turned to either of D1 or D6, thereby arriving at the solution provided by claim 1 at issue.

- 6.3.2 The board does not agree. In order to arrive at the claimed invention on the basis of D2 or D3 in combination with D1, the skilled person would have had to
- go against the teaching which is key to both D2 and D3, namely to use a gluten-free starting material and would have had to use the gluten-containing starting material of D1 instead,
 - would have had to remove the gluten from said starting material, something taught in D1 in the context of flour production only, and
 - would have had to use the gluten-free glucose syrup resulting therefrom and mentioned in D1 as a side aspect only, as a precursor in D2 and D3 for the production of beer.

This multiple sequence of steps is neither disclosed nor suggested in any of D1, D2 or D3 and if at all, would have been applied by the skilled person only when already knowing the claimed invention, i.e. with the benefit of hindsight. Therefore, the claimed invention is inventive in view of D2 or D3 in combination with D1.

- 6.3.3 D6 concerns a process for producing starch from plant material by adding gluten thereto to produce a network of protein and isolating the starch therefrom (e.g. claims 1 and 2). The starch is said to be an industrial and food raw material of major importance (page 1, lines 12-13; page 18, lines 10-13); specific uses are not recited. D6 lacks any reference to a potential use in the production of beverages. Consequently, with a view to solving the technical problem, the skilled person would not have consulted D6 at all.

Therefore, the skilled person would not have combined either of D2 or D3 with D6 to solve the above-defined problem.

- 6.3.4 The respondent additionally submitted that any one of D5, D9 and D10 may be considered to be the closest prior art. However, no arguments were provided in this respect. Hence, as set out in the board's communication dated 5 November 2018, the objections starting from D5, D9 and D10 are unsubstantiated and thus are not admitted into the proceedings (Article 12(4) in conjunction with Article 12(2) RPBA).
- 6.3.5 It follows that the subject-matter of claim 1, and claim 11 by analogy, as well as of dependent claims 2 to 10 involves an inventive step.
- 7. The assessment of whether a disclosure represents an accidental anticipation according to G 1/16 and G 1/03
 - 7.1 The above finding that in view of D1 as a secondary document, the claimed subject-matter is inventive may at first sight appear to be in contradiction with the finding that D1 is not an accidental anticipation (point 2.3.2 and 2.4, above). More specifically, the finding that the claimed subject-matter is inventive in view of D1 as a secondary document may lead to the conclusion that D1 is irrelevant to inventive step. This may in turn be interpreted such that the criterion in G 1/03 that an accidental anticipation should be completely irrelevant for assessing inventive step is met and that hence D1 is an accidental anticipation.
 - 7.2 The board finds it appropriate to provide its reasons in this regard in more detail.

7.2.1 According to the passage of G 1/03 quoted above (point 2.2.3), *inter alia* the criterion that a disclosure has to be completely irrelevant for assessing inventive step should not be taken in isolation. Said passage then reads "*[w]hat counts is that from a technical point of view, the disclosure in question must be so unrelated and remote that the person skilled in the art would never have taken it into consideration when working on the invention*". This criterion is essentially identical to that explicitly cited in G 1/16 (an anticipation is accidental "*if it is so unrelated to and remote from the claimed invention that the person skilled in the art would never have taken it into consideration when making the invention*"). Hence, this is the criterion that needs to be met for a disclosure to be considered an accidental anticipation.

7.2.2 In view of this, the requirement in G 1/03 that an accidental novelty-destroying disclosure has to be completely irrelevant for assessing inventive step is to be understood not as an alternative, or additional criterion, but as a **consequence** of the criterion that, from a technical point of view, said disclosure is so unrelated and remote that the person skilled in the art would never have taken it into consideration when making or working on the invention. Consequently, if this criterion is met, it follows that said disclosure is completely irrelevant for assessing inventive step. However, not meeting said criterion does not necessarily imply the opposite, namely that the disclosure in question will contribute to a finding that inventive step is lacking.

8. Article 84 EPC

8.1 The respondent objected under Article 84 EPC (in respect of claim 1 of the fifth auxiliary request found allowable by the opposition division) on the basis that it was not clear whether the plural term "enzymes" referred to one or more enzymes and secondly that the term "the beverage" in step a) of claim 1 lacked a proper antecedent. These terms are also present in claim 1 at issue. However, they are also present in claim 1 as granted. Pursuant to G 3/14, a clarity objection against granted claims is not possible in opposition appeal proceedings.

9. Sufficiency of disclosure, Article 100(b) EPC

9.1 The respondent objected to the broadness of the terms "cross-linking enzymes" and "beverage". Broadness as such is however not a valid basis for an objection of insufficiency of disclosure.

9.2 The respondent also alleged that the skilled person would be unable to choose a (mixture of) suitable enzymes for the claimed process. However, as already pointed out by the appellant in its letter dated 12 December 2014, the burden of proof lies with the respondent (opponent) to show that the method of the invention does not work. In fact, there is no reason to doubt that the skilled person in possession of the patent documents as a whole (in particular paragraphs [0012]-[0015],[0025] and [0026]) would be able to choose suitable enzymes for the claimed process.

9.3 Lastly, the respondent submitted that the use of the plural "enzymes" in claim 1 has the consequence that at

least two distinct enzymes must be employed in the process. The board does not agree, since "enzymes" could conceivably be interpreted broadly as referring to either a single enzyme (a plurality of identical enzyme molecules, i.e. enzymes), or alternatively, more than one distinct enzyme. This interpretation is consistent with the description (paragraph [0025]) according to which suitable cross-linking enzymes are identified individually, or in combination.

Irrespective of this, as set out above, the assertion that the skilled person is unable to identify a suitable enzyme or enzyme mixture is not supported by evidence and consequently must fail.

- 9.4 It follows that the invention defined in the claims is sufficiently disclosed.
10. Amendments, Articles 100(c) and 123(2) EPC
- 10.1 No objections have been raised by the respondent either in respect of the ground under Article 100 (c) EPC or, as regards amendments effected in the claims of auxiliary request IV, under Article 123(2) EPC. The board does not see any reason to raise objections in this regard. The claims at issue according to auxiliary request IV therefore meet the requirements of Articles 100(c) and 123(2) EPC.
11. The set of claims according to auxiliary request IV is consequently allowable.

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 with the order to maintain the patent on the basis of the following claims and a description to be adapted thereto:

Claims 1 to 11 of auxiliary request IV filed with the statement of grounds of appeal.

The Registrar:

The Chairman:



N. Maslin

M. O. Müller

Decision electronically authenticated