Minutes of Oral Proceedings

1. The Chairman opens the proceedings at 09:00 h explaining the interpretation and technical facilities as well as reminding the public not to take photos or recordings of the meeting.

The parties confirm that they have received the contact data of the Opposition division (OD).

2. Upon request, the Proprietor of the patent (P) confirms the maintenance of the main request as well as of auxiliary requests 1-3. Moreover, the P requests that documents D8-D11 should not be admitted into the procedure as they were late filed, prima facie irrelevant, and no justification for their introduction into the procedure was given by the Opponents. Finally, Article 83 EPC should not be admitted as ground for opposition.

Opponent 1 (O1) confirms his requests and his agreement with the objections raised by Opponent 2 (O2).

O2 confirms his requests.

3. The proceedings continue with the parties' submissions under Article 53 b) EPC.

The Chairman explains the latest decision of the Enlarged Boards of Appeal on the patentability of plants (G3/19) and its effect on the application of Rule 28(2) EPC.

O1 refers to his written submissions and those of O2.

O2 equally refers to his written submissions. O2 explains that the invention was based on an essentially biological process of generating plants by random mutagenesis and not by directed introduction of foreign genes into plants. O2 further points out that the limit date ("Stichtag") set in G3/19 should not be applied as it contravenes the intention laid down in the EU directive 98/44. The directive intended to allow the patenting of transgenic plants only and in line with the decision of the Technical Boards of Appeal T356/93 and did not refer to conventional plants at all. The limit date given in G3/19 thus should have been set much earlier, i.e. at the time of publishing of the EU directive. Rule 28(2) EPC is consequently relevant for the subject-matter of claim 7.

Due to the historical evolution of the patenting of plants, the argumentation of G3/19 fails and cannot be applied, O2 points out. Finally, O2 argues that random mutagenesis is actually not entirely random but under control of certain biological processes and given natural circumstances. It should thus not be regarded as a technical process.

The P refers to decision G3/19 which should be followed when assessing the present case. Moreover, the P is of the opinion that random mutagenesis is a technical process.

4. After a break for deliberation (09:37-09:50 h), the Chairman announces that the OD follows the opinion of the Enlarged Board of Appeal in G 3/19 ("Pepper") and considers that Article 53(b) EPC does not exclude claim 7 from patentability, as the patent had already been granted before 1 July 2017. As a consequence, it is not relevant whether the claimed plant is exclusively obtained by an essentially biological process.

5. The Chairman asks for the parties' submissions on the question whether the claimed plants had to be excluded from patentability for them being plant varieties.

O2 refers to his submissions in writing. He alleges that using the methodology disclosed in the patent, stable plant lines had been obtained which are different from all other plants of the same genus. Moreover, Article 4 of the EU directive 98/44 prohibits patents on plant varieties or essentially biological processes for the production of plants or animals. The directive sets the criteria for plant or animal varieties which criteria are met in the present case. Moreover, the present plants are not produced by a technical process and thus excluded from patentability according to the directive which only refers to the patenting of transgenic plants.

The P argues that claim 7 is not confined to specific plant varieties and thus meets the requirements of Rule 27(b) EPC. The claim relates to barley plants carrying three defined mutations but no restriction otherwise. The claim is thus allowable under Article 53 (b) EPC in accordance with EPO practice.

O2 replies that Rule 27(b) EPC is a consequence of the EU directive which therefore needs to be consulted. Moreover, the affected genes of the plants of claim 7 can be transferred to other plants using essentially biological processes, and claim 7 is therefore not restricted to plants derived from technical methods.

The P argues that essentially biological processes had been discussed already and that decision G1/98 gives a definition of a plant variety which is not met in the present case as no individual plant variety is claimed.

O2 points out that G1/98 refers to technical inventions and transgenic plants only and not, as in the present case, to plants obtained by conventional breeding methods.

6. After a break for deliberation (10:04-10:23 h), the Chairman announces that the OD considers that the technical feasibility of the invention is not confined to a particular plant variety, and hence claim 7 is not excluded from patentability under Article 53(b) EPC in accordance with Rule 27(b) EPC.

7. The proceedings continue with the parties' submissions on novelty. Due to the fact that both documents cited by the Opponents as being pertinent for the novelty of the claimed subject-matter are intermediate documents (WO2010/075860 and WO2010/063288), priority of the patent needs to be discussed first.

None of the parties had any comments to make on the question of valid priority rights.

After a break for deliberation (10:26-10:33 h), the Chairman announces that the OD considers the priority of the patent to be valid and that the cited documents may be used to object novelty under Article 54(3) EPC.

Concerning novelty, O1 refers to his submissions in writing.

O2 argues that both documents comprise mutant barley carrying nonsense mutations and that the same plants were used in the opposed patent as a starting point to obtain the present plants by crossing. The plants therefore are no technically new plants but merely comprise a combination of known features which cannot be considered as something novel. This also applies to the claimed method, O2 concludes.

The P responds that a novelty objection cannot be based on the combination of different documents and that none of the documents discloses the present plants or uses thereof.

O2 accepts that no single document exists which comprises the plants as presently claimed.

8. After a break for deliberation (10:42-11:01 h), the Chairman announces that the OD considers the claimed subject-matter novel. He points out that the fact that all technical features of claimed subject-matter need to be derivable from a single document in order to affect novelty is standard in all technical areas of the EPO.

9. The proceedings continue with the parties' submissions on inventive step.

The Chairman reminds the parties that the intermediate documents cannot be used for objections under Article 56 EPC. Moreover, the admissibility of documents D8-D11 had to be discussed first. The Chairman expresses the OD's preliminary opinion that the documents should be admitted into the procedure as they were filed within the period laid down in Article 116 EPC.

The P argues that generally the case should be presented when filing the opposition. Documents D8-D11 were not mentioned in this filing, were filed too late and prima facie not relevant. In particular, the P points out that D8-D10 were published after the present date of priority and were not relevant for the question of inventive step. D11 could be relevant for inventive step, however, it only discloses an investigation of the SMM cycle in plants, and there was no mentioning of barley, beer brewing and off-flavours in D8.

O2 replies that the documents were relevant and introduced in response of the arguments presented in the summons to oral proceedings by the OD.

10. After a break for deliberation (11:10-11:19 h), the Chairman announces that the OD considered documents D8-D11 admissible since they were filed before the Rule 116 EPC date and were filed as response to the summons.

11. The proceedings continue with the substantial discussion on inventive step.

O2 essentially repeats what was already filed with his submissions of 09-03-2022.

In particular, O2 argues that the claimed mutations obtained by random mutagenesis could have been expected naturally and compares this to other ways of manipulating the plant genome by transgenic approaches and gene editing using CRISPR/Cas. Such processes according to O2 had to be regarded as technical processes as opposed to random mutagenesis, since they can overcome natural circumstances and species boundaries. Random mutagenesis cannot therefore be regarded as a technical process, and its products are non-inventive.

In addition, the present mutations do not confer new properties to the plants but simply knock-down or suppress the expression of given genetic traits. The mutations are not specific and the same result could be obtained by other mutations, O2 argues. Finally, O2 points out that obtaining the claimed mutants was only a matter of time and the screening of a sufficient number of seeds after mutagenesis. He alleges that the same argument had been used by the P for turning down the objections under Article 83 EPC raised by the OD.

Applying the problem-and-solution approach, O2 regards the problem of undesired off-flavours like DMS and T2N in beer production and the involvement of LOX enzymes in the biochemical process leading to said off-flavours as common knowledge in the art. Since other methods to overcome said problems were already known, the problem was to provide an alternative. The solution was obvious since it is known that biochemical effects have a genetic basis. The problem was solved by chemical mutagenesis and screening of the obtained mutant plants using biochemical parameters. O2 points out that such a procedure was obvious to follow for any breeder and had thus to be regarded as trivial. The genetic basis underlying the obtained phenotype was irrelevant since the problem had been solved already on a biochemical, i.e. phenotypical basis. The identification of the affected genes and the particular mutations therefore could not be regarded to per se provide a technical effect but had to be seen as an add-on only. Concerning the decision T0420/19 dealing with a barley plant having an MMT mutation, O2 argues that the decision did not discuss the technical effect of the mutation on the plants and could not therefore be transferred to the present case.

The P points out that no specific prior art was mentioned by O2. The invention was the provision of barley plants for the production of beer having low levels of off-flavours in an energy saving way. The P explains the conventional heating steps for removing off-flavours which are energy consuming, and points to the technical effects obtained in the present patent as supported by examples 1-3, tables 2, 3, 5-8, as well as tables 10-14 and figure 7 of the description. The P concludes that the patent provides barley plants having the technical effects of reduced levels of DMS and T2N precursors in wort, reduced levels of DMS, T2N precursors, and free T2N, reduced papery taste, and

improved foam development of the beer. In response to O2's allegations, the P argues that random mutagenesis was a technical process as chemicals are added. Moreover, the P points to the Guidelines for Examination at the EPO stating that targeted mutagenesis and random mutagenesis are to be considered as technical processes (GL G-II.5.4). The obtained lack of activity of the corresponding enzymes has to be regarded as a trait, and the screening procedure is not obvious since only the patent discloses the way to identify the desired plants which have not been obtained before, the P argues. The P regards T040/19, in which the technical effect of the MMT mutant barley plants was confirmed, to be very similar to the present case and thus relevant. Finally, the P argues that the argumentation of O2 was based in hind sight since there was nothing in the prior art to suggest that the present plants can be produced.

12. After a break for lunch and deliberation (12:19-14:00 h), the Chairman announces that the OD considers the claimed subject-matter to be inventive.

13. The proceedings continue with the parties' submissions on the objection under Article 83 EPC raised by the OD and its admissibility.

No new arguments are presented.

14. After a break for deliberation (14:02-14:10 h), the Chairman announces that the OD considers the claimed subject-matter to be allowable under Article 83 EPC.

The Chairman asks for any outstanding requests which have not been dealt with.

The parties confirm that no technical problems occurred during the proceedings.

The Chairman announces the decision of the OD to reject the oppositions since none of the grounds mentioned under Article 100 EPC prejudices the maintenance of the patent as granted.

15. The proceedings are closed at 14:12 h.