

Unit 2-Food: Essay

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Do Genetically Modified Organisms Pose a Threat?

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Genetically modified organisms, GMOs, pose a threat because they harm the consumers of these goods (Swanson, 2013), they are used as tools to exploit farmers (Null, Gale, 2014), and they also are the reason for many different types of animal abuse (Paul, 2013). Although this is true some experts could argue that GMO's help rather than pose a threat because they are becoming a more reliable crop with a much larger product yield (Terrascope, 2015) as well as these GMOs greatly reducing the need for chemical pesticides and herbicides (Battelle, 2015). The potential that GMOs could be in everything sparked my interest in GMOs for I have heard of their detrimental effects but never truly understood their full impact, further building my inclination to research this topic.

GMOs pose a threat because they are harmful to the consumer. The company Monsanto produces a soy bean called Roundup Ready Soybeans (Monsanto, 2015) which is resistant to the chemicals found in their herbicide Roundup, because of Genetic Modification. This resistant allows farmers to spray these toxic herbicides onto their soy beans with no effect to the plant's health. This herbicide Roundup is a glyphosate based herbicide sprayed on the majority of Monsanto's crops. According to Dr. Nancy Swanson (2013)

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 shows that because these GMOs are being sprayed with toxic herbicides we are getting the negative effects. Dr. Nancy Swanson is a physics and math major from FSU who has written over 30 scientific books and holds 5 patents, with background as a Navy Scientist, this together with the extensive research conducted in the light of GMOs show her progression towards the negatives of them and similar cases. With this evidence it can be shown that GMOs are negatively affecting our health. Supporting that GMOs are harmful to us, therefore a threat. Not only this but

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. 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, but these posters are not required to have any background experience. These two pieces of data prove that there are harmful effects of GMOs because of 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.

Another reason why GMOs are a threat is because they are used as tools by large corporations to exploit smaller farmers and take advantage of the public. One article written by Heyes (2015) in the Natural News website states:

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 shows 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, this website also has a staff of 20 dedicated writers who produce articles daily based on research they find online, also due to this being a natural based website there is strong support for the thesis side of the argument. Another example however is that in the Philippines:

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 shows 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. Which is why GMOs pose a threat, because their companies are unfair exploiters.

The final reason that GMOs pose a threat changes focus from human impact to animal impact. Not only are humans being fed GMOs but animals and cattle are as well (Paul, 2013). According to Katherine Paul (2013)

But what happens when animals are ... force-fed monoculture diets of genetically modified corn and soy? ... Calves are born too weak to walk, with enlarged joints and limb deformities. Piglets experience rapidly deteriorating health, a “failure to thrive” so severe that they start breaking down their own tissues and organs – self-cannibalizing – to survive. (Paul, 2013)

This is a disturbing and painful thought. Animals are practically being tortured all because they are being fed un-natural feed (Paul, 2013) rather than being free-roam or organic. Here are more examples of the negative effects of these GM farms from Paul (2013)

Many animals suffer from weak, brittle bones that easily fracture. Dairy cows develop mastitis, a painful udder infection. Beef cattle develop liver abscesses and an excruciating condition referred to as “twisted gut.” (Paul, 2013)

This again shows the torturous effects the GMOs have on farm animals and their wellbeing. These GMOs can easily be avoided and can cause much less pain to these animals with the use of organic feed or natural feeds. The information given by Katherine Paul was distributed by the Counter Punch website online which is an online article based news board with factual information about global topics with an income of donations and subscriptions, also this foundation has been around since 1993. In the end GMOs pose a threat due to their use in the physical abuse to farm animals. So therefore GMOs are a threat because they are causing negative effects to our farm animals.

While all of this is all true experts could argue that GMOs do not pose a threat. One reason why they do not is because of their mass quantity production in first and third world countries. According to Terrascope (2015)

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

The Terrascope project was an MIT class of students who work together with alumni in order to solve a global problem, this paper was worked on by a highly intellectual team of researchers but the no information on the actual researchers or their background could be found. With the knowledge that was given it showed that GMOs do actually increase yield for crops. This increase of crop yield does not show a threat but rather a benefit because of increase profit and food production. Another example of how GMOs are more than a benefit than a threat is from Diehl (2015) who states:

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)

This shows efficiency in the GMO farms and efficiency is a benefit rather than a threat. The information given was from Paul Diehl, who has worked in the biotech industry for over 20 years as well as receiving a Washington State University Ph.D, with this level of education one can infer that Diehl has an interest in the subject at matter, he also maintains a level of neutrality throughout the article, in which the data was found. These two examples of higher yield do not seem to be a threat in any way and rather portray GMOs as benefits due to their efficiency and larger yields.

The Other reason in which it could be argued that GMOs are not a threat is because they reduce chemical pesticide and herbicide use (Battelle, 2015). "

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)

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. Another example of how GMOs are not a threat and that they reduce the amount of chemicals used for farming is that according to Europa Bio (2015)

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)

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.

To finalize This Research 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. Finally, In

Conclusion GMOs pose a threat because they harm the consumers of these goods (Swanson, 2013), they are used as tools to exploit farmers (Null, Gale, 2014), and they also are the reason for many different types of animal abuse (Paul, 2013). Although this is true some experts could argue that GMO's help rather than pose a threat because they are becoming a more reliable crop with a much larger product yield (Terrascope, 2015) as well as these GMOs greatly reducing the need for chemical pesticides and herbicides (Battelle, 2015).

## References

- Can Genetically Modified Food Feed the World? (n.d.). Retrieved December 1, 2015, from <http://biotech.about.com/od/investinginbiotech/a/Can-Genetically-Modified-Food-Feed-The-World.htm>
- Do GM crops help reduce pesticide and herbicide applications? (n.d.). Retrieved December 11, 2015, from <http://www.europabio.org/do-gm-crops-help-reduce-pesticide-and-herbicide-applications>
- Dr Swanson: GMOs Cause Increase in Chronic Diseases, Infertility and Birth Defects. (2013, April 27). Retrieved November 30, 2015, from <http://sustainablepulse.com/2013/04/27/dr-swanson-gmos-and-roundup-increase-chronic-diseases-infertility-and-birth-defects/#.Vl01i3arSUI>
- Five Good Reasons to Support GMOs. (2015, March 27). Retrieved December 1, 2015, from <http://www.battelle.org/media/the-battelle-insider/the-battelle-blog/2015/03/27/five-good-reasons-to-support-gmos>
- Genetically Modified Crops. (2010). Retrieved November 29, 2015, from <http://12.000.scripts.mit.edu/mission2014/genetically-modified-crops>
- Glyphosate And Roundup Brand Herbicides. (n.d.). Retrieved December 16, 2015, from <http://www.monsanto.com/glyphosate/pages/default.aspx>
- GMO Facts. (n.d.). Retrieved December 16, 2015, from <http://www.nongmoproject.org/learn-more/>
- Heyes. (2015, September 9). Monsanto has a long history of bullying, deceiving and exploiting farmers and governments. Retrieved November 30, 2015, from [http://www.naturalnews.com/051568\\_Monsanto\\_GMOs\\_farmers.html](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 November 30, 2015, from <http://www.globalresearch.ca/the-global-gmo-food-war-against-humanity-devastating-health-and-environmental-impacts-worldwide/5414669>

Paul, K. (2013, August 9). Torturing Animals With GMOs. Retrieved December 16, 2015, from  
<http://www.counterpunch.org/2013/08/09/torturing-animals-with-gmos/>

Roseboro, K. (2013, February 13). The GMO Seed Monopoly. Retrieved November 30, 2015,  
from <http://organicconnectmag.com/project/the-gmo-seed-monopoly/>