



DIVE BRIEF

FDA approves GMO cattle for food

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Megan Poiniski
Senior Reporter

Dive Brief:

- The FDA has determined that meat from cattle bioengineered to have shorter hair — known as a slick coat — poses a low risk to consumers who eat it. This is the first time the FDA has made a low-risk determination in a bioengineered animal for food use, the department said.
- The bioengineered cattle has a genetic trait that is naturally occurring and is sometimes passed on to offspring. Cattle with a slick coat tend to do better in warmer climates. In the case of the bioengineered cattle, the genes were altered using CRISPR technology by precision breeding firm Acceligen.
- While there are several ingredients and food items from bioengineered plants on the market today, there have been more regulatory hurdles for animals to be approved. Since 2017, animals genetically modified for food have been under the FDA's purview and regulated with the same scrutiny as new drugs.

Dive Insight:

While genome editing using CRISPR has been done for nearly a decade, the technology has largely not come to the animals people in the United States eat. Just two other genetically modified animals have been approved for use as food — AquAdvantage salmon in 2015 and GalSafe pork in late 2020. AquAdvantage salmon, which has been modified with DNA from an ocean pout fish to grow faster, first hit the market last May, and is only currently available through one U.S. distributor. While GalSafe pork is FDA-approved for use in food, the pigs were primarily developed for medical uses.

Considering that the "slick" gene was first pinpointed by USDA scientists in 2008, who found developing shorter hair to be a potential boon to cattle in warm temperatures, it's no surprise that this genetic modification is the first to make it through the full regulatory process. The Associated Press reported that the regulatory process for this genetic modification was shorter than that for AquAdvantage salmon and GalSafe pigs because the genetic makeup is similar to other cattle and the slick coats are found naturally in some breeds.

This low-risk determination from the FDA — a tacit approval from a regulatory standpoint — could be game-changing. Or it could be something that biotech advocates put on a timeline, but it doesn't make a difference in the food system. The impact of the decision depends largely on what meat companies, food distributors, retailers and foodservice outlets decide to do with it.

In a statement, Steven Solomon, director of the FDA's Center for Veterinary Medicine, said that the safety

decision on this intentional genomic alteration — abbreviated by the department as IGA — underscores the federal government's commitment to using a science and data-based process focused on the health and safety of both animals and consumers to analyze this type of product.

"We expect that our decision will encourage other developers to bring animal biotechnology products forward for the FDA's risk determination in this rapidly developing field, paving the way for animals containing low-risk IGAs to more efficiently reach the marketplace," Solomon said in the statement.

From the biotech standpoint, it sounds promising. But among consumers, there is a vocal and active community that opposes genetically modified and bioengineered foods of all kinds.

The concerns from this community is why it took six years from the time AquAdvantage salmon was approved for safe consumption to the time it first appeared on the market. In 2016, a coalition of groups representing fishermen, environmental and salmon advocates and food sustainability proponents sued the FDA for approving the salmon for consumption. The advocacy groups argued that the FDA had not spent enough time analyzing what threat AquAdvantage salmon would pose to wild populations if accidentally released. In November 2020, a federal judge ruled that the FDA should have given more consideration to these potential risks and ordered the department to reconsider the environmental assessment, but did not nullify the government's approval.

Outside the court, however, non-GMO advocates had

done other work to slow sales of AquAdvantage salmon. Petition drives and protests that came shortly after FDA approval of the fish led many retailers to ban the GMO fish years before it became available. In 2017, The Center for Food Safety released a list of 81 retailers, six seafood companies and six restaurants and chefs that made policies against selling genetically engineered seafood.

It will take a minimum of two years for the bioengineered cattle to be available for food, the FDA said in the statement. That's plenty of time for an opposition campaign to mount or for biotech activists to launch a PR campaign about the benefits of bioengineered food animals. It's also plenty of time for more genome edited food animals to receive FDA approval. The fight over GMOs has mellowed somewhat since 2015, with the federal government now mandating disclosure of the presence of some bioengineered ingredients on labels, but there are still deep feelings among consumers and advocates. What happens next will show how much — or how little — sentiments have changed.

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