

The European Patent Office
Munich
Erhardtstraße 27
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Germany

Opposition to Patent EP 1 597 965

Title: Broccoli type adapted for ease of harvest

Proprietor: Seminis Vegetable Seeds, Inc. (US)

Date of publication and mention of the grant of the patent: 12.6. 2013

Date of filing patent application: 25.4.2005

Application number: 05103316.5

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The fee of 745 € for the opposition was transferred to the EPO bank account Commerzbank München, BLZ 700 800 00, KtNr. 3 338 80000 on 17 February 2014

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List of opponents:

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Arche Noah (AT)
Bingenheimer Saatgut AG (DE)
BioForum Vlaanderen (BE)
Bionext (NL)
Bund Naturschutz in Bayern (DE)
Bund Ökologischer Lebensmittelwirtschaft, BÖLW (DE)
Bündnis gentechnikfreie Landwirtschaft Niedersachsen, Bremen und Hamburg (DE)
Christoph Then (in support of *No Patents on Seeds!*) (DE)
FIAN, FoodFirst Informations- and Actions-Network (DE)
Grupo de Acção e Intervenção Ambienta, GAIA (PT)
Gen-ethisches Netzwerk e.V. (DE)
Gesellschaft für ökologische Forschung (DE)
Getreidezüchtung Peter Kunz (CH)
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IG FÜR (DE)
IG Nachbau (DE)
IG für gentechnikfreie Saatgutarbeit (DE)
Katholisches Landvolk Bewegung, KLB (DE)
Navdanya International (IT)
Réseau Semences Paysannes (FR)
Red de Semillas (ES)
Ruth Tippe (in support of *Kein Patent auf Leben!*) (DE)
Umweltinstitut München (DE)
Verband Katholisches Landvolk (DE)
Zukunftsstiftung Landwirtschaft (DE)

The opposition is supported by around 75.000 signatures

The subject-matter of the European patent is not patentable under European Patent Convention (EPC). The opponents request the patent be revoked in its entirety.

Reasons for opposition:

- Article 53b (EPC) is of special relevance because it excludes patents on plant varieties and on essentially biological processes for the breeding of plants.
- The subject-matter of the patent is not inventive according to Article 56 (EPC).
- The patent is contrary to morality and public order, Art 53a (EPC).

A public hearing is requested if the Opposition Division does not revoke the patent in its entirety.

Summary:

In June 2013, Seminis, a company owned by the US corporation Monsanto, was awarded a European patent on conventionally bred broccoli (EP 1597965). The broccoli is adapted to grow so that the head is higher than the leaves to make mechanical harvesting easier. The patent covers the plants, the seeds and the “severed broccoli”.

These plants are neither new nor inventive: As described in the patent, the idea of breeding broccoli with a raised head was described in publications many years ago and there are several types of broccoli already known to possess a similar phenotype to that set out in the patent. This shows that the broccoli as described in the patent is derived from existing biodiversity or from previously bred plants.

If the description in the patent wording is correct, Seminis has now bred varieties of broccoli with raised heads that are more homogenous in their characteristics than previously known types of broccoli. However, these plants have simply been produced by crossing and selection, which is regarded as an essentially biological process for breeding which cannot be patented according to the European Patent Convention and current EPO (G2/07 and G1/08) decisions.

Further, the group of plants described in the patent as having several uniform characteristics such as a raised head of specific height, a specific colour and defined size is nothing other than a plant variety (or a group of varieties). Plant varieties are defined as a group of plants with uniform characteristics that are stable in following generations and distinctive in comparison with other types of plants. This broccoli meets all relevant criteria. Plant varieties are excluded from patentability according to the EPC and EPO (G1/98) case law.

Consequently, this patent constitutes a threefold violation of European patent law and presents ethical concerns. Patents on naturally occurring biodiversity in plant breeding are an abuse of patent law because instead of protecting inventions they become an instrument for the misappropriation of natural resources. These patents block access to the genetic resources necessary for further breeding. Basic resources needed for daily life are subordinated to monopolisation and become a source of financial speculation.

Detailed reasoning of the opposition:

(1) Art 53b, EPC, essentially biological breeding:

Art 53b of the EPC excludes essentially biological processes for the production of plants or animals.

In G2/07 and G1/08 this exclusion was defined as follows:

- 1. A non-microbiological process for the production of plants which contains or consists of the steps of sexually crossing the whole genomes of plants and of subsequently selecting plants is in principle excluded from patentability as being „essentially biological“ within the meaning of Article 53(b) EPC.*
- 2. Such a process does not escape the exclusion of Article 53(b) EPC merely because it contains, as a further step or as part of any of the steps of crossing and selection, a step of a technical nature which serves to enable or assist the performance of the steps of sexually crossing the whole genomes of plants or of subsequently selecting plants.*
- 3. If, however, such a process contains within the steps of sexually crossing and selecting an additional step of a technical nature, which step by itself introduces a trait into the genome or modifies a trait in the genome of the plant produced, so that the introduction or modification of that trait is not the result of the mixing of the genes of the plants chosen for sexual crossing, then the process is not excluded from patentability under Article 53(b) EPC.*
- 4. In the context of examining whether such a process is excluded from patentability as being „essentially biological“ within the meaning of Article 53(b) EPC, it is not relevant whether a step of a technical nature is a new or known measure, whether it is trivial or a fundamental alteration of a known process, whether it does or could occur in nature or whether the essence of the invention lies in it.*

There is no doubt that the description given in the patent meets the criteria for this decision. For example on page 10, line 57 of the patents it is stated that:

“A pedigree showing the development of the line 970195 is summarized in figure 3, demonstrating a typical series of crosses and selections in the development of the plants”

Furthermore, it has to be taken into account that the European Parliament in a resolution (European Parliament resolution of 10 May 2012 on the patenting of essentially biological processes) gave an interpretation of the EU Directive 98/44, which was adopted by the EPO and is applied in current

case law. According to the text of the resolution, the EU Parliament

(...)

3. Welcomes the decisions of the Enlarged Board of Appeal of the EPO in the so-called 'broccoli' (G 2/07) and 'tomato' (G 1/08) cases, dealing with the correct interpretation of the term 'essentially biological processes for the production of plants (or animals)' used in Directive 98/44/EC and the European Patent Convention to exclude such processes from patentability;

4. Calls on the EPO also to exclude from patenting products derived from conventional breeding and all conventional breeding methods, including SMART breeding (precision breeding) and breeding material used for conventional breeding;(...)

6. Welcomes the recent decision of the European Patent Office in the WARF case and of the European Court of Justice in the Brüstle case, as they appropriately interpret Directive 98/44/EC and give important indications on the so-called whole content approach; calls on the European Commission to draw the appropriate consequences from these decisions also in other relevant policy areas in order to bring EU policy in line with these decision. (...)

The EU Parliament, together with the EU Commission and the EU Council, developed and adopted the EU Directive 98/44 currently applied by the EPO, making its interpretation of the provisions of the Directive highly relevant. Consequently, a whole-content approach has to be applied in this context (as also applied in G2/06) and products derived from essentially biological processes for breeding have to be excluded from patentability. Therefore, the patent must be revoked in its entirety.

(2) Art 53b, EPC, plant varieties:

Article 53b also excludes patents on plant varieties. According to rule 26 of the EPC plant varieties are defined as follows:

"Plant variety" means any plant grouping within a single botanical taxon of the lowest known rank, which grouping, irrespective of whether the conditions for the grant of a plant variety right are fully met, can be:

(a) defined by the expression of the characteristics that results from a given genotype or combination of genotypes,

(b) distinguished from any other plant grouping by the expression of at least one of the said characteristics, and

(c) considered as a unit with regard to its suitability for being propagated unchanged.

Further, in G1/98 the EPO gives the following reasoning on the definition of plant varieties (emphasis added):

“Varieties have been generally considered to be the result of the breeding process (cf B6ringer, Industrial Property Rights and Biotechnology, Plant Variety Protection No. 55, June 1988, page 45, point 1.1). In essence, this means they are the result of the processes of selection and crossing, including modern techniques such as cell fusion which do not occur under natural conditions. This seemed self-evident so long as breeding was the only way to obtain new plants. The case law of the EPO has found, drawing on Article 2(2) of the UPOV Convention 1961, that plant varieties means a “multiplicity of plants which are largely the same in their characteristics and remain the same within specific tolerances after every propagation or every propagation cycle” (T 49/83, Propagating material/CIBA-GEIGY, OJ EPO 1984, 112, Reasons, point 2, confirmed in T 320/87, Hybrid plants/LUBRIZOL, OJ EPO 1990, 71, Reasons, point 13). Under Article 1(vi) of the UPOV Convention 1991, plant varieties are defined as follows:

“Variety means a plant grouping within a single botanical taxon of the lowest rank, which grouping, irrespective of whether the conditions for the grant of a breeder's right are fully met, can be

- defined by the expression of the characteristics resulting from a given genotype or combination of genotypes,*
- distinguished from any other plant grouping by the expression of at least one of the said characteristics and*
- considered as a unit with regard to its suitability for being propagated unchanged;”*

The definitions in Article 5(2) of the EC Regulation on Community Plant Variety Rights as well as under Rule 23b(4) EPC, which entered into force on 1 September 1999, are identical in substance. The reference to the expression of the characteristics that results from a given genotype or combination of genotypes is a reference to the entire constitution of a plant or a set of genetic information. (Van der Kooij, Introduction to the EC Regulation on Plant Variety Protection, London 1997, Article 5, paragraph 2; see also Byrne, Commentary on the Substantive Law of the UPOV 1991 Convention, London 1991, page 20 ff).

In contrast, a plant defined by single recombinant DNA sequences is not an individual plant

grouping to which an entire constitution can be attributed (Wuesthoff-Leßmann-Würtenberger, Handbuch zum deutschen und europäischen Sortenschutz, Weinheim 1999, paragraph 116). (...)”

There is some controversy as to whether G1/98 can be regarded as the correct interpretation of Article 53b and EU Directive 98/44. However, this is a separate case for discussion. In the case at hand, there is no doubt that

- the plants are derived from breeding processes
- their characteristics are based on a combination of genotypes (combined by crossing and selection)
- the plants as described are meant to be homogenous and stable and distinct
- can be described as a multiplicity of plants which are largely the same in their characteristics.

There are many passages in the patent that can be used to prove this fact such as for example:

>> page 6, line 39 which states homogeneity, stability and distinctiveness:

“The assembly of harvested plants is uniform in weight, stalk length and other traits.”

>> page 11, line 3 ff:

“The head exertion of this broccoli line has shown uniformity and stability for all traits and over several years.”

>> page 10, line 48 ff which shows that the whole genotype was evolved by breeding and the plants are not the result of genetic elements that can be isolated and transferred to other plants:

“Only after a succession of years of crossing and selection in combination with one or two generations of selfing was it shown that the genetic linkage that existed between head exertion and poor horticultural and head quality could be broken. The progress in any generation was always small and difficult to quantify from generation to generation.”

It also should be acknowledged that figure 3/ page 16 is nothing other than a breeding process to show how to produce a plant variety by combining the genome of several varieties or breeding lines of broccoli.

As mentioned, a whole-content approach has to be applied in this context (as requested by European Parliament and applied in G2/06) and not only the carefully worded claims of the patent. A comparison can be made with the wording of US Patent 8,030,549 B2 to show that careful wording concerning the same type of broccoli was intentionally used to sidestep the prohibition in Article 53b. In the aforementioned patent the word variety is, for example, used in the field of invention section:

“The present invention relates to the field of plant breeding and variety development, and more specifically, relates to the development of a new and distinct broccoli type for easier harvest.”

Similar wording is used in the European Patent but without mentioning plant varieties. The claims of the US Patent 8,030,549 B2 have a different wording. The plants and seeds claimed are described as “*inbred*” and “*hybrid*” broccoli plants derived from specific “*lines*” of broccoli. This wording shows that the claims concerning plant varieties have been carefully avoided in the claims of the European Patent.

Consequently, the plants as claimed in the patent must be considered to be a plant variety (or a group of plant varieties) and the patent must be revoked in its entirety.

(3) Art. 56, EPC

Art. 56 requires inventiveness in order for a patent to be granted. However, in this case, it was already known that breeding broccoli with an exerted head would be desirable but could only be achieved after further breeding (see page 2-4 of the patent). The patent does not contain any technical explanation of how to overcome the problem described by the patent holder on page 4, line 8. The plants were simply crossed and selected over several generations. This is a time consuming process, but it is not inventive. So ultimately Seminis / Monsanto might be in a position to obtain plant variety protection for its seeds but cannot claim protection of any *invention* under patent law.

(5) Art 53 a

The phenotype as developed by breeding this broccoli is derived from naturally occurring biological diversity. This patent is nothing other than a misappropriation of genetic material that is the basis for all plant breeding. Consequently, the patent is likely to hamper or block further breeding by other breeders. The main purpose of this patent is not to protect an invention, but to monopolise and control resources necessary for plant breeding. Given the so-called UN millennium goal of reducing the number of people suffering from hunger by the year 2015, this kind of patenting must be seen as contrary to public order and morality.

Attachments:

US Patent 8,030,549 B2

Signatures supporting this opposition (handed over separately)