

# In post-GMO era, EU faces gene tech dilemma

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LONDON (Reuters) — Heat-tolerant Angus beef cattle designed for the tropics with white coats instead of black or red. A button mushroom that doesn't turn brown. Pigs that don't fall sick.

These are all ideas thrown up by gene editing, the new technology taking the biomedical world by storm, and one which also promises a revolution down on the farm.

It poses a thorny problem for European policymakers wary of new molecular manipulation in agriculture after a quarter century of conflict over genetically modified food.

In a research lab in Norwich, 160 kilometers northeast of London, Wendy Harwood is making exact DNA tweaks in barley plants to produce better-germinating grain, with higher yield and quality.

“We've never been able to go in and make such a precise change as we can now with gene editing,” said the John Innes Centre scientist. “This gives you exactly the change you want without anything you don't want.”

Further to the south of England in Basingstoke, animal genetics firm Genus has tapped the same “CRISPR-Cas9” technique to develop the world's first pigs resistant to a devastating and common viral disease, in a tie-up with U.S. researchers.

Bright ideas from others include improved varieties of rice, soybeans and tomatoes, as well as hornless cattle and the heat-tolerant breed of Angus.

Using “molecular scissors” to cut DNA means scientists can edit genomes more precisely and rapidly than ever before, and agricultural products — which don't need the same clinical trials as human drugs — could get to market relatively quickly.

Last month, a non-browning button mushroom became the first CRISPR-edited organism to get a green light from the U.S. government.

But whether such products will ever arrive on European farms is another matter, since the European Commission has so far not made a decision on how they will be regulated, leaving the new science in limbo.

The EU executive had been due to decide by the end of 2015. The deadline was missed, and there is now no new timeline for a decision.

Greenpeace wants the EU's GMO law to be fully applied to "new breeding techniques" (NBT) like gene editing, because of potential environmental and health impacts, and it fears Brussels is dithering under pressure from Washington. A spokesperson believes the EU has delayed regulation to pave the way for a transatlantic trade deal.

A Commission spokesman denied the delays had anything to do with the Transatlantic Trade and Investment Partnership trade pact talks, but could not say when the EU would make a ruling.

Biotechnology companies, meanwhile, argue their gene-edited products are "non-GMO," since they do not contain foreign DNA from a different species.

"We fundamentally see gene editing as being very distinct from GMO," said Genus Chief Executive Karim Bitar. "It's a very precise cut and there is no movement of genes from one species to another. That's a major attraction."

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