

Executive Order Lays Foundation for Lab-Created Foods

Support of Bioengineered Fake Food Is Now White House Policy

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*September 12, 2022, U.S. President Joe Biden signed an "Executive Order on Advancing Biotechnology and Biomanufacturing Innovation for a Sustainable, Safe and Secure American Bioeconomy." **This executive order makes biotechnology a national priority** across agencies and branches of government. Similar legislation has been introduced in the U.K.*

*In late March 2023, Biden expanded on this premise in a "Bold Goals for U.S. Biotechnology and Biomanufacturing" report. According to this plan, **the food industry is now to be led by biotech**, and the "improvements" we can look forward to are more lab-grown meats and bioengineered plant foods*

Rather than investing taxpayer dollars in regenerative agriculture, which is what could really solve our problems, government is instead backing a whole new industry of fake foods, from lab-grown meats to large-scale insect production

Two cell-based lab-grown meat companies have now received the green light to produce and sell fake chicken in the U.S.

Meanwhile, a Food Hazards Identification report by the British Food standards Agency and Food Standards Scotland, published in March 2023, warns there are "considerable gaps in knowledge" when it comes to cell-based meat production, and many potential hazards

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September 12, 2022, U.S. President Joe Biden signed an "Executive Order on Advancing Biotechnology and Biomanufacturing Innovation for a Sustainable, Safe and Secure

American Bioeconomy.”¹

This executive order makes biotechnology a national priority across agencies and branches of government. As noted in this order, biotechnology will also be used to “improve” food security, sustainability, and agricultural innovation in the U.S.:

“The Secretary of Agriculture, in consultation with the heads of appropriate agencies as determined by the Secretary, shall submit a report assessing how to use biotechnology and biomanufacturing for food and agriculture innovation, including by improving sustainability and land conservation; increasing food quality and nutrition; increasing and protecting agricultural yields; protecting against plant and animal pests and diseases; and cultivating alternative food sources.”

Support of Bioengineered Fake Food Is Now White House Policy

In late March 2023, Biden expanded on this premise in a “Bold Goals for U.S. Biotechnology and Biomanufacturing” report.² According to this plan, the food industry is now to be led by biotech, and the “improvements” we can look forward to are more lab-grown meats and bioengineered plant foods.

In the featured video above, I discuss this rapidly advancing trend, and the true geopolitical incentives behind it, because the U.S. is not alone in moving in this direction. A similar plan is detailed in the U.K.’s Genetic Technology and Precision Breeding Act of 2023.³ Specific goals highlighted in Biden’s “Bold Goals” report include:⁴

- Increasing agricultural productivity by 28% in the next decade
- Reducing food waste by 50% by 2030
- Reducing methane emissions from agriculture by 30% by 2030 by:

1. Capturing biogases from manure management systems
2. Reducing methane emissions from ruminant livestock
3. Reducing methane emissions from food waste in landfills

As reported by Food Dive:⁵

“While advocates and some companies have been working to reduce methane emissions from food, cut down on food waste, increase capacity for producing alternative proteins and use bioengineering to make healthier and hardier crops and animals, goals like these have never before come from the White House ...

The federal government is providing more evidence that it intends to do more than just talk about big goals. A day before the report came out, FDA gave its second tacit approval to a company using biotechnology to grow meat from cells in bioreactors.

While neither ... is creating meat for consumers yet, this action shows that the federal government is moving toward making cultivated meat a reality.”

Government Supports a Failed Strategy

Among the many problems with this plan is the fact that taxpayers will now be paying for government's funding of private corporations involved in the fake food industry. The end result is predictable. What we'll have is a repeat of what happened with farm subsidies.

Rather than subsidizing the most nutritious foods, government farm subsidies go almost exclusively to large monoculture farms growing genetically engineered corn, soy and other basic ingredients used in processed foods. As a result, the processed food industry has grown on our dime while public health has deteriorated.

The same thing will happen here. Instead of investing in regenerative agriculture, which is what could really solve our problems, government is backing a whole new industry of fake foods, from lab-grown meats to large-scale insect production.

Cultivated Meats Get Green-Light

At present, two cell-based lab-grown meat companies have received the green light to produce and sell fake chicken in the U.S. The first, Upside Foods (previously Memphis Meats), received FDA approval for its cell-based lab-grown chicken in November 2022.⁶ According to the FDA's November 14, 2022, memo:⁷

"We have no questions at this time about UPSIDE's conclusion that foods comprised of or containing cultured chicken cell material resulting from the production process ... are as safe as comparable foods produced by other methods."

Dr. Uma Valeti, CEO and founder of Upside Foods, called the approval "a watershed moment in the history of food" and a "major step toward a new era in meat production." The company has a 53,000-square-foot facility in the San Francisco Bay Area capable of producing 400,000 pounds of fake meat per year.

In March 2023, Eat Just — which has been selling its lab-grown chicken in Singapore since 2020 — also received FDA approval. The company is currently building a commercial-scale facility in the U.S. that will house 10 250,000-liter bioreactors.⁸ Vítor Espírito Santo, senior director of Eat Just's cellular agriculture division, told Food Dive:⁹

"The Singapore approval was a big, big deal. But it's undeniable that the U.S., the FDA approval, is something that we were looking forward [to] for many years, and I think it's a big game changer for the industry.

We have two countries now. Hopefully now this keeps happening in more and more jurisdictions, and cultivated meat can become a reality worldwide."

Safety Data Is Sorely Lacking

While the U.S. government is moving full speed ahead with approvals for lab-grown meats, a Food Hazards Identification report¹⁰ by the British Food standards Agency (FSA) and Food Standards Scotland, published in March 2023, warns there are "considerable gaps in knowledge" when it comes to cell-based meat production. As reported by Food Safety News

March 24, 2023:¹¹

“The purpose of the report was to identify hazards in the cultivated meat production process to help inform the FSA risk assessment process for authorization. It was also important that products do not pose any microbiological or chemical concerns. The research was based on a review of scientific literature in 2020.

There was little or no data on the final analytical composition of products, key toxicology data, nutrition profiles, product stability, allergy risk, and any recorded adverse effects when consumed by animals or humans ...

The FSA report found there are several stages of development for producing cultured meat and at each one, different chemicals, biologics, media formulations, additives, and supplements are used. The contamination risk of each input needs to be assessed, as any undesirable components that remain in the final product need to be at an acceptable exposure level or be food-grade and safe.”

Examples of Potential Hazards

Potential problem areas identified by the FSA include:^{12,13}

Contaminated reagents, air or water baths	Poorly cleaned or maintained equipment
Failing to follow cleaning protocols when culturing cells	Failing to follow good laboratory practices (GLP) and/or good manufacturing practices (GMP)
Use of antibiotics, fungicides and/or chemicals that are toxic to humans in the production	Consumption of viruses used in the manufacturing process
Cross-contamination of one cell line into another due to concomitant use of multiple cell lines	Other cross-contamination risks, such as "poor maintenance of equipment, poor cleaning regimes, incorrect storage of cells, working with multiple cell lines in one area, using the wrong cells and incorrect labeling"
New diseases and/or allergic reactions to new proteins due to using cell lines of animals not common in the local diet	Nutritional deficiencies, "as the nutrition profile could be different from what it is replacing"

As noted in the report:¹⁴

“There are many stages of development for producing cultured meat ... from taking a cell line from a small vial or biopsy and increasing the culture volume stepwise in stages (proliferation), until a commercial sized bioreactor can be seeded, to

differentiating the cells to final desired cell type.

Then [they are] maturing them, usually on a scaffold, to increase the protein content, and then detaching/grinding the cells with/from their scaffold to produce a final product that can be used to make meat like cells. At each stage, different chemicals, biologics, media formulations, additives and supplements are used to ensure a successful culture.”

Contamination can occur at any of these steps. Each additive also poses potential risks, both known and unknown, as various byproducts are created in the process. In the video above, I review some of the many potential dangers associated with fake meats.

Considering the multistep processing cultivated meats undergo, it’s simply not possible for it to be as safe as conventional meat, where the primary contamination risks are limited to slaughter, processing, packaging, distribution and storage. With fake meats, hazardous contamination can occur at any point during manufacturing, in addition to these conventional “weak points.”

Fake Meat Is Ultraprocessed Greenwashed Junk Food

Synthetic meat is the epitome of ultraprocessed food,¹⁵ and it seems naïve to think it won’t have health effects similar to other ultraprocessed junk foods. Obesity,¹⁶ Type 2 diabetes, cardiovascular disease, cancer and depression are but a few examples of conditions known to be promoted and exacerbated by a processed food diet.^{17,18,19,20,21}

Ultraprocessed foods already account for up to one-third of total diet-related greenhouse gas emissions. So, how is expanding the manufacturing and consumption of even more ultraprocessed foods going to lower greenhouse gas emissions?

Synthetic foods will likely be an even bigger driver of chronic ill health and early death. Ultraprocessed foods are also completely counterproductive to environmentally “green” and sustainable goals.

For example, ultraprocessed foods already account for 17% to 39% of total diet-related energy use, 36% to 45% of total diet-related biodiversity loss and up to one-third of total diet-related greenhouse gas emissions.²² So, how is expanding the manufacturing and consumption of even more ultraprocessed foods going to lower greenhouse gas emissions? As noted in a September 2022 Journal of Cleaner Production paper:²³

“Ultraprocessed foods are fundamentally unsustainable products; they have been associated with poor health and social outcomes and require finite environmental resources for their production ... are responsible for significant diet-related energy, [and] greenhouse gas emissions.”

And, for all the lip service paid to “equity,” increasing consumption of processed foods will actually worsen economic inequalities, as it redirects money away from small farmers and independent homesteaders to transnational corporations that rely on underpaid workers.

Be Part of the Solution

Ultimately, the answer to food safety and food security lies not in a biotech-centered food system that is controlled from the top down, but rather in a decentralized system that connects communities with farmers who grow real food in sustainable ways and distribute that food locally.

Strategies that can get us there were covered in the Children's Health Defense's March 4, 2023, Attack on Food symposium (video above). Food Sovereignty was primarily covered in Session 3, which begins at three hours and 45 minutes.

For example, Dr. John Day and Beverly Johansson shared tips on how to grow your own food and preserve the food you grow. Other helpful strategies include buying food from local farmers and farmers markets, and creating independent food hubs that cut out the middlemen.

The final session of the symposium dealt with larger societal solutions to fight back against the war on food. U.S. Rep. Thomas Massie highlighted core vulnerabilities in the U.S. food supply, which fell apart during the pandemic when farmers had to euthanize animals because they couldn't get them processed.

Four meatpackers control 85% of the meat that's processed in the U.S. One of them is owned by China, one by Brazil and the other two are multinational corporations. Food prices are going up while farmers are going broke. In 2017, Massie introduced the Processing Revival and Intrastate Meat Exemption (PRIME) Act,²⁴ but the bill hasn't moved since its introduction in the House.

The PRIME Act would allow farmers to sell meat processed at smaller slaughtering facilities and allow states to set their own meat processing standards, because small slaughterhouses do not have an inspector on staff — a requirement that only large facilities can easily fulfill — they're banned from selling their meat. The PRIME Act would lift this regulation without sacrificing safety, as random USDA inspections could still occur.

"If a farmer wants to sell pork, beef or lamb to a consumer, as long as that consumer and that farmer and that processor are all in the same state, they're not crossing state lines, they keep the federal government out of that transaction," he said.

Massey has also introduced legislation to protect access to raw milk (HR 4835, the Interstate Milk Freedom Act of 2021²⁵).²⁶ The bill was introduced at the end of July 2021, as an amendment to the 2018 Farm bill. Contact your representatives and urge them to support these bills.

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Notes

- ¹ [White House Executive Order on Advancing Biotechnology September 12, 2022](#)
- ^{2, 4} [Bold Goals for US Biotechnology and Biomanufacturing March 2023](#)
- ³ [Genetic Technology \(Precision Breeding\) Act 2023](#)
- ⁵ [Food Dive March 23, 2023](#)
- ⁶ [Food Dive November 16, 2022](#)
- ⁷ [FDA Memo November 14, 2022](#)
- ^{8, 9} [Food Dive March 21, 2023](#)
- ^{10, 12} [Food standards Agency Hazards Identification Report November 2022](#)
- ^{11, 13} [Food Safety News March 24, 2023](#)
- ¹⁴ [Food standards Agency Hazards Identification Report November 2022, Page 8](#)
- ¹⁵ [Friends of the Earth, From Lab to Fork, June 2018 \(PDF\)](#)
- ¹⁶ [Cell Metabolism, 2019; doi.org/10.1016/j.cmet.2019.05.008](#)
- ¹⁷ [JAMA Internal Medicine February 11, 2019;179\(4\):490-498](#)
- ¹⁸ [BMJ February 14, 2018; 360](#)
- ¹⁹ [JAMA 2017;317\(9\):912-924](#)
- ²⁰ [BMJ, 2019;365:l1451](#)
- ²¹ [BMJ, 2019;365:l1949](#)
- ^{22, 23} [Journal of Cleaner Production September 25, 2022; 368: 133155](#)
- ²⁴ [HR 2657 PRIME Act](#)
- ²⁵ [HR4835 Interstate Milk Freedom Act 2021](#)
- ²⁶ [Thomas Massie Press Release July 30, 2021](#)

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