

Research paper: genetically modified organisms



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When you Google GMO's, Genetically Modified Organisms, it does not take long to find several websites, blogs or studies discussing the ability of GMO's to reduce or even stop, world hunger. This is a fantastic thing. However, what if GMO's could do more? I want to research and investigate if GMO's could help reduce agricultures' effect on climate change and if so to what extent. The use of GMO's is a controversial topic in today's society. I believe the more positives we can uncover about GMO's the more likely the public is to be more accepting the use of them.

If GMO's could reduce climate change, this would not just affect climate scientists and those concerned with climate change. This information would affect agriculturists who push the concept of using GMO's to feed a growing world, farmer and ranchers who want to produce more ecofriendly products, people concerned with water conservation; the audiences it could potentially reach are endless. This research is a prime example of using GMO's to kill two birds with one stone. We already know GMO's can help reduce world hunger, perhaps they could reduce climate change and with further studies, who know what other uses for GMO's we could find. I believe GMO's could be a breakthrough in science and technology to help ensure a better future.

The first source I will be using to help conduct my research is a study titled "Assessment of Climate Change Awareness and Agronomic Practice in an Agriculture region of Henan Province, China". This study provides information about awareness of farmers on climate change in addition to other information on how climate change is related to agriculture. The study

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shows that most farmer who were unaware of climate change do not use agronomic practice to help better the environment or help reduce climate change. This study also relates climate change directly to endangering our food supply. It provides a lot of information about the idea of a rapidly growing population. The study says the population will increase from 7 - 9 billion by the year 2050. While this is a very pressing issue, we know that GMO's can be the solution to this. We believe GMO's could reduce climate change they could be much more beneficial not only for scientist and agriculturist but for everyone. This study also has information stating that the agriculture industry is responsible for 14 percent of global greenhouse gases. An additional 17 percent can be added when land use and deforestation is considered. Therefore, in all the agriculture industry is responsible for 31 percent of global greenhouse gases. The agriculture industry constantly has a negative light being shined on it or, so it seems in recent years. If GMO's could help reduce the amount of greenhouse gases produced by agriculture, it could put the agriculture industry positively in the headlines. In the beginning of this study they did a survey about climate change awareness in farmers. While the study took place in China, I believe it can still be relevant to the United States and even other parts of the world. Most farmers in the study who were aware of climate change were already acting to reduce their effects on climate change through agronomic practice. I believe we could modify this approach for my study. If we advocate about the agriculture industry's effect on climate change to farmers, even if we get them to agree to action needs to be taken against climate change, they are more likely to take action if we also provide them with a simple solution like GMO's.

In the survey done in the study above they stated that 57 percent took no action related to climate change. I had the privilege to have a phone interview with Clint White, a sixth-generation farmer in Vernon, Texas. During this interview I asked Mr. White what his views on man-made climate change were. He proceeded to tell me that, he did believe the climate was changing, he did not believe it was because of man. Mr. White is not alone in his view. I grew up in a community that was full of farmer and ranchers and most of them shared a common belief on man-made climate change. Their belief was; God created the world and who are we, as man, to think we have the power to change it beyond repair? Clint White said, " the weather moves in cycles". He said this past year was abnormally cold. He lost some of his crop because of the cold weather. Mr. White said it has not been this cold in a long time. " But," he said, " it has been this cold before, about 20 years ago I remember it being that cold, and it will be that cold again." " it's just the weather cycle." He said. This belief of farmers could potentially pose a problem. We believe GMO's may be able to help reduce manmade climate change in agriculture, but a large majority of farmers do not believe in mad-made climate change. Earlier in my paper I discussed how GMO's have already been proven to be a solution for feeding the hungry world. During my interview with Mr. White he did express the idea that he does believe in using GMO's to produce more on less and use less resources, as do most farmers. If GMO's can be used to produce more food on less land, use less resources, and reduce climate change then they will be benefitable to everyone, regardless of your agenda.

The second source I have chosen to reference in my research is "Climate Change and Agriculture Production". This study, as well, is focused on helping feed the growing population. However, it also offers information that clarifies the effects of climate change related to agriculture that is helpful in understanding what specific problems need to be addressed. The study discusses that due to population growth and the demand for more food, crop land has been being used more intensively and we have needed to expand the amount of land we farm on to be able to keep up with the demand. Intensively using land is not good for the soil or the environment. This study also explains that tilling the soil permits oxidation of organic matter. All of these problems directly effect climate change in a negative way. I want to investigate if, though the use of GMO's, we could engineer a crop that would eliminates these problems. Another problem stated in this study is that agriculture is the largest consumer of fresh water, along with fertilizer being the highest commercial energy inputs in developed countries, followed by machinery and irrigation. I would want to study was to use of GMO's to reduce these factors and hopefully reduce the need of energy and water to produce crops, ultimately reducing agriculture's effect on man-made climate change. While my first source focuses more on the awareness of climate change in farmers, my second source is more related to identifying the specific issues that need to be improved to reduce the agriculture industry's effects on climate change. Once I have identified specific pressing issues, this will provide me with a place to start my research and specifically areas to focus on how the use of genetically modified organisms could possibly reduce theses issues.

Researching how and if genetically modified organisms could reduce climate change is just the beginning. I would want to follow that research with studying other ways agronomic practices could not only reduce climate change but also still be effective and efficient for the agriculture industries. There is a large amount of evidence that points towards GMO's being successful in producing crops that need less water, less fertilizer, and better adapting to changing climates. This evidence gives me a strong foundation in my thesis; GMO's may be able to help reduce agricultures effects on climate change. I have been doing background reading to better understand how to conduct my study based on other studies. I have not come across anything that specifically researches the use of GMO's to reduce climate change. It is possible this is the first study on this specific topic being done potentially giving it the possibility to be innovative and groundbreaking research.

I am expecting some negative feedback on the idea of using genetically modified organism in the food source. Being " All Organic" or " GMO Free" is becoming very popular and is the new trend. You can go into almost any grocery store and find promotions for food products that are organic or GMO free. These promotions indirectly imply that GMO's are a negative thing and food that does not have GMO's are better. There are very little negatives in using GMO's in our food supply and the good definitely out weights the bad. Organic or non-GMO food producers can charge more for their product. I do foresee negative promoters continuing to use misleading or false information related to the use of GMO's. However, I believe we as people who know the truth and all the good GMO's have to offer and could potentially provide

should advocate all the positives and put to rest the negative rumors about genetically modified organisms. Through this study we could uncover more positives about GMO's to better promote this use of them.

I believe GMO's have the potential to ensure better air quality, less pollution, a better environment, and reduce climate change, in addition to numerous other advantages. Whether you believe in manmade climate change or just believe in using less resources and feeding the hungry world, I believe everyone can agree that the proper use of science and technology through GMO's to better our world is positive. Your support and help would give me the opportunity and ability to research the use of genetically modified organisms in crops could reduce agriculture's effect on manmade climate change by engineering crops that require less water and little to no fertilizers.

Work Cited

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