

The dangers and safety of genetically modified food

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Genetically Modified Food: Safe or Not?

Since 1994, when the Flavr Savr tomato commercially hit the shelves, the use of Genetically Modified Food/Organisms, or GMOs has been a hot topic. Especially in recent years, there has been a strong push for use of GMOs to stop. Many people aren't comfortable with the idea that their food is being tampered with on a molecular level. The U. S. Food and Drug Administration claims that GMOs are safe to consume and likely have no effect on human health. In addition there has also been no health risks shown as the result of GMOs in the countries where they are approved. To help understand the issues we must first understand what GMOs are.

Genetically Modified Organisms are basically what they sound like. Various living foods have their genetic material artificially manipulated in a laboratory. In the lab they create these foods by combining unstable components of plants, animals, bacteria and viral genes (" GMO Facts"). This unique science is not observed in traditional crossbreeding or in nature. Because it is not considered " natural" it is often viewed as unsafe. Scientist get the most favorable characteristics of plants and combine them to form the largest and most ideal food item for the consumers.

Although the effect of GMOs on humans isn't very evident there has been a few cases where the use of GMOs can be linked to some problems. One of which is the increase in allergies from GM foods. In a study with soy beans people were 50% more likely to be allergic after GMOs were introduced (" Health Risks"). Other allergy effects have been shown as well. Luckily, if a GM food is found to contain allergens the FDA requires it to undergo

additional test to see its risks (Goodenough and McGuire). They can also cause liver problems. Many of the other observed side effects were viewed in a laboratory and tested on rats. Rats fed GMO potatoes had partially atrophied livers. They also lead to reproductive issues. With rats fed GMOs nearly 50% of the offspring die within three weeks. There is also a correlation between GMOs and the deformation of testis, sperm, ovaries and uterus in mice and rats (“ Health Risks”). After a few generations of the rats eating GMO products many were completely sterile. The large scale effect of humans have not been able to be observed yet. These observed side effects in rats should be concerning for humans as well. However, at the moment there is not any exemplary detailed observations of the side effects caused by GMOs on humans.

Another issue that we face with GMOs is the development of super diseases. With the introduction of super organisms (GMOs) it is likely that super diseases will develop. These diseases are usually resistant to antibiotics. There are also some cases where the stomach lining of rats were seeing excessive cell growth, this type of growth is typically related to the formation of cancer (“ Health Risks”). The harmful effects of GMOs may only be seen after long periods of exposure or they may take a long time to surface. It could take years for the symptoms to present themselves and by that time vast numbers will have already been exposed. The companies that produce GMOs are selling and distributing GMOs without knowing all of the possible harmful effects they could be causing to the inhabitants of our planet.

The use of GMOs has also had an effect on the environment. GMOs are mostly grown for herbicide tolerance. This causes toxic herbicides to continually increase in potency. These powerful herbicides are hurting all plants and animals around the GMO plant. For an example the pollen from pest-resistant corn has been shown to harm the monarch butterfly caterpillars (Goodenough and McGuire). The GMOs also give rise to "super weeds". These super weeds develop and become resistant to almost all of herbicides potencies. Approximately 15 million acres of U. S. land are now overgrown by Roundup resistant "super weeds" (Anne Outwater). These super weeds can create a huge issue for all surrounding vegetation. Now that the super weeds have begun to grow and spread it is an impossible task to stop them. As has already been observed planets are becoming more and more adaptive to herbicides and we have yet to discover exactly how bad this adaption can become.

When creating GMOs they also make them resistant to pesticides. This enables them to be regularly treated with pesticides. Unfortunately, this is having a similar effect to the super weeds. Insects are developing that are becoming more and more resistant to pesticides causing them to be more numerous and more destructive.

GMOs have their advantages. GMOs generally reduce the need for herbicides and pesticides. They yield much more durable plants that require less care. These plants and grow during droughts and in used up soils. The need for less tilling and plowing can help reduce greenhouse emissions. GMOs are also able to be manipulated to increase the suitable components of the

plant. They are also grown bigger and in more quantity. This increased production can help provide much needed food for starving deprived counties. People in support of GMOs have pointed out that over a trillion GMO based meals have been eaten, without any obvious and extreme side effects ("The Good, Bad, and Ugly About GMOs."). GMOs can be a very valuable reserve.

As observed GMOs can be very helpful and very harmful. There are both good and bad from the use of GMOs but the possible risks seem to outweigh the pros. However, GMOs haven't been around long enough for the affects to become evident on humans. It still seems probable that GMOs can have harsh and unpredictable consequences. There have been enough studies with various animals and plants that show how harmful GMOs can be. GMOs should not be as widely distributed until we know and understand the effects. After decades of consumption it will be an impossible task to reverse the possible damage that has been done. Many also see moral issues with the idea of GMOs. In nature it is not possible to perform the type of gene manipulation seen in GMOs. Should nature be tampered with like this?

There are some very wealthy companies that have been pushing for the use and distribution on GMOs. These companies are making a profit but risking the lives that they are feeding. Michael Carolan seems to think that it's clear that large biotech companies are simply worried about the money earned from these products, rather than consumer safety (Carolan). These products may have gotten more support if the companies truly had the motive to help feed developing countries and produce better safer crops. However, it

appears that is not truly their motive. These companies work hard to keep the regulation at a minimum.

The GMO biotech companies should be responsible for any and all effects from GMO products. They are creating products for consumption without fully understanding the consequences. These big companies should have the soul responsibility to protect its consumers. Regulation agencies like the FDA should also be held more accountable. If a product is not fully understood then it should not be released for public use. The FDA should be mandating that GM foods be properly label so consumers have the ability to protect themselves. Both the large biotech companies and regulatory agencies need to work hard to ensure that all their products are safe before distribution. Unfortunately, they are not and our people, plants, animals and planet are going to pay the price.