

January 2022

Europe vs. United States: Consumer Resistance to GM Crops from 1990-2010

Lauren R. Stashak

Buffalo State College, stashalr01@mail.buffalostate.edu

Follow this and additional works at: <https://digitalcommons.buffalostate.edu/exposition>



Part of the [Cultural History Commons](#), [European History Commons](#), [Intellectual History Commons](#), [Public History Commons](#), [Social and Behavioral Sciences Commons](#), and the [United States History Commons](#)

Recommended Citation

Stashak, Lauren R. (2022) "Europe vs. United States: Consumer Resistance to GM Crops from 1990-2010," *The Exposition*: Vol. 6 : Iss. 1 , Article 12.

Available at: <https://digitalcommons.buffalostate.edu/exposition/vol6/iss1/12>

This Poster is brought to you for free and open access by the History and Social Studies Education at Digital Commons at Buffalo State. It has been accepted for inclusion in The Exposition by an authorized editor of Digital Commons at Buffalo State. For more information, please contact digitalcommons@buffalostate.edu.

Europe versus United States: Consumer Resistance to GM Crops from 1990-2010

Lauren Stashak, HIS 300W: Dr. Bridget Chesterton

Introduction

Today, genetically modified organisms are on every dinner plate in North America. In the 1970s, scientists started experimenting with biotechnology and it was not until the 1980s when GMOs starting to spread throughout the country. With the rise of genetically modified crops in the 1980s, came consumer opinions and ultimately resistance to these products in the 1990s. This then played a fundamental role in the daily lives of both the farmers and the average U.S. and European citizen.

Tomatoes

The tomato experiment was of course, trial and error, because the first genetically modified tomato failed. In a race to get the first successful GMO products up and running in the 1980s, the goal was to get tomatoes last many hours of transportation with little evidence of decay. A small private company known as Calgene based in California was interested in completing this goal. The specific gene that causes the ripening in tomatoes is known as polygalacturonase, or the PG enzyme. Calgene needed to delete the gene that produces the PG enzyme to stop breaking down the proteins that held the walls of the tomato together, to stop the ripening or decay of the tomato. By applying antisense technology, Calgene was able to decrease the protein levels in the walls of the tomato. Unfortunately, when they were planted and grown, they continued to last for a limited time and when they were packaged and transported to a new destination, almost all the tomatoes had perished. Consumers had to continue to buy green tomatoes at the grocery store that were previously sprayed with a gas, and ethylene, to ripen them by the time they had gotten home.

Frankenfood

Frankenfood, a play on words comparing the modified human to modified foods. It is the idea that to make crops better for the environment, more convenient for farmers, and bring juicy red tomatoes from Georgia to Maine, was a failure and a monstrosity to nature. As the common story of Frankenstein is told, he was risen from the dead by scientists and caused chaos throughout the city. The easiest way for anti-GMO activists to get their point across is to explain that GMOs are the exact same thing. Scientists take organisms, change their composition in a laboratory, then release the product to the world. Activists believed that artificial life does not belong in the natural world.

StarLink

A version of Bt corn, StarLink Corn was approved by the US government to be grown as feed for animals only. Scientists that were pro GMO technology did express the concern of unknown allergies that could form from adjusting certain DNA sequences plants. Not just allergens could harm humans but altering organisms on the molecular and cellular level could potentially decrease the nutritional value the product originally held. For example, Theodoros Varzakas, Ioannis Arvanityannis, and Haralambos Baltas discussed the incident that occurred at Pioneer HI-Bred seed company in 1996.



The company was able to remove a specific gene from a Brazil nut into a soybean with the goal of increasing nutritional value to the soybean. After several tests, people who were allergic to Brazil nuts became allergic to the genetically modified soybean. This problem occurred with StarLink corn. After engineering the organic corn to the specific type of Bt corn, it held allergic properties to certain people which is why it was only available to farmers to grow as feed for cattle. As farmer's grew the corn in their fields, European anti-GM activists were correct when the StarLink corn had contaminated other organic corn fields. Specifically, fields in Texas that grew corn for taco shells that Taco Bell distributed to its customers. Immediately after failing a test for StarLink corn in Taco Bell's food, many of the taco shells of brands like Safeway, Food Lion, and Shaw that contained the contaminated StarLink grown in the fields of Texas was pulled from shelves that supermarkets had sold across the country. This clearly discrediting GM technology and foods that Americans had blindly trusted in their fast-food restaurants.

Europe

Supermarkets in Europe were against the production of genetically modified foods that in Iceland, a British chain supermarket had refused to sell any edible products of bio-tech on their shelves. From England to Italy to Belgium to Switzerland, major supermarket chains backed up the British chain that had shut down GM food sales. By 2000, GM food was banned from almost all supermarkets across Europe. In 1999, the opposition to GMOs grew in countries across Europe including France, Greece, and Britain. Britain grew from 33% to 51%, Greece grew from 51% to 81%, while France grew from from 46% of the population opposing the distribution and consumption of genetically modified foods to 65%. Public coverage of GM technology also had a direct impact on the relationship between consumers and food. The more coverage that was advertised, the more consumers developed negative connotations and opinions on the topic. While anti-GM activists fought GM products and as proven above that many countries had turned GM products away, the amount of GM crops grown globally between the years 1996 to 1999 had increased dramatically. From 1.7 million hectares to 39.9 million hectares.

United States

When it came to genetically modified crops or biotechnology in general, the United States accepted it and embraced it with hesitant but open arms. What stuck out the most was the price. Americans spent a mere 10% of their income on food while Europe spent around 15-20% of their income. The United States values convenience while much of Europe values quality. The US spends time in drive thrus of a fast-food restaurants that spit out processed meat and products high in sugar, salt, and trans fats like high-fructose corn syrup. Not only those, but GM corn and soy. These products were the basis of processed foods that come in paper bags in drive through windows. They were engrained in the processed food millions of Americans eat everyday and many were not even aware that these genetically modified crops were in there. That is fast food was able to be so cheap, with the help of most of fast-food products being made from genetically modified crops.

Acknowledgements

I would like to thank Dr. Bridget Chesterton for guiding me through this project and a special thank you to my friends Alicia and Haleigh for keeping me on track from start to finish.

Sources:
 Mohorčič, J. and Jacy Reese. "Cell-Cultured Meat: Lessons from GMO Adoption and Resistance." *Appetite* 143 (2019).
 Weasel, Lisa. *Food Fray*. New York: American Management Association, 2009.
 Varzakas, Theodoros H., Ioannis S. Arvanityannis, and Haralambos Baltas. "The Politics and Science behind GMO Acceptance." *Critical Reviews in Food Science and Nutrition* 47, no. 4 (2007): 335-51. <https://doi.org/10.1080/10408390600762696>.

Images:
 "Bt Corn and Traditional Corn," n.d. <https://edgedavao.net/agn-trends/2020/01/14/bt-corn-towards-food-security/attachment/bt-corn-and-traditional-corn/>; photo-courtesy-of-biotech/
 Chillmaid, Martyn. "Genetically Engineered Tomatoes." Science Photo Library. <https://www.sciencephoto.com/media/211989/view/genetically-engineered-tomatoes>.
 "Frankenfoods Hitch a Ride through Congress - but You Can Help Stop Them." *Grist*, March 20, 2013. <https://grist.org/food/frankenfoods-hitch-a-ride-through-congress-but-you-can-help-stop-them/>.
 Hegenbart, Scott. Taco shell recall prompts industry, scientific response, n.d. <https://www.foodingredientsonline.com/doc/taco-shell-recall-prompts-industry-scientific-0001>.