



PRIVATE CLAIMS ON NATURE

No to Syngenta's Patent on Peppers

no patents on seeds

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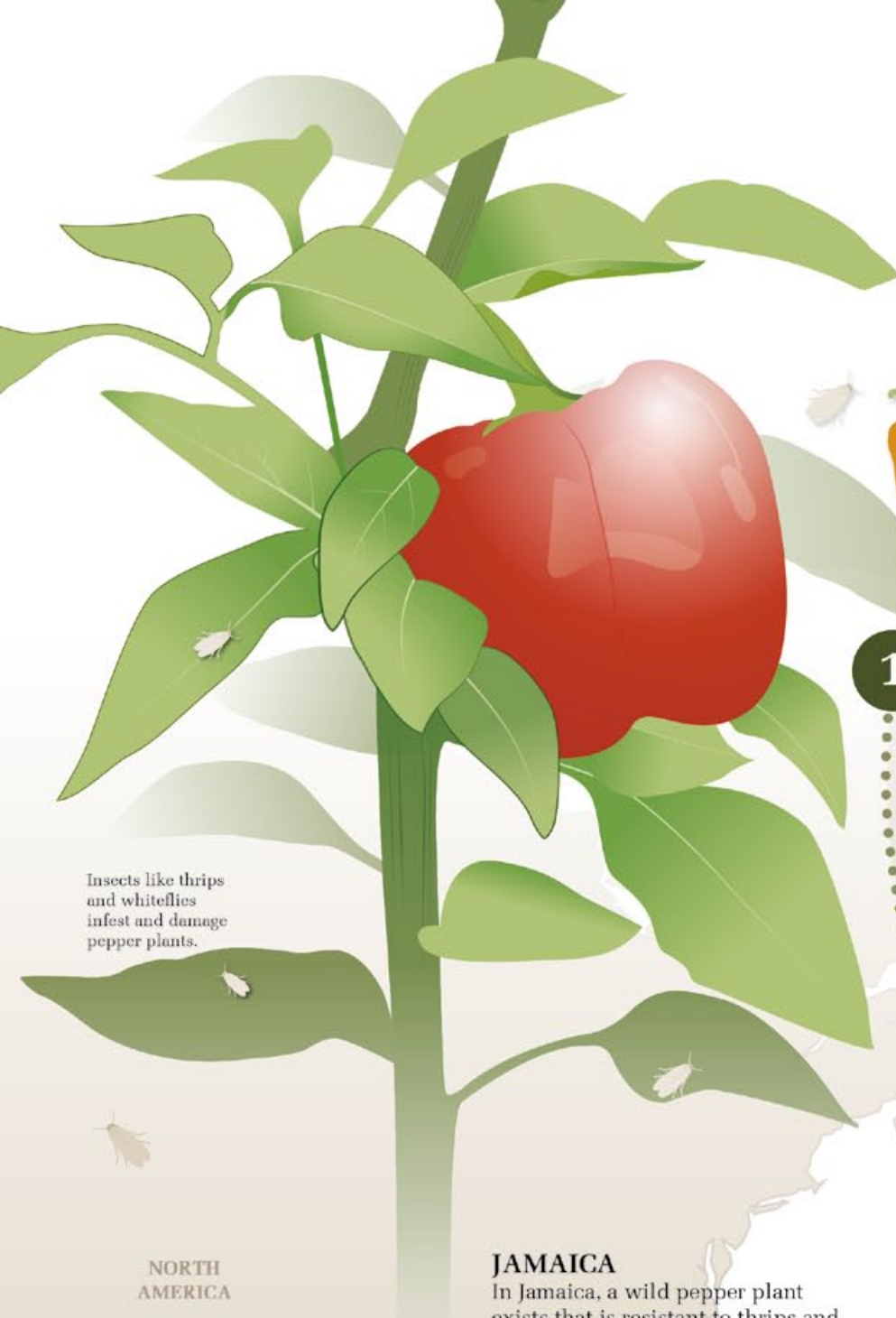
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**CAN LIVING ORGANISMS SUCH AS PLANTS AND ANIMALS BE INVENTED?
AND SHOULD PRIVATE COMPANIES BE ALLOWED TO CLAIM SUCH SUPPOSED
INVENTIONS FOR THEMSELVES? NO!**

Governments, different farmers' and breeders' organisations, and NGOs all oppose patents on seeds. Such patents are not only questionable from an ethical point of view; they also increase concentration in the seed market, decrease biodiversity, and pose a risk to food security. Patents on seeds should supposedly create an incentive to invest in the breeding of new plant varieties, but they cause the opposite: Access to the base material of plant breeding – plant varieties and wild plants – is blocked for breeders. This has negative impacts on innovation and finally on food security.

Despite the fact that the patenting of plant varieties is prohibited by European law, the European Patent Office (EPO) continued to grant patents that encompass several plant varieties. On May 8, 2013, the EPO granted a patent to Syngenta for insect resistant pepper plants, although the patented plants are derived using conventional breeding: A wild pepper plant from Jamaica was crossed with commercial pepper plants. Since the wild plant is resistant to various pests, the patented resistance already existed in nature and was not invented by Syngenta. Moreover, no benefit sharing was paid to the country of origin – Jamaica.

This and other patents on seeds must be prevented. That is why a broad coalition has filed an opposition to the pepper patent and demands that plants and animals are excluded from patentability. As a first step, the pepper patent should be revoked. Secondly the Administrative Council of the European Patent Organisation should abide by its mandate and modify the implementing rules at the EPO so that patents on conventionally bred plants are not granted in the future.



Insects like thrips and whiteflies infest and damage pepper plants.

1

PEPPERS

Pepper plants belong to the nightshade family. The commercial value of peppers amounts to approximately 500 million dollars per year. These plants are however susceptible to various insect pests like thrips and whiteflies that can cause substantial crop damage and, consequently, commercial losses.

2

JAMAICA

In Jamaica, a wild pepper plant exists that is resistant to thrips and whiteflies. In the 1970s, University of California Professor Paul G. Smith brought the plant to the United States.



The wild pepper plant

3

THE NETHERLANDS

From the University of California, the wild pepper came to the Centre for Genetic Resources, the Netherlands (CGN), the Dutch seed bank, in 1976.



NORTH AMERICA

SOUTH AMERICA

Free Pepper – How a Natural Pepper Became a Patented Plant

On May 8, 2013 the European Patent Office (EPO) granted a patent on conventionally bred insect resistant pepper plants to Syngenta, the world's biggest agrochemical company. Such patents negatively impact further innovation. Therefore, a broad coalition filed an opposition to this patent in February 2014.

OPPOSITION

In February 2014, a broad coalition of NGOs and farmers' and breeders' organisations, filed an opposition to the patent at the EPO, stating that Syngenta did not invent the resistance, since it already existed in nature and novelty cannot be claimed.

Such patents are not only questionable from an ethical point of view. They also: aggravate the concentration process within the seed market, have a negative impact on innovation, and pose a risk to food security.



PATENT APPLICATION

In 2008, Syngenta filed a patent application at the EPO, claiming exclusive rights to all peppers resistant to whiteflies. Five years later the firm was granted the patent, which is now valid across Europe. This means that farmers and breeders are no longer allowed to use these peppers for further breeding.



4



Resistant wild pepper plant



Susceptible commercial pepper plant



Resistant commercial pepper plant



5



The patent was granted on May 8, 2013, by the EPO.

A single patent application enables Syngenta to hold the patent in 38 states.



SYNGENTA

Syngenta received the wild pepper from CGN and started to use it for breeding in about 2002. The company crossed the wild pepper plant with commercial pepper plants. The desired trait – insect resistance – could be specifically selected by means of SMART breeding. This is a conventional breeding method based on crossing and selection, supported by technical means. The resulting commercial pepper is resistant to whiteflies.

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PATENTS ON SEEDS – HOW IT CAME TO BE

In the past 100 years, the task of plant breeding in the industrialised world has increasingly shifted from farmers to corporations. Those corporations demand intellectual property rights for their varieties, the most stringent of which is the patent.

PLANT BREEDING – FROM FARMERS TO CORPORATIONS

Until late in the 19th century, plant breeding and seed production were the tasks of farmers. New crops were developed by selection in the field. Farmers propagated their seeds themselves, exchanged them, and kept some seed for sowing the next year (farm saved seed). In developing countries, where farmers often lack the possibility to buy new seed every year, farm saved seed is still the most important source of seeds.

In the early 20th century, farming and plant breeding began to diverge in the industrialised world. While many small seed companies emerged that specialised in seed production and in the development of new varieties (breeding), farmers focused on crop production.

With the development of modern breeding technologies, it also became attractive for large corporations, which were originally agrochemical companies, to invest in plant breeding.

Today, many small seed companies have disappeared, and a few multinational corporations such as Monsanto, Pioneer and Syngenta dominate the international seed market. Most notable is the monopolisation of biotech seeds.

PLANT BREEDING – FROM BREEDERS' RIGHTS TO PATENTS

The private companies that invested in plant breeding to bring new and improved varieties to the market looked for ways to gain a return on their investments. Therefore a special kind of intellectual property rights was developed: plant breeders' rights.

Plant breeders' rights were established in the 1960s and harmonised internationally by the International Convention for the Protection of New Varieties of Plants (UPOV Convention)¹. They grant exclusive rights to

breeders for the production and sale of new varieties.

However, other breeders are permitted to use protected plant material freely for the development of new varieties (breeders' exemption). Under certain conditions farmers are also allowed to reuse seeds from protected varieties (farmers privilege).

With the introduction of genetically modified organisms (GMOs) in agriculture, Europe began issuing patents for plant breeding. This in turn was a major incentive for multinational corporations to invest in genetic engineering. Today, however, patents are also increasingly granted on conventionally bred plants.

The crucial difference between patents and plant breeders' rights is the scope of the protection. While breeders' rights only provide protection for a single variety, patents can cover many different varieties. Furthermore, the breeders' exemption does not appear in patent law. This means that breeders need permission from the patent holder(s) to use a variety covered by a patent. This permission could be denied. Either way, the negotiation for a license includes high procedural costs. The result is limited access to the base material of breeding – plant varieties – with negative effects on innovation and increased market control by the corporations that own the patents. In practice a patent is a very effective way to exclude your competitors from the market.



Reuters

Today, many plant varieties are developed using modern breeding technologies.

TERMS AND DEFINITIONS



FARMERS' RIGHTS² //

Farmers' rights consist of:

- > the **customary rights** of farmers to use, exchange and sell farm saved seeds and propagating material.
- > their **rights to be recognised, rewarded and supported** for their contribution to the global pool of genetic resources, as well as for the development of commercial plant varieties.
- > their **participation in decision-making** on issues related to crop genetic resources.

Farmers' rights are defined and restricted by several factors:

- > **Intellectual Property Rights.** Intellectual property rights (breeders' rights and patents) can limit farmers from their traditional practice of seed saving and exchange, as they will often not be allowed to save part of the yield

from protected seeds to replant the following year. Thus, they have to buy seed year after year, or in some cases pay licence fees. Ironically, farmers' innovations, practices and techniques as well as their knowledge are not recognised by the UPOV system, despite the fact that they developed most of the current plant varieties, and without them our enormous agricultural biodiversity would not exist.

- > **Seed laws.** The EU Legislation on the marketing of seed and propagating material poses bureaucratic and legal barriers for farmers to exchange and sell seed.
- > **Private Contracts.** Private contracts can prohibit further breeding with seeds, as well as seed saving and the exchange of seeds.
- > **Sterile Seed.** The terminator technology, or hybrid seed, prevents or hinders seed saving.

INTELLECTUAL PROPERTY RIGHTS // *Intellectual*

property is a legal term, and includes all the knowledge and cultural heritage that was brought about by mental efforts. Intellectual property can be protected by copyrights, breeders' rights, trademarks and patents (among other methods).

- > **Plant Breeders' Rights** // Plant breeders' rights protect new plant varieties. In order to be protected, the varieties must be new, distinct, uniform and stable. If those criteria are met, breeders have the exclusive right for the production and sale of new varieties for a fixed amount of time (25 or 30 years). Alternatively, they can licence their varieties to others. The protected varieties can however be used by other breeders for the development of new varieties (breeders' exemption). The rules for breeders rights in Europe permit farmers, for certain species, to save and propagate (but not exchange and sell) protected seeds for their own use (farmers' privilege) if they pay a licence fee.

- > **Patents** // Products or processes are patentable. Patents were originally developed for industrial inventions like machinery. In order to be patentable, an invention must meet the following criteria: novelty, inventive step, and industrial applicability. If a patent is granted, the patent holder can prevent others from the reproduction, use, sale, and distribution of the invention for 20 years. Alternatively, the patent holder can allow its use by payment of a licence fee. Breeders are not allowed to use patented seed for the development of new varieties. In European Patent law the farmers' privilege is similar to the one in plant variety protection.



THE POLITICAL SITUATION IN EUROPE – YESTERDAY AND TODAY

The European Patent Office (EPO) has the legal authority to examine and grant patents in Europe. Despite controversies over the patentability of conventionally bred plants and animals, the EPO continued to grant such patents at an increasing rate until recently.³

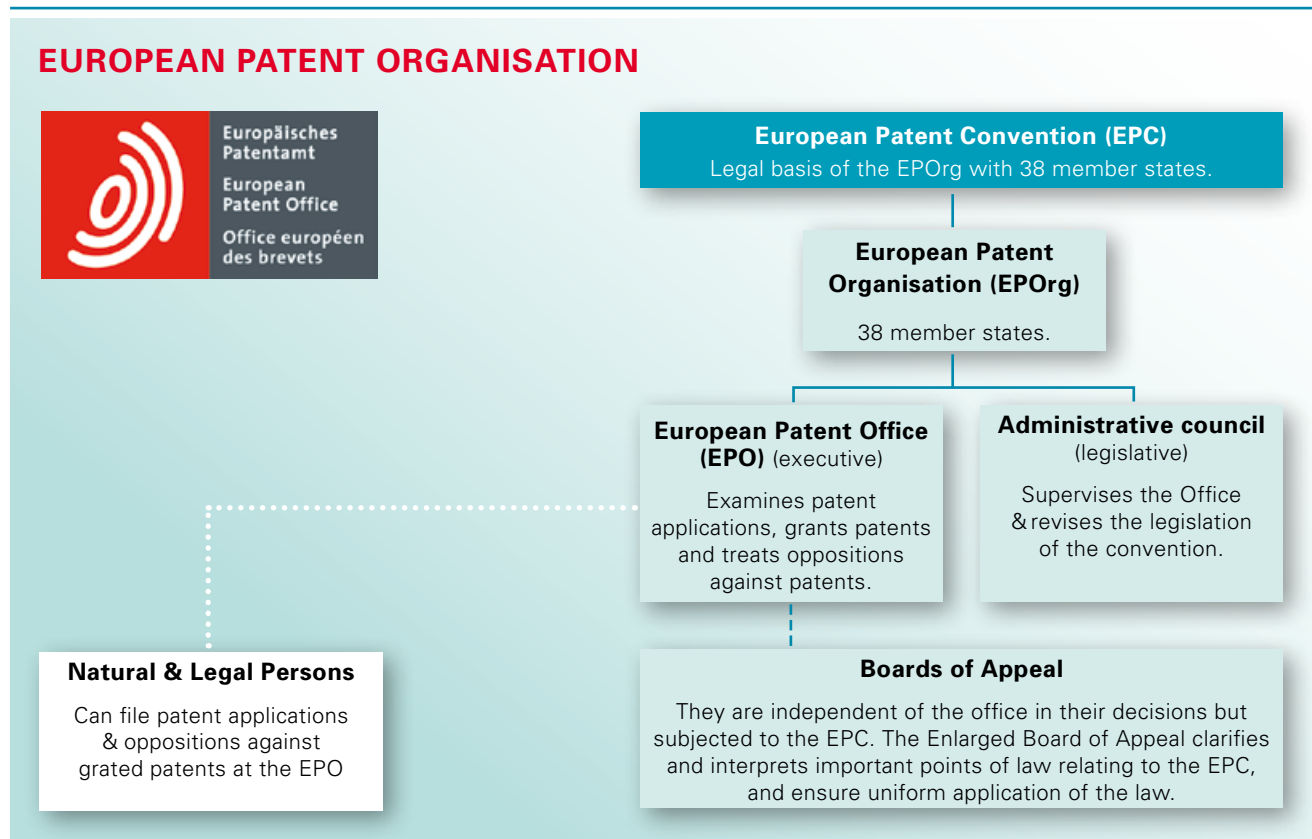
THE EUROPEAN PATENT ORGANISATION

The European Patent Convention (EPC) of 1973 established a legal system to grant patents in Europe. The EPC does not fall under the scope of the European Union and is not subject to the jurisdiction of the European Court. The EPC led to the creation of the European Patent Organisation (EPOrg) in 1977. The EPOrg consists of two organs: One is the EPO, its executive body, which examines patent applications, grants patents, and hears

complaints against granted patents. The other organ is the Administrative Council, its legislative body. The Administrative Council oversees the EPO's activities and can revise the legislation of the EPC. To date, the organisation has 38 member states. Patents that were granted by the EPO are valid in all 38 member states, and as far as they are mentioned in the application, the required fees have been paid and the claimed translations have been made.⁴

MEMBER STATES OF THE EUROPEAN PATENT ORGANISATION

In addition to the 28 member states of the EU, the following states belong to the Organisation: Switzerland, Norway, Iceland, Liechtenstein, Serbia, Albania, Macedonia, San Marino, Monaco and Turkey.



EXCEPTIONS TO PATENTABILITY

The EPC states that plant or animal varieties as well as essentially biological processes for the production of plants and animals are not patentable.

EPC ARTICLE 53B

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; this provision shall not apply to microbiological processes or the products thereof.



Keystone

The seat of the European Patent Office in Munich.

THE BIOTECH DIRECTIVE AND ITS CONSEQUENCES

Up until the late 1990s, this article (Art. 53b of the EPC) was interpreted such that plants and animals cannot be patented. The turning point was the approval of the Directive on the Legal Protection of Biotechnological Inventions (98/44 EC) by the European Union in 1998. This directive still excludes plants and animals from patentability (Art. 4.1.). But in practice, it allows patents on plants and animals if the implementation of the invention is not technically restricted to a certain plant or animal variety but can be applied to a range of varieties (Art. 4.2.). This is like saying that marriage is forbidden but polygamy is allowed.

In 1999, the directive was incorporated into the implementing regulations of the EPC. Partly as a result of this, the number of filed and granted patents on plants increased significantly. Within ten years, over 1000 patents on plants were granted. This also includes patents on conventionally bred plants – plants that were bred without the use of genetic engineering.

THE BROCCOLI AND THE TOMATO CASE

Recently, two cases, a patent on broccoli plants (EP 1069819) and a patent on tomato plants (EP1211926), led to a debate on principles about the patentability of essentially biological processes for the production of plants and animals. In 2010, the Enlarged Board of Appeal – the highest legal decision-making body of the EPO – decided that patents on conventional breeding methods, that cross the entire genome, are prohibited (Decision G2/07 and G1/08). As a result, the claims were rephrased so that they do not refer to processes but instead to the products deriving from those processes. It must now be decided whether or not the products deriving from conventional breeding methods are patentable. The corresponding decisions (G2/12 and G2/13) by the Enlarged Board of Appeal are still pending. Nevertheless, more patents on conventionally bred plants were granted in 2013, such as Syngenta's patent on pepper plants.



REASONS AGAINST PATENTS ON SEEDS

Patents on seeds are unethical. They benefit multinational corporations at the expense of farmers and breeders. They hinder innovation, lead to decreasing agricultural biodiversity, and pose a risk to our food security.

> LIVING ORGANISMS CANNOT BE INVENTED // Plants and animals evolved over millions of years by natural selection. Various breeding methods allow us to manipulate this process. This means we can alter plant and animal varieties according to our wishes. However, we cannot invent them. A living organism cannot, also from an ethical point of view, be the intellectual property of a company.

> INCREASED MARKET CONCENTRATION // Granting such patents allows corporations to exclude their competitors from the market and thus further promotes market concentration in the seed sector. Small and intermediate companies will be displaced by large corporations because they have less financial means to file and force patent applications. This process is further accelerated by the fact that one patent can incorporate many varieties, or the other way around: One variety can be blocked by different patents. For example, there is a patent on lettuce that incorporates at least 158 different varieties.⁵

> CONTROL BY A FEW INTERNATIONAL CORPORATIONS // This means that the competition will be eliminated and only a few corporations will control the proprietary seed market and thus the basis of our food. Today, only 10 corporations own about 75 % of

the international seed market. The three largest, Monsanto, DuPont and Syngenta, control over 50 % of the market. In the case of peppers, only two international companies, Monsanto and Syngenta, own almost 60 % of all protected varieties in Europe.⁶

> INCREASED PRICES FOR FARMERS AND CONSUMERS // Through the monopolisation of the seed market, corporations are free to determine the prices for their seeds, at the expense of farmers, and ultimately, consumers.

> LESS INNOVATION // Contrary to the intended purpose, patents on seeds substantially hinder innovation. Breeders and farmers are not allowed to breed using patented varieties without the permission of the patent holder. If permission is obtained, a licence fee must be paid to the patent holder.

> LESS BIODIVERSITY // The diversity of agricultural varieties and wild crops are the main resources for breeders to develop new varieties. If access to this diversity is hindered, there will be less innovation. Less innovation leads to less new varieties there by decreasing biodiversity in agriculture and the choice for consumers.

> ENDANGERED FOOD SECURITY // Given reduced diversity, crops are less capable of adapting to diseases or changing environmental conditions (such as climate

change). Therefore, high agricultural biodiversity is essential for our food security.

> HUNTED FARMERS // Patent infringement can have severe consequences for farmers and breeders. If a farmer planted, saved or sold patented seeds, it does not matter whether he knowingly did so or not. For example, his own seeds may have been contaminated by patented seeds. Especially in the United States there are cases where farmers had to pay out-of-court fees of up to \$35 000 to

Monsanto to avoid criminal prosecution. Additionally, the farmers had to allow Monsanto to take field samples in subsequent years and they had to sign non-disclosure agreements. Other farmers who chose to fight and defend themselves in court were subjected to long and costly legal processes. Not only farmers also breeders and even companies that sell vegetables can be prosecuted.

WHO OPPOSES PATENTS ON SEEDS?

Almost everybody is against patents on seeds. Over the past few years, many different stakeholders have become involved in the fight against patents on plants and animals. The only ones in favour of such patents are the few large agrochemical and pharmaceutical companies that benefit from such patents.



OPPOSING FORCES

EXAMPLES

Farmers’ organisations	Farmers’ organisations all over the world have signed a global appeal against patents on crops and livestock. ⁷
Breeders’ organisations	A European coalition of leading plant breeders, processors, traders and producers stated that the increasing number of trait and breeding-related plant patents will result in fewer plant breeding innovations, further consolidation of the plant breeding industry, and reduced free-dom of choice for farmers, traders, food industry, retail and consumers.⁸ The members of the European Consortium for Organic Plant Breeding (ECO-PB) stated that any patenting of living organisms, their metabolites, gene sequences or breeding processes are refrained from.⁹ The European Seed Association (ESA) stated that allowing patents on plants deriving from essentially biological processes would make the exclusion of essentially biological processes meaningless.¹⁰
Non-governmental organisations (NGOs)	Within the coalition No Patents on Seeds, many NGOs from Europe oppose such patents. No Patents on Seeds is supported by over 300 NGOs and farmers’ organisations around the world. ¹¹
Development countries	Many developing countries have already tried to prevent the patentability of all life forms within the frame work of the WTO TRIPS Agreement.
European governments	In its resolution “No patenting of conventionally bred livestock and plants,” the German Bundestag calls on the federal government to work at the EU level against the patentability of plants and animals. ¹²
Civil society	Two million people signed a petition from Avaaz, requesting the Administrative Council of the European Patent Organisation to enact clear and effective laws to protect consumers and farmers, and not to grant companies patents on plants or conventional breeding methods. ¹³

SYNGENTA’S PEPPER PATENT

On May 8, 2013, the European Patent Office granted a patent on insect resistant pepper plants. The patent applicant is Syngenta, the world’s largest pesticide producer. The resistance derives from a wild pepper plant from Jamaica that was crossed with commercial pepper plants from Syngenta using conventional breeding methods. A broad coalition has filed an objection against this patent at the European Patent Office.

THE SCOPE OF THE “INVENTION”

On April 4, 2008, Syngenta applied for a patent on insect resistant pepper plants at the European Patent Office. Five years later, after Syngenta had to alter its claims in several procedures, it was granted the patent (EP 2 140 023 B1). All pepper plants of the species *Capsicum annuum*¹⁴ (such as sweet peppers and chilli peppers, among others) that are intermediate (i.e. partially) resistant to infestations by whiteflies (*Bemisia*) fall within the scope of the patent. The claims include the seeds and fruits of the plants, as well as the method of producing those plants, fruits and seeds.¹⁵

PEPPERS, THEIR PESTS, AND PROTECTION MEASURES

Pepper plants belong to the nightshade family. They include sweet peppers, chilli peppers and jalapeño peppers, and are consumed as vegetables or spices. Overall, the commercial value of peppers amounts to approximately 500 million dollars per year. However, the plants are susceptible to various insect pests that can cause substantial crop damage and, consequently, commercial losses. Among the most severe pests for peppers are thrips and in a smaller extent whiteflies, which attach themselves to the plants and suck out the contents. They can also act as a vector for plant viruses that cause further damage to the plants. To reduce insect damage biological or chemical control can be used. But these measures can be costly, time-consuming and – in the case of chemical control – ecologically damaging. Therefore farmers that grow those crops welcome resistant varieties.

WHAT SYNGENTA DID

Syngenta achieved the insect resistance by means of marker-assisted breeding (or SMART breeding). This is a conventional breeding method based on crossing and selection that is supported by technical means, such that the desired traits – in this case insect resistance – can be identified and specifically transferred into the progeny. In contrast to genetic engineering, no foreign genes are introduced into the DNA, so that the desired traits must already exist in a plant in order to be selected for breeding. In the case of the pepper patent, the insect resistance was found in a wild pepper plant originating from Jamaica. Therefore Syngenta did not invent the resistance, but only transferred it from a wild plant into a commercial plant.

The patented plants from Syngenta are now intermediate resistant to the infestation of whiteflies and/or thrips. However, Syngenta had to drop the claim of thrips resistance during the patentgranting procedure, because thrips resistance in pepper plants was already documented in the literature¹⁶. Thus, the criterion of novelty for the granting of a patent was not given.

WHY THIS PATENT IMPEDES INNOVATION

Anyone who wants to breed a pepper with white fly resistance needs permission from Syngenta. But even if



Jamaican wild pepper



Protest against patents on life in front of the European Patent Office.

someone intends to breed thrips resistant pepper varieties and therefore wants to use the wild pepper from Jamaica, they risk infringing on Syngenta's patent if the resulting plants are also resistant to whiteflies. In other words, the use of the wild pepper or other plants with the same resistance for breeding risks patent infringement. Thus, the pepper patent from Syngenta hinders progress and innovation in plant breeding.

WHY THIS PATENT SHOULD BE REVOKED

Why do we believe that this patent should be revoked under current regulations?

- > Syngenta's patent claims a resistance that derives from a natural plant; therefore it is a discovery, and not an invention.
- > What Syngenta did in the framework of the pepper

patent was to breed a novel variety. Plant varieties are however not patentable under European patent law.

- > Syngenta's pepper plant is the result of essentially biological processes (conventional breeding methods) that are not patentable according to Art. 53 b) of the EPC. Therefore, products deriving from such processes must not be patentable either; otherwise the ban to patent essentially biological processes would be meaningless, as it could be easily circumvented by patenting the products deriving from those processes.
- > Syngenta's pepper plant is based on the commercial development of insect resistance that exists naturally in a wild pepper plant from Jamaica. Thus, Syngenta commercialized a wild plant trait, without benefit sharing with the country of origin. This is commonly referred to as biopiracy.

BIOPIRACY // Biopiracy refers to the acquisition and commercial development of naturally existing resources (such as plant substances) and/or related traditional knowledge through a technologically advanced country or organisation without providing fair compensation to the countries or indigenous peoples on whose territory

the resources were originally discovered and who passed on said knowledge for generations.

Two forms of biopiracy can be differentiated. One form refers to the illegal access to genetic resources and/or traditional knowledge. This means there was no Prior Informed Consent (PIC) and no benefit sharing.

The other form of biopiracy refers to the illegitimate behaviour in the sense of the patent law. This means that something was patented that is not new, that already existed before and was known. This can be a plant or a specific application of traditional knowledge.

OUR DEMAND: NO PATENTS ON LIFE!

Humans, animals, plants and microorganisms must not be patentable.

AS FIRST STEPS TOWARDS AN ABSOLUTE PROHIBITION WE CALL FOR:

- > Syngenta's pepper patent to be revoked by the EPO.
- > the Enlarged Board of Appeal to reject patents on conventionally bred plants by means of the pending decisions G2/12 and G2/13.
- > the Administrative Council of the EPO to change the basis of patenting at the EPO, such that patents on conventionally bred plants are no longer granted.

PATENTED

WHAT WE DO:

- > The publishers of this report and many organisations across Europe have filed an opposition to this pepper patent at the EPO.
- > The coalition of No-Patents-on-Seeds lobbies the Administrative Council of the EPOrg to change the basis of patenting at the EPO in order to exclude patents on conventional bred plants.

OPPOSITION

WHAT YOU CAN DO:

- > Share this brochure and raise awareness about the problems of patents on seeds.
- > Ask your government, parliament and politicians to speak out against patents on seeds.
- > Ask your supermarket if the vegetables are patented varieties.
- > Support local farmers.
- > Support No Patents on Seeds.

- 1 The UPOV Convention was adopted in 1961 in Paris and came into force in 1968. It was last revised in 1991. The UPOV Convention led to the creation of the International Union for the Protection of New Varieties of Plants (UPOV), in 1961. The UPOV is an intergovernmental organisation with headquarters in Geneva. The objective of the UPOV is to provide plant variety protection for new plant varieties. To date, the organisation counts 71 member states. New members agree to implement laws on plant variety protection in line with the 1991 Act of the Convention.
- 2 Farmers' rights are defined by the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA).
- 3 In 2012 five patents on conventional plants have been granted. In the first eight months of 2013 at least ten patents have been granted. Only in September 2013, after serious protests, the President of the EPO decided to stop further patents, until pending decisions are taken on cases

concerning patents on broccoli and tomatoes by the enlarged board of appeal.

- 4 More information about the EPO can be obtained here: www.epo.org/about-us/organisation.html.
- 5 This data can be obtained from the Pinto Database. Pinto stands for Patent Information and Transparency Online and has been created to make the patent status of plant varieties publicly accessible: <http://pinto.azurewebsites.net>
- 6 Richter, T. (2012). Strukturen und Entwicklung des Schweizer und internationalen Marktes für Saatgut am Beispiel ausgewählter Gemüsesorten. Bio Plus AG, Seon: www.evb.ch/cm_data/Saatgutmarkt_Juni_2012.pdf
- 7 www.alt.no-patents-on-seeds.org/index.php?option=com_content&task=view&id=1&Itemid=27
- 8 www.eco-pb.org/fileadmin/ecopb/documents/ecopb_PostitionPaperOrganic-PlantBreeding.pdf
- 9 European Seed Association (2012). Written statement regarding case G2/12: www.euroseeds.org/publications/position-papers/intellectual-property/esa_12.0823/
- 10 European Seed Association (2012). Written statement regarding case G2/12: www.euroseeds.org/publications/position-papers/intellectual-property/esa_12.0823/
- 11 www.no-patents-on-seeds.org
- 12 www.no-patents-on-seeds.org/sites/default/files/news/bundestag_de.pdf
- 13 Avaaz (2013). Monsanto vs. Mother Earth. https://secure.avaaz.org/en/monsanto_vs_mother_earth_loc
- 14 Not to be mistaken with black pepper (*Piper nigrum*).
- 15 The patent on insect resistant plants is hereafter named "pepper patent." The patent with all the claims can be found here: www.ip-watch.org/weblog/wp-content/uploads/2013/05/EPO-Patent-Pepper-May-2013.pdf
- 16 See Maris et al. (2003). Thrips resistance in pepper and its consequences for the acquisition and inoculation of tomato spotted wilt virus by the western flower thrips. *Phytopathology*, vol. 93, p. 96–101.

no patents on seeds



NO-PATENTS-ON-SEEDS // The No Patents on Seeds coalition was initiated by the Berne Declaration, Greenpeace, Misereor, No Patents on Life, Swissaid and the Norwegian Development Fund, and campaigns for a clear regulation in patent law to exclude from patentability plants and animals, genetic material and processes for breeding of plants and animals and food derived thereof. The initiative is supported globally by over 300 NGOs and farmers' organisations.

www.no-patents-on-seeds.org/en



THE BERNE DECLARATION // The Berne Declaration (BD) is a Swiss non-governmental organization which aims to combat the root causes of poverty, not only its effects. As part of a worldwide network of human rights groups, environmental and development organizations, the BD promotes a more equitable, sustainable and democratic North-South relations since 1968. The Berne Declaration is an independent organization, financed for the most part by its 24 000 members and donors.

www.evb.ch/en



SWISSAID // One of Switzerland's leading aid organisations, SWISSAID was founded in 1948. Swissaid is involved in cooperative development projects in nine countries, influences policy-making on development in Switzerland, and informs people about the causes of poverty and under-development. Swissaid has 137 staff worldwide, 31 of whom work in Switzerland.

www.swissaid.ch/en



BIONEXT // Bionext is the Dutch chain organisation for sustainable, organic agriculture and food. It promotes the collective interests of the Dutch organic sector, on a national and European level. The organisation acts as a spokesperson for Dutch organic farmers, producers (including organic seed companies), traders and organic shops. One of the core tasks of Bionext is advocacy on legislation issues relevant to organic agriculture and food.

www.bionext.nl

