DO NEW PLANT BREEDING TECHNIQUES HAVE A FUTURE IN EUROPE?

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With the support of
The European Court of Justice is expected to decide soon about the future of the so-called new plant breeding techniques (NPB Ts) in Europe.

The term describes a number of scientific methods for the genetic engineering of plants to enhance traits like drought tolerance and pest resistance.

At issue is whether these techniques should be classed as GMOs and, therefore, fall under the strict GMO approval process.

The agri-food industry and farmers say the EU should open the door to these techniques and help agriculture face challenges like climate change and rising food demand.

On the other hand, environmentalists insist that these techniques are harmful to health and environment and accuse the big agri-food multinationals of trying to bring these "hidden GMOs" in Europe.
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New plant breeding techniques concern law interpretation, Commission says

By Sarantis Michalopoulos | EURACTIV.com

The future of new plant breeding techniques (NPBTs) at the EU level lies in the European Court of Justice’s interpretation of existing law, Health Commissioner Vytenis Andriukaitis told EURACTIV.com, adding that the executive will act accordingly at the political level.

“It’s an issue related to the interpretation of existing law. The European Commission has no right to interpret the law and this is the difficulty. We can present an opinion but not to say something is okay or not. It’s about law interpretation and this is in the hands of the European Court of Justice,” the EU health chief said.

He added that it’s not going to be a decision but a law interpretation, and then we can “move forward one way or another”. The term NPBTs describes a number of scientific methods for the genetic engineering of plants to enhance traits like drought tolerance and pest resistance.

At issue is whether these techniques should be classed as GMOs and, therefore, fall under the strict GMO approval process.

Supporters of NPBTs argue that plants obtained through these...
techniques could also be the product of conventional cross-breeding techniques that mimic natural processes and hence cannot be considered genetically modified organisms (GMOs).

On the other hand, opponents insist that these techniques should fall under the GM legislation and accuse the agri-food industry of trying to bring GMOs in Europe through the back door.

It seems that the ECJ’s ruling on the issue will also determine the Commission’s stance. The court ruling on the “mutagenesis” case was expected in May, but sources told EURACTIV that it would most probably be published in June.

A Commission source recently told EURACTIV that the executive hopes for “important” clarity on the scope of GMO legislation.

In January 2018, ECJ Advocate General Michal Bobek published his opinion, saying that mutagenesis is, in principle, exempted from the obligations in the GMO directive. His opinion is not binding but is rarely ignored by the Court.

The Advocate General’s opinion was hailed by EuropaBio, which represents the biotech industry groups in the EU.

“The advocate general’s opinion demonstrates that necessary steps are being taken towards clarifying the regulatory status of products that have been developed using the latest biotechnological tools and applications. We trust that the forthcoming ruling will contribute to establishing regulatory clarity,” said John Brennan, EuropaBio’s secretary-general.

FARMERS CALL FOR ‘LEGAL CERTAINTY’

Along the same line, EU farmers call for a “certain” legal framework in order to invest in these new techniques, which they consider crucial to face increasing environmental challenges, such as floods and drought, as well as increased food demand due to the rise of population.

“We need to develop new plant varieties which are, for example, resistant to water and heat stress, as a way to adapt to climate change,” said Thor Korfoed from EU farmers’ union Copa-Cogeca.

In addition, EU farmers have warned policymakers that unless immediate action is taken, Europe will lag behind the US when it comes to biotechnology.

On 28 March, the US Department of Agriculture (USDA) decided not to regulate plants that could otherwise have been developed through traditional breeding techniques, as long as they are not plant pests or developed using plant pests.

“If we don’t act now, we will put ourselves in the hands of a few multinational American companies,” Copa said.

But for Greenpeace, there is no such a danger as GM regulation has always been very different between the US and the EU.

“That hasn’t disadvantaged EU farmers in any way in the past, and we don’t expect that it will in the future,” Greenpeace told EURACTIV.

NOT ALL QUESTIONED WILL BE ANSWERED

Greenpeace’s hope is that more and more EU farmers will be able to offer food that is completely GM-free.

“Consumer demand for such food is strong, and GM-free labelling schemes are expanding quickly. That should be a strong motivation for farmers to steer clear of the dead-end road that GM farming represents in the US and a handful of other countries.”

Franziska Achterberg, food policy director at Greenpeace EU, said the court’s decision would not answer all the questions about what is in or out of the scope of the EU’s GMO law, as it will concern the scope of the mutagenesis exemption.

“In the end, it is up to the European Commission and EU national governments to properly apply the law. This is the bare minimum that Europeans should expect. But so far, the Commission has dragged its feet. It has yet to explain, for example, how the EU will ensure that there will be no imports of new GM crops without mandatory traceability and labelling.”

Achterberg also added that there would be other relevant court rulings, such as in the German case about Cibus’ gene-edited oilseed rape, which may help further in defining the scope of the EU’s GMO law.
The new plant breeding techniques (NPBTs) are a major opportunity to move toward sustainable agriculture and simultaneously ensure food quality for EU consumers, MEP Paolo De Castro told EURACTIV.com. According to De Castro (S&D), the EU should embrace innovation more and more in order to boost food production and cut the environmental impact of farming.

“In this sense, plant breeding innovation holds enormous promise for helping protect crops against drought and diseases while increasing nutritional values or eliminating allergens.”

NPBTs concern a number of scientific methods for the genetic engineering of plants to enhance traits like drought tolerance and pest resistance.

Critics say they should fall under the GM legislation while supporters say the methods do not transfer any gene from one plant to another but rather accelerate modifications that could happen in nature and therefore, should not be regulated as GMOs.

A European Court of Justice (ECJ) ruling is expected soon on “mutagenesis” method. In theory, the

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court’s ruling will provide more clarity about the EU policy framework for these techniques.

“NPBTs can be crucial in the challenge to ensure enough, safe and quality food not only to all European consumers but also at the global level,” the Italian politician emphasised.

De Castro said he expected the court decision to encourage innovative and sustainable plant breeding, also in consideration of a similar US decision on the issue.

The socialist MEP insisted that it is mainly a legal decision, as the arguments taken into account are exclusively science-based.

“These techniques simply replicate natural evolution processes and hence cannot be managed – from a legal point of view – in the same way as traditional GMOs.”

This argument, though, is opposed by Greenpeace, which believes that if these techniques were not regulated under the EU’s GMO law, the existing legislation would be insufficient to adequately control the risks they pose to the environment.

Referring to an analysis conducted for the German Federal Agency for Nature Conservation (BfN), Greenpeace claims that existing policies do not guarantee a level of protection comparable to that of the genetic engineering law, neither individually nor collectively.

“Crops that have had their genetic makeup modified through genetic engineering techniques like CRISPR/Cas or ODM clearly fall within the scope of the EU’s GMO law. An exemption from the EU’s GMO law would have no legal basis,” Franziska Achterberg, the food policy director at Greenpeace EU, told EURACTIV.

Achterberg warned that this would mean letting GM crops onto the EU market without risk assessment, consumer labelling or detectability.

“People would find it impossible to know for sure what they are eating and how it was produced. It would impede on the right of breeders, farmers, traders and retailers to go GM-free. The recently acquired right of EU countries to ban GM crops at the national level would also become meaningless.”

THIS OPPORTUNITY ‘CANNOT BE MISSED’

Environmentalist NGOs say the new techniques will also damage farmers by depriving them of their right to seeds and therefore increasing their dependency on multinational companies.

But for De Castro, it is rather the contrary.

“If we do not act now and support this kind of innovation, putting them under the GMO regulation we will put ourselves in the hands of a few multinational companies that already control a major part of the market.”

He said that in a simplified regulatory framework, European farmers, in close connection with universities and research institutes, could take advantage of plant breeding to significantly improve the crops they produce in a natural and sustainable way.

“Intervening on the agronomic and qualitative characteristics of plants will allow us, on the one hand, to decrease the use of chemical and nutritional inputs, thus reducing the environmental footprint of agriculture, and on the other, to improve production efficiency and increase food safety,” De Castro said.

The Italian MEP added that farmers and breeders needed to work together and be increasingly innovative in order to deal with the challenge of food security, namely feeding a growing world population with limited resources and increasingly unforeseeable weather conditions.

“I am convinced that such innovations represent an opportunity we cannot miss to better protect biodiversity and drive a real sustainable intensification of agriculture and food production,” he concluded.
abelling products that result from the so-called new plant breeding techniques would provide little new information and would therefore make no sense for consumers, Garlich von Essen, secretary-general of the European Seeds Association (ESA), told EURACTIV.com.

New plant breeding techniques (NPBTs) focus on developing new seed traits within a given species through genetic engineering. The European Court of Justice (ECJ) is expected soon to decide on whether these techniques would fall under the GM legislation or not. “Product labelling makes sense only where it gives additional information on the quality or specific characteristics of products. But where products resulting from the latest breeding methods are the same as products resulting from conventional breeding, i.e. are identical as regards their qualities and specific characteristics, such a label would not provide any substantial additional information,” von Essen said.

The biotech industry says no foreign DNA is present in the genes of seeds obtained through NPBT and thus they should not be considered GMOs. On the other hand, environmental NGOs call these techniques “hidden GMOs” and say they should be labelled as such.

Considering that Europe has shut the door to GMOs, the discussion about these techniques has heated up in Brussels ahead of the crucial ECJ ruling.

Von Essen insisted that the legislator introduced labelling requirements for GMO plants only, since these are not only clearly distinguishable from conventional plants by their genetics, but generally

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require specific additional measures such as post-market monitoring.

He admitted, though, that the debate around plant breeding innovation should be developed and stressed that the seeds industry is working to establish a “reasonable and meaningful information and communication exchange”.

The US recently said it has no plans to regulate plants that could otherwise have been developed through traditional breeding techniques “as long as they are not plant pests or developed using plant pests”.

In the rest of the world, some South American countries have adapted their legislation to the latest developments in plant breeding.

Argentina has legislation in place while Brazil, Colombia and Chile are in the process of establishing it.

According to ESA, these countries are following Argentina’s example, which basically means that they use a case by case or, more precisely, a category-by-category approach.

“They generally follow the principle that products that could have also been produced by conventional breeding methods or occur naturally, e.g. mutagenesis techniques or allele replacement by cis-genesis are not subject to GM regulations,” ESA said.

On the other hand, Nina Holland of the Corporate Europe Observatory (CEO) noted that without labelling, consumers but also plant breeders, farmers and food processors were losing their ability to make well-informed decisions about the products they use.

She said that the Dutch Parliament has adopted a resolution calling for continued labelling of products of new techniques, even if they get to the market without safety checks.

“But the Trans Atlantic Consumer Dialogue (TACD) has argued in its statement on the topic, safety checks must be in place to assess the risks to the environment, human health and animal welfare before products derived from these new techniques are placed on the market or released into the environment. Otherwise, the integrity of, and trust in, the EU food chain will be further at risk.”

Holland said the biotech industry’s spin was focused on creating a distinction between ‘old GMOs’ and products from new GM techniques.

“But current EU GMO rules consider the source of DNA inserted (‘foreign’ or not) as irrelevant; it is the technique used that matters. New GM techniques like Crispr-Cas, ODM and zinc-finger nuclease (ZFN) are different from selection breeding. Off-target effects have to be investigated, such as the question whether the cuts made in the DNA only affect the intended target site or also others,” she noted.

She also referred to a statement by scientist organisation ENSSER, which said these techniques could be used repetitively, or in combination.

“One individual change might seem indistinguishable from one arising in nature, but collectively they can lead to an organism that is entirely different. Also, if these products were really ‘indistinguishable’ from what could occur in nature, this begs the question of why corporations are applying for patents as if they were inventions,” Holland said.

In January, ECJ Advocate General Michal Bobek published his opinion saying that one type of NPBT (mutagenesis) is, in principle, exempted from the obligations in the GMO directive. His opinions are not binding, but are rarely ignored by the Court.

The European Commission has said it expects “important clarity” on the GM scope from the ECJ decision. However, the current court case refers to mutagenesis only.

But for ESA, when the Advocate General provides a differentiated view on the products resulting from mutagenesis, he builds different categories.

“We feel that with this differentiation he is quite in line with the basic principle that also we as the breeding sector see as decisive: a product that could also have been produced by conventional breeding methods or by nature itself should not be regulated as GMO,” Von Essen said.

He added that if the Court follows the Advocate General in this principle, which is laid down in the GMO definition of the directive, this can also be applied to products resulting from other new breeding methods.

“This should then help the Commission, and most importantly the member states and their respective authorities, to apply this principle also for plants resulting from other new breeding methods.”

THE NEXT CAP

According to ESA, the NPBTs will also have a crucial role to play in the post-2020 Common Agricultural Policy (CAP) objectives, considering that it will focus on environmental objectives, reducing the impact of agriculture and requiring farmers to deliver also on public goods.

The EU executive is expected to present its proposals on the next CAP in the coming weeks.

Mitigating the environmental impact of EU farming will take centre stage in the next CAP and for this reason, ESA says the EU agriculture’s economic competitiveness should be further strengthened.

“Excellence in agricultural research and applying the results will be decisive to achieve both, the economic and societal objectives […] the latest breeding methods definitely have huge potential to contribute to these ends, e.g. by more quickly providing varieties with improved pest or disease resistance,” Von Essen concluded.
EU farming community divided over new plant breeding techniques

By Sarantis Michalopoulos | EURACTIV.com

The EU should embrace the new plant breeding techniques as the best chance to supply enough food for the EU's population, according to mainstream EU farmers. But organic farmers oppose this and a lot may depend on a European court ruling due before the summer.

The relevant European Court of Justice (ECJ) case, dealing with new plant breeding techniques (NPBT), was expected this month but sources recently told EURACTIV it was going to be delayed, probably for June.

An ECJ source explained that the Court's decision on a case is normally made within 2-4 months after the publication of Advocate General's opinion, which in this case was last January.

The same source noted that sometimes the process takes longer and there is no firm date yet for this particular case.

The Commission has made clear it sees it as a pure case of interpreting the law; However, EU farmers expressed their fear last year about a “politicised” decision.

FOCUS ON MUTATION

Pekka Pesonen, secretary-general of the biggest farmers' association in the EU (Copa-Cogeca), highlighted the importance of plant breeding innovation in agriculture and food production in the EU.

He explained that every year farmers are restricted in the use of plant protection products. The lack of approval of new or old plant protection products is a huge problem for farmers.
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who need to produce enough crops and of the required quality.

“The biggest difficulty is the resistance to pesticides that can be a fatal problem for food production as a whole. Some of the pesticides we can learn to replace with alternatives such as mechanical weed control. But for fungal diseases and insect attacks, there are currently no alternatives to pesticides,” Pesonen said.

Copa and Cogeca believes that all plant breeders in the EU must make every effort to embrace faster and better breeding techniques.

“It is crucial that breeders in the EU get access to all the necessary plant breeding technologies (NBT). EU farmers cannot wait for the normal time of 12-15 years that it takes to breed a new variety and with the huge uncertainty that results from conventional processing techniques.”

“NBTs must be used immediately for mutation breeding as it is the plant’s own DNA being worked on and must therefore naturally be excluded from the GMO Directive. By doing this, a new variety where NBT is used for mutation, of course, must only undergo a normal variety testing by CPVR and, of course, can in no way contain any patents at all,” Pesonen emphasised.

He said that if the EU takes this step in spring 2018, we have a chance to supply enough food for the EU’s population.

“It is essential that all breeders have free access to the breeding material so that all small and medium-sized breeders in the EU can freely breed in a free market. We have to divide the discussion between NBTs on mutation and modification. We can take the discussion about NBTs on modifications later on.”

ORGANIC FARMING ‘UNDER THREAT’

On the other hand, EU organic farmers (IFOAM EU) firmly oppose the NBPTs. They believe they should clearly fall under the GM scope, otherwise, the organic sector will be dealt a severe blow.

“The organic sector will have to face a situation where genetic modification techniques, excluded from organic farming, could be released into the environment and the food chain but be exempted from any traceability and labelling requirements,” IFOAM noted.

A similar position is shared by the European Coordination Via Campesina (ECVC), a farmers’ organisation that defends farmers’ rights and sustainable farming, which says these new biotechnology-driven techniques, excluded from organic farming, could be released into the environment and the food chain but be more dependent on multinational seed corporations.

“The name has changed but the sanitary and environmental hazards remain the same,” they said.

The Corporate Europe Observatory (CEO) fears that the patents to emerge from these techniques, considered necessary for innovation by the biotech industry, will basically increase the pressure on farmers by making them more dependent on multinational seed corporations.

“Other innovation pathways exist. Many researchers, plant breeders and farmers are collaborating on agro-ecological methods to increase biodiversity in food crops, developing more resilient varieties and promoting food sovereignty. The decisions about the direction in which solutions for our food system are sought and about what research is needed is a political one, and concern society at large,” CEO’s Nina Holland told EURACTIV.

Socialist MEP De Castro recently said that these techniques would improve food quality and help tackle the rising demand for food.

“Intervening on the agronomic and qualitative characteristics of plants will allow us, on the one hand, to decrease the use of chemical and nutritional inputs, thus reducing the environmental footprint of agriculture, and on the other, to improve production efficiency and increase food safety,” De Castro told EURACTIV.

However, Holland explained that food quality can be improved in many different ways but it’s crucial to first restore soils and make food more nutritious, as well as boost the diversity of plants we eat.

“Currently enough food is being produced, however, it is not accessible to all and produced unsustainably. Enormous amounts of food are being wasted or are very inefficiently used to feed intensive livestock industry,” she said adding that food systems should be more focused on the local level.

As for new genetic engineering techniques, she said their proponents are making wild claims about their benefits but it seems that the old herbicide-tolerance trait is still industry’s number one priority.

“Cibus’ oilseed rape, the first product commercialised from a new technique, has been made tolerant to sulfonylurea-based herbicides and BASF has told the media that it expects to develop herbicide-tolerant seeds using Crispr-Cas,” she said, referring to genome editing.
The European Court of Justice (ECJ) should “normally” decide on the future of the so-called new plant breeding techniques (NPBTs) before the summer break in July. However, no date has yet been set, a source close to the issue told EURACTIV.com.

“Considering that the Advocate’s General opinion was in January, the Court’s decision on the case should be in July, before the summer break,” the source said, emphasizing that no date has been mentioned so far.

If there is no judgement in July, the ECJ will publish it in September, the source added.

The term NPBTs describes a number of scientific methods for the genetic engineering of plants to enhance traits like drought tolerance and pest resistance.

Critics suggest that these techniques should fall under the GM legislation and accuse the agri-food industry of attempting to bring “hidden” GMOs to Europe from the back door.

On the other hand, backers of these techniques argue that plants obtained through these techniques could also be the product of conventional cross-breeding techniques that mimic natural processes and hence cannot be considered GMOs.

Advocate General Michal Bobek issued his opinion last January, saying that organisms obtained by mutagenesis – the case which is under examination – are, in principle, exempt from the obligations in the GMO directive.

His opinion is not binding but it rarely differs from the Court’s final judgment.

The European Commission expects the outcome of this Court judgment will bring more clarity in the GM definition. It will then decide accordingly upon the future of these techniques in Europe but insists it’s a “law interpretation”.

In an interview with EURACTIV, Jim Collins, the chief operating officer of Corteva Agriscience, the Agriculture Division of DowDuPont, said that growers would improve water utilisation or even crops with NPBT – something they were not able to do before.

Referring to Europe in particular, he cited wheat as an example of a crop whose productivity we have not been able to improve.

“It’s hard for me to speculate about the exact outcome of the ECJ. At the end of the day, I do believe that we have some new plant breeding techniques that can dramatically improve the speed of things that we already do today,” he emphasised.