Tuesday, March 12, 2024 / The real fight over fake meat

[HALF SECOND OF SILENCE]

[BILLBOARD]

DAVID PIERCE (guest host): Artificial meat grown in labs…aka “lab meat” has had a heck of a year.

Last June the FDA approved two lab meat startups to sell their stuff to the general public.

*<CLIP> GOOD MORNING AMERICA: “Cells kept on ice can be replicated on a large scale. Fed a mixture of vitamins, fats sugar and oxygen in tanks, growing into tissues of chicken…”*

DAVID: But good luck finding it on the menu. The meat alternative is now facing technological setbacks and political blowback.

KENNY: "There are a number of red states moving to ban some cultivated meat altogether, and even at the federal level, there are some policymakers working to ban it in school lunches."

DAVID: Fake meat’s real problems — ahead on Today, Explained.

<CLIP> JIM MILLER, ALABAMA FARMER: “It strikes me that something grown in a petri dish is not as wholesome and good as beef raised on the farm that we’ve been raising for thousands of years.”

[PREROLL]

[THEME]

DAVID TRACKING: It’s *Today, Explained*. I’m David Pierce filling in as host today. I’m here with reporter Kenny Torrella, Vox's man on the meat beat. Kenny, what’s new with lab meat?

KENNY: Well its taking a lot of political heat. Arizona, Tennessee, West Virginia, Alabama and Florida all have bills that are moving through their state legislatures to simply just ban the production and sale of cell-cultivated meat altogether.

*<CLIP> RON DESANTIS: “”we need meat and we’re not going to have fake meat in Florida. We aren’t going to have fake meat! That doesn’t work!*

KENNY: And then at the federal level, you have a bill to ban the sale of cell cultivated meat through the National School Lunch program.

*<CLIP> KCAU: “The school lunch integrity act of 2024 would prohibit lab grown meat in the government supported programs…”*

KENNY: And one funny thing about all of this is that the Tennessee bill goes so far to say that if you sell cell-cultivated meat in the state of Tennessee, you will be fined $1 million in violation.

DAVID: It's a real like Doctor Evil, like $1 million kind of move here.

KENNY: Yeah,

*<CLIP> DR EVIL (AUSTIN POWERS): “Throw me a frickin’ bone here!”*

DAVID: Why are we doing this?

KENNY: If you look at what policymakers say when they introduce these bills, they're kind of two main reasons.

SCORING IN—UPTOWN DUCK STRUT

~~\~~the surface level reason is that they are raising concerns over food safety. You know, the Florida bill sponsor said that there are just too many unknowns about this novel technology. We need to slow it down.

*<CLIP> FLORIDA STATE REP DANNY ALVEREZ: “ Simply put, its safety. There is no long term safety data on cultivated protein….so we’re just gonna pump the brakes…”*

KENNY: these startups only launched about ten years ago. But, you know, they've gone through a lengthy review process with regulators who deemed it safe to eat. Really, what's most likely going on is that this is just being further churned up in the culture war. So, you know, it's kind of being served up as red meat for the base, but it also plays well to rural America. You know, most meat, egg and dairy is produced in red states. Not all, but most of it in it can be an effective tactic during an election year to kind of throw a bone to the farmers and ranchers and also rile up the base with, you know, political red meat, so to speak.

SCORING OUT

DAVID: So at some level, this is pure politics. What do you make of those politics? What would you chalk that up to?

KENNY: So you have lawmakers basically saying outright,

*<CLIP> SENATOR MIKE ROUNDS: “ WE just want to make sure that our livestock producers in the upper midwest aren’t being challenged to compete with cultured meat….”*

KENNY: And I think it goes to this term that food industry reformers have coined called agricultural exceptionalism, in which the agriculture sector doesn't have to play by the same set of rules as the rest of the economy. When it comes to environmental regulations, consumer protections, because it's seen as this essential product that is made by humble farmers and ranchers who are salt of the earth and can do no wrong. And there's this kind of cone of silence around it in that whether you're from a red state or blue state, you can't criticize agriculture, whether it's big or small AG. that's not only prevalent on the right, but it's also quite prevalent on the left. So just as a recent example, you have Senator Tammy BALDWIN, a Democrat from WISCONSIN, who's introduced a bill that would make it illegal for plant based milk companies to use the word milk on their products.

*<CLIP> WTMJ NEWS: “US SENATOR Tammy Baldwin supported the Dairy Pride act, to stop plant based drinks from stealing the good name of Wisconsin milk...*

KENNY: You couldn't call it soy milk. It would have to be soy beverage or soy drink.

DAVID: which sounds much Grosser than soy milk.

KENNY: Yeah. In fact, Trader Joe's, their almond milk is called almond beverage. You also have Senator John Fetterman, you know, a Democrat from Pennsylvania who's introduced a similar bill about vegan eggs. Those companies can't use the word egg on their product, according to this Fetterman bill.

*<CLIP> TIK TOK: “can’t even have an egg sandwich! I’m done, I’m done!”*

KENNY: And, of course, you know, Pennsylvania is a major egg producer, so there's a lot of protectionism going on around here. And historically, Republicans have received a lot more money from big AG than Democrats. It's nonpartisan to say, you know, you love me and you want to protect the meat industry. It's an industry that, you know, is kind of above criticism when you compare it to, say, fossil fuels.

DAVID: So this has become a big political fight. But is there anything real that we're actually fighting about yet? Can you actually buy and eat and have this stuff in your fridge yet in any real way?

KENNY: No. And that's kind of the irony of all this. Republicans in these state houses are trying to ban a product that doesn't even exist. You know, after those two startups received regulatory approval last summer, they just weeks later started to sell in two restaurants to two restaurants in the entire country, one in San Francisco, one in Washington, DC.

DAVID: And one of them is not McDonald's.

KENNY: I'm sorry. Yeah, these were more high end restaurants.

*<CLIP> TIK TOK: “This Michilin level fried chicken is made from cultivated meat…That’s right, cultivated….”*

KENNY: They sold them in extremely limited quantities, and they sold them at a loss. And so these sales only occurred for, you know, six months or so. They've since been phased out. So if you had all the money in the world and you wanted to go buy cell-cultivated meat somewhere, you couldn't do it.

DAVID: There's an interesting parallel there to a lot of the stuff that we talk about with climate and environment tech right now, right? There's the problem of solving it once and prototyping the thing. And I think the interesting moment with the lab made, it seems like, was they said, yes, we can do it. We can make something that everyone, even Kenny agrees tastes passably like chicken. But then scaling that up to the size of the meat industry in the United States was always going to be a very different problem. And it seems like, especially now, in a very different and much tighter economy than we were in five years ago. That's a harder problem than everybody might have reckoned for a few years ago and might take longer.

KENNY: Yeah, no company has come close to scaling this technology. A lot have these proofs of concept and can produce it on a very small scale. But nowhere close enough to, you know, see it on supermarket shelves or restaurant menus and really compete with the industry that they're trying to go up against.

DAVID: Why is it so hard to scale? On the one hand, it seems like it would be easier because you don't have to breed generations of cows or chickens and find a place to put all of them. This seems like on some level, it actually be easier to do at huge volume. Why is it such a hard scale problem?

KENNY: Yeah there’s a few things. So you can first just look at the technical challenges.

SCORING IN—ROWING WESTWORD

So you know for one the ingredients that you have to feed these cells for them to grow and to grow into meat are really expensive. So they need to figure out how to build out a huge supply chain of affordable food for their cells. The second is that it can be challenging to grow massive amounts of this cell, cultivated meat, and prevent bacterial contamination. So they grow them in these big bioreactor tanks.n They're large, large stainless steel tanks. But they can be prone to contamination. And so that's another challenge because if one tiny bacteria infects the batch, it all has to be thrown away. And then, you know, a third challenge is also just figuring out how to make this process more efficient, make the cells grow faster, so that they can cut down the time it takes to produce a batch. Secondly, this is a really capital intensive project. You know, if you think of our meat industry, it's developed over the last. Well, you could argue over the last 10,000 years or so, but…

DAVID: Yeah. We've been doing this a while.

KENNY: Yeah. But over the last century we've seen what we would consider the factory farming or industrialized model really scale. And it's scaled with the help of a massive ecosystem of government research and funding of land grant universities and the cell cultivated meat sector just doesn't have that infrastructure. And it would also take it decades and decades to get the capital to build these massive factories. So there's all of these kind of technical and economic realities that are stacking up to kind of cause this reckoning moment within this sector that the promises they made over the last decade, that this is around the corner that we're going to be able to start to scale, is once we get regulatory approval, just aren't going to come to fruition just yet. And if this does succeed, it's it's going to be decades from now.

SCORING OUT

DAVID: So it's bad times for alternative meat, really, however you want to look at it both politically and technologically. And just in terms of whether people like it.

KENNY: Yeah, we're kind of in an alternative meat winter. Yeah.

DAVID: Okay. So what does that mean for our non-alternative, non-lab, old fashioned meat consumption.

KENNY: It's going up and up and up. Meat consumption has reached about 225 pounds of meat a year in the United States, which is higher than virtually any other country in the world and is the highest it's ever been in the US. And that has massive implications for climate change in the environment, animal welfare and in public health. And so cultivated meat, along with plant based meats, were really hailed as a way to kind of alleviate these problems that stem from meat production, but without having to change consumer behavior. The thought was you could just change meat itself. And so now you have critics of these industry saying, look, this was never really going to work out. And that theory of change is really in question now.

SCORING IN—USERS LOSE DRUGS

DAVID: Coming up—why the source of our meat matters so much.

[MIDROLL]

[BUMPER]

*<CLIP> CARL’s JR: “What’s more American than a cheeseburger? This cheeseburger, loaded with a hot dog and potato chips in the hands of all American model*

DAVID: David Pierce. I'm filling in as host today on Today, Explained. OK, Kenny, when we left off, you were saying that Americans are actually eating more meat than ever and not the lab grown variety. Remind us why it's such a bad thing that we're eating so much meat.

KENNY: First, there's the environmental case.

SCORING IN—ROWING ONWARD

So if you look at this broadly, there's the climate change aspect of it. There's also the pollution aspect of it.

*<CLIP> FINANCIAL TIMES: “Around 90 percent of Amazon deforestation is the result of livestock production. It’s the number one user of …freshwater worldwide. Plus it’s more greenhouse gas emissions than the whole of the transport sector: planes, trains and automobiles.”*

Looking just at the United States, we raise about 10 billion animals for food. That's mostly chickens. And the emissions come from a few sources, primarily cattle and their belches.

*<CLIP> PBS NEWSHOUR: “In digesting their high fiber diet cows emit methane as a byproduct, making them one of the least climate friendly sources of food on the planet…”*

KENNY: The second is the animals. Manure contains high levels of nitrous oxide, which is also a very potent greenhouse gas. And then we also dedicate a vast amount of land in the United States to growing corn and soy to feed all these animals. And we spray a lot of fertilizer and pesticides to make that corn and soy grow big and fast. But producing all of that fertilizer and pesticide also produces a lot of emissions. So it's the animals themselves, but it's also emissions from all the food we have to feed them.

DAVID: And you mentioned there's also a pollution problem on the other side of this too.

KENNY: Yes. So the 10 billion animals we raised for food, they generate a lot of manure, about 1 trillion pounds annually. That's twice as much as humans in the US. And a lot of that manure ends up in rivers and streams,

<CLIP> IOWA PBS: “In Iowa manure runoff is thought to be a major contributing source *of bacteria which forced beach closures during the summer…”*

KENNY So you have all of this waste, whether it's from the crops or from the the animals themselves, that is, you know, essentially trashing America's rivers and streams.

SCORING OUT

DAVID: So we don't just have a meat problem, we have a pooping, burping animal problem.

KENNY: Yeah. It is, you could call it a really shitty problem if you wanted to. But, you know, it's not just climate change and pollution. It's also resources. You know, it takes an incredible amount of resources to grow all this meat and dairy. We often call the fossil fuel industry extractive You could apply that same word to animal agriculture, which uses. About 41% of U.S. land is devoted to meat and dairy production in one way or another. Most of that is for cattle grazing, but also a lot of it is to grow corn and soy. You know, when you're driving through the Midwest, all that corn and soy, it's not being turned into tofu and corn on the cob. It's mostly being turned into livestock feed.

DAVID: So is this a known thing? I feel like we talk all the time about celebrities in their private jets, and we yell at Taylor Swift for how she moves around the U.S., and everybody's mad at Joe Manchin in West Virginia over coal. But I don't recall any congressional yelling or protests about cattle burping. Why aren't we yelling about this?

KENNY: I think there's a few reasons. One is the reason I mentioned earlier agricultural exceptionalism. You know, you see agriculture exempt from largely exempt from the Clean Water Act and the Clean Air Act. So those laws have been really effective at cleaning up pollution from coal plants from and from factories. But because they're largely exempting factory farms. We just haven't, you know, a huge amount of pollution stemming from meat production that just does not get regulated. But the bigger reason, I would argue, is that this is such a politically sensitive issue, and that has caused most of the environmentalist community to totally avoid campaigning against giant meat companies, to calling for regulations against factory farming to stop pollution, you know, to avoid the science that says rich countries really need to embrace a more plant based diet, to meet the Paris climate agreements. You know, Americans love meat, and no one, even environmentalists, want to be the messenger of this bad news that something that we love to eat is harming the planet, and we need to change.

DAVID: Okay. So it seems clear that you can't environment shame politicians into making new, better laws or people into eating different kinds of meat. Is there another move? Are the folks working on this figuring out some other plan that might work?

KENNY: Well, their response to the factory farming system is not necessarily to go up against it, but try to promote what they call regenerative agriculture.

DAVID: Ooh, what is that?

KENNY: I wish I could easily define it. But there is no formal definition. And if you kind of ask one group, they might define it one way, another group would define it another way. But the way I would kind of define it for, for the lay reader is that it's kind of “Organic 2.0”

DAVID: okay.

KENNY: It's a more holistic way of farming that stands in opposition to the industrialized AG model with, you know, the crowded factory farms and the chemical fertilizers. And it's been championed by, you know, everyone from Joe Rogan

*<CLIP> ROGAN: “And It’a an agriculture where everything works in symbiosis, is that a safe thing to say? WILL HARRIS (farmer) ‘that’s a great thing to say.”*

KENNY: to Representative Alexandria Ocasio-Cortez

*<CLIP> AOC: “Ms. Boyd, indigenous farmers have taken a regenerative agriculture approach to the land for millenia, correct? BOYD: correct.*

KENNY: to Walmart.

*<CLIP> GENERAL MILLS PROMOTIONAL VIDEO: “GE and Walmart have a shared vision to help make farming more sustainable…”*

KENNY: You know, there's a lot of buzz around regenerative agriculture, in the air right now, but its impact and its potential to kind of clean up the problems we've talked about so far are kind of dubious.

DAVID: So what is that focused on? It feels like as we've been talking about this, this industry is huge. It goes a lot of different directions. The folks working on regenerative agriculture, what are they most focused on in this industry right now?

SCORING IN—WOBBLY NEIGHBORHOOD

KENNY: So environmental groups have really honed in on regenerative beef, because beef is the most polluting food product that there is.

DAVID: Because of the burping cows

KENNY: because of the burping cows. Precisely. The whole idea around regenerative cattle ranching is that you have ranchers who are essentially more hands on, and they move cows from one area of a ranch to another area of a ranch periodically. And what this does is that it prevents cattle from overgrazing and destroying landscapes, destroying vegetation~~. \~~And when that happens, the soil can become healthier. There's more abundant vegetation. And here's the point that you can sequester massive amounts of carbon dioxide from the atmosphere.

DAVID: I mean, this seems like a great idea. Is this gonna work?

KENNY: There's one huge drawback to regenerative beef. It requires far more land than conventional meat.

SCORING SPUTTERS OUT

DAVID: Even more?

KENNY: About twice as much or even more, according to the studies that showed a lot of promise. So what that means is that if we were to just switch even a modest amount of current beef production to regenerative beef, it would cause a massive spike in demand for land. And again, remember, we already have 41% of the entire country devoted to growing raising animals for food. If we wanted to go in this direction, we would have to increase that significantly.

DAVID: We'd have like four cities and then farmland, and that would be the United States.

KENNY: It would essentially lead to the United States being one giant cattle ranch. If we were to convert a lot of beef to this style.

DAVID: Okay. So and the only scalable solution, it seems in theory, is just to eat less meat.

KENNY: Essentially. I mean, you know, you could bicker around the edges of all these different solutions. But ultimately, climate scientists have been saying, for decades now that rich countries need to change not only how they farm, but also what they eat. And that means less meat and dairy.

DAVID: Okay, so until now, in this episode, you have convinced me successfully that it is impossible to do that. Convince me now that it's possible.

KENNY: So on many days I believe it is impossible and don't really see our country changing on this. But I think, you know, we can look to Europe for a place that is kind of going through this right now and has seen some successes and, maybe, some warnings for the future of what we might expect if we were to start really regulating factory farms and trying to change the system.

SCORING IN—RAINBOWTIZED

So, you know, in Europe, many environmental groups and even elected officials are pretty progressive on this issue and have been pushing for a reduction in meat consumption. They've been pushing for stronger regulations on factory farms, and it's actually starting to work. So you can look at Germany, where meat consumption has been on the decline since 2011.

*<CLIP> EURONEWS: “According to authorities around 10 percent of Germans are vegetarians, up 4 percent for 2018, and the trend is still on the rise…”*

KENNY: Sweden is experiencing a similar decline. Denmark and a number of other countries have invested, massive amounts of government dollars into trying to boost the plant based food sector, essentially. But at the same time, there's been a lot of pushback to some of these initiatives, especially regulating livestock pollution, where in the Netherlands you have farmers protesting in the streets and setting hay bales, a fire, over policy that would reduce livestock pollution.

*<CLIP> AL JAZEERA: “Farmers have said they want to paralyze the entire country. They have announced they want to block access to the main airports, the situation has been escalating…”*

KENNY: So I think that's a preview as to how politically difficult this issue will be in the US. But it's a policy discussion that we can no longer afford to avoid if we want to have a planet for future generations.

SCORING BUMP

DAVID: Vox reporter Kenny Torrella.This episode was produced by Miles Bryan, edited by Matt Collette, fact-checked by Laura Bullard, and engineered by Patrick Boyd. I’m David Pierce and this is *Today, Explained*.

[10 SECONDS OF SILENCE]