

# Custom Essay

Argumentative Essay Sample on The Safety of GMOs

MEISTER

Name of Student

Institutional Affiliation

Date of Submission

While agriculture is one of the earliest and therefore oldest sciences, it continues to develop even to this day. The rise in the world's population drives up the demand for food, prompting scientists to devise new ways to increase food production. One innovation that has had a massive impact on food production is the development of genetically modified organisms or GMOs. Using genetic engineering, scientists are developing ways to make crops more resilient to extreme weather conditions, more resistant to disease and pests, and increase yield. Despite advances made over the years, public opinion on GMOs remains deeply polarized. On one side of the debate are those who believe that creating GMOs is the key to food security, especially as the future of the greenhouse effect will likely make it more difficult for farmers to produce food. On the other side are those who believe that GMOs are dangerous to human and environmental health. Contrary to the widely circulated beliefs on its harmful effects, GMOs are actually safe to grow and consume as well as offer the possibility of ensuring food security. As this argumentative essay will show, not only is the science behind the development of GMOs essentially the same as traditional selective breeding but there is currently no evidence proving that GMOs are dangerous to health.

GMOs offer the possibility of ensuring food security. Science has always had a hand in advancing agriculture, and the development of GMOs is a more recent step to ensuring that there will be enough food to meet growing demand. Since researchers began using genetic engineering, they have been able to increase crop yield. For example, a review of agricultural yields from 1996 to 2015 showed that planting genetically modified crops increased the production of corn by 357 million tons, cotton fiber by 25 million tons, and soybean by 180 million tons. In another study, researchers

determined that GM crops were responsible for increases in yield between 6% and 25% depending on the country (Norero, 2018). But increasing yield is not the only way by which GMOs can help solve food insecurity. The technology is also responsible for making crops more resistant to extreme weather and disease. For example, scientists have found a way to make crops such as corn, soybean, canola, and plum more resistant to pests (Phillips, 2008). Furthermore, scientists have also found ways to make crops more nutritious. Staples such as maize and rice which have been fortified with vitamin A are just a few of the crops that scientists have succeeded in increasing nutritional value (Hefferon, 2015). Overall, the science behind GMOs has made it possible to improve crops both in quality and quantity, and such achievements with staple crops contribute towards securing food for the global population. GMOs help cut down crop losses and make food more affordable. These developments are especially important among the most vulnerable populations which number to hundreds of millions in developing countries.

Apart from furthering food security, GMOs are also acceptable as the science behind it is essentially the same as traditional selective breeding. One of the main arguments against GMOs is that it modifies genetic material, thus making these products abnormal and therefore dangerous. However, this argument against GMOs is flawed for the reason that genetic modification has been conducted by people for thousands of years. Genetic modification is traditionally done by selective breeding. Farmers choose varieties that exhibit desirable traits and cross them together to produce plants that have the said desirable traits. For example, suppose that one variety shows resistance to disease while another variety has a high yield. A farmer can take these two varieties,

crossbreed them, and produce a new variety that resists diseases as well as yields more crops than older varieties. This process involves genetic modification since crossbreeding them essentially changes the genetic makeup of the crop. GMOs are produced following the same principle; the only difference is that the process is made faster. Whereas traditional methods of selective breeding took decades in the past, genetic engineering shortens this time and makes the process more precise (The Royal Society, 2016). In this regard, it would be wrong to stay that GMOs produce abnormal crops for the reason that it changes the genetic makeup of plants. Genetic modification has been taking place for thousands of years, the only difference is the method by which the desired result is achieved. The fear-mongering concerning the genetic makeup of crops is therefore incorrect.

Finally, there is no conclusive evidence that shows GMOs are unsafe. The public has been bombarded by claims that GMOs are unsafe for human and environmental health ever since research on this field began. However, the vast majority of the scientific community has periodically assured the public that there is no evidence proving any of the claims meant to scare people. For example, the Royal Society (2016) has established that there is no evidence to prove that GMOs are harmful to human health. GMOs are neither poisonous, nor toxic, nor filled with carcinogens. In fact, as mentioned earlier, researchers are continually finding ways to make GMOs more nutritious. Scientists believe that the reason behind the popularity and spread of anti-GMO arguments can be linked to their inherent content. Anti-GMO rhetoric is often filled with emotional rather than cognitive appeals. As stated by Stephan Blancke of Ghent University, “negative representations of GMOs are widespread and compelling because they are intuitively

appealing. By tapping into intuitions and emotions that mostly work under the radar of conscious awareness...such representations become easy to think" (Blancke, 2015). People are relatively quick to respond to emotional appeals rather than logic and reason, and for this reason, anti-GMO rhetoric succeeds better in capturing attention, being remembered, and ultimately transmitted to others. In some ways, people's fears of foods from GMO crops are the same as the fears that underlie the question of can cellular phones cause cancer. Such claims are simply unfounded yet they persist since they play on deep-seated fears.

In conclusion, the development of genetically modified organisms or GMOs for food production is an innovation society should not fear. Claims regarding its toxicity, abnormality, and cancerous content are simply untrue, as there is no conclusive piece of evidence that proves these. Through scientists' ability to enhance the quality and quantity of such crops, GMOs hold the promise of making agriculture more sustainable and therefore more likely to ensure food security. The science behind GMOs is also clear; it is essentially the same as traditional breeding methods that humans have practiced for thousands of years, the only difference being that the process is made faster through modern technology. As the world's population grows and arable land dwindles, GMOs promise to ensure that gaps in food production will be filled. At this point, society's only hindrance is its own prejudices against a technology that holds the key to benefitting the world.

## References

Blancke, S. (2015, August 18). Why people oppose GMOs even though science says they are safe. *Scientific American*.

<https://www.scientificamerican.com/article/why-people-oppose-gmos-even-though-science-says-they-are-safe/>

Hefferon, K. (2015). Nutritionally enhanced food crops; progress and perspectives.

*International Journal of Molecular Science*, 16(2), 3895-3914. doi: 10.3390/ijms16023895

Norero, D. (2018, February 23). *GMO crops have been increasing yield for 20 years, with more progress ahead*. Cornell Alliance for Science.

<https://allianceforscience.cornell.edu/blog/2018/02/gmo-crops-increasing-yield-20-years-progress-ahead/>

Phillips, T. (2008). Genetically modified organisms (GMOs): Transgenic crops and recombinant DNA technology. *Nature Education*, 1(1), 213.

<https://www.nature.com/scitable/topicpage/genetically-modified-organisms-gmos-transgenic-crops-and-732/>

The Royal Society. (2016, May). *Genetically modified (GM) plants: questions and*

*answers*. <https://royalsociety.org/topics-policy/projects/gm-plants/>