Reasons for opposition against
Patent EP 3629711
with relevance for EU legislation

Title: TOLERANCE IN PLANTS OF SOLANUM LYCOPERSICUM TO THE TOBAMOVIRUS TOMATO BROWN RUGOSE FRUIT VIRUS (ToBRV)

Were do the plants described in the patent come from?

Vilmorin claims exclusive rights on tomato plants with resistance to Tomato Brown Rugose Fruit Virus (ToBRFV).

The virus causes symptoms including mosaic and distortion of leaves and brown, wrinkly spots (rugose) on fruits. Outbreaks can be severe and leave fruit unmarketable.

Plants that did not show this symptoms were detected by growing conventionally bred plant varieties (breeding lines) in the region where the virus is prevalent (Israel). The respective plants were crossed and selected and propagated by selfing.

What is claimed?

The company claims the plants (cells, propagation material, fruits) inheriting genetic variants.

Also methods for detection and growing these plants are claimed as invention.

In essence, the patent claims the use of naturally occurring gene variants for traditional plant breeding.

Therefore, this patent may have huge implications for traditional breeders.

What is the legal basis for opposition? (1)

According to Article 53 (b) of the European Patent Convention (EPC) plant and animal varieties as well as conventional breeding are excluded from patentability.

It reads:

“European patents shall not be granted in respect of: […] (b) plant or animal varieties or essentially biological processes for the production of plants or animals (...)”.

Until 1998, this prohibition was interpreted in a way that prevented patents on plants or animals from being granted, even if they were genetically engineered (T356/93).

What is the legal basis for opposition? (2)

A new interpretation to Article 53 b) was given in 1998 by the EU Patent Directive 98/44. This legal framework is currently interpreted to allow patents on genetically engineered plants (and NGTs).

The reason was that some of the genetic material obtained from genetic engineering cannot be protected under plant variety protection (PVP) law. Therefore, and only under this condition, is it eligible for patent protection.

What is the legal basis for opposition? (3)

Article 4 (1) and (2) of the EU Patent Directive reads:

"*1. The following shall not be patentable:*

(a) Plant and animal varieties;

(b) Essentially biological processes for the production of plants or animals.

2. Inventions which concern plants or animals shall be patentable if the technical feasibility of the invention is not confined to a particular plant or animal variety.

(...) "

What is the legal basis for opposition? (4)

The intention of the legislator in prohibiting the patenting of plant varieties in Art. 53 b) were to prevent an overlap between plant variety protection and patent law (prohibition of double protection).

Unlike in the case of genetically engineered plants, there is no loophole in intellectual property law in the case of conventional breeding.

Therefore, Art 53 (b) still has to be understood as a general barrier for patents on plants obtained from conventional breeding.

What is the legal basis for opposition? (5)

Table 1: Differences between conventional breeding (including random mutagenesis) and genetic engineering relevant to the interpretation of Article 53 (b), EPC.

Criteria	Conventional breeding	Genetic engineering
Insertion of traits	Traits can only be established ex-post, from pre-existing genetic diversity by selection (crossing and selection).	Traits can be predicted (ex-ante) and directly inserted.
Transfer of traits	Traits (genetic information) can only be exchanged between the plants (crossing and selection) or by protoplast fusion.	Traits (genetic conditions) can be isolated and transferred or inserted via technical means.
Species borders	Traits can only be exchanged within species borders (closely related species, breeders' gene-pool).	Traits can be transferred or introduced without being limited by borders between the species.
Genetic diversity	The natural or induced genetic diversity limits the potential selection of desired genetic conditions (traits).	The traits are not limited by pre-existing genetic diversity.
Genetic background	The impact of the genetic background differs from case to case and can be influenced by further crossing and selection.	The impact of the genetic background can be reduced or silenced via technical means (such as additional promotors).

Summary of grounds for opposition

- the plants were not invented but detected
- the plants can be protected under PVP law
- the methods to produce the plants are not technical but classical breeding

The political challenge: current practice of the EPO

The European Patent Office (EPO) applies the prohibition of patenting plants obtained from crossing and selection (Rule 28 (2)) only for applications being applied after 1st July 2017 (such as the patent on tomatoes by Vilmorin).

The EPO grants patents on plants derived from random mutagenesis (such as the patent on barley and beer by Carlsberg).

This practise of granting patents on classical breeding is in conflict with the intention of the legislator to prevent an overlap between plant variety protection and patent law (prohibition of double protection).

What do we demand?

No Patents on Seeds! demands a ‚patent-free zone' for traditional breeders (breeders working with plants that are not genetically engineered), including plants derived from random mutagenesis. This can be achieved by a correct interpretation of existing European patent law.

Can the future NGT-regulation contribute to a solution?

The EU Parliament on new Article 33 a (d) for future NGT regulation could fix a key part of the problem:

Article 4 of Directive 98/44/EC on the legal protection of biotechnological inventions is amended as follows:
(a) In paragraph 1, the following points are added:
(d) plants, plant material, parts thereof, genetic information and process features they contain that can be yielded by techniques excluded from the scope of Directive 2001/18/EC as listed in Annex I B to that directive.

How to improve the proposal of the Parliament (without changing its content)

Article 4 of Directive 98/44/EC on the legal protection of biotechnological inventions is amended as follows:
In paragraph 1, the following points are added:

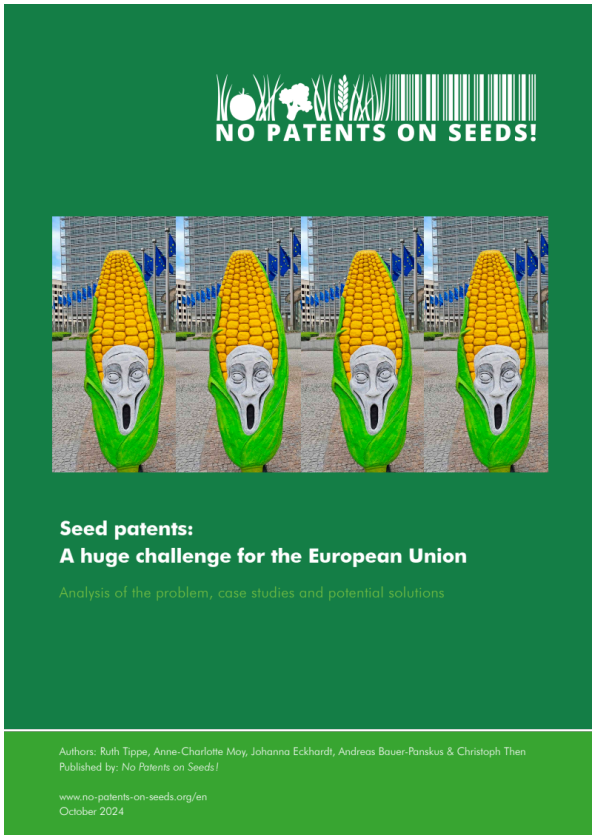
(c/d) plant material and parts thereof, as well as genetic information contained therein which have been obtained by non-targeted mutagenesis or cell fusion (including protoplast fusion) of plant cells of organisms which can exchange genetic material through traditional breeding methods.

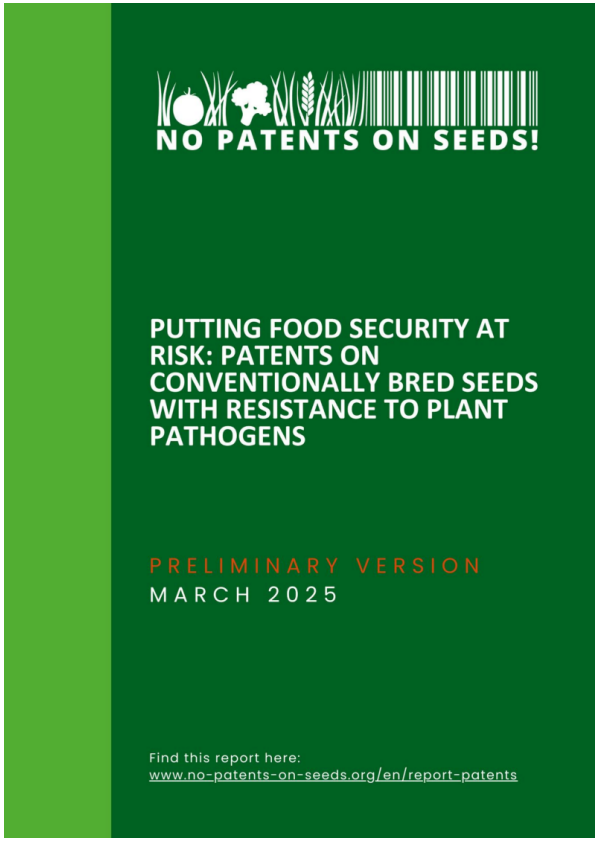
Take home message

The access of plant material that occurs in nature or is obtained from conventional breeding is crucial for all future breeding. If patents on this material is not stopped, patents will hamper, delay or block future breeding of plants with and without NGTs.

The EU can stop patents on seeds obtained from conventional breeding and random mutagenesis because such patents were never allowed under EU Patent Directive 98/44/EC but are prohibited under Art. 53 b), EPC.

Further information





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