

Europe's highest court last week controversially ruled that crops edited using techniques like CRISPR will be regulated in the same way as genetically modified organisms (GMOs), in a development that could have significant implications.



Trade obstacles, a stifling on the development of new technology and an impact on the EU's ability to engineer food have been listed as some of the potential consequences of the ruling.

The decision was a shock for the scientific community, the [United States Department of Agriculture \(USDA\)](#), and the crop development industry.

Garlich Von Essen, secretary-general at the European Seed Commission, told Fresh Fruit Portal that if exporter countries such as Brazil, Argentina, the U.S. or Chile don't consider products developed using CRISPR to be GMOs, then they wouldn't regulate them as such.

"Then the big question is how would you organize the import of such products into Europe," said Von Essen.

As he sees it, the same situation that they have today with GMO food imports would occur with gene edited imports.

He also explained there would be lengthy delays in authorization in Europe, explaining that these techniques would be used not for one or two products, but for many.

Furthermore, as they can't be detected with a normal GMO testing kit, the process of identifying them would be complex.

The ruling may therefore result in "new, non-tariff barriers for agricultural commodity trade," said Beat Späth, director for agricultural biotechnology at EuropaBio.

Innovation

For Späth the ruling runs the risk of stifling innovation.

"In addition to providing consumer and environmental benefits, innovations made possible by genome editing would hold enormous promise to keep Europe at the forefront of socio-economic development, continuing to generate jobs and growth in the EU," he said.

Johnathan Napier, a researcher at the Rothamsted Institute in the U.K., said that he was "genuinely surprised that it was so clear and so definitive to say that all genome edited material and product of the breeding's technologies would be classified as GMO, as opposed to something that would have been the product of mutagenesis".

Mutagenesis is a process by which the genetic information of an organism is changed, resulting in a mutation. The [New York Times](#) reports that scientists began firing X-rays at plants or using chemicals that disrupted plant DNA in the 1920s.

Scientists inspected the mutants to find those that were improvements. Thousands of plant breeds in use today, from strawberries to barley, are the product of mutagenesis, the publication reports.

Napier, who is a pioneer in plant biotechnology and an advocate for the power of GM plants to deliver benefits for the public, explained that a GMO is something that has foreign DNA added to it, such as a transgenic plant.

Gene editing, on the other hand, has no foreign gene. The CRISPR-Cas9 enzyme modifies the DNA sequence or cuts a part of it, but once is edited you are left with a plant with no foreign genes present.

In contrast to the EU, the U.S. does not consider editing a plant's DNA with CRISPR to be genetic modification, because these crops are "indistinguishable from those developed through traditional breeding methods," according to a USDA statement in March.

Napier said that the EU ruling will put a stop to basic research in Europe, as "everybody knows that the regulatory approval process is long and quite political".

Industry

For the future of the agricultural industry, the ruling threatens to have an impact on the EU's ability to engineer food, according to Späth.

"The EU's GM policies do not provide the legal certainty and predictability needed by EU public and private researchers to effectively contribute to and deliver the innovations

needed to respond to challenges such as improving food security and nutrition or adapting to climate change,” he said

With that in mind, consequences may not be seen over the next couple of years, but Von Essen there will be a long-term impact.