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A Genetically Modified World

Genetically modified organisms have been around for years and have been consumed by humans and animals. GMOs can be found all around the globe because they serve an important role to today’s society in a number of ways. Considering the fact that there are so many genetically modified crops around the world, GMOs are in almost all food products. Genetically modified (GM) crops are crops whose genes have been tampered with in order to create a plant with only desireable traits. The most common GM crops include rice, corn, soybeans and several others that can be found in several countries including the U.S, Australia, and China. When it comes to genetic modification, people would rather ignore what is being done to our food, until it comes to their attention that there is a potential harm to human health. There has been debate on whether or not genetically modified crops pose a threat to us or the environment’s safety. Scientists have conducted several experiments and done research to determine if the genetically modified crops will harm the human body if consumed. As technology advances and the world’s population expands, the amount of GM crops grown will only increase. There is enough information to conclude that GM crops serve as an overall benefit to the world because of the effects they have on the economy, the environment and society. GM crops should continue to be grown by farmers around the world because they are environmentally friendly, cost efficient, and a stable food source.

 Crops have been genetically modified for years, long before people began to realize it and there was never an issue. Hosansky, a Denver writer that specializes in environmental issues, points out that “since the beginning of agriculture, farmers have modified crops.” Plants have evolved over time by combining its genetic material and breeding with other plants. Something as simple as putting two similar plants together, may result in offspring with a combination of both parent plants thus creating a new and modified plant. As stated in the same article, farmers began to develop their own breeds of plants by “[selecting] generations of … seeds from the most desirable plants and cross breeding different plants in order to produce new traits” (Hosansky). By crossing the different genes to produce a hybrid with different traits from the parent plants, that offspring’s genes have been naturally modified which is makes it a genetically modified organism.

Cross breeding two plants was the earliest form of genetic modification and it occurs amongst plants that are of the same species. As seen in the past, farmers have created fruit hybrids such as the pluot by the cross pollination of a plum and an apricot tree. These examples of hybrids are commonly seen in grocery stores but most consumers do not seem to stop and realize they are genetically modified foods. Cross breeding was of the first forms of GMOs but the actual injection of traits was first introduced in 1996 and these genetically modified crops were created so the plants would “exhibit … desired [traits]” (Food & Water Watch). In order to chemically, genetically modify plants, new genetic material from different organisms would have to be extracted from one substance and inserted into the seeds of the crop that is going to be genetically altered. Because genetically engineered crops appear to have nothing but beneficial aspects, “US agribusiness and policy makers . . . [embraced] biotechnology as a silver bullet for the food system” (Food & Water Watch). Substantial research has been done on GM crops to make sure that it poses no threat to the safety of consumers nor the environment.

Genetically engineered crops are beneficial to the world considering the fact that they positively affect the environment. According to the article, “SA Journal (Adelaide, Australia),” by Alisha Fogden, “since [West Australia] started growing GM (in 2010), the uptake has been phenomenal” (Fogden). Genetically modified organisms have proven to serve a very useful purpose in the continent of Australia. GM and crops quickly grew in popularity and Australia has seen nothing but positive results from them. Fogden believes that Australia greatly benefits from GMOs because farmers no longer have to worry about spraying their crops with chemicals and toxins in order to protect them (Fogden). Typically, crops need to be treated to be sure that they survive in the different situations they're in, but genetically modified crops have changed the way chemicals are used in farming.

Since GM crops do not need to be treated, the chemicals that would have been used, will not be released into the atmosphere, polluting the air. Plants can be altered to become pest resistant themselves by inserting the genetic material of pesticides into the crop’s genes (“Approach GM Foods with Caution”). The insertion of this trait will allow farmers to continuously plant new crops without the worry of a swarm of insects completely destroying their products. In addition, crops can also be inserted with the genetic material of other plants with desirable traits which could potentially make them more likely to survive in the constantly changing climate around the world.

 The new, desirable genes, such as being immune to certain diseases, could eventually be passed on to non-GM plants through a natural process called gene transfer. Gene transfer will allow nature to pass on the improved genetic material to other plants, without the aid of harsh and dangerous chemicals. As Hosansky points out in his article, “‘with biotechnology, you can double the amount of food without increasing the use of fertilizers and pesticides’” (Hosansky). One can conclude that the earth will benefit from this due to the fact that there are not as many toxins being released into the atmosphere. The fewer of amounts of pesticides used will not only benefit the environment, but it will also have a positive economic impact on farmers.

As technology advances and more genetically modified crops begin to develop, the majority of crops grown by farmers will be genetically altered in one way or another and this greatly impact the economy. This is much more cost effective for farmers because those crops will reproduce much faster than all natural, organic crops and the farmer will not have to purchase more of a certain type of plant seed. According to “SA Farmers in GM Limbo,” GM crops are being grown more frequently because they supply much more produce than organic plants so farmers will be able to export and profit off of all of the produce.

 Not only will the farmers profit off of selling their products, but they will also save money on the overall treatments of their entire crop. The genetic modification of crops will allow much more to be grown at a quicker rate and they will not be as susceptible to diseases as natural crops (“SA Farmers in GM Limbo”). If crops are able to survive against potential threats, farmers will not have to constantly spray pesticides or herbicides to keep the crop healthy. Also, farmers will not have to worry as much as the all-organic food producers when it comes to replacing entire crops when a disease hits and damages all of the produce. Having to replant entire crops is one of the most costly expense considering that they must be given time to grow to the proper size and the soil must be treated to be sure that the new crop is not affected. In this situation, GM crops could have prevented this due to the fact that their genes give them protection against diseases (Li et al 1). If all crops were to grow with a pest repellant and immunity to a disease, regular plant treatments will not have to be done, spraying crops will be an unnecessary expense and farmers will save money. The expenses of GM crops will decrease which will make it economically easier for foods to be exported to other countries where food is scarce and the population continues to grow.

The world’s population will only continue to increase as the years pass so more food will need to be produced in order to feed everyone. By genetically modifying the genetic coding of all crops, more food will be produced and there will be enough to feed all of the families in the United States (Knutson). World wide hunger is a problem society faces today and besides feeding the United States, there are currently several countries with hungry people that can be supplied with food. Without GM crops, not enough food will be produced for the U.S to continue to provide food to the other starving nations. The world’s population is only going to increase and whether it be drastic or not, there will continue to be unfed familes by only shipping and producing solely non-GM foods. If this necessary change is not made, there will not be a large enough food supply for citizens now nor for future families.

According to the article “Recommendations from a Meeting on Health Implications of Genetically Modified Organisms,” it is predicted that “world population will increase by 25% to 7.5 billion by [the year] 2020” (Amofah). With such a drastic increase in population, it will be difficult to provide food for the currently starving people as well as the rapidly increasing population. GM crops would be one of the only things that could save future generations from the potential threat of starvation. By growing more genetically modified crops, there will be a larger food supply and these genetically engineered plants will be able to withstand the constantly changing environments. Several GM crops have already been planted and that has helped reduce the number of starving people around the world. As stated in the article by Tom Price, there has been a “17 percent drop” of starving people all around the globe from 1992 to today (Price). The amount of starvation has decreased over the years due to the fact that genetic modification in crops has become more popular. GM crops produce much more than organic plants and they have also been known to have more of a nutritional value than non-GM crops.

When genetically modifying crops, the plants themselves could be injected with vitamins, making them more nutritious for people to consume. There are several ways that crops could benefit humans and Price writes that the genetic engineering of crops will put an end to hunger and malnourishment at a much quicker rate than ordinary crops (Price). By infusing crops with more vitamins, the starving people around the world will be given the nourishment they need to survive by simply eating one type of food. Crops infused with the genetic material of the various types of vitamins will ensure that all people will get their daily dose of vitamins with one helping of vegetables or fruits which will prevent malnourishment among all people, not only those with a scarce food supply. When the produce gets exported from one country to another, the chances of those foods rotting before arrival is highly likely. With GE produce, the food supply could stay ripe for a lot longer than non-GM foods and the product will reach its designated location, ready to be eaten (Price). This enhancement would allow food to be sent to a number of places without having to pay for the loss of product that was inedible to those receiving the merchandise. This process will ensure that fruits and vegetables do not go to waste as a result of rotting and it will be greatly beneficial for the European countries in need of food.

Genetically modified organisms appear to solely have positive effects on the world but there is still a debate as to whether or not they should continue to be grown. One major concern of genetically altering the characteristics of crops, is that the new genes will continue grow and reproduce causing it to out-populate the original plant species. As long as scientists continue to genetically alter crops, the original plant species’ genetic coding will get lost along the way. In addition, once the genetic coding of the plant gets altered, it will get passed on to its offspring creating a never ending cycle where the plant adopts a new trait (Hosansky). Scientists and farmers are planting genetically modified crops in order for them to have only their desired traits within them thus leaving the original species out to die and unable to reproduce. After the offspring have passed on the new genes, it is possible that the genes were passed on to a different plant causing it to produce a mutated offspring. The mutations occur naturally and eventually more plants will be genetically different from their original and this could eventually lead to the extinction of the starting plant all together. The fear of losing a species of plant is causing people to question whether or not genetically modifying plants would be safe and they feel that the existence of an entire species should be jeopardised, only to change a few of its characteristics.

There are concerns that genetically modified crops will completely wipe out a species because of the insertion of genes from a different substance; however, that is not entirely the case. As stated in the article, “If You Don’t Want Your Food Genetically Modified, Tell Nature to Stop it,” genetic transferring occurs naturally within organisms and it has been happening long before scientists inserted new genetic material into plants. This means that there is no need for concern with the mixing of a plant’s genes considering that nature does it on its own. The only difference would be that the changes are instantly shown when the new genes are physically inserted into the plants. The article also states that “natural gene transfers have been spaced out over the millennia, giving species time to adapt” (“If You Don’t Want”). Basically, organisms have been genetically modifying themselves since the beginning of time and the genetic transfer among plants is of the same subject matter. Over time, almost all organisms will differ from their original state and scientists were able to conclude that “humans… [are] more genetically modified than other primates” so this supports the claim that organisms are able to survive with gene transferring (“If You Don’t”). Regardless of whether or not a new trait is inserted by scientists or if it is genetically inherited by another plant, gene flow will continue to occur and genes will either continue to survive or get replaced by a new trait.

Genetically modified organisms have more of an impact on the world than some would think. Agriculture is one of the most affected by gene modification because crops are genetically altered to have a more desired traits. GM are found in the majority of consumable products mainly because many farmers would much rather have the altered crops over the all natural ones. GM crops are growing in numbers, globally and people are having a difficult time trying to decide if they would be beneficial to them or if it causes more harm than good. There is concern as to whether or not the injection of different genes is inserted into a completely different organism, is a safe process for scientists to do, let alone unleash more of them onto the world. Genetically modified foods are more beneficial than problematic, in more ways than one, and they should be allowed to be grown around the world. GM crops and foods are helping the world by keeping the environment safe, positively affecting the economy, and by supplying food for the rapidly growing population.

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