Gene-edited beef cattle get regulatory clearance in US

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U.S. regulators on Monday cleared the way for the sale of beef from gene-edited cattle in coming years after the Food and Drug Administration concluded the animals do not raise any safety concerns.

The cattle by Recombinetics are the third genetically altered animals given the green light for human consumption in the U.S. after salmon

and pigs. Many other foods already are made with genetically modified ingredients from crops like soybeans and corn.

The cattle reviewed by the FDA had genes altered with a technology called CRISPR to have short, slick coats that let them more easily withstand hot weather. Cattle that aren't stressed by heat might pack on weight more easily, making for more efficient meat production.

The company did not say when home cooks or restaurants might be able to buy the beef, but the FDA said it could reach the market in as early as two years.

Unlike the salmon and pigs, the cattle did not have to go through a yearslong approval process. The FDA said the cattle were exempt from that because their genetic makeup is similar to other existing cattle and the trait can be found naturally in some breeds.

Dr. Steven Solomon, director of the FDA's Center for Veterinary Medicine, said the agency's review of Recombinetics' cattle took several months. He said there's no reason meat from the animals or their offspring would need to be labeled differently.

Solomon said a genetically altered animal marketed as having a special advantage—such a higher than normal ability to withstand heat—might need to go through the full approval process.

"This opens up a completely different pathway," he said, noting the decision could be encouraging for other biotech companies, many of which are small startups.

The gene-edited trait in the Recombinetics cattle can be passed down so semen and embryos from them could be used to produce offspring with the same shorter coats.

The trait will make beef production more sustainable and to improve animal welfare in warmer climates, Recombinetics said in a statement without providing further details.

Greg Jaffe, who specializes in biotechnology at the Center for Science in the Public Interest, said the FDA's announcement made clear it wasn't exempting all gene-edited animals from the longer approval process.

"They reinforce the idea that this is a case-by-case review," Jaffe said.

He said the agency should be more transparent about the review process so people know what's in the works. That could lead to better public acceptance and minimize any potential economic disruptions from global trade, since other countries might consider the animals genetically modified foods that need to be labeled, he said.

Jaydee Hanson, of the Center for Food Safety, said the agency should keep track of the animals for several generations to ensure there aren't any unintended issues.

The genetically modified pig is intended mainly for medical purposes, not meat, according to the company that developed it. The firm recently provided a pig heart that was transplanted into a dying man in an experimental surgery.

The company behind the modified salmon said the fish are being sold to distributors in the Midwest and Northeast.

Alison Van Eenennaam, an animal geneticist at University of California, Davis who has worked with Recombinetics, said requiring all companies to go through the lengthy approval process could end the possibility of commercializing gene-edited animals in the U.S.

For the gene-edited cattle cleared by the FDA, she said it could take about two years for beef from the offspring to reach the market.

Once the semen is used to create embryos, she said gestation would take about nine months and the resulting calves might be slaughtered after about 10 months. She noted the market isn't limited to the U.S., given the way cattle are bred.

"Let's face it, bull semen goes all over the world," she said.

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