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**Datasheet for the decision
of 28 March 2022**

Case Number: T 1370/19 - 3.3.04

Application Number: 09763909.0

Publication Number: 2346316

IPC: A01H5/00

Language of the proceedings: EN

Title of invention:

Resistance to post harvest deterioration in cucumber

Applicant:

Rijk Zwaan Zaadteelt en Zaadhandel B.V.

Headword:

Cucumber I/RIJK ZWAAN

Relevant legal provisions:

EPC Art. 53(b), 84, 111(1), 123(2)
RPBA 2020 Art. 13(2)

Keyword:

Amendments - allowable (yes)
Exceptions to patentability - plants (no)
Claims - clarity (yes)
Appeal decision - remittal to the department of first instance
(yes)

Decisions cited:

G 0002/88, G 0002/12, G 0002/13, G 0003/19, T 0150/82,
T 0815/93, T 0525/98, T 0967/10, T 1988/12, T 0032/17

Catchword:



Beschwerdekammern

Boards of Appeal

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Case Number: T 1370/19 - 3.3.04

D E C I S I O N
of Technical Board of Appeal 3.3.04
of 28 March 2022

Appellant: Rijk Zwaan Zaadteelt en Zaadhandel B.V.
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Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 7 January 2019
refusing European patent application No.
09763909.0 pursuant to Article 97(2) EPC**

Composition of the Board:

Chair G. Alt
Members: B. Rutz
M. Blasi

Summary of Facts and Submissions

- I. The appeal by the applicant (appellant) lies from the decision of the examining division to refuse European patent application No. 09 763 909.0 (the application) entitled "*Resistance to post harvest deterioration in cucumber*". The application had been filed on 19 November 2009 as an international application, published as WO 2010/057960.
- II. In the decision under appeal, the examining division decided not to admit into the proceedings sets of claims of a main request and auxiliary requests I and II, filed by letter dated 29 October 2018.
- III. Furthermore, the examining division decided that claim 1 of the new main request filed during the oral proceedings did not relate to added subject-matter under Article 123(2) EPC but did not meet the requirements of Article 84 EPC.

The examining division reasoned on pages 8 and 9 of the decision that the "genetic locus" feature of claim 1 "*is entirely unclear and presumably still unknown*" and that "[t]he 'genetic locus' may be obtainable from the deposit referred to in claim 1, but in the absence of structural information about the locus the genetic information present in the genome of the claimed plants is unknown and the process feature (or indeed the genetic locus conferred to the plants by said process) is unclear".

The examining division cited from decision T 967/10, *inter alia*: "*Consequently, it is unknown what the genetic information present in the genome of the*

claimed plants, and one of the characterising technical features imparted to the claimed plants by the process, actually is. Hence, the process feature of claim 1 as such is considered as unclear" and stated that "[t]he same applies in the present case. The reference to the 'genetic locus' in claim 1, which is defined neither in the claims nor in the description, renders the claim unclear (Article 84 EPC)."

Because the "genetic locus" was unknown or unclear, "the scope of claim 1 cannot be ascertained" and "it cannot be used to distinguish the claimed plants from the plants of the prior art".

Two counter-arguments of the appellant were addressed in the decision under appeal.

First, the appellant submitted that product-by-process claims were allowable "since the description of the present application does not allow to define the 'genetic locus' in structural terms". The examining division replied that it did not question "the allowability (under certain conditions) of so-called product-by-process claims" but found that "it must be clear, which property, which technical feature is conferred by the process recited in the claim".

Second, the appellant submitted that it was possible to distinguish the claimed plants from prior-art plants, "e.g. by carrying out a so-called allelism test between the deposited plant and the plant to be tested or by developing markers for the genetic locus". The examining division replied that "[t]he requirement that the claims have to define the subject matter for which protection is being sought ... is independent from the requirement of novelty".

The examining division cited from decision T 967/10 that *"whether or not claimed subject-matter is defined in such a way as to allow a third party, such as a potential infringer, to determine whether or not he is working in the scope of the claim"* was merely a *"secondary consideration"*. The examining division also cited decision T 1988/12, which referred to the above statement from decision T 967/10, and added that *"[i]n the board's view, the suggestion that the skilled person has to rely on an analysis of a potentially infringing product to know what the subject-matter for which protection is sought actually is, runs counter the purpose of Article 84 EPC"*.

Thus, the examining division concluded that *"[t]he reference to the 'genetic locus' in claim 1, which is defined neither in the claims nor in the description, renders the claim unclear (Article 84 EPC)"*.

- IV. With the statement of grounds of appeal, the appellant re-filed the sets of claims of the main request and auxiliary requests I and II dated 29 October 2018 and the main request underlying the decision under appeal, all of which contained a disclaimer in respective claims 1 and 2. The appellant filed the four claim requests in a further version in which the disclaimers were deleted and requested that the proceedings be stayed until after the Enlarged Board of Appeal issued its decision in case G 3/19.
- V. The board summoned the appellant to oral proceedings in view of the corresponding request and informed the appellant of its preliminary opinion in a communication pursuant to Article 15(1) RPBA.

VI. In this communication, the board stated that it saw no reason not to admit the main request, a request re-filed with the statement of grounds of appeal and originally filed with the letter dated 29 October 2018, into the appeal proceedings (Article 12(4) RPBA 2007).

The board provided comments on Article 53(b) EPC in light of the outcome of decision G 3/19 (OJ EPO 2020, A119) and gave the preliminary opinion that the examining division's reasoning on why the term "genetic locus" was unclear was without merit and that the meaning of the expression "reduced sensitivity to ethylene does not affect sex expression" was clear to the skilled person. The board also raised the objection that the term "EX5001" was unclear.

VII. In reply to the communication, the appellant filed sets of claims of a main request and auxiliary requests I to III. In all the claim requests, the term "EX5001" was deleted. The appellant furthermore stated that it *"seems that the oral proceedings could be cancelled"*.

VIII. The board cancelled the oral proceedings.

IX. Claim 1 of the main request reads as follows:

"1. Mutant cucumber (*Cucumis sativus*) plant, which has a recessive genetic locus which is responsible for improved shelf life of the fruits of the plant which is directly linked to reduced sensitivity of the plant to ethylene,

wherein the improved shelf life is characterized by:

- harvested cucumber fruits after storage in the presence of ethylene in a concentration of 5 ppm at 21°C in darkness remaining firm after 8 days, wherein firmness is defined by requiring an average force of

5.3 kg/cm² when measuring the fruit flesh at different positions with a penetrometer; and

- harvested cucumber fruits after storage in the presence of ethylene in a concentration of 5 ppm at 21°C in darkness remaining visibly free of fungal growth after 12 days;

wherein the plant has reduced sensitivity to ethylene when the ratio between the average hypocotyl length of the plant in etiolated seedling stage grown at 21°C in darkness in air containing 10-20 vpm ethylene and the average hypocotyl length of the plant in etiolated seedling stage grown at 21°C in darkness in air is at least 0.15, preferably 0.19 or higher;

wherein the reduced sensitivity to ethylene does not affect sex expression; and

wherein the plant is obtainable by crossing a cucumber plant with a plant grown from seeds of cucumber, representative seeds of which were deposited with the NCIMB under NCIMB accession number 41670, and selecting in the F2 progeny of the cross that is obtained after selfing the F1 for plants having the improved shelf life and reduced sensitivity to ethylene."

- X. The arguments of the appellant as far as relevant to the decision are summarised as follows.

Clarity (Article 84 EPC)

The definition of the phenotype alone, without knowing the genotype, was sufficiently clear and could serve as the identifiable and unambiguous technical feature that defined the claimed plants and distinguished them from the prior art.

The absence of a definition in the claim of the genetic basis of the trait, i.e. of the genetic locus that

caused the trait, did not present an obstacle for determining the subject-matter for which protection was sought, especially in this case where the phenotype was defined by measurable characteristics for which values and tests were included in the claim.

Before markers and gene sequences were readily available, plant breeders were already able to assess whether other varieties would include the same or different genotypes causing the phenotype of interest without knowing any structural features of the genotype.

Also, the distinctness requirement in plant breeders' rights as set out for example in Article 7 of Council Regulation (EC) No 2100/94 of 27 July 1994 on Community plant variety rights could be determined by the expressed characteristics (phenotype) without knowing the structural features of the underlying genotype.

The phenotypic trait was thus identifiable without any knowledge of the genotype.

The skilled person was capable of unambiguously recognising, distinguishing and utilising structurally undefined genetic traits as long as there was a defined phenotype. Therefore, it could be concluded that, in contrast to what was stated in decisions T 967/10 and T 1988/12, a clearly described phenotype caused by the genetic locus, the availability of a deposit comprising the genetic locus (as a source of the genetic trait represented by the phenotype) and information on the inheritance of the trait/locus together formed a clear and unambiguous disclosure of the technical features of the trait and its underlying genetic locus. Structural

features of the genetic trait (such as the nucleotide sequence of the locus) itself were not required.

The examining division stated the genetic locus may be obtainable from the deposit but that in the absence of structural information, the genetic information in the genome of the plants was unknown. This was in itself correct. However, a lack of sequence information in the claim did not lead to a lack of clarity.

The examining division stated that the requirement that the claims had to define the matter for which protection was sought was independent of the requirement of novelty. Indeed, the requirements were not the same. However, the claim included the definition of a clear and distinguishable phenotype which defined the subject-matter of the claim and which could serve as a distinguishing feature since it was a visible and/or measurable parameter.

The genetic locus was not claimed per se, but instead a plant in which a genetic trait performed its function. A plant could be defined by its phenotype.

The claims of the main request were thus clear.

- XI. The appellant requests that the decision under appeal be set aside and that a patent be granted on the basis of the set of claims of the main request or, alternatively, on the basis of the set of claims of one of three auxiliary requests submitted with the letter dated 7 July 2021.

Reasons for the Decision

1. The appeal complies with Articles 106 to 108 and Rule 99 EPC and is admissible.
2. Since the appeal is allowable, the present decision is issued in writing on the basis of the requests, grounds and evidence on file (Article 113 EPC and Article 12(8) RPBA).

Main request

Admittance (Article 13(2) RPBA)

3. While, in principle, amendments of a party's appeal case after notification of a summons to oral proceedings are not taken into account, the board decided to admit the claims of the main request filed on 7 July 2021 into the proceedings considering that the board had raised in this *ex parte* appeal case a new objection of lack of clarity on a term for the first time in the communication under Article 15(1) RPBA, issued after the summons and that the amendment consisted in the deletion of the term in question and did not give rise to any new objections.

Amendments (Article 123(2) EPC) - claim 1

4. The board agrees with the finding in the decision under appeal that claim 1 of the then main request examined in the decision complies with the requirements of Article 123(2) EPC.
5. Basis for features not dealt with in the decision under appeal because they were not present in the claim request under consideration can equally be found in the

application as filed: "at least 0.15" (page 6, lines 14 to 16); "preferably 0.19 or higher" (page 14, lines 10 to 13 and claim 6) and "does not affect sex expression" (page 14, lines 2 to 3). The absence of the term EX5001 as a definition of the plant is supported by the application as filed (see e.g. page 12, lines 25 to 32 and page 13, lines 3 to 7).

Clarity (Article 84 EPC) - claim 1

The feature "genetic locus"

6. The decision under appeal found the term "'genetic locus' ... entirely unclear [...] in the absence of structural information about the locus". Consequently, "[t]he reference to the 'genetic locus' in claim 1, [...] renders the claim unclear".
7. The board comes to a different conclusion.
8. Claim 1 is directed to a mutant cucumber plant defined by several functional features, one of them being that the plant has a "recessive genetic locus which is responsible for improved shelf life of the fruits of the plant which is directly linked to reduced sensitivity of the plant to ethylene".
9. The current case turns on whether the term "genetic locus" is clearly defined in claim 1.
10. The term "genetic locus" has a well-known meaning. It describes a position on a chromosome where a gene (often also referred to as an "allele"), responsible for a property of an organism, for example, a plant, is located. A "property" (often also referred to as a "trait" or, more generally, as a "phenotype" or

"phenotypic characteristics") may in the case of a plant be, for example, red petals or improved resistance to drought.

If the gene present at a genetic locus is alone responsible for the trait, the trait is "monogenic". Otherwise, it is "multigenic".

11. In claim 1, the "genetic locus" is further defined by functional features, namely that it "is responsible for improved shelf life of the fruits of the plant which is directly linked to reduced sensitivity of the plant to ethylene" and that it is "recessive".
12. These definitions are clear to the skilled person in the sense that the skilled person understands what they mean and knows, if necessary, how the function can be determined. The features tell the skilled person what the trait is, i.e. improved shelf life of the fruit of the plant linked to reduced sensitivity of the plant to ethylene, and that it is the genetic locus which is responsible for this trait. Qualifying the "genetic locus" as "recessive" means that it is propagated in a classical Mendelian way, i.e. recessively, and that a single genetic locus confers the phenotypic characteristics, i.e. the trait is monogenic. This understanding is shared by the appellant.
13. What is to be understood by "improved shelf life" is defined in claim 1 by further functional features - three parameters and methods on how to measure them, namely:

(i) harvested cucumber fruits after storage in the presence of ethylene in a concentration of 5 ppm at 21°C in darkness remaining firm after 8 days, wherein

firmness is defined by requiring an average force of 5.3 kg/cm² when measuring the fruit flesh at different positions with a penetrometer

(ii) harvested cucumber fruits after storage in the presence of ethylene in a concentration of 5 ppm at 21°C in darkness remaining visibly free of fungal growth after 12 days

(iii) wherein the plant has reduced sensitivity to ethylene when the ratio between the average hypocotyl length of the plant in etiolated seedling stage grown at 21°C in darkness in air containing 10-20 ppm ethylene and the average hypocotyl length of the plant in etiolated seedling stage grown at 21°C in darkness in air is at least 0.15, preferably 0.19 or higher

14. Again, these definitions and testing instructions are readily understood by the skilled person.
15. The claimed mutant cucumber plant is itself furthermore defined by a process feature in that it "is obtainable by crossing a cucumber plant with a plant grown from seeds of cucumber, representative seeds of which were deposited with the NCIMB under NCIMB accession number 41670, and selecting in the F2 progeny of the cross that is obtained after selfing the F1 for plants having the improved shelf life and reduced sensitivity to ethylene".
16. It is clear to the skilled person what this feature means. In terms of qualification of the "genetic locus", the skilled person moreover understands that the genetic locus present in the claimed plant, and responsible for the trait, is the same as that in the

plant grown from the deposited seeds referred to in the process feature.

17. In view of the above, the technical feature "genetic locus" is considered to be characterised by several clear functional definitions.
18. In the decision under appeal, the examining division found the term "'genetic locus' ... *entirely unclear* [...] *in the absence of structural information about the locus*" (underlining by the board). As a consequence, claim 1 did not comply with the requirements of Article 84 EPC.
19. This reasoning seems to presuppose that in the case at hand a definition of the technical feature "genetic locus" by structural features was mandatory for this feature (and the claimed subject-matter) to be defined in a clear manner.
20. Technical features of a claim may be defined structurally or, "*in appropriate cases*", functionally (see decision of the Enlarged Board of Appeal G 2/88, OJ EPO 1990, 93, point 2.5 of the Reasons).
21. In view of the two different options for characterising a technical feature, the board considers that there is a gap in the reasoning of the decision under appeal in that it does not explain why, in this case, a definition by the functional features recited in the claim was not appropriate so that a structural definition was mandatory for claim 1 to be clear.
22. As has been put forward by the appellant, what is being claimed is a plant; not the genetic locus *per se*. It is not evident to the board why, generally, the definition

of a plant by way of functional features should not be permissible or why it is not permissible in the case at issue.

23. Whether the chosen, functional definition can serve to distinguish the claimed plant from plants disclosed in the prior art, i.e. if it is, for example, suited to establish novelty, is another matter, as rightly pointed out by the examining division in the decision under appeal.
24. To the appellant's argument in this context that the claimed subject-matter was clear since it was possible to distinguish the claimed plants from prior-art plants by, for example, carrying out tests, the examining division, with reference to decisions T 967/10 and T 1988/12, replied that whether the subject-matter was defined such that a third party, for example, a potential infringer, was in a position to determine if they were working within the scope of the claim was merely "*a secondary consideration* [under Article 84 EPC]".
25. With regard to this line of argument, it could be asked, for example, whether this falls within the ambit of Article 84 EPC or whether it instead falls in the context of determining the scope of protection pursuant to Article 69(1) EPC. The latter question, however, in accordance with the case law of the boards, is not an issue examined in proceedings before the European Patent Office except when dealing with questions under Article 123(3) EPC (see Case Law of the Boards of Appeal, 9th edition 2019, II.A.6.3.2). However, the board does not need to deal with this line of argument since the board considers claim 1 to be clear (see points 6. to 22. above and point 37. below).

26. The examining division, as a basis for its reasoning that the term "genetic locus" was unclear in the absence of structural information, referred to decision T 967/10.
27. However, in decision T 967/10, it was held that the claim was unclear because the process feature was unclear (see point 11 of the Reasons). Hence, the reasoning in decision T 967/10 does not directly support the conclusion in the decision under appeal that claim 1 was unclear because a technical feature other than the process feature was unclear.
28. With regard to the definition of the plant in the current case by, *inter alia*, a process feature and in reply to the appellant's argument that, for example, in view of decision T 150/82, product-by-process claims were allowable since the description of the current application did not allow defining the "genetic locus" in structural terms, the examining division stated that it did not question "*the allowability (under certain conditions) of so-called product-by-process claims*", but that "*it must be clear, which property, which technical feature is conferred by the process recited in the claim*".
29. The board understands this latter statement to be based on point 5 of the Reasons of decision T 967/10. This statement reads in its entirety: "*[T]he requirement for clarity means that the skilled person should be able to determine, either from the claim alone or, by construction of the claim in the light of the description, or by construction in the light of the skilled person's common general knowledge, which identifiable and unambiguous technical features are*

imparted to the product by the process by which it is defined (see for instance T 815/93, reasons 4.3; T 525/98, reasons 2; and T 768/08, reasons 4.9)."

A similar statement to the same effect is found in decision T 1988/12, point 7 of the Reasons.

30. In view of the case law of the boards, the characterisation of a product by a process feature is permissible. Yet, product-by-process claims have to be interpreted in an absolute sense, i.e. independently of the process, and the product itself has to meet the requirements of patentability (see Case Law of the Boards of Appeal, 9th edition 2019, II.A.7.2).

31. A question that could be asked in view of the position that it must be clear from the claim or by claim construction which property is conferred to the product by the process recited in the claim is if this is reconcilable with one of the preconditions established by the board in the landmark decision T 150/82 for a product-by-process claim to be permissible - and applied by boards of all technical fields in numerous appeal cases - namely that *"there is no other information available in the application which could enable the applicant to define the product satisfactorily by reference to its composition, structure or some other testable parameter"* (see Headnote, point II.). In the current case, the appellant has submitted that *"the description of the present application does not allow to define the 'genetic locus' in structural terms"*.

32. Furthermore, the case law referred to in decision T 967/10 (e.g. decisions T 815/93 and T 525/98, see point 29. above) seems to indicate that the boards in these cases would have accepted (decision T 815/93, see

point 4.3.1 of the Reasons) or did accept (decision T 528/98, see point 2.2 of the Reasons) evidence to elucidate which technical features were imparted by the process.

33. As to the consequences of not knowing (either from the claim, by claim construction or from evidence) which technical characteristics are imparted by a process defining a claimed product in the context of the assessment of the novelty of the subject-matter of a product-by-process claim, it was held in the recent decision T 32/17 that the process feature is disregarded for the definition of the claimed product (see points 15. to 17. of the Reasons).
34. In summary, the technical feature "genetic locus" is considered to be characterised by clear functional definitions. The absence of a structural definition for the feature does not result in a lack of clarity.

The feature "reduced sensitivity to ethylene does not affect sex expression"

35. In the communication of 3 July 2017, the examining division stated that "[n]either the claims nor the description teach, how the absence of a 'change in sex expression' is to be assessed", making this expression unclear.
36. The board agrees with the examining division that no explicit test of sex expression in cucumbers is disclosed in the application. The board, however, notes that in the paragraph bridging pages 3 and 4 of the application, the effect of ethylene and certain types of ethylene insensitivity on sex expression as shown by the femaleness or maleness of flowers is set out:

"ethylene plays an important role in the determination of sex expression of the flowers"; "ethylene treatment of cucumber flower buds enhances femaleness"; "flowers will change their developmental program to enhance the development of male organs" and "[a] change in sex expression of the flowers is highly undesirable and must be avoided". These passages show that the determination of sex expression in cucumber through the inspection of male and female flowers belonged to the common general knowledge of the skilled person. The expression at issue is thus clear to the skilled person.

37. In conclusion, the board finds claim 1 of the main request clear (Article 84 EPC).

38. The following assessment is made by the board in accordance with Article 111(1) EPC in combination with decision G 10/93 (OJ EPO 1995, 172).

Exceptions to patentability (Article 53(b) EPC)

39. In decisions G 2/12 and G 2/13 (OJ EPO 2016, A27 and A28), the Enlarged Board of Appeal held that the exception to patentability of essentially biological processes for the production of plants in Article 53(b) EPC did not have a negative effect on the allowability of a product claim directed to plants or plant material such as a fruit or plant parts.

40. In opinion G 3/19, the Enlarged Board of Appeal abandoned the interpretation of Article 53(b) EPC given in decisions G 2/12 and G 2/13 and, in light of Rule 28(2) EPC, held that the term "essentially biological processes for the production of plants or animals" in Article 53(b) EPC is to be understood and

applied as extending to products exclusively obtained by means of an essentially biological process (see Reasons, point XXVI.8). The Enlarged Board of Appeal thus concluded that the exception to patentability of essentially biological processes for the production of plants or animals in Article 53(b) EPC has a negative effect on the allowability of product claims and product-by-process claims directed to plants, plant material or animals if the claimed product is exclusively obtained by means of an essentially biological process (see Conclusion).

41. However, to ensure legal certainty and protect the legitimate interests of patent proprietors and applicants, the Enlarged Board of Appeal considered it appropriate that the new interpretation of Article 53(b) EPC had no retroactive effect on European patents containing such claims granted before 1 July 2017, when Rule 28(2) EPC entered into force, or on pending European patent applications seeking protection for such claims filed before that date (see Reasons, point XXIX).
42. Accordingly, as the current application was filed before 1 July 2017 and is still pending (see section I), the new interpretation of Article 53(b) EPC adopted in opinion G 3/19 does not apply. Furthermore, Article 53(b) EPC, as interpreted by decisions G 2/12 and G 2/13 of the Enlarged Board of Appeal, does not exclude the subject-matter of the main request from patentability.
43. In view of the above considerations, the board concludes that the subject-matter of the claims of the main request is not excluded from patentability

pursuant to Article 53(b) EPC in conjunction with Rule 28(2) EPC.

Remittal of the case (Article 111(1) EPC)

44. Pursuant to Article 111(1), second sentence, EPC, the board may either exercise any power of the department responsible for the decision appealed or remit the case to that department for further prosecution.
45. The sole ground for refusing the application was that claim 1 did not comply with the requirements of Article 84 EPC. The board has reviewed this decision (see points 6. to 38. above). Given the claims of the main request were first admitted in appeal proceedings, the examining division has not had an opportunity to examine them for compliance with the remaining patentability requirements, in particular novelty, inventive step and sufficiency of disclosure.
46. As set out in Article 12(2) RPBA, the primary object of the appeal proceedings is to review the decision under appeal in a judicial manner. This principle would not be observed if the board were to rule first on these patentability requirements.
47. Thus, special reasons are present for remitting the case to the examining division for further prosecution (Article 11 RPBA).

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the examining division for further prosecution.

The Registrar:

The Chair:



A. Chavainier Tomsic

G. Alt

Decision electronically authenticated