# Impossible Burger Meets FDA Bureaucracy

“Meat” grown in a lab is a hot trend right now, with manufacturers jumping over each other in a quest to be in on the next big food craze. Scientists, environmentalists, and entrepreneurs are extremely excited by the prospect of meeting the world’s growing demand for meat with only a fraction of the resources needed by our current factory farming system. One company, Impossible Foods, has been carried away in that excitement. They began selling their soy leghemoglobin derived Impossible Burger in 2016, despite not being generally recognized as safe by the Food and Drug Administration.

## Putting Sustainability First

Cultured “meat” is an enticing proposition. The Impossible Burger uses 95% less land, 74% less water, and creates 87% less greenhouse gas emissions than its cow-sourced counterparts. It’s also free of antibiotics, artificial ingredients, and hormones. This particular cultured meat is made from soy leghemoglobin genes and a genetically modified yeast not unlike that found in common Belgian beers.

Leghemoglobin is a hemoprotein found in the root nodules of leguminous plants – in this case, soy. Once these hemoproteins are broken down, they release heme. Heme contains iron and carries oxygen in the blood, making the veggie burger “bleed” and giving it a meaty texture and flavor. Making the burger entirely out of these root nodules would be expensive and would increase its negative environmental impact, but Impossible Foods, the company behind Impossible Burger, combines the soy leghemoglobin gene to a yeast strain and then grows the yeast via fermentation.

# Can You Eat It?

Sustainable? Yes. But is it safe?

Impossible Foods says yes. The burger has been reviewed by a panel of experts, with scientists from the University of Nebraska, University of Wisconsin and Virginia Commonwealth University generally recognizing it as safe. Rats studies have been conducted, and there were no adverse effects from the soy leghemoglobin protein, even when feeding the rats 200 times the amount a human is expected to consume.

But the magical yeast that allows the company to produce their burger causes other problems. There are more than 40 other unidentified proteins in the impossible burger. In the words of Michael Hansen, a senior scientist at Consumer's Union, "It's only 73 percent pure, the other 27 percent is from proteins from the genetically engineered yeast that produces it, and these [proteins] have an unknown function…" Due to these unidentified proteins, the FDA told Impossible Foods that the burger was unlikely to be recognized as safe.

# What is Progress?

The Impossible Burger has been available at select restaurants since 2016. Impossible Foods does not need the FDA to categorize the burger as generally recognized as safe to sell it. This isn't actually illegal, as the FDA's self-affirmation program does not require new ingredients to be approved. We only have any of this information because Impossible Foods tried to go one step further in the regulation process, applying for the FDA's GRAS (generally recognized as safe) status.

Impossible Foods has a mission, and that mission is an admirable and necessary one. Forget about figuring out if it's real or not, climate change is here. Factory farming is not

sustainable, even as the demand for meat is still growing. More consumers are looking for quality sustainable or vegan/vegetarian options, and Impossible Foods wants to serve that market. Their website emphasizes their sustainability.

They also make a point to push transparency and encourage questions. That will be crucial for a generation that is looking for corporations to step in where the government is not addressing their needs and concerns.

The food system has to change or it will collapse. Many companies have been stepping up their environmental bona fides in response the Environmental Protection Agency's current irresponsibility. It remains to be seen if the FDA can cope with the demands of the rapidly evolving demands and realities of a sustainable food system.

**Sources:**


- *Impossible Burger's 'Secret Sauce' Highlights Challenges of Food Tech* – NY Times
- *Untested GMO Ingredient Illegally Sold Without FDA Approval* – Cornucopia Institute
- *Frequently Asked Questions* – Impossible Foods
- *Silicon Valley's Bloody Plant Burger Smells, Tastes And Sizzles Like Meat* – NPR