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Datasheet for the decision of 29 July 2025

Case Number: T 0564/23 - 3.3.09

Application Number: 13798580.0

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Language of the proceedings: EN

Title of invention:
FERMENTATION OF JUICE

Patent Proprietor:
ADM WILD Europe GmbH & Co. KG

Opponent:
Oterra A/S

Headword:
Fermentation of juice/WILD

Relevant legal provisions:
EPC Art. 100(c), 100(b), 100(a), 56
RPBA 2020 Art. 13(2)

Keyword:
Grounds for opposition - added subject-matter (no) - insufficiency of disclosure (no)
Inventive step - non-obvious alternative - (yes)

Decisions cited:
T 0641/00, T 0917/13, T 1127/16, T 1473/19

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Case Number: T 0564/23 - 3.3.09

D E C I S I O N
of Technical Board of Appeal 3.3.09
of 29 July 2025

Appellant: (Opponent)	Oterra A/S Agern Alle 24 2970 Hørsholm (DK)
Representative:	Willnegger, Eva Montgomery IP Boulevard Saint Michel 10/4 1150 Bruxelles (BE)
Respondent: (Patent Proprietor)	ADM WILD Europe GmbH & Co. KG Rudolf-Wild-Straße 107-115 69214 Eppelheim (DE)
Representative:	Grünecker Patent- und Rechtsanwälte PartG mbB Leopoldstraße 4 80802 München (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 15 March 2023 rejecting the opposition filed against European patent No. 2922417 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chairman	A. Haderlein
Members:	F. Rinaldi
	G. Decker

Summary of Facts and Submissions

I. This decision concerns the appeal filed by the opponent (appellant) against the opposition division's decision to reject the opposition.

II. In the notice of opposition, the opponent had requested that the patent be revoked under Article 100(a), (b) and (c) EPC.

III. The following documents are relevant to this decision:

D1: US 5,266,337

D3: CN 103131596 A (English translation)

D11: E. Gleyses *et al.*, "Impact of total acidity on ethanolic fermentation of a black carrot juice with dextrose under controlled conditions with *Saccharomyces cerevisiae and bayanus*", Study report (Project 21201), dated 15 March 2021, filed by the opponent

D12: M. Gąstoł, "Vineyard performance and fruit quality of some interspecific grapevine cultivars in cool climate conditions", Folia Horticulturae 27/1, 2015, 21-31

D24: "Reference Guideline for Lemon Juice", Revisited May 2011

D24 was filed on appeal by the appellant.

IV. On appeal, the patent proprietor (respondent) filed a total of three auxiliary requests. Relevant to this decision are only claims 1 and 8 of the patent as granted (main request). These claims read as follows.

"1. *A process of preparing a concentrated liquid foodstuff comprising treating a mixture of a juice concentrate and a carbohydrate with a yeast, wherein said juice concentrate has a water content of 20 to 80% by weight based on the juice concentrate and a Brix of from 5 to 20°Bx, wherein said carbohydrate is selected from the group consisting of maltose, lactose, glucose, saccharose, fructose, hexose, a hydrolyzed saccharose concentrate, an invert sugar syrup, a glucose syrup, and a natural fruit sugar from fruit juice and fruit juice concentrate, and is added in an amount of from 1 to 20 wt%, based on the total weight of the mixture, wherein the mixture has a total acidity of at least 25 g/L, calculated as citric acid, pH 8.1, and wherein the treatment of the juice concentrate with the yeast is carried out at temperatures above 25°C and wherein the fermentation is carried out at a pH < 4, to obtain a concentrated liquid foodstuff, wherein the alcohol content is lower than 15 g/kg of concentrated liquid foodstuff.*"

"8. *The process according to any of claims 1 to 7, characterized in that the treatment is carried out for 24 to 50 h.*"

V. The appellant's submissions are summarised as follows.

- The amendment in claim 1 was not allowable. The meaning of the feature of claim 12 of the application as filed that was added to claim 1 was expanded. Due to the amendment, granted claim 1 required a fruit juice concentrate as a mandatory feature and in addition one of the remaining sugars of the list in claim 12.

- Article 100(b) EPC prejudiced the maintenance of the patent as granted. The patent did not disclose all the information necessary for carrying out the invention, in particular, what pH was used, how the alcohol content was achieved and what the fermentable sugars were. In addition, the results in D11 (table 5) demonstrated that the invention as set out in claim 8 was insufficiently disclosed.
- The subject-matter of claim 1 lacked inventive step starting from example 3 of D1. The difference was the total acidity. This feature did not have any effect. The problem was to provide an alternative process. In light of the teaching of D1, adding citric acid would have been obvious for the skilled person. Furthermore, the subject-matter claimed would have been obvious by combining the teaching of D1 and D3.

VI. The respondent's submissions are summarised as follows.

- The amendment in claim 1 was allowable. Adding the term "and" after the comma in the list of carbohydrates in claim 12 of the application as filed did not change the meaning of this list.
- The patent's example 1 provided guidance on how to carry out the invention. The patent specification taught suitable pH values of the fermentation mixture, how to obtain a low alcohol content by stopping the reaction and what sugars were suitable for fermentation. In addition, both the patent's example 1 and example 1 of D11 (table 5) showed that it was possible to carry out the process of claim 8.
- The subject-matter of claim 1 involved an inventive step. D1 was the closest prior art. Claim 1 differed from D1 in the total acidity. This feature

caused an improved flavour. Even if no improvement were to be acknowledged, controlling the pH, as taught by D1, did not mean that the total acidity of claim 1 would have been reached. Moreover, the skilled person would not have used the composition of D3 or a lemon juice in the process of D1.

VII. Final requests

The appellant (opponent) requested that the decision under appeal be set aside and that the patent be revoked.

The respondent (patent proprietor) requested that the appeal be dismissed (main request) or, alternatively, that the patent be maintained on the basis of auxiliary requests 1 to 3 filed with the reply to the statement setting out the grounds of appeal.

Reasons for the Decision

1. *Patent*

1.1 The patent is directed to a process for the preparation of a concentrated liquid foodstuff having a low alcohol content (paragraph [0009]).

1.2 Claim 1 of the patent is directed to a process in which a mixture of a juice concentrate and a carbohydrate with a yeast is subjected to fermentation to obtain a concentrated liquid foodstuff with an alcohol content lower than 15 g/kg of concentrated liquid foodstuff.

2. *Ground for opposition under Article 100(c) EPC*

2.1 The appellant contested the opposition division's conclusion that the amendment in claim 1 as granted did not prejudice the maintenance of the patent as granted under Article 100(c) EPC.

2.2 The amendment under scrutiny concerns the list of carbohydrates in claim 12 of the application as filed added to claim 1 of the application as filed. In the list in claim 12, individual carbohydrates are separated by commas, whereas an "and" is added by the amendment, leading to claim 1 as granted.

2.3 In detail, claim 12 of the application as filed discloses that the carbohydrate is selected from the group consisting of:

"*maltose, lactose, glucose, [...] a glucose syrup, a natural fruit sugar from fruit juice and fruit juice concentrate*"

whereas in claim 1 as granted, the list reads:

"*maltose, lactose, glucose, [...] a glucose syrup,* ***and*** *a natural fruit sugar from fruit juice and fruit juice concentrate*" (emphasis added by the board)

2.4 The appellant argued that a comma was replaced by the connector "and". It referred to a grammar handbook, a dictionary, an entry from a patent blog, and decisions T 1127/16 and T 1473/19. The appellant maintained that due to the amendment, claim 1 required a combination of carbohydrates, namely a fruit juice concentrate as a mandatory feature together with one of the remaining

sugars of the list in claim 12 of the application as filed (maltose, lactose, glucose, etc.). This was also explained, for instance, in the statement setting out the grounds of appeal, with the aid of the table on page 10. In this table, the appellant compared what it considered the relevant wording of claim 1 as granted and claim 12 of the application as filed. In the appellant's view, there was no basis for such an amendment.

2.5 This is not persuasive.

2.6 As shown above in point 2.3, the term "and" is added right after the comma between the penultimate element of the list and the last element of the list ("natural fruit sugar from fruit juice and fruit juice concentrate"). Therefore, the appellant's line of argument based on the understanding that a comma was replaced by the connector "and" does not hold. The documents and decisions cited are not relevant either.

2.7 The table on page 10 in the statement setting out the grounds of appeal does not reproduce *verbatim* the wording of claim 1 as granted and claim 12 as filed (see in the left column "*a glucose syrup* ***or***" instead of "*a glucose syrup,* ***and***" and in the right column "*a glucose syrup* ***or***" instead of "*a glucose syrup*"). Rather, the table already contains the conclusions according to the appellant's interpretation of these claims.

2.8 Moreover, the board notes that a natural reading alone of the wording "a mixture of a juice concentrate and **a** carbohydrate" and "wherein **said carbohydrate** is selected from **the group** consisting of" (emphasis added) in claim 1 as granted suggests that there is only one

element as a carbohydrate, which is selected from the list that follows. If a combination of different carbohydrates had been intended, this would have been expressed accordingly (e.g. by using the expression "combination of").

2.9 In any case, claim 1 of the application as filed involves the step of treating a mixture of a juice concentrate having a Brix of from 5 to 20 °Bx and a carbohydrate with a yeast. Provided that the appellant's reading is correct, this passage in combination with claim 12 of the application as filed would have to be read as a juice concentrate having a Brix of from 5 to 20 °Bx and a carbohydrate selected from fruit juice concentrate. This is somewhat redundant. In view of this, the technically meaningful reading of claim 12 of the application as filed is instead that the natural fruit sugar is from fruit juice and fruit juice concentrate, i.e. the natural fruit sugar being the last (combined) element of the list. This board understands claim 1 as granted accordingly.

2.10 Therefore, the opposition division's conclusion is confirmed that the ground for opposition under Article 100(c) EPC does not prejudice the maintenance of the patent as granted.

3. *Ground for opposition under Article 100(b) EPC*

3.1 The opposition division concluded that the ground for opposition under Article 100(b) EPC did not prejudice the maintenance of the patent as granted.

3.2 The appellant contested this conclusion. In its view, the patent did not disclose all the necessary

information for carrying out the invention. The following points were raised.

- None of the examples of the patent showed the pH used. Therefore, the examples were not according to the patent.

- There was no information in the patent on how to achieve the alcohol content disclosed in claim 1.

- The essential feature regarding the content of sugar was not reflected in claim 1. Monosaccharides were necessary for fermentation. Sucrose and lactose were not fermentable by every yeast.

- According to the appellant's experiments in table 5 of D11, in four out of five examples the alcohol (i.e. ethanol) content of claim 1 could not be obtained within the fermentation time of 24 to 50 hours required by dependent claim 8. The alcohol content of claim 1 was reached much faster than the lower limit of the fermentation time range.

3.3 However, none of the objections raised by the appellant is convincing.

3.4 It is not a requirement of sufficiency of disclosure that all process steps or features be disclosed in the claim. To carry out the invention set out in claims 1 and 8, the skilled person would turn to the teaching of the patent's description and complement it with common general knowledge.

3.5 The fact that the pH of the fermented juice is not explicitly disclosed in the patent's example 1 would not prevent the skilled person from reproducing the

example. The appellant declared - during the opposition proceedings and again on appeal - that the pH of the mixture of example 1 was 2.4. The opposition division explained in the decision under appeal that it regarded the stated pH of 2.4 as credible in view of the claimed range of less than 4 described in the patent and the pH values determined in D11. The appellant provided no proof to the contrary. Irrespective of these considerations, no difficulty can be seen in reproducing the patent's example 1 by choosing a juice that has the required pH or, if need be, by adjusting the pH.

3.6 Moreover, the skilled person would know how to choose carbohydrates that are fermented by the yeast they want to use. They would also know that fermentation can be stopped at any time by heating the fermenting mixture, as described in paragraph [0042] of the patent and all the examples. Further guidance on the juice concentrate, the yeast and the fermentation time is given in the patent.

3.7 As to the objection that reaching the alcohol content set out in claim 1 within a fermentation time of 24 to 50 hours set out in dependent claim 8 was not enabled, the following observations are made.

3.7.1 Example 1 of the patent discloses how to carry out a fermentation process that provides, within 48 hours, an alcohol content of 10 to 15 g/kg fermented mixture. In this example, lime juice concentrate is used.

3.7.2 Experiments carried out by the appellant's technical experts in D11 confirm that an alcohol content lower than 15 g/kg of the fermented mixture is reached within 24 to 50 hours. Example 1 in table 5 of D11 shows that

with a different juice mixture (black carrot juice), an alcohol content of 15 g/kg fermented mixture is reached within 27 hours. Accordingly, a lower alcohol content is reached in less than 27 hours.

3.7.3 As the appellant correctly pointed out, the other experiments disclosed in table 5 of D11 show that the alcohol content required by claim 1 is reached in less than 24 hours. For instance, in example 2 of table 5 of D11, this alcohol content is reached as early as within 14 hours. However, the experiments that exhibit too fast a fermentation are carried out under aerobic conditions. By contrast, the patent teaches that the reaction batch is neither agitated nor aerated during fermentation (paragraph [0041]). The same is disclosed in example 1 of the patent - the fermentation is carried out in the absence of oxygen.

3.7.4 It follows from this that the skilled person wishing to fulfil also the preferred requirement of claim 8 would find in the patent specification sufficient teaching on how this can be achieved.

3.7.5 Considering example 1 of the patent and example 1 of D11, the skilled person can operate within the entire range set out in claim 8. The claimed subject-matter can be carried out both within the lower and higher end of the time range and with different juices.

3.7.6 In view of the above, the board can only conclude that sufficient teaching is provided to the skilled person for carrying out the invention substantially over the entire scope of the claims.

3.8 Therefore, the opposition division's conclusion is confirmed that the ground for opposition under

Article 100(b) EPC does not prejudice the maintenance of the patent as granted.

4. *Ground for opposition under Article 100(a) EPC - lack of inventive step*

4.1 The opposition division arrived at the conclusion that the subject-matter of claim 1 involved an inventive step. The following reasoning was outlined in the decision.

- Example 2 of D1 was the closest prior art.
- The difference was that the example did not disclose a total acidity of at least 25 g/L, calculated as citric acid, pH 8.1.
- The distinguishing feature did not cause a technical effect.
- The problem to be solved was to provide an alternative process of preparing a concentrated liquid foodstuff.
- The teaching of D1 did not point towards adding an acidifier. The skilled person would not have added an acidifier on the basis of their common general knowledge or the cited documents.
- Thus, the subject-matter of claim 1 involved an inventive step.

4.2 Like the opposition division, the appellant and the respondent agreed that D1 was the closest prior art.

4.3 While the opposition division began its assessment of inventive step from example 2 of D1, the appellant considered example 3 to be the starting point. Irrespective of what example of D1 is used as the starting point, the parties agreed that the total acidity of at least 25 g/L is not disclosed in D1.

Therefore, the total acidity is the distinguishing feature of claim 1.

4.4 Effects of the distinguishing features

4.4.1 The parties disagreed as to whether this difference causes a technical effect.

4.4.2 The respondent referred to the patent, in particular paragraphs [0068] to [0076] and Figures 1 to 3, which allegedly all showed that an improvement in flavour occurred.

4.4.3 However, there is no credible evidence demonstrating that the distinguishing feature causes an improvement in terms of flavour or desired aromatic components. Figures 1 and 3 show that the fermentation process leads to a different GC-MS spectrum compared to the starting mixture. A different spectrum confirms that a different product was obtained, but this does not allow drawing any conclusion on the flavour of the product obtained. The cited sections of the description of the patent also do not describe any effect caused by the total acidity.

4.4.4 The respondent further referred to the experiments carried out by the appellant (in D11) to show that acidity had an influence on the alcohol content and yeast cell size. Indeed, the experiments that come closest to comparative tests are those in D11. However, in these experiments, the forming of aromatic compounds is not evaluated. Therefore, no conclusion supporting the respondent's view can be taken from D11.

4.4.5 It follows from this that the respondent has not demonstrated any technical effect caused by the

distinguishing feature. In particular, no improvement in flavour was shown.

4.5 Accordingly, as the opposition division correctly assessed, the problem to be solved is to provide an alternative process of preparing a concentrated liquid foodstuff.

4.6 Non-obviousness

4.6.1 The appellant argued that in view of the teaching in D1, the skilled person would have been motivated to add an acidifier, in particular citric acid, to the grape sweet must used in the starting mixture of D1. Citric acid was known in the art to be a useful acidifier in fruit juices.

4.6.2 As the appellant correctly pointed out, D1 teaches in column 5 that for the control of the fermentation, the pH value of the fermentation material is adjusted in general to a pH of 2 to 6, preferably from 2.5 to 4.

4.6.3 However, the skilled person starting from the examples of D1 would have realised that the grape sweet musts used in these examples already have the required, preferred pH. As the respondent explained, these compositions have a pH value of about 2.9. Therefore, the skilled person would have had no incentive to adjust the pH value. They would not have added further acid, such as citric acid, to the compositions of the examples.

4.6.4 The respondent also explained, with reference to D12, that the grape sweet musts in the examples of D1 had a total acidity of between 3 to 12 g/L. Thus, the board concludes that even if the skilled person had

considered adding further acid to the grape sweet musts of D1, it would not have been obvious to add the high amount of citric acid required to arrive at the total acidity of at least 25 g/L called for in claim 1.

4.6.5 It follows from this that in view of the closest prior art D1 alone, the solution provided by the subject-matter of claim 1 constitutes a non-obvious alternative.

4.6.6 With reference to Headnote I of T 641/00 (Two identities/COMVIK) and T 917/13 (Reasons for the Decision, point 8.3.2), the appellant argued that since the total acidity did not provide a technical effect, the distinguishing feature as such did not involve an inventive step. The distinguishing feature was an arbitrary feature.

4.6.7 Decision T 641/00 concerns an invention consisting of a mixture of technical and non-technical features. According to the cited headnote, inventive step of such an invention is assessed by taking into account all the features which contribute to the technical character, whereas features making no such contribution cannot support the presence of inventive step. The board fails to see the relevance of the cited decision for the invention under scrutiny. Total acidity is not a non-technical feature. It is a technical feature that typically defines and characterises fruit juices, as can be seen from the prior art cited in these proceedings. In the case in hand, the total acidity qualifies and restricts the fruit juices used in the process of the patent in suit. Consequently, it contributes to the technical character of the fermented mixture.

4.6.8 Likewise, T 917/13 does not support the appellant's case. In that decision, the competent board held the claimed subject-matter to be non-obvious even if, like in the current case, no improvement over the closest prior art was made credible (see Reasons for the Decision, point 5). It also stressed that the absence of an improvement over the prior art does not necessarily imply a lack of inventive step (Reasons For the Decision, point 8.3.1).

4.7 The appellant additionally argued that the subject-matter of claim 1 did not involve an inventive step in view of the combination of documents D1 and D3. In its view, the fruit juice of D1 could be replaced by the lemon juice preparation disclosed in D3, or even by conventional lemon juice, which implicitly had the total acidity required by claim 1, as shown in D24.

4.7.1 The appellant argued that D3 disclosed low-alcohol fermentation of citrus fruits, like the patent. In its view, D3 also taught that adding citric acid to a fermentation process increased the acidity and inhibited the fermentation process. In addition, the appellant argued that the skilled person would stop the fermentation of the composition of D3 when the desired alcohol level was reached.

4.7.2 As the appellant correctly observed, D3 concerns the preparation of fruit wine, which is described as being a "low-alcohol beverage" (paragraph [0004]). However, in D3, the term "low-alcohol" refers to an alcohol content of 10 to 12%. No lower alcohol content is mentioned throughout D3.

4.7.3 The alcohol content mentioned in the examples of D1 is about ten times lower than that of D3. On this basis

alone, the skilled person would have had no motivation to turn to the teaching of D3.

4.7.4 Furthermore, the examples of D1 provide a consistent teaching involving several process steps to obtain beverages having an alcohol content that is lower than 15 g/kg of beverage. In view of this, the skilled person would have had no motivation to inhibit the fermentation process by adding an acid, let alone to prematurely stop the fermentation process. The reason for this is that D1 already provides teaching that would lead them to the desired product. It would not have been obvious to the skilled person to depart from the teaching of D1 and ferment a juice with high total acidity under the conditions specified in D1.

4.7.5 In this context, reference is made to the case law summarised in Case Law of the Boards of Appeal of the EPO, 11th edn., 2025, Chapter I.D.3.9. In line with this case law, the starting point in an assessment of inventive step not only determines the subject-matter that serves as the starting point but also defines the framework for further developments.

4.7.6 As regards the argument that the skilled person would have used lemon juice within the process of D1, it is observed that D1 is mainly directed to grape must. This is the only juice exemplified in D1 as having fermentable sugars (column 4, lines 9 to 13). As the respondent explained, the disclosure of D1 concerns a fermentation product with reduced ethanol content made of sugar-containing fruit juices, i.e. of "sweet juices". In view of this, the skilled person would not have considered lemon juice to be a sugar-containing fruit juice suitable for use within the process of D1. According to its claim 1, the process of D1 requires a

certain amount of fermentable sugars in the fruit juice that undergoes fermentation.

4.7.7 In sum, starting from D1, and considering D3, or lemon juice, the skilled person would not have arrived at the subject-matter of claim 1.

4.8 Therefore, the opposition division's conclusion that the ground for opposition under Article 100(a) EPC in conjunction with Article 56 EPC does not prejudice the maintenance of the patent as granted is also confirmed.

5. *Objection under Article 13(2) RPBA*

5.1 The appellant alleged that the respondent's letter dated 10 July 2025, which was filed after notification of the board's communication under Article 15(1) RPBA, contained submissions which constituted an amendment of the respondent's appeal case. The appellant therefore requested that these submissions not be taken into account under Article 13(2) RPBA.

5.2 The board did not identify in the letter anything going beyond a refinement of the respondent's line of argument or a legitimate response to aspects addressed in the board's communication. The submissions in the letter could have been presented equally well orally, during the oral proceedings before the board, without giving rise to an amendment of the respondent's case within the meaning of Article 13(2) RPBA.

5.3 The appellant also did not set out which parts of the letter it considered to represent an amendment to the respondent's appeal case.

5.4 In sum, there was no reason to exclude the submissions in the respondent's letter (or parts of it) from the proceedings.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

K. Götz-Wein A. Haderlein

Decision electronically authenticated