

## Create an End and New Beginning For GMOs

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### Abstract

The advent of Genetically Modified Organisms (GMOs) possesses a potential benefit to human agriculture as well as potential negatives. The unnatural modification of plant genetics creates both practical and moral unease which are addressed by the author with support from contemporary thinkers, experts and activists. While GMOs have potential, this paper recommends that more research on GMOs is necessary and, above all, public awareness must be fostered as we explore this new technology.

Genetically Modified Organisms, or GMOs, are a controversial topic that deserves attention because of the potential risks they involve. However, they should not just be disregarded because of their potential benefits. There are many different opinions of GMOs around the world. Some people believe they are a positive new development and others think it is detrimental to people and the environment. GMOs are plants and animals that have had their genetic makeup altered to exhibit traits that are not naturally theirs. Experts disagree with the use of GMOs because of the potential health risks and risks to the environment. However more testing needs to be done to take away negative health risks. With the use of GMOs comes modified viruses that could cause famine by destroying crops or cause human and animal diseases of tremendous power. Some experts explain that genetic recombination will create deadly new viruses from such constructions. GMOs should not be used right now until researchers can create a safe way to use GMOs without all the multiple risks. More testing needs to be done because, if successful, GMOs can positively benefit the world in many ways. Right now the community can try to buy foods without GMOs as much as possible so that the companies will see that the community refuses to be the “guinea pigs” to see what effects GMOs will cause. While experts agree on the potential good of biotechnology, the dangers may outweigh these advantages.

For a definition by one of the leading companies that create GMOs “Monsanto” describes, “With the growth of modern agricultural practices and crops that generate ever-increasing yields, we are helping farmers around the world to create a better future for human beings, the environment, and local economies” (“Monsanto”). This statement provides the audience with a better understanding of what GMOs are according to “Monsanto.” Monsanto is, however, a large organization that’s ultimate goal is wealth. Deborah B. Whitman who is CSA Senior Editor of Life Sciences: Biotechnology, Immunology, Oncogenes and Growth Factors, states her opinion on why GMO may be negative for the environment when she explains, “One concern is that crop plants engineered for herbicide tolerance and weeds will cross-breed, resulting in the transfer of the herbicide resistance genes from the crops into the weeds.

These ‘superweeds’ would then be herbicide tolerant as well” (Whitman). Whitman describes how biotechnology can work against the environment by creating a weed that could possibly become herbicide resistant, thus making it impossible to rid crops of weeds. This is an extremely probable situation and would make a negative impact on the environment because with an increase of weeds, it will make growing crops much more difficult. This is why GMOs should not be used right now because they can cause negative effects such as “superweeds”, and until further research is done GMOs should be discouraged. According to “Green Facts,” GMOs can have a negative effect on the environment by the transfers of GMO seeds into non GMO crops. “Green Facts” informs the reader how the environment is affected by negative effects that evolved from the use of GMOs when they explain, “Growing genetically modified or conventional plants in the field has raised concern for the potential transfer of genes from cultivated species to their wild relatives” (“Green Facts”). This statement is explaining that with the use of GMOs the seeds from them could be blown in the wind to other natural crops thus mixing and then creating no separation between natural and GMOs. And with all the possible negative effects, the audience wants to be able to tell the difference between what is genetically modified and what isn’t, because GMOs have so many risks.

Another source called “Planet Ark” states that farmers disagree with the use of GMOs for the environment when they explain, “And in two separate studies, UK researchers have found that bees carrying GM rapeseed pollen had contaminated conventional plants more than 26 kilometers (16 miles) away and that if farmers grew GM rapeseed for one season, impurities could stay in the soil for up to 16 years if not rigorously controlled” (“Planet Ark”). “Planet Ark” explains that bees carrying GM spread it around to all the other plants making natural plants genetically modified plants. If this continues “Planet Ark” explains that it will be hard to know what is natural and what is unnatural. The fact that the audience does not have a choice to pick between GMOs and natural because it is all blending together is an issue that is not ok and should be taken seriously. Another statement found by “Planet Ark” explains why else they agree that GMOs are bad for the environment when explained, “Opponents say GMOs should be banned altogether because cross-pollination is inevitable and makes it impossible for consumers to have a real choice over the food they purchase” (“Planet Ark”). “Planet Ark” believes GMOs are bad for the environment because of cross pollination. Cross pollination is a negative effect of GMOs because it doesn’t give the consumers a choice between GMOs or natural. This choice should be given to individuals and the fact that it is not is an issue that should be changed. It needs to be proposed that GMOs not be used until further testing.

Another source called “Say No to GMOs” states that GMOs are unhealthy for the human body and can cause multiple problems as an effect. “Say No to GMOs” states one effect GMOs can have on humans is the creation of viruses. “Say No to GMOs” describes the effect as, “By far the most insidious dangers of genetic engineering are inherent to the process itself, which greatly enhances the scope and probability of horizontal gene transfer and recombination, the main route to creating viruses and bacteria that cause disease epidemics” (“Say No to GMOs”). This describes the serious issue that GMOs can create new viruses that will affect anyone eating GMOs, which there are currently no cures for these viruses. As the audience can see GMOs will cause multiple problems that will have extremely serious effects, that are not so easy to reverse once it is done, thus making GMOs not beneficial. R. Lawson is another source with an organization called “Green Health” that believes that GMOs have a negative effect on the human body. Lawson explains that research won’t be able to prove that until a comparison is made between people that eat GMOs and those who don’t. Lawson describes how GMOs will have a negative effect when he explains, “The minute traces of antibiotics in GM foods may add to the problems of bacterial resistance and human allergy to antibiotics” (Lawson). Lawson concludes that the use of GMOs can create negative effects to humans. GMOs are currently not safe and further testing needs to be done to ensure that no negative effects, such as bacterial resistance, occur. It is not a beneficial idea to try GMOs on the

audience and then find out what effects GMOs will have later after it has been consumed. In an article written by Dr. Elizabeth Cullen, part of the Irish Doctors' Environmental Association, stated that GMOs are unsafe for humans when she explained, "Many EU member states voted against the legalization of GT73 following the discovery of a confidential Monsanto feeding study, which revealed potentially adverse effects including a 15% increase in the liver weight in rats" (Cullen). According to Cullen GT73 is consisted of patented living GMO seeds that produce a crop when spilled. The fact that educated doctors explain how unhealthy and dangerous GMOs are should provide the audience with a credible reason to not eat GMOs and to refuse to purchase as much of it so that companies may stop using GMOs. In a movie dedicated to providing the truth about GMOs, it explains how they are harmful to health and environment, stating "This film gives a voice to farmers whose lives and livelihoods have been negatively impacted by this new technology. The health implications, government policies and push towards globalization are all part of the reason why many people are alarmed by the introduction of genetically altered crops into our food supply" (*The Future of Food*). This explains that GMOs will affect many elements of life in a negative way and should not be used. The audience can see how important the issue is because it affects so many things and how by not using GMOs the world will not experience the dangerous negative effects. Cummings is a lawyer and is an *expert on agriculture and genetic engineering*. She wrote an article in "Natural Awakenings" stating why GMOs are negative for human health when she informs, "The result can create new proteins that might trigger serious allergic reactions or recombine with other bacteria and viruses to create new pathogens or toxins. The antibiotic resistant marker gene used in the process could render the antibiotics we use to control disease less effective" (Cummings). Cummings makes a valid point according to researchers and the fact that new viruses could emerge from GMOs is probable and deserves attention. Being that Cummings is a credible source providing the audience with real dangers that could occur from GMOs, the audience should refuse the use of GMOs because they can create new viruses. This should create a fear in the audience about how truly hazardous GMOs are and that it is a serious issue that needs to be stopped and then researched.

According to researchers not only do GMOs affect health they can also greatly affect the economy. Whitman describes how the use of GMOs will be negative to the economy when she explains, "Yet consumer advocates are worried that patenting these new plant varieties will raise the price of seeds so high that small farmers and third world countries will not be able to afford seeds for GM crops, thus widening the gap between the wealthy and the poor" (Whitman). Whitman describes that the increase use of GMOs will make it hard for other countries because the cost of GMOs is greater than non GMOs (Whitman). Individuals need to not buy GMOs because it has the possibility to increase world hunger and create bigger issues for the world. The Prince of Wales explains why the use of GMOs is not a positive idea when he informs:

The fundamental difference between traditional and genetically modified plant breeding is that, in the latter, genetic material from one species of plant, bacteria, virus, animal or fish is literally inserted into another species, with which they could never naturally breed. The use of these techniques raises, it seems to me, crucial ethical and practical considerations. (Prince of Wales)

The previous quote by Prince of Wales explains how not only are GMOs not a good idea and unhealthy, the process is unethical. Dr. Cullen, from Irish Doctors Environmental Association, explains her evaluation on how GMOs are immoral. Cullen describes how unethical GMOs are when she states, "Genetic engineering of food is an unholy alliance between bad science and big business" (Cullen). This statement provides Cullen's perception on why GMOs should not be used and how her opinion of GMOs is unholy. The audience can see why it is important to not buy GMOs because doing so is an issue that is simply unethical. The Prince of Wales is another source that believes the use of GMOs is unethical. He

explains this further when he states, “I happen to believe that this kind of genetic modification takes mankind into realms that belong to God, and to God alone” (Prince of Wales). Prince of Wales explains how GMOs should never be used because he believes that by creating GMOs humans are playing God. Since most of the audience are decent and ethical people they can understand why helping to stop the use of GMOs by not purchasing it will help, because doing things that are unethical or testing God is non beneficial. So to not use GMOs is important in not being unethical.

The organization “Say No to GMOs” is another source that believes GMOs are completely unnatural. They explain how GMOs are unnatural when they state, “Genetic engineering is a radical new technology that forces genetic information across the protective species barrier in an unnatural way” (“Say No to GMOs”). This explains that the process of creating GMOs is unnatural and should not be used. This is a great example of why the audience should not use GMOs because anything that is unnatural should never be eaten because of the potential dangers. In an article, Ricki Lewis agrees with “Say No to GMOs” on how Transgenic Organisms are unethical. He provides his opinion when he states, “To interfere with another life-form is disrespectful and another form of cultural arrogance” (Lewis). This explains why Lewis believes that the use of GMOs is unethical and disrespectful. The Prince of Wales describes how he is against the use of GMOs and how he proposes that no one use GMOs before there is more research done. In his proposal, he argues:

I believe we should stop and ask that question, through a wide public debate of the issues of principle which cannot be addressed effectively through science and regulation alone. Is it not better to examine first what we actually want from agriculture in terms of food supply and security, rural employment, environmental protection and landscape, before we go on to look at the part genetic modification might, perhaps, play in achieving those aims? (The Prince of Wales)

The Prince of Wales proposes that instead of jumping right into the process of GMOs that the countries decide what they want from agriculture and find a natural and ethical way to do that. This proposal is what needs to be done about GMOs because without proper testing there are possibilities of dangers for the audience, but with proper testing GMOs could be beneficial. According to researchers there are different proposals that could avoid the use of GMOs.

One of the proposals from “Green Facts” proposes that more research needs to be done on GMOs. “Green Facts” explains this when it states that, “Genetically engineered crops can reduce some environmental risks associated with conventional agriculture, but will also introduce new challenges that must be addressed” (“Green Facts”). “Green Facts” explains that although GMOs may have some benefits, it will produce challenges that will have to be fixed. This proposal is what needs to be done about the issue of GMOs. The audience needs to not buy GMOs and then more testing needs to be done to make GMOs hazard free.

Lawson proposes that labeling should be used in the future for GMOs (Lawson). Lawson explains his proposal when he suggests, “However, if we do not get clear labeling and complete separation of GM foods, we will never be able to find the GM free control group. So our demands for labeling are not just in the name of civil liberty - they are also for the sake of medical knowledge” (Lawson). Lawson explains that without proper labeling, those people that do not want to eat GMOs will have no choice and the choice needs to be given. Cullen explains her proposal for the ban of GMOs when she informs, “The Irish Doctors’ Environmental Association has called for a ban on the importation of Monsanto’s live GMO seeds” (Cullen). Since Cullen is a credible doctor she states that GMOs have been banned because of the health dangers from GMOs. This explains how serious and dangerous GMOs are and how doctors are

banning it because it is so unsafe and stating how the audience should not use GMOs. "Say No to GMOs" explains their proposal for the future of GMOs when they explain, " 'Say No to GMOs' supports mandatory labeling, long-term independent safety testing, more stringent regulation and full corporate liability for damages resulting from the irresponsible introduction of GMOs to the food supply and environment" ("Say No to GMOs"). "Say No to GMOs" explains that labeling is a necessity and that the corporations should be liable for any negative results from the use of GMOs. "Say No to GMOs" describes the perfect proposal for the future of GMOs and how to create a safe future by labeling, testing, and liability.

The proposal for the future of GMOs should be taken seriously. The proposal for right now is that the audience should call their state representative and express their concern that GMOs are unsafe and unhealthy and that they are not going to be the "guinea pigs" to see what effects GMOs will cause. The audience needs to stress to their state representatives the fact that they have the right to know if the food being consumed contains GMOs or not. In the future more testing needs to be done to not only test what the effects will be but how to make GMOs safe so that one day they can be used effectively without dangers. There needs to be labeling on all GMO foods so that it can give consumers an option. Until more testing has been done to ensure GMOs are safe, consumers should have the option of knowing whether or not the food has GMOs. Until these proposals have been done the audience should try to not consume foods that contain GMOs to the best of their ability. This is the best proposal for this issue because GMOs do have the potential to be good just not as they are now. With further testing, GMOs could solve many world problems. Until that time, consumption of GMOs should be discouraged.

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