

Is Lab-Grown Meat Really Meat?

A labeling war is brewing.

[Rose Eveleth](#) July 11, 2018 8:32 AM



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After centuries of a veritable monopoly, meat might have finally met its match. The challenger arises not from veggie burgers or tofu or seitan, but instead from labs where animal cells are being cultured and grown up into slabs that mimic (or, depending on whom you ask, mirror) meat. It currently goes by many names—in-vitro meat, cultured meat, lab-grown meat, clean meat—and it might soon be vying for a spot in the cold case next to more traditionally made fare. To put it bluntly: the kind that comes from living animals, slaughtered for food.

Cultured-meat manufacturers like [Just Inc.](#) and [Memphis Meats](#) are hoping to provide consumers with meat that is just like its predecessor, that tastes and looks and feels and smells exactly the same as something you might get in stores today but will be more sustainable. Whether that will turn out to be true [won't be clear for some time](#). But there's another, more immediate battle heating up between the cattle industry and these new entrants into the meaty ring. So buckle up and put on your wonkiest hat, because the labeling war is about to begin.

In February, the U.S. Cattlemen's Association wrote a [petition](#) to the U.S. Department of Agriculture, asking the government to ban cultured-meat companies from using the terms *meat* and *beef* at all. In response, a rival cattlemen's association, the National Cattlemen's Beef Association, wrote a letter opposing the petition. Cultured-meat companies also opposed the petition, for probably obvious reasons. In May, the Missouri Senate [passed an omnibus bill](#) that included a provision that "prohibits misrepresenting a product as meat that is not derived from harvested production livestock or poultry," and on June 1, then-Gov. Eric Greitens signed the bill into law before stepping down.* The Food and Drug Administration will be hearing comments about [cultured meat](#), including how it should be labeled, in a public meeting on Thursday.

This is not be the first time that food products meant to imitate or replace more traditional fare have faced questions about their labeling. In 1869, margarine was invented by a French chemist. As the butter replacement spread to the United States, [dairy farmers raised the alarm](#). At the time, butter cost about 25 cents a pound, and margarine was roughly half the cost. "I would make the tax so high that the operation of the law would utterly destroy the manufacture of all counterfeit butter and cheese as I would destroy the manufacture of counterfeit coin or currency," declared Wisconsin Rep. William Price. David Henderson, a representative from Iowa, compared margarine to the witches' brew in *Macbeth*.

They [convinced the U.S. government](#) to tax margarine at 2 cents a pound and lobbied against the use of yellow dyes to make the butter replacement look more buttery. By 1900, it was illegal in 30 states to dye margarine yellow, and a handful of states went even further, dictating that margarine had to be dyed an unappetizing pink. Canada outright banned margarine until 1948.

The rise in vegetarian and vegan food options in supermarkets has given us a few more examples of mimics and their labels. [Soy milk and almond milk](#) have been a thorn in the side of the dairy lobby for [more than 15 years](#). The Soyfoods Association of America [petitioned the FDA back in 1997](#), asking for permission to call their products “soymilk,” starting a long battle between soy manufacturers and dairy farmers. Dairy farmers object to these beverages being called *milk*, but thus far the FDA hasn’t done anything to stop brands from using the word.

But the debate over cultured meat is also fundamentally different from these earlier case studies, because unlike margarine or soymilk, cultured meat is biochemically identical to the substance it’s competing with. Which makes the question of labeling all the weirder and more complicated.

The fight over how to label these products gets wonky pretty fast, but you can boil the debate down to three main questions: Who is going to make the rules, who gets to use the word *meat*, and what else should the labeling language say?

Let’s start with jurisdiction, since it’s the wonkiest bit and we can get it out of the way pretty quickly. The USDA and the FDA both could have some say in how these products are labeled. The two agencies both deal with food and safety and labeling, but they have slightly different scopes. The FDA regulates drugs and dietary supplements, but it is also in charge of making sure that the foods on the market are “safe, wholesome, sanitary and properly labeled.” The USDA is responsible for overseeing agriculture in the U.S. and handles the labeling and safety of meat products. A

representative from the Food Safety and Inspection Service arm of the USDA told me that FSIS “has jurisdictional authority over food labeling for products containing meat and poultry.”

So the question of who is going to dictate the labeling of cultured meat is something of a riddle, because it really depends on whether you see cultured meat as meat. From a production standpoint, cultured meat is more in line with the way that drugs and supplements and additives are made in a lab, and that would make the FDA more qualified to oversee things. But from a final product standpoint, if the lab-grown meat is going to wind up on the shelf next to the traditionally slaughtered stuff, it seems like the USDA should take charge.

This might seem like boring bureaucracy, and it sort of is, but it could make a big difference to the cattle industry’s fight. The two agencies have different track records when it comes to labeling. The FDA has allowed almond milk and soymilk products to keep their names, despite [constant lobbying and lawsuits](#) from the dairy industry. And it recently allowed Just’s [eggless mayo replacement](#) to use the term *mayo* on its packaging, even though the FDA’s own standards of identity define mayonnaise as “the emulsified semisolid food prepared from vegetable oil(s) ... acidifying ingredients ... and one or more of the egg yolk-containing ingredients.” That decision might pave the way for how the FDA sees cultured meat, since Just is also one of the major players on the lab-grown meat front.

Is meat the muscle of an animal? Or is it the remains of a living creature? If the former, this lab-grown stuff is meat. If the latter, it’s not.

All these decisions haven’t gone unnoticed by the cattlemen. While the U.S. Cattlemen’s Association and the National Cattlemen’s Beef Association

don't agree on whether the upstarts should be able to use the word *meat*, they would both prefer to see the USDA in charge. "USDA has a long-standing history of allowing only science based legally defensible principals," says Danielle Beck, the director of government affairs at the National Cattlemen's Beef Association. In the letter opposing the U.S. Cattlemen's Association petition to ban cultured-meat companies from using the word *meat*, the National Cattlemen's Beef Association wrote, "Unfortunately, FDA has an established record of haphazard enforcement and a long-standing history of turning a blind eye to the law."

There's a bit of a funny tangle here for the U.S. Cattlemen's Association, though. If it wants the USDA to take the reins, the product has to be considered meat. But it doesn't want the product to be considered meat.

Either way, it's looking like the FDA might indeed be the one to steer this ship. In the statement announcing the Thursday meeting to hear comments on the cultured-meat question, the FDA suggested that it would likely be the one making decisions about cultured-meat labels, writing "both substances used in the manufacture of these products of animal cell culture technology and the products themselves that will be used for food are subject to FDA's jurisdiction and applicable statutory and regulatory food safety and food labeling requirements." If the FDA takes the reins here, cattlemen worry that they won't get what they want when it comes to labeling.

But what do they want, exactly? It turns out that different cattle lobbying groups want different things. This brings us to our second question, which is less bureaucratic, and more philosophical: What is meat anyway? Is this cultured meat truly meat? Should it be called *meat* in the first place? The lab-grown meat companies I spoke with are clear on their answer to this question: yes. "Our products meet the statutory definition of meat," Eric Schulze, the vice president of product and regulation at Memphis Meats, told me by email. "Does it comes from an animal? Does it have the same

biochemical makeup as meat? If yes, then it's meat," says Josh Tetrick, the CEO of Just.

The cultured-meat companies also point to existing definitions on the books for meat that don't preclude their products in any way. The [Federal Meat Inspection Act](#) defines meat this way: "the part of the muscle of any cattle, sheep, swine, or goats which is skeletal or which is found in the tongue, diaphragm, heart, or esophagus, with or without the accompanying and overlying fat, and the portions of bone (in bone-in product such as T-bone or porterhouse steak), skin, sinew, nerve, and blood vessels which normally accompany the muscle tissue and that are not separated from it in the process of dressing." Under this admittedly unwieldy (and unappetizing) definition, meat grown in a lab from animal cells counts as meat.

Of course, not everybody agrees that it should be called meat. Warren Love, one of the representatives in Missouri behind the state bill that would ban companies like Just and Memphis Meats from using the term *meat*, says, "We have no problem with them producing it, manufacturing it, whatever, we just don't want it to be labeled as, and kind of hijack the name of meat. Meat is from a harvested animal." Love, who's a cattle rancher himself, says that without protecting the term *meat*, these new entrants into the market might dilute the goodwill that the beef industry has built up among consumers. "I guess you would call it protecting your brand," he says. "I'm an old cowboy and I ride for the brand."

The U.S. Cattlemen's Association's petition to the USDA homes in on this argument, asking the department to create a new rule that specifically defines meat as "the tissue or flesh of animals that have been harvested in the traditional manner." But that itself, specifically the "harvested traditional manner" part, isn't defined in the petition. When I spoke with Lia Biondo, the director of policy and outreach for the U.S. Cattlemen's Association, she clarified for me: "Harvested in the traditional manner

means slaughtered at a slaughterhouse.” But the term *slaughterhouse* doesn’t appear at all in the USCA petition, and some have raised concerns that this “traditional manner” definition might come back to bite the industry. Without a clear definition, detractors worry that defining *meat* this way might preclude the use of advanced technologies in the future. “That could prevent us from utilizing innovative breeding technologies or gene editing,” says Beck.

If your eyes are glazing over at this point, you’re not alone. Amid all these long and unwieldy definitions and mental gymnastics, it’s easy to lose sight of the point of all of these labels in the first place. The reason the FDA or the USDA has these standards and definitions is to make sure that consumers aren’t confused. When they reach for a container that says it’s milk or butter or eggs or mayo, they should get what they think they’re getting.

“We don’t want someone else who’s in there to buy bacon to pick up a product just by sight and by name, and not even read the label. And then get home and think ‘Ew, this is something grown in a lab,’ ” says Warren Love. “We just want that type of product to be labeled so it’s not confusing for someone who wants to purchase the nutritious wholesome meat.”

So the real, big question here is what consumers think meat is. When people buy meat, what do they think they’re getting? Does the average consumer consider meat to be animal flesh? Or does she imagine a cow being sent to slaughter? Is meat the muscle of an animal? Or is it the remains of a living creature? If the former, this lab-grown stuff is meat. If the latter, it’s not. There isn’t really any data on this, so each party in this fight is free to assume that their preferred answer is the correct one.

“We see it all the time: There’s imitation vanilla, there’s real vanilla,” Biondo says. “Personally, I’m cooking with real vanilla. Imitation crab and real crab, very different products, they’re labeled as such. We don’t think this is a novel request, that these companies have to operate under the

same rules.”

But the question at hand here is more complicated. Artificial crab is made from [an entirely different animal](#). Cultured meat is made from the same animal, simply in a different way. Josh Tetrick, the CEO of Just, says that in any other situation, we wouldn't be even having this debate. Think of electric cars, he says. The engine in an electric car is completely different from a traditional combustion machine. But we still call them *cars*. “Can you call an electric car a *car*? Of course you can! It's a fucking car! It has tires and it takes you from place to place! It's made up of the components we think of as a car.”

The FDA hasn't said what it will do about the *meat* terminology, but if its past history is any indication, it's not unreasonable to guess that these cultured-meat companies will be allowed to use the terms *meat* and *beef*. And if they do, the U.S. Cattlemen's Association won't be happy. “I have to say that this would be considered a loss,” Biondo told me.

But her counterpart at the National Cattlemen's Beef Association isn't worried about the terms *beef* and *meat*, as much as she's concerned with the additional words that might be on cultured-meat packaging. “Our biggest goal is preventing the term *clean meat*,” Beck told me. “The term *clean meat*, to me it's not science based, it's not legally defensible, it's not helpful to consumers, and ultimately it's inherently disparaging to traditional beef products.”

And this brings us to the last big question in this labeling war. Assuming they're allowed to call their product *meat* (and I think that's a fair assumption to make), what should the additional words and labeling be to clarify what kind of meat it is? Some cultured-meat advocates are pushing *clean meat*, arguing that this lab-grown meat is better for the environment. Others will likely go for *cultured meat*, a less controversial term. The FDA will almost certainly require additional labeling on packages, explaining that the meat is not made how most consumers are used to.

What those additional terms and phrases might be are still to be seen, but we can look to the Just Mayo decision for clues. Tetrick's company [was asked to do a better job of explaining](#) what "Just" meant on the label. It had to make the fact that the product was egg-free bigger and more obvious on the package and the little cracked-egg logo smaller. So for meat, companies might be asked to add clarifying language to their packaging that explains that the meat was grown in a lab. They might not be allowed to use images of whole cows on the package, either. Most likely, companies will put out products with certain labels, and those labels will be reviewed and course-corrected by the FDA.

And the companies I spoke with weren't opposed to being clear about what their product is, and how it's different from traditional meat. They believe they're creating something that consumers will want to buy, after all. And they're hoping that people who want meat but don't feel great about traditional meat slaughter and production will seek out their labels. "We want to talk about it, it's an important thing, an exciting thing, and consumers will be excited about it," Tetrick told me. Schulze added that "as a new entrant into the marketplace, we know that we have a lot of work to do to introduce ourselves, our process, and our product to regulators, industry partners, and consumers. We are committed to being transparent about our products and how they are made."

What these companies don't want is to be legally mandated to use these terms and explanatory labels. Because eventually, the idea is that this kind of meat will replace slaughterhouses all together. Tetrick says that he hopes to one day see lab-grown meat next to traditional meat without any kind of disclaimers.

The cattlemen groups say they don't mind companies like Memphis Meats and Just entering the market, but they want them to be clearly demarcated as a separate product. "We're happy to compete for the center of the plate with any other protein out there, whether it's chicken, a black bean burger,

a plant-based burger that bleeds and sizzles like real meat, or whether it's a lab-grown meat product, but ultimately our goal is ensuring consumers have enough information on hand to make informed decisions," Beck told me.

So far, these meat products aren't widely available, and few people have tried them. Those who have admit that, for now, lab grown meat isn't quite the same as the slaughtered stuff. "It had a familiar mouthfeel," [one taste tester said of the first ever lab-grown burger](#) back in 2013. "It's close to meat, but it's not that juicy," said another. None of the cattlemen association affiliates I spoke with had ever tasted cultured meat. But they are confident their product is superior, and always will be. And they want the labeling to reflect that. Warren Love, the Missouri state representative, said he probably wouldn't even try cultured meat if he was offered. "No. I like Coca-Cola. I like the real thing. I'm particular about my food. I don't even eat chicken nuggets. They're all meat, but they're ... I've seen it made and I don't want to eat it. But I do like a hot dog, and I love Spam."

Correction, July 11, 2018: This article originally misstated that the Missouri bill prohibiting the representation of products "not derived from harvested production livestock or poultry" as meat had not yet become law because the governor had yet to sign the legislation. Then-Gov. Eric Greitens did sign the legislation on June 1.