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Datasheet for the decision of 4 March 2020

Case Number: T 1032/16 - 3.3.04

Application Number: 09703613.1

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Language of the proceedings: EN

Title of invention:
Onions with high storage ability, high soluble solids content and/or low pungency

Patent Proprietor:
Nunhems B.V.

Opponent:
Seminis Vegetable Seeds, Inc.

Headword:
Onions with high soluble solids content and low pungency/ NUNHEMS

Relevant legal provisions:
EPC Art. 56
RPBA Art. 13(1)

Keyword:
Main request - inventive step (no);
auxiliary requests 1 to 4 - admitted (no)

Decisions cited:

Catchword:

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Beschwerdekammern

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Case Number: T 1032/16 - 3.3.04

D E C I S I O N
of Technical Board of Appeal 3.3.04
of 4 March 2020

Appellant: (Opponent)	Seminis Vegetable Seeds, Inc. 800 N. Lindbergh Blvd. St. Louis MO 63167 (US)
Representative:	Uexküll & Stolberg Partnerschaft von Patent- und Rechtsanwälten mbB Beselerstraße 4 22607 Hamburg (DE)
Respondent: (Patent Proprietor)	Nunhems B.V. Napoleonsweg 152 6083 AB Nunhem (NL)
Representative:	BASF IP Association BASF SE G-FLP-C006 67056 Ludwigshafen (DE)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 3 March 2016 concerning maintenance of the European Patent No. 2244554 in amended form.**

Composition of the Board:

Chair	A. Chakravarty
Members:	R. Morawetz
	L. Bühler

Summary of Facts and Submissions

I. The appeal of the opponent (appellant) lies from the interlocutory decision of the opposition division that, account being taken of the amendments in the form of the first auxiliary request, the patent and the invention to which it relates met the requirements of the EPC (Article 101(3)(a) EPC). The patent, entitled "*Onions with high storage ability, high soluble solids content and/or low pungency*", derives from European patent application No. 09 703 613.1 which was filed as an international application under the PCT and published as WO 2009/092560 ("application as filed" or "application").

II. The patent was opposed on the grounds set out in Article 100(a) EPC, in relation to novelty (Article 54 EPC) and inventive step (Article 56 EPC), and in Article 100(b) and 100(c) EPC. During the oral proceedings before the opposition division, the opponent withdrew the ground for opposition under Article 100(a) EPC in relation to novelty (Article 54 EPC).

III. In the statement of grounds of appeal, the appellant argued that the subject-matter of claim 2 of auxiliary request 1 underlying the decision under appeal (identical to present main request) extended beyond the content of the application as filed. They also submitted arguments with respect to lack of inventive step of the subject-matter of the claims of that request.

IV. With their reply to the appellant's statement of grounds of appeal the patent proprietor (respondent)

made auxiliary request 1 underlying the decision under appeal their main request, filed sets of claims of auxiliary requests 1 and 2 and stated that auxiliary request 3 pending before the opposition division was maintained. They also provided argumentation with respect to the basis of the claimed subject-matter in the application as filed and the inventive step of the subject-matter of the main request.

Claims 1 and 2 of the main request read as follows:

"1. A long-day onion plant producing bulbs which have a mean pyruvate level at harvest of less than 5.5 µMol/g fresh weight (FW), wherein said bulbs have a mean soluble solids content (SSC) at harvest of at least 7.5%, and wherein said plant is obtained by crossing a plant of which seeds were deposited under Accession No. PTA-9053, PTA-9054 or PTA-5 9055 with another onion plant.

2. The onion plant according to claim 1, wherein said pyruvate level after 5-6 months of storage is less than 3.75 µM/g FW."

V. The board appointed oral proceedings and issued a communication pursuant to Article 15(1) RPBA 2007 setting out its non-binding preliminary appreciation of substantive and legal matters concerning the appeal. In that communication the board *inter alia* informed the parties that it "*was inclined to the view that the application as filed discloses (see paragraph [0070]) the feature "5-6 months" in combination with the following further features characterising the storage phase "in the dark, under cool temperatures and at RH of 60-80%" which features are not disclosed as*

optional" (see point 15).

VI. In response, the respondent filed auxiliary requests 1 to 4 to replace pending auxiliary requests 1 to 3.

Claim 1 of auxiliary requests 1 and 2 is identical with claim 1 of the main request.

Claim 2 of auxiliary request 3 reads as follows: (amendments vis-a-vis claim 2 of the main request are highlighted)

"2. The onion plant according to claim 1, wherein said pyruvate level ~~after 5-6 months of storage~~ is less than 3.75 µM/g FW after 5-6 months of storage in the dark under cool temperatures and at RH of 60-80%."

Claim 1 of auxiliary request 4 differs from claim 1 of the main request in that the mean pyruvate level at harvest has been amended to read "*of less than ~~5.5~~ 3.75 µMol/g fresh weight (FW)*".

VII. Oral proceedings before the board took place on 4 March 2020. At the oral proceedings before the board, the appellant withdrew the request not to admit document D8A into the proceedings. At the end of the oral proceedings, the Chair announced the board's decision.

VIII. The following documents are referred to in this decision:

D1 WO 2007/011857

D3 C.R. Galmarini *et al.*, Mol. Genet. Genomics

(2001), vol. 265; pages 543 to 551

D5 Declaration by John Uhlig, dated 18 March 2014, including Annexes 1 and 2

D7 Declaration by Rick Watson, dated 29 May 2013

D8 Certificate of plant variety protection for onion EX07716000, pages 1 to 3

D8A Certificate of plant variety protection for onion EX07716000, pages 1 to 15

D9 Affidavit by J. Scott Hendricks dated 22 December 2015

D10 Affidavit by J. Scott Hendricks dated 22 December 2015, including Annexes A and B

D11 Rules & Regulations of the State of Georgia, Georgia Department of Agriculture (2007); Vidalia Onions, Chapter 40-7-8; pages 1 to 21

IX. The appellant's arguments, submitted in writing and during the oral proceedings, are summarised as follows:

Main request

Claim construction - claim 1

The process feature "*obtained by*" should be read as meaning "*obtainable by*". It was not specified how much of the claimed plant's genome came from the plants for which seeds had been deposited. It could be any fraction of the genome, e.g. as low as 5%. The claim did not require that the genome of the deposited seeds

was causal for "high soluble solids content (SSC)", "low pungency" or any other trait.

Inventive step (Article 56 EPC) - claim 1

Closest prior art

Document D1 was the closest prior art. It disclosed long-day onion plants producing bulbs having low pungency, i.e. having a pyruvic acid development (PAD) measurement at harvest of less than 5.5 µM/g fresh weight (FW), which could be stored without an increase of PAD measurements of more than 15% compared to the PAD measurement at the time of harvest, see paragraphs [0021] to [0023], [0045], [0053] and claims 1, 2, 6. According to paragraph [0006] of document Dl, storage onions were known to have a higher percentage of solids.

The plants of document D1 also had the feature of a mean SSC of at least 7.5%. Document Dl referred to deposited seeds and a hybrid plant having one or both parents selected from the long-day onion plants WYL 77-5128B and WYL 77-5168B, see paragraphs [0081] and [00168]. A cross between these two deposited inbred lines always produced identical hybrid plants. These hybrid plants mentioned in paragraph [0081] of document D1 inherently had a mean PAD at harvest of less than 5.5 µM/g FW and an SSC content at harvest in the range of at least 7.5%, see document D5, D8A, D9 and Dl0.

Document D5, fourth paragraph, disclosed that a hybrid plant was produced from the two parent lines disclosed in paragraph [0081] of document D1. The results were illustrated in Annex 2 of document D5 and showed that

plants as disclosed in document Dl had a pyruvate content of less than 5.5 µM/g FW and a SSC content of more than 7.5%, see page 3, second paragraph. That the SSC and pungency were measured at harvest was evident from page 1, point 1 of document D5. Even if pungency had not been measured at harvest but later, pungency would have been even lower at harvest since the pungency of the onions of document D1 increased during storage, see paragraph [0053].

Document D8A explained that the EX07716000 variety was a cross between WYL 77-55128A (the isogenic sterile version of long-day Spanish onion inbred WYL 77-55128B) and WYL 77-5168B, see page 3, second paragraph and that it was "*a hybrid long day onion which combined all of the desired features of a typical long-day Spanish hybrid onion with low pungency*", see page 10, first paragraph. Document D8A provided evidence that the onions of document D5 were hybrids as disclosed in paragraph [0081] of document D1.

Document D9 confirmed that the hybrid onion plant designated EX16000 was a hybrid of the plant lines 5128 and 5168 and that any hybrid progeny produced by these two plant lines would be genetically identical to EX16000, see paragraph bridging pages 1 and 2.

Document Dl0 and its Annexes A and B showed that an external laboratory, the National Onion Lab, tested numerous onion bulbs of the hybrid (EX16000) obtained from different farms operated by commercial onion producers. Document D10 provided evidence that in carrying out the teaching of paragraph [0081] of document D1, the skilled person inevitably arrived at an onion plant having a mean SSC at harvest of at

least 7.5%.

While the data contained in document D10 appeared to be contradicted by the data disclosed in document D7, the accuracy with which SSC levels could be determined had to be born in mind, see document D3. In document D7 only a few bulbs had been tested while in document D10 an independent analysis had been carried out.

Technical problem

The plants disclosed in document D1 differed from the claimed plants in that they were not obtained by crossing a plant of which seeds were deposited under Accession No. PTA-9053, PTA-9054 or PTA-5 9055 with another onion plant.

No technical effect was linked to this difference.

The objective technical problem to be solved in view of the disclosure of document Dl was the provision of alternative long-day onion plants having low pungency and high SSC.

Obviousness of the claimed solution

The solution as claimed was rendered obvious by the teaching of document Dl alone.

The skilled person reading document Dl would know that by using ordinary plant breeding methods, onions having the traits "low pungency" and "high SSC" could be obtained by selecting for these traits. The skilled person would further know that they could select for whatever SSC threshold they wanted.

Document D1 taught that the high SSC value was a known trait.

Document D1 further showed that the high pyruvate level trait of long-day onions could be replaced by the low pyruvate level trait of short-day onions without negatively affecting the further desired traits of long-day onions, including the high SSC trait.

Auxiliary requests 1 to 4

Admittance

The added subject-matter objection addressed by the amendments made in these requests had already been raised in the statement of grounds of appeal, see page 5, point 2.2.

Moreover, the subject-matter of claim 1 of auxiliary requests 1 and 2 lacked inventive step for the same reasons as the subject-matter of claim 1 of the main request, while claim 2 of auxiliary request 3 had been amended based on the description. The term "*cool temperature*" in this claim lacked clarity.

As regards the inventive step of the subject-matter of claim 1 of auxiliary request 4, the same arguments as for the subject-matter of claim 1 of the main request applied, *mutatis mutandis*. Moreover, a mean pyruvate level at harvest of less than 3.75 µMol/g FW as claimed in claim 1 was already disclosed in document D1, see claim 6.

X. The respondent's arguments, submitted in writing and during the oral proceedings, are summarised as follows:

Main request

Claim construction - claim 1

The process feature "*obtained by*" meant that the genetic source, i.e. the plants for which seeds had been deposited, was a limiting feature of the claim. Selection for the traits "high SSC" and "low pyruvate" brought along the genes of the deposited seeds leading to lower pungency during storage.

Inventive step (Article 56 EPC) - claim 1

Closest prior art

Document D1 was the closest prior art. Document D1 related to long-day onions which produced bulbs having low pungency, i.e. less than 5.5 µMol/g FW of pyruvate. However, document D1 did not disclose any SSC values of the onions plants disclosed therein. Document D1 disclosed a correlation between high SSC and storability but no causal linkage between these two features.

Paragraph [0081] of document D1 disclosed hybrid plants having both the deposited WYL 77-5128B and WYL 77-5168B lines as parents. The EX16000 variety was a cross between WYL 77-5128A and WYL 77-5168B, see document D8, page 3.

Document D9 showed that WYL 77-5128A and WYL 77-5128B had different SSCs from each other, see Table on page 2. It followed from this that either these two

lines were not isogenic or male sterility had an effect on SSC.

With respect to the accuracy of pungency and SSC measurements, reference was made to document D3, page 544, right hand column, last paragraph. Here it was reported that a difference of 1 µM in pyruvic acid concentration and a difference of 1% in SSC concentration could be accurately determined.

While claim 1 required that pyruvate levels and SSC content were measured at harvest, it was not clear whether the pungency and SSC values reported in document D5 for the EX16000 variety were measured at harvest or after storage.

Document D11 demonstrated that the pungency values reported in Annex A of document D10 were in a different unit than that used in the pungency definition in claim 1. It was thus impossible to determine whether the pungency values reported for the onion bulbs of the EX16000 variety in Annex A of document D10 was "*less than 5.5 µMol/g FW*" as required by claim 1.

The hybrids from the lines deposited in document D1 did not have the pungency and SSC levels as claimed, see document D7, page 4.

Technical problem

The subject matter of claim 1 differed from the onion plants of document D1 in having significantly higher SSC levels and significantly lower pungency and in a different genetic source.

The effect associated with these differences was an

improved pungency, an improved SSC and a decrease of pungency upon storage.

The technical problem to be solved was the provision of improved long-day onion plants with respect to pungency and SSC and thereby storability.

Obviousness of the claimed solution

A skilled person starting from document D1 representing the closest prior art and faced with the above mentioned problem would not arrive at the claimed subject-matter in an obvious manner for the following reasons.

Document D1 did not mention the SSC of the onions described therein nor did it disclose that the storage stability was directly linked to the feature "high SSC". As the skilled person was not aware of the causal link between "high SSC" and good storability, they would not have known that storability could be improved by increasing SSC.

Document D1 did not provide any motivation for the skilled person to breed for long-day low pungency onions with increased SSC levels starting from the onions disclosed therein.

Auxiliary requests 1 to 4

Admittance

Auxiliary requests 1 to 4 were filed as a *bona fide* response to the board's preliminary opinion.

The amendments to claim 2 of new auxiliary request 1

addressed the objection under Article 123(2) EPC. In new auxiliary request 2, claim 2 had been deleted.

The previous auxiliary request 2, wherein the pungency values in claims 1 and 10 was amended to "*less than 3.75 µMol/g fresh weight*" was combined with the amendments of new auxiliary requests 1 and 2 and re-filed as new auxiliary requests 3 and 4.

No further submissions were made with respect to inventive step of the subject-matter of claim 1 of auxiliary request 1 and 2.

The subject-matter of claim 1 of auxiliary requests 3 and 4 further differed from the teaching in document D1 in that the claimed onions also had a lower pyruvate level.

XI. The appellant (opponent) requested that the decision under appeal be set aside and that European patent No. 2244554 be revoked.

The respondent (patent proprietor) requested that the appeal be dismissed and that the patent be maintained on the basis of the main request (corresponding to the first auxiliary request underlying the decision under appeal), or, alternatively, on the basis of the set of claims of one of auxiliary requests 1 to 4, all filed with letter dated 17 October 2019. Further, they requested that these requests be admitted into the proceedings.

Reasons for the Decision

1. The appeal complies with Articles 106 to 108 and Rule 99 EPC and is therefore admissible.

2. An amended version of the Rules of Procedure of the Boards of Appeal (RPBA 2020) came into force on 1 January 2020. The transitional provisions are set out in Article 25 RPBA 2020. Pursuant to paragraph 3 of Article 25 RPBA 2020, where the summons to oral proceedings has been notified before the date of the entry into force of the RPBA 2020, Article 13, paragraph 2, of the revised version shall not apply. Instead, Article 13 of the Rules of Procedure of the Boards of Appeal in the version valid until the date of the entry into force shall continue to apply. In the present case, the parties were notified of the summons to oral proceedings before 1 January 2020. Therefore, Article 13(1) and (3) RPBA 2007 apply to the present case.

Main request

3. This claim request was auxiliary request 1 in the proceedings before the opposition division and was considered to meet the requirements of the EPC (see decision under appeal, point 4.4.2).

Claim construction - claim 1

4. Claim 1, a product-by-process claim, is directed to a long-day onion plant producing bulbs which combine the properties "*pyruvate of less than 5.5 µMol/g FW*" and "*SSC of at least 7.5%*" at harvest, wherein the onion plant "*is obtained by crossing a plant of which seeds were deposited under Accession No. PTA-9053, PTA-9054*

or PTA-5 9055 with another onion plant" (see section IV. above for the complete wording of the claim).

5. The process feature "*is obtained by (...)*" defines the claimed onion only in as far as it imparts identifiable and unambiguous technical features to the product (see Case Law of the Boards of Appeal of the European Patent Office, 9th edition 2019, II.A.7.1). The parties agreed that a technical feature imparted to the claimed onion plant by the process feature of claim 1 was the presence in its genome of a fraction of the genome of the plants of which seeds were deposited. However, the parties disagreed on whether additional identifiable phenotypic characteristics were conferred on the long-day onion plant by the process of claim 1.

6. The board notes that the claim does not specify that the genome of the plants for which seeds were deposited causes the claimed SSC or pungency traits or any other trait. The respondent's argument that selection for "*pyruvate of less than 5.5 µMol/g FW*" or "*low pungency*" and for "*SSC of at least 7.5%*" or "*high* SSC" brings along the plants' genes responsible for a lower pungency upon storage is not accepted by the board. In the board's view, the feature that the claimed plants are obtainable by crossing a deposited onion plant with another onion plant is not a limitation to the immediate progeny of such a cross, but includes all plants having such a cross in their ancestry. Thus, the process feature is not construed as imparting any particular genotype to the claimed plants. Lower pungency upon storage is thus not a feature of the claimed onion plants. The board concludes that no additional identifiable phenotypic or genotypic characteristics are conferred on the long-day onion

plant by the process of claim 1.

Inventive step (Article 56 EPC) - claim 1

Closest prior art

7. In the decision under appeal, document D1 was taken as representing the closest prior art for the claimed onion plants. This view was maintained by the appellant in the appeal and was not contested by the respondent. The board sees no reason to differ.

8. Document D1 discloses onion (*Allium cepa*) plants requiring 14 or more contiguous hours of daylight to initiate bulb formation, i.e. long-day onions, which produce bulbs having a pyruvic acid development (PAD) measurement of less than 5.5 µMol/g FW at harvest and whose bulbs can be stored without an increase of PAD measurements of more than 15% compared to the PAD measurement at the time of harvest (see paragraphs [0021], [0022], [0023] and [0053]). It is undisputed that document D1 does not explicitly disclose any SSC values.

9. However, document D1 does disclose hybrid plants whose parents were the long day onion plants WYL 77-5128B and WYL 77-5168B (see paragraph [0081]). WYL 77-5128B and WYL 77-5168 are long-day Spanish onion breeding lines, combining all the desired features of typical long-day Spanish onions with the additional feature of low pungency (see paragraphs [0087] and [0089]). Seeds of these inbred lines were deposited in accordance with the Budapest Treaty (see paragraphs [0088], [0089] and [00168] of document D1). The board concludes that the hybrid plants disclosed in paragraph [0081] are made available by document D1. The person skilled in the

field of plant breeding is furthermore aware that a cross between these two inbred lines of document D1 always yields the same hybrid plant (see also document D10, paragraph bridging pages 1 and 2).

10. Document D8A, the certificate of plant variety protection for onion EX 077116000, discloses that EX 077116000 is a hybrid onion developed by crossing WYL 77-5128A (female parent) with WYL 77-5168B (male parent)(see page 3, first paragraph). The document also discloses that WYL 77-5128A is the isogenic sterile version of long day Spanish onion inbred WYL 77-5128B with (see page 4, second paragraph). Being isogenic, WYL 77-5128A and WYL 77-5128B are genetically identical, except for the male sterility (see document D9, page 1, last paragraph).

11. The respondent argued that lines WYL 77-5128A and WYL 77-5128B are either not isogenic or that the male sterile genotype affects the SSC phenotype.

12. This line of argument is based on Table 2 of document D9 which reports an average SSC of 7.38% for WYL 77-5128A and of 7.01% for WYL 77-5128B. However, document D3 discloses that "*four replications of five-bulb samples or two replications of ten-bulb samples are adequate to detect a 1 µM difference in enzymatically developed pyruvic acid and a 1% difference in SSC*" (see page 544, right hand column, last paragraph). Thus, bearing in mind the accuracy with which SSC percentages can be determined, the values reported in Table 2 of document D9 do not establish that lines WYL 77-5128A and WYL 77-5128B are not isogenic or that the male sterile genotype affects the SSC phenotype. Indeed, that the SSCs values determined for one and the same variety are not

necessarily identical is also evident from the test results reported in Annex A of document D10 (see point 14. below). Thus, the respondent's line of argument is not found persuasive.

13. In view of the above considerations, the board is persuaded that plants of variety EX 077116000 are representative of the hybrid plants disclosed in paragraph [0081] of document D1.

14. Document D10 confirms that the hybrid identified as EX 07716000 in document D8A is the same as the hybrid EX16000 (see paragraph bridging pages 1 and 2) while according to document D5, the hybrid EX16000 is also referred to as XP16000 (see page 2, sixth paragraph). From Annex B of document D10 it is evident that XP16000 is furthermore referred to as EverMild.

15. According to document D5 it was general practice to determine the refractive index as a measure of soluble solid content (SSC) and to report the result as %, % sucrose or as degrees brix. There is no difference in the values as such, and *"the feature "SSC at harvest of at least 7%" as used in EP 2 244 554* [the opposed patent] *is the same as "SSC at harvest of at least 7 brix*" (see page 1, point 1).

16. Annex A of document D10 reports results of pungency and brix (=SSC) testing of numerous onion bulbs of EverMild (=EX16000) obtained from 11 different farms operated by commercial onion producers (see page 2, last paragraph). In tests carried out at harvest on onion bulbs grown on different fields on a farm in Oregon, the mean pungency was 3.8 and the mean brix (=SSC) was 7.8% with a standard deviation (SD) of 0.4 (see Annex A, LF Test No: LF2012-1951) and 3.6 and 7.6% with a SD

of 0.4, respectively (see Annex A, LF Test No: LF2012-1649). Furthermore, in tests carried out at harvest on EverMild onion bulbs grown on a farm in Hermiston, the mean pungency was 4.5 and the mean brix was 7.9% with a SD of 0.2 (see Annex A, LF Test No: LF2011-566). These SSC values fall within the scope of claim 1 of the main request.

17. Relying on document D7, the respondent submitted that EX 077116000, a hybrid produced by crossing WYL 77-5128A with WYL 77-5168B has an average SSC % of 6.3 (see page 5, points 20) and 21)), which fell outside of the range specified in the claim.

18. Document D7, a report drawn up by the inventor of the opposed patent, is silent about the number of onion bulbs tested. Bearing in mind the accuracy of SSC tests, see point 12. above, the board is not persuaded that document D7 establishes that the hybrid of document D1 has a SSC below 7.5%. In the board's view, the results reported in document D10, see point 14. above, obtained in measurements carried out on numerous bulbs from different locations in an independent analysis by an external laboratory, the National Onion Lab, see point 14. above, are more persuasive than the results provided in document D7.

19. That the pungency results of Annex A of document D10 were obtained using the pungency analysis method of document D11 has no bearing on the board's conclusion with respect to the SSC levels disclosed in Annex A of document D10 because pungency and SSC are different traits.

20. The board concludes from the above that the SSC results reported for hybrid EX16000 in Annex A of document D10

are evidence that the bulbs produced by onion hybrids of document D1 possess SSC values that fall within the scope of claim 1 of the main request and thus establish that an SSC of at least 7.5% at harvest is an inherent property of the onion plants disclosed in document D1.

21. That the plants of document D1 have a PAD measurement of less than 5.5 µM/g FW, i.e. "low pungency", is already explicitly disclosed in document D1 (see points 8. and 9. above) and is confirmed by e.g. document D5 and document D8A.

22. Document D5 reports on field trials carried out by the National Onion Labs analysing the SSC and pungency of onion bulbs grown from the hybrid, EX16000, obtained from the two lines WYL 77-5128B and WYL 77-5168B deposited in document D1 (see point 4 of document D5). The results of these analyses are summarised in Annex 2 of document D5. The average pyruvate content was less than 5.5 µM/g fresh weight for all locations (see document D5, page 3, first full paragraph).

23. The board agrees with the appellant that it is evident from page 1, point 1 of document D5 that pungency levels were determined at harvest. The board also agrees with the appellant that should the measurements have been carried out later, then the pungency values at harvest would have been even lower because the pungency of the onion plants of document D1 increases during storage, see e.g. paragraph [0053] of document D1.

24. Finally, document D8A confirms that the EX07716000 variety "*is a hybrid long day onion which combines all of the desired features of a typical long day Spanish hybrid onion with low pungency*", see page 10, first

paragraph.

25. From the above, the board concludes that the hybrid plant having as parents the long day onion plants WYL 77-5128B and WYL 77-5168B disclosed in paragraph [0081] of document D1 is an onion plant having a mean pyruvate level at harvest of less than 5.5 µMol/g FW, wherein said bulbs have a mean SSC at harvest of at least 7.5%.

26. In the board's judgement, the hybrid onion plants disclosed in paragraph [0081] of document D1 represent the closest prior art for the subject-matter of claim 1.

Technical problem

27. The claimed onion plant differs from the hybrid onion plant disclosed in document D1 solely in that it is defined as being obtainable by crossing a plant of which seeds were deposited under Accession No. PTA-9053, PTA-9054 or PTA-5 9055 with another onion plant. Contrary to the respondent's position, the claimed onion plant does not differ from the onion plant of document D1 by a significant higher SSC value and significant lower pungency value, see point 25. above. It was however uncontested that the genetics of the claimed onion plant differs from that of the hybrid onion plant of document D1, albeit in an unknown manner, see point 5. above.

28. With respect to the technical effect of this difference, the respondent submitted that it resulted in plants whose pungency decreased during storage, in contrast to the plants disclosed in document D1, whose pungency increased during storage. This difference resulted in the claimed onion bulbs having an improved

storability.

29. The respondent's line of argument is based on a claim construction according to which the claimed plants have a set of genes also contained in one of the deposited seeds which cause a decrease of pungency during storage. For the reasons set out in point 6. above, this argument does not succeed.

30. Therefore, the board agrees with the appellant that the problem to be solved by the claimed subject-matter can be formulated as the provision of a further long-day onion plant producing bulbs having low pungency and high SSC.

Obviousness of the claimed solution

31. The question to be answered in assessing obviousness is whether the skilled person seeking to solve the above formulated technical problem and starting from the hybrid plants disclosed in document D1 would have arrived at the claimed plants without inventive effort.

32. Document D1 discloses that high solids and storability are correlated, see paragraph [0006], and already establishes that combining traits of long-day onion plants (bulb formation after 14 hours of light, high storability, high SSC) with the low pungency trait of short-day onion plants in a single onion plant/bulb requires no more than standard plant breeding techniques (see e.g. Examples and point 25. above).

33. In the board's judgement, the skilled person faced with the problem formulated above would have bred known long-day and short-day onion plants and select for the desired traits of "low pungency" and "high SSC" by

employing routine methodology with a reasonable expectation of obtaining onions having both of these traits.

34. The respondent's counter-arguments are not found persuasive as they ignore that document D1 already discloses an onion plant having a mean pyruvate level at harvest of less than 5.5 µMol/g FW, wherein said bulbs have a mean SSC at harvest of at least 7.5% and because they are furthermore based on the assumption that the skilled person was faced with the problem of providing long-day onion plants which were improved with respect to storability.

35. The board concludes from the above that the subject-matter of claim 1 was obvious for the skilled person before the relevant date of the patent. The main request does not meet the requirements of Article 56 EPC.

Auxiliary requests 1 to 4

Admittance (Article 13(1) RPBA 2007)

36. Auxiliary requests 1 to 4 were filed in response to the board's communication and were meant to address the board's concerns with respect to added subject-matter of claim 2 of the main request.

37. The appellant objected to the admittance of auxiliary requests 1 to 3 into the appeal proceedings, because they addressed objections that had been raised in the statement of grounds of appeal and were thus filed late in the proceedings without justification and because they were not clearly allowable and introduced new

problems.

38. Pursuant to Article 13(1) RPBA 2007, an amendment to a party's case after the filing of the statement of grounds of appeal or reply may be admitted and considered at the board's discretion. That discretion "shall be exercised in view of *inter alia* the complexity of the new subject-matter submitted, the current state of the proceedings and the need for procedural economy".

39. Indeed, the board's argumentation in the communication pursuant to Article 15(1) RPBA with respect to added subject-matter of claim 2 of the main request (see section V. above) corresponded to an objection made in the statement of grounds of appeal (see section III.). This objection could thus have been addressed sooner, i.e. in response to said statement of grounds of appeal. No persuasive explanation for not filing auxiliary requests 1 to 4 earlier was provided. These requests are thus considered to be filed late.

40. Moreover, claim 1 of auxiliary requests 1 and 2 is identical to claim 1 of the main request and cannot, therefore, overcome the deficiencies of the main request.

41. Claim 2 of auxiliary request 3 has been amended to include the feature "*under cool temperatures*", which is disclosed in the description of the patent. Considering this amendment would have required a discussion of the clarity requirement of Article 84 EPC because "*cool temperature*" is a relative term without a defined meaning. Thus, also this request was not clearly allowable.

42. Finally, in claim 1 of auxiliary request 4 the mean pyruvate level at harvest had been amended to read "*less than 3.75 µMol/g fresh weight (FW)*".

43. Since a mean pyruvate level at harvest of less than 3.75 µMol/g fresh weight (FW) is already disclosed in document D1, see claim 6, also the subject-matter of claim 1 of auxiliary request 4 does not prima facie overcome the deficiencies of the main request.

44. Thus, admission of auxiliary requests 1 to 4 into the appeal proceedings would not have served the interests of procedural economy.

45. In view of the above considerations, the board, exercising its discretion pursuant to Article 13(1) RPBA, decided not to admit auxiliary requests 1 to 4 into the appeal proceedings.

Conclusion

46. The sole claim request in the appeal proceedings does not meet the requirements of Article 56 EPC. Accordingly, the patent cannot be maintained in amended form on the basis of this request and, in the absence of another, allowable claim request, the patent has to be revoked.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar: The Chair:

I. Aperribay A. Chakravarty

Decision electronically authenticated