

Topic: Genetically modified organisms pose a threat to the global community.

Task: #6 Scaffolding or Rough Draft for Essay (100 Points)

1. Do genetically modified organisms pose a threat to the global community?
2. Genetically modified organisms, GMOs, pose a threat as they can harm consumers and be used as tools to exploit farmers and harm consumers. On the contrary, GMO's help rather than pose a threat as they are becoming a more reliable crop with a much larger product yield as well as greatly reducing the need for chemical pesticides and herbicides.
3. Reason 1- GMOs can harm consumers of said products.

- a. Example- “Data show correlations between diseases of the organs and the increase in (GMOs) in the food supply, along with the increase in glyphosate-based herbicide applications [to these GMOs]... The endocrine disrupting properties of glyphosate can lead to reproductive problems: infertility, miscarriage, birth defects, and sexual development...The endocrine disrupting properties also lead to neurological disorders.” (Swanson, 2013)

This resistant allows farmers to spray these toxic herbicides onto their soy beans with no effect to the plant's health. However, this quote illustrates that while there is no negative effect on *plants*, humans are harmed in the process. This is not just a mild fever, but can result in birth defects and neurological disorders, something that will stay with people for the rest of their lives.

Dr. Nancy Swanson is a physics and math major who has written over 30 scientific books and holds 5 patents, with background as a Navy Scientist; however, her education is not specifically in agriculture or botany.

As clearly outlined in the research done by Dr. Nancy Swanson, GMO's are not just posing but actively allowing for health detriments to people with very serious, lifelong consequences in some cases.

- b. Example- “Sri Lankan scientists hypothesize that glyphosate, originally discovered to act as a chelating chemical in 1964, takes up toxic heavy metals and binds them in the kidney without the body’s detection. According to the researchers, the buildup of these heavy metals ultimately leads to kidney failure and death.” (Null, Gale, 2014)

With this information provided by Global Research It can clearly be seen that GMOs are harmful to humans because of their harm to our health and threat to wellbeing, again showing the threat of GMOs. This has been known for several decades, but the effects are truly being observed now.

The information was provided by Global Research, a website dedicated to the spread of global issues and awareness, this website is a nonprofit organization in which people can post factual articles about a global subject, yet their contributors are not required to have any background experience.

These two pieces of data prove that there are harmful effects of GMOs due to their detrimental effects from harmful chemicals. In essence, the widespread use

of GMOs and their un-natural chemical makeup is hurting humanity therefore must be seen as a threat.

4. Reason 2- GMOs are used as tools by large corporations to exploit smaller farmers and take advantage of the public.

- a. Example- "Making growers reliant on proprietary, genetically modified seeds smacks of "the usual game of economic dependence," which in turn, "stands out like a new form of slavery," he said, referring to the "suicide belt" in India, where thousands of Indian farmers killed themselves after being forced to grow GMO crops and being unable to repay debts incurred to buy GMO seeds." (Heyes, 2015)

This information provides just one instance where weaker farmers were exploited and cheated into buying and farming these genetically modified foods. With this information we can see that GMO companies are in fact causing harm to people because of their harsh treatment and effects on farmers, this in turn shows that they are a threat.

Natural News is an American News website with the goal of spreading news about the more agricultural side of America, with a staff of 20 dedicated writers who produce articles daily based on research they find online; yet, they have to rely on other research done by different organizations, and cannot conduct research themselves.

In addition to forcing laborers to work ridiculously hard in poor conditions, workers after this sort of job are not simply turning around with optimism, but instead doing anything to avoid this kind of work again, showing the horrendous exploitations corporations impose on their workers.

- b. Example- "An estimated 270,000 small-hold farmers in the Philippines are being forced to grow GM corn and ending up in debt. The cost of corn seeds has risen 282% from its introductory price and accounts for 18-21% of a farmer's total cost of production. Farmers are at the mercy of seed suppliers and lenders who are one and the same in the country and refuse to provide lending unless the farmers grow GM corn." (Roseboro, 2015)

This data illustrates the greed and exploitation of these GMO companies and how they are using these powerless farmers to profit from. This is a prime example of how the GM companies are negatively impacting humanity therefore a threat.

The information was provided by The Organic Connections website, a website with a journal run by a nutritional supplement company showing vested interest in the support of organic foods; but keep in mind this is still a factual data base. In short these companies are using these helpless farmers just to squeeze them out of a little more profit causing them to struggle to live and maintain, after which leaving them in debt to struggle throughout the rest of their lives, proving that GMOs pose a threat; large corporations are unfair exploiters.

5. Counter-Reason 1- GMOs allow for mass quantity production in first and third world countries.

- a. Example 1- “GMO crops have been found to increase yields, with a 10 percent change to a genetically modified herbicide tolerant crop yielding a roughly 1.7 percent increase in productivity.” (Terrascope 2015)

As technology continues to evolve, we will constantly be able to improve the amount of food, the yield, of crops. As there are current food crises around the world, this is obviously favorable. GMO's allow for a large quantity of food being output; constantly improving as time goes on.

The Terrascope project was a class of students based at the prestigious college of Massachusetts Institute of Technology who worked together with a highly intellectual team of researchers, but there is no information provided on the actual researchers themselves.

With the knowledge that was given it showed that GMOs do actually increase yield for crops, showing not a threat but rather a benefit because of increase profit and food production.

- b. Example 2- “Even livestock can be raised less expensively, using feed made from GM crops as evidenced by the recent change in EU policy to help struggling farmers. Also, faster growth rates resulting in cheaper fish production is the main benefit touted for the AquaBounty salmon that may become the first GM animal approved to be sold as food.” (Paul Diehl, 2015)

Diehl illustrates that the livestock and fish we come to eat can be raised and fed through GMO's, allowing for higher efficiency and less cost. Not only is the feed modified, but the animals themselves, allowing for quicker growth.

The information is from Paul Diehl, a worker in the biotech industry for over 20 years, and currently has a Ph.D; with this level of education one can infer that Diehl has an interest in the subject at hand, yet he also maintains a level of neutrality throughout the article, in which the data was found.

Allowing for livestock to be raised with efficiency is beneficial to the global community as there is more food for people in desperate need of nutrients in order to survive.

6. Counter-Reason 2- GMOs reduce chemical pesticide and herbicide use.

- a. Example 1- “On average...GM technology adoption has reduced chemical pesticide use by 37%, increased crop yields by 22%, and increased farmer profits by 68%.” (Battelle, 2015)

Pesticides and herbicides used in food growth have been linked to multiple health issues when consumers consume the food. GM technology allows for the reduction of these chemicals used in food production, helping to better the food situation for people who have been negatively affected by these chemicals.

Battelle is the world's largest nonprofit research and development organization, they also specialize in applied sciences, though no specific education or prior works are listed.

With the data given it showed that GMOs do indeed actually reduce the amount of chemical usage through farming. This shows that GMOs have a positive impact

- on our ecosystem. This positive impact does not pose a threat therefore showing why GMOs are not a threat.
- b. Example 2- “Herbicide-tolerant and insect-resistant plants account for more than 95% of the GM crops at present; both contribute to a reduction in farmer’s application of plant protection products. A recent large project made an inventory of agrochemical use per hectare of GM crops compared with conventional crops ... Several major studies in the US reported lower herbicide use (up to 25-33%) in herbicide-resistant crops ...compared to their conventional counterparts.” (Europa Bio, 2015)

This is another example of how corporations are reducing the amount of chemicals (specifically herbicide) used in farming, allowing for the improvement of health conditions for consumers. Projects are being done in order to help the production as well as the farmers; corporations are trying to help the people working under them as well as increasing their production.

Europa Bio is a board of management made up of representatives of member companies, though they have a neutral argument in their article, there is no education information or much else on the company, but with this information given it can clearly be seen that GMOs are reducing the amount of chemicals we need to put in our environment.

Because GMOs are actually reducing the amount of chemicals in our ecosystems, proven by the data shown, they can be considered not a threat in this aspect, with corporations arguably helping the farmers themselves along with production.

Reflection:

Researching this topic has really turned around how I view GMOs. Originally I thought of them as scientific advancements that would enlighten humanity and our future; but after further research my ideals totally changed. GMOs have changed into a bad thing for society with their unfair policies, health risks, and exploitation. Now I view them as negative assets of humanity, especially finding out how the large companies such as of these GMOs, such as Monsanto, were exploiting farmers for their personal gain had a huge impact on this topic. This is very enlightening research, due to its eye opening research and topic, but I feel the need for more research on the topic of negative health effects of GMOs. Most of the data I found was mere correlation without causation for health defects. An example of how to fix this would be to make an organization dedicated to the further research for hard evidence to support the GMO's negatively impact our health. This would in turn open the populace eye on the negatives of these GMOs and would not just enlighten me, but now the world with hard evidence.

Conclusion: Genetically modified organisms have been shown to pose a threat to the global community as they are used as tools to exploit farmers as well as harms consumers, however, they can also be viewed as overwhelmingly helpful, as they are becoming a more reliable crop

with a much larger product yield along with greatly reducing the need for chemical pesticides and herbicides.

References:

Can Genetically Modified Food Feed the World? (n.d.). Retrieved December 13, 2016, from <http://biotech.about.com/od/investinginbiotech/a/Can-Genetically-Modified-FoodFeed-The-World.htm>

Do GM crops help reduce pesticide and herbicide applications? (n.d.). Retrieved December 11, 2016, from <http://www.europabio.org/do-gm-crops-help-reduce-pesticide-and-herbicideapplications>

Dr Swanson: GMOs Cause Increase in Chronic Diseases, Infertility and Birth Defects. (2013, April 27). Retrieved December 13, 2016, from <http://sustainablepulse.com/2013/04/27/drswanson-gmos-and-roundup-increase-chronic-diseases-infertility-and-birthdefects/#.VI01i3arSU1>

Five Good Reasons to Support GMOs. (2015, March 27). Retrieved December 14, 2016, from <http://www.battelle.org/media/the-battelle-insider/the-battelle-blog/2015/03/27/fivegood-reasons-to-support-gmos>

Genetically Modified Crops. (2010). Retrieved December 12, 2016, from <http://12.000.scripts.mit.edu/mission2014/genetically-modified-crops>

Heyes. (2015, September 9). Monsanto has a long history of bullying, deceiving and exploiting farmers and governments. Retrieved December 14, 2016, from http://www.naturalnews.com/051568_Monsanto_GMOs_farmers.html

Null, G., & Gale, R. (2014, November 18). The Global GMO Food War against Humanity. Devastating Health and Environmental Impacts Worldwide. Retrieved December 12, 2015, from <http://www.globalresearch.ca/the-global-gmo-food-war-against-humanity-devastatinghealth-and-environmental-impacts-worldwide/5414669>

Roseboro, K. (2013, February 13). The GMO Seed Monopoly. Retrieved December 14, 2015, from <http://organicconnectmag.com/project/the-gmo-seed-monopoly/>