

The future of agriculture (genetically modified organisms)

[Science](#), [Genetics](#)



Everything is evolving. Not just humans and animals, but our food too. Some say it started way before humans even knew about genetics and how to alter genes. Decades before organisms began to be genetically modified, animals were indirectly modified through selective breeding. But now with all of the technology that has been invented, these organisms can be modified to almost exactly what is desired through genetically modified organisms. GMOs are now a safe and viable source of food that provide a variety of benefits to both producers and consumers. Congress needs to make these foods more accessible to people and fund research to further advance this beneficial technology.

First off, GMOs provide massive benefits to the farmers that grow the crops. Crop seeds can be altered to be resistant to different kinds of pesticides and even more resistant to droughts as some need less water to grow. But one very important modification that has been made in the past few years is the increase in the size and yield of many crops, more specifically corn. Bt corn is a genetically modified type of corn that is resistant to pests, increasing survivability and yield. As seen in "Genetically Modified Corn- Environmental Benefits and Risks" (Gewins 015). With these new advancements in genetic modification farmers are now growing corn on a massive scale. And with the mass production of corn farmers now need a market to sell all of their products. That is where the CAFOs (Concentrated Animal Feeding Operations) and high fructose corn syrup industries come in to play. These excess amounts of corn that can now be grown can be used for other processes such as producing high fructose corn syrup and feeding cows for cheap. Now farmers are both mass producing the corn and also producing

beef and corn syrup on a much larger scale. However, the producers are not the only ones benefiting from these genetically modified organisms.

Genetically modified organisms also provide numerous benefits to consumers. Many people believe that GMO foods mean the use of chemicals, however in most cases that is the exact opposite. Certain GMO crops are now insect and pesticide resistant. Meaning less use of pesticides in general and also the chemicals do not affect the food at all. With pesticide use, insects will eventually become resistant to the pesticide and it will potentially harm the surrounding ecosystem. However with GMOs plants that are naturally resistant to these pests can be created and reproduced “ The only path toward a continuous supply of a variety of foods, more nutritious food, cheaper food, and an environmentally friendlier agriculture is the genetic engineering of plants and seeds.”(Caplan 4).

Some people believe that GMOs are modified by pumping dangerous chemicals into the food that makes it grow better, but that is not the case. GMOs, as their name suggests, are made through altering the genetics of the organism, “ Progress in genetic engineering has led to the introduction of genetically modified organisms (GMOs) whose genomes have been altered by the integration of a novel sequence conferring a new trait.” (Elenis 347). Essentially meaning moving around the DNA and inserting the desired traits. There is no use of any dangerous or unnatural chemicals and ingredients in the process. However, some people still choose to believe these theories and even use bogus science experiments to support their claims. For many years the Eric Seralini rat experiment was used to support the ban of GMOs

however it was recently retracted. As can be seen, a huge piece of evidence that was used against GMOs is now irrelevant, furthering the claim that GMOs are safe. Clearly, there is little evidence against GMO use, however the support for non-GMO groups continues to grow. Many scientists are now attributing the growth due to the fear/disgust factor created by the media. Such is discussed in “ What Lies Beneath? Fear vs. disgust as affective predictors of absolutist opposition to genetically modified food and other new technologies” (Royzman 467&468). It is believed that people feel disgusted knowing that their food has been genetically modified, however these are unjustified opinions.

Throughout the 70s and 80s pesticide use was booming, with pesticide/insecticide use peaking around the early 80s. At the same time, the first successful GMO plant was created around then in 1983. When first introduced, pesticides were seen as the next “ big advancement” but farmers have seen the weaknesses of it as time has passed. Pests can become immune to pesticides and can wreak havoc on an ecosystem if not properly regulated. GMOs have been tested and researched since the 80s and released for public consumption since 1994 with the release of the tomato with a longer ripening time. Scientists have seen the effects of these organisms over time on both other organisms and the surrounding ecosystem.

As stated before, humans have been indirectly altering organisms to produce desired traits for hundreds of years. But now that the genes can be directly altered and people do not know enough about it one may believe GMOs to

be harmful to humans and the environment. When really in most cases there is little to no evidence of these claims. If GMOs truly were harmful, then surely there would be some hard evidence against the practice by now. Still, there are ways to improve GMOs. Scientists and farmers must work together to further improve genetic modification. But that may only happen once the public is educated enough about the topic and the real impacts, rather than the average trendy scandalous media story. Who knows what great advancements will be found next in the near future.