Sarah Ildza

Prof. Jane Bolster

Scientific Controversy Paper

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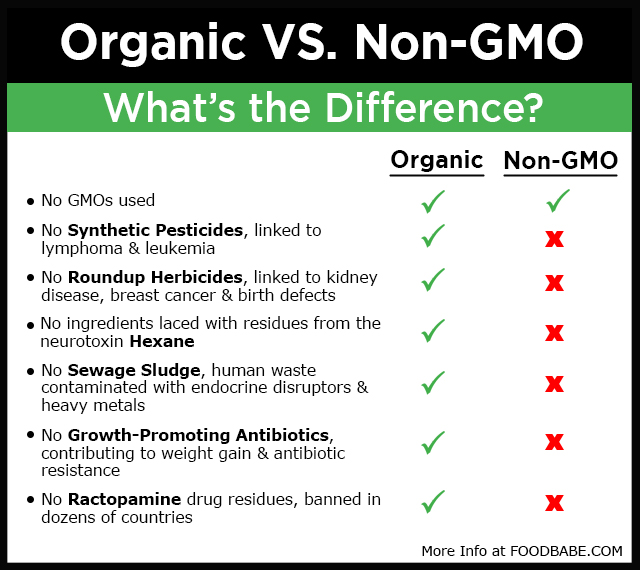
GMO vs. Organic Food Controversy

“Genetically modified organisms are slowly killing us all”, is something that a lot of scientists have to say about GMO products. If you walk into a grocery store and you look for a label on something that says “organic”, you will find it in bold, loud letters because companies want to make it clear when something is organic. On the other hand, when something is GMO, the label is smaller, and it often says something like “this product contains artificial flavoring” rather than straight up saying “GMO” because it sounds nicer. Organic foods are foods that are grown in a natural environment. There are limited chemicals used on those organisms, and no growth hormones used either. GMO organisms are usually sprayed to last longer and have a lot of chemicals put into their growth for preservative methods. A huge controversy revolves around organic vs GMO products because some people are trying to live healthier lives eating biologically grown non processed foods while others eat whatever is the cheapest; those foods generally being GMO foods.

Humans fear GMO products because they are unnatural and can influence the human body in unpredictable ways, but it is unknown what kind of influences they can have. It is surprising that according to a personal health columnist Jane E. Brody, GMOs are found to be *beneficial* for the environment rather than harming it. But there is no proof for that claim though. The controversy lies within the unknown. Nobody knows what possible outcomes humans could come across from eating this food, so it is impossible to have a solid line with which side of the controversy is right. People live on believing things about GMOs solely based on either opinion or small things they’ve heard from others but not anything based on strong evidence. But there are ways to avoid foods that people have their suspicions on.

An article published by Popular Science on May 24th, 2018 called “What to expect from the new GMO Labels We’re Getting in 2020”, by Sara Chodosh help a similar stance to that of the New York Times article. Apparently saying that something is “GMO” holds a bad connotation. New labels will say “BE”, or “bioengineered” so that it does not sound as bad as when saying that something is “genetically modified”. A question is brought forth in the article: “If GMOs are safe, why should we label them?” Turns out that even if GMO products are proven to be safe, a lot of people still refuse to consume them because most of those products come from big companies such as Monsanto. Monsanto's seed goes into “80% of corn and 90% of soybeans in the United States”, and many people disagree with this type of monopolization so they would rather not buy products made by Monsanto. People also are shown to fear GMOs simply because they are not natural. People like things that are natural because there is more trust in natures abilities rather than another human injecting something with chemicals for it to hold a specific benefit. There is the presence of the fear of the unknown which is turning many people off from buying GMOs. One mess-up in the tweaking of a gene of an organism can cause whole crops to be messed up and that is a fear that many people hold.

An article by a Food Babe, who is a popular source called “The Shocking Difference Between Organic & Non-GMO Labels- Its Huge!” talks about the negative findings in GMO, unlike the other articles. Pesticides are not meant to be consumed so why would someone eat food that has been sprayed with pesticides? Pesticides are meant to fight away pests by using chemicals that kill them and those chemicals are what people are consuming. The other articles claimed that there are no diseases, or anything found to be caused by GMO, but Food Babe says otherwise. There are growth chemicals put into animals like cows, chickens, and pigs that make them grow faster and fatter for companies to be able to sell them and make money quickly. Humans then eat these animals, also consuming the hormones that influence them too by making them gain weight. The article states that “scientists have found that lean people have more of the good, anti-obesity bacteria in their guts, compared to people who are overweight”. Since obesity is a huge problem in America in this day, hearing this is extremely eye opening to people.



https://foodbabe.com/difference-between-organic-non-gmo-labels/

This image shows why organic is extremely important regardless of if a product is GMO or non-GMO.

Are organic foods better though? There is a lack of evidence that would provide proof of it being better. The organic food industry is thriving, as in they make an estimated amount of $2.9 billion in 2010 and it has grown by 10% every year since (zmescience.com). Organic foods do not show any proof of actual health benefits, but it is found that most people that buy organic do so not only because of their belief that it will help preserve their health, but people also believe that it is better for the environment. Buying foods that are grown by local farmers are better than both organic and GMO foods, regardless of if the owner grows them organically or not. This can be a possible solution so that people not only preserve their own health but also take care of the environment. Since a lot of people have something against Monsanto, buying from local producers would also help because they would be supporting their community rather than a big food corporation.

Like the controversy that’s going on with gene modification in humans, GMO foods have a similar case. There are artificial genes being inserted into organisms and then they grow and reproduce, and that product is what humans consume. But like the saying goes, “we are what we eat”, so that modified food is being consumed and digested by humans. According to Dr. Mercola, Genetic modification interferes with the naturally occurring genetic modifications organisms undergo in order to survive”. People are interfering with nature’s way of fixing its own shortcomings by creating GMO foods. In a way, people are playing “God”, and that is not right. As of right now, clearly no evidence has been found to show that GMO’s are harmful to humans but who knows how long that will last. Those that consume GMO foods are playing as “lab rats” because we do not know what the future could hold. Maybe buying and consuming organic food isn't necessarily a solution to anything, but farmers markets are spreading and becoming a more reliable place to buy food so that people not only better their health but also support their local farmers.

A lot of people care about other controversies such as climate change, and whether they eat organic foods influences that. The way organic foods are grown affects the climate and the way animals are treated when they are raised under GMO conditions is unnatural. People are becoming more aware of this through media and that is making them turn to eating organic foods, and in a lot of cases becoming vegans/ vegetarians as well (articles.Mercola.com). Flavor also has a huge difference in GMO and organic foods. Minerals in foods are what give foods their rich flavors so according to Dr. Mercola, “the minerals actually form the compounds that give the fruit or vegetable its flavor.” It is hard to convince people to switch to organic especially since organic is more expensive, so people rather pay less for regular food than more for organic, so a lot of convincing is needed to help people make the correct choice.

While interpreting and analyzing various articles, I realized that they all contradict each other. The popular sources are different than the scholarly sources. Since popular sources are more edited and watched out for what they are feeding the public, it is harder for writers to put their own opinion into things. Since GMO foods are easier and faster to make, it is undoubtedly easier to feed the public information that would make them *want* to consume it rather than be opposed to it. Scholarly sources are more edited and therefore can hold more of the authors standpoint. For those reasons, scholarly sources are blunter and give less of a general view on topics. Overall there are many ways to move about the whole controversy. One beneficial thing people can do is go to their local farmers markets and support their local farming communities. Another way is by trying to farm themselves but that is a harder approach because not a lot of people have the possibility to. Articles that make people aware of the negative effects of GMO foods are a good way to inform people because it shows them what is going on and how big brand companies are lying to them. This makes people strive to do their own research and decide on what companies they want to support or avoid. A lot of big brand companies believe that GMO is our future, but many health specialists want to sway people go for organic, and the effort to do so is spreading successfully.

Annotated Bibliography

Brody, Jane E. “Are G.M.O. Foods Safe?” *The New York Times*, The New York Times, 23 Apr. 2018, [www.nytimes.com/2018/04/23/well/eat/are-gmo-foods-safe.html](http://www.nytimes.com/2018/04/23/well/eat/are-gmo-foods-safe.html).

I chose this article because Jane Brody is a personal health columnist on the New York Times. She is a credible source because she received her B.S. degree in biochemistry from the New York State College of Agriculture and Life Sciences at Cornell University. She has written many articles on health and dietary tips, so she is clearly a trustworthy source. In that article, Brody argues that GMO organisms cannot yet be labeled as “unsafe” or “safe” because there have been no signs of a negative effect yet. According to the article, “it is not possible to prove a food is safe, only to say that no hazard has been shown to exist”. This article battles mostly towards the side that provides proof that GMOs are safe to consume. In fact, this article says that GMOs are beneficial for the environment and humans as well. The article mentioned that according to a 2014 review in the Journal of Animal Science, “billions of edible animals are raised in this country each year on feed containing G.M.O.s, with no evidence of harm. In fact, animal health and growth efficiency actually improved on the genetically engineered feed”. Regardless of this evidence, or lack thereof, there could be negative effects shown later. One account of someone getting a disease or something that can be linked to eating GMO foods, and there will be a lot of research needed to be done to figure out what is that’s harmful about GMOs.

Chodosh, Sara. “What to Expect from the New GMO Labels We're Getting in 2020.” *Popular Science*, 24 May 2018, [www.popsci.com/what-to-expect-from-new-gmo-labels#page-2](http://www.popsci.com/what-to-expect-from-new-gmo-labels#page-2).

Sara Chodosh is an assistant editor for popular science. She studied at NYU and got a Master of Arts in Science, Health and Environmental Reporting. Chodosh speaks about how a lot of organic foods are served with a false label and a lot of GMO foods lack appropriate labeling. She wants food companies to be more transparent about how they are advertising their food so people would not be buying something that they believe to be true and ending up getting scammed by the companies. Chodosh mentions that the new labels will be labeled as “BE”, which stands for bioengineered, rather than “GMO” because apparently labeling something as “GMO” carries a negative connotation. There are also many people that try to avoid eating GMO foods for different reasons. Many food companies are owned by GMO companies, so this article spreads awareness to different reasons people want to avoid GMO products.

Food Babe. “The Shocking Difference Between Organic & Non-GMO Labels - It's Huge!” *Food Babe*, 25 Oct. 2017, foodbabe.com/difference-between-organic-non-gmo-labels/.

“Food Babe”, a.k.a. Vani Hari is an American author that criticizes the food industry. She has her own blog and she is more biased and leans towards organic products and away from GMO. She also has her own food line where she sells foods consisting of all-natural ingredients and is healthy. She has even written a book called “Feeding You Lies”, which is a New York Times bestseller. In her article, she writes about the different negative aspects of GMO and all the reasons why organic is better. Food Babe speaks about how even though there are no directly linked diseases to GMO products, the chemicals and pesticides used on GMO products are extremely harmful. So many chemicals that are used on GMO products are banned from use on organic such as “obesogens”, which promotes weight gain. Obesogens are a chemical that signals the human body to store fat. Another disgusting aspect of GMO products is they are fertilized with sewage sludge. Sewage sludge is basically a toxic chemical mix of toilet waste that is used as a fertilizer on GMO products. Foods that have come in contact with this fertilizer have found to be deadly to cattle. Overall, Food Babe advocates for organic and is completely against GMOs.

Andrei, Mihai. “Is Organic Food Actually Better? Here's What the Science Says.” *ZME Science*, 20 Dec. 2018, [www.zmescience.com/other/science-abc/organic-food-science02092015/](http://www.zmescience.com/other/science-abc/organic-food-science02092015/).

In this article, evidence is found, or rather a lack of evidence that provides proof that organic is *not* what people think it is. There is no real proof that states that organic foods are any healthier for people so people that believe that it is healthier are doing so based on their morals rather than any proof. “Organic” foods are just taking money out of people’s pockets. Not only that but people that buy organic typically believe that there is no use of pesticides on such food when that is in fact not the case. Organic foods use organic pesticides, which aren't even that helpful because they contain similar ingredients to those of normal pesticides. Organic foods also tend to require more pesticides because they are more susceptible to disease since they are generally less resistant.

Mercola, Joseph. “GE Food Dangers: Why GMOs Can Never Be Safe.” *Mercola.com*, 5 Jan. 2016, articles.mercola.com/sites/articles/archive/2016/01/05/ge-food-dangers.aspx.

Dr. Mercola is a certified physician and nutritionist who spreads his ideas on health and nutrition through his website; Mercola.com. In this article, Mercola uses his studies to talk about why he believes that GMO foods are not reliable and a good choice when consuming foods. GMO foods are injected with various things for them to survive various conditions and that means that their genes are edited, therefore that is then consumed by people and it affects us as well. Dr. Mercola also states that big manufacturing companies like Monsanto are lying to people when they say that nobody has ever found to get sick form eating GMO foods. People have been found with tumors, premature deaths, cancer and more. Unlike the other sources, Dr. Mercola is going against GMO products, while the other articles are going for it.

Mercola, Joseph. “Try This Simple Health Advice for Optimal Health This Year.” *Mercola.com*, articles.mercola.com/sites/articles/archive/2019/01/05/importance-of-eating-organic.aspx.

In this article, Dr. Joseph Mercola talks about why organic the only types of foods people should be consuming. Not only is it better than processed foods, but it also has benefits regarding the environment and animals. It is better for the environment because organic foods are grown more naturally and animals that are raised biologically are also living in better conditions. Cows, chickens and pigs that are grown as GMOs are raised in very poor conditions and fed many antibiotics that are then consumed by those consuming those chickens. Eating a natural grass-fed chicken is a smarter way to go. Another way that the environment is being affected is soil depletion. Soil is lacking nutrients and “reductions in biodiversity and a narrowing of available foodstuffs has also resulted in a narrower range of nutrients in our diets”. Overall, Dr. Mercolla is a fan of eating healthy and is against GMO products. His articles serve to sway people to his side.