

Genetically Modified Food: What It Means To Us

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Over the last few decades, a new technology has grown. It has been argued that this technology has the potential to alleviate our impact on the environment as well as solve major food crises across the world. Yet, this technology has generated fierce controversy due to its health-related, environmental, social and ethical implications. This is the technology of genetically modified organisms (GMOs). Genetically modified organisms are defined by the World Health Organisation (WHO) as “organisms in which the genetic material (DNA) has been altered in a way that does not occur naturally”. This includes GM crops. Over the recent years, GM crops have come with a price – on humans, and on the environment.

The process of genetically modifying crops is a newfound technology. Hence, it follows that there are uncertainties about this technology. Research and experiments are necessary before it is declared safe for consumption. However, genetically modified foods, their ingredients and their products have crept onto our dinner plates at an alarming rate. In the US alone (where GM crops are mainly grown) over 80% of processed foods are GM foods. Yet there is no consensus among the scientific community that GM foods have no adverse effects on our health. This is seen from the numerous ongoing studies producing varying results. One thing is certain, though: genetic engineering inserts DNA sequences into crops, causing unintentional deletion and rearrangement of its DNA. Because of this, GM crops have altered plant proteins or novel proteins. It is hard to say whether these proteins can provoke allergic reactions in humans. In Australia, for example, GM peas caused allergenic reactions in mice. Not just that, it also made the mice more sensitive to other food allergies. But the most appalling aspect of such results is that foods containing GM products are not labelled to differentiate between GM foods and non-GM ones. Hence, consumers are denied the right to choose the less risky alternative. They are forcibly made the “guinea pigs” of the experiment of genetic engineering – an experiment with an insubstantial hypothesis and little precautions.

The ill effects of GMOs are not limited to humans alone. Nature is already beginning to show its rejection of genetically modified crops. For example, when Roundup Ready crops (herbicide-resistant crops) were introduced to the American Prairies, herbicides began to be sprayed more freely. These herbicides reduced the number of milkweed plants, a crucial plant for monarch butterflies. As a result, there was a 75% decline in the number of monarch butterflies in the area. These butterflies are crucial for pollination as well as for the survival of other species. Their decline led to a huge impact on what is left of the Prairies. Another example of Nature’s rebellion against GMOs is the rise of “super weeds”. These weeds are resistant to the pest-controlling effects of Bt crops. They’ve also become herbicide-resistant like Roundup Ready crops. Because of this, farmers have to use more than double the pesticides that they used to before GM crops were introduced. Hence, a novel but misguided plan to abate the burden we create on the environment has backfired. In a poverty-stricken country like India, farmers have to face the brunt of such a backfire. Already in a debt trap, they cannot afford increasing pesticides and herbicides. Farmers that had once put their faith in GM crops now see no alternative but to take their own lives. In a 2011 documentary titled

“Bitter Seeds”, American filmmaker Micha Peled alleged that GMOs have caused a quarter of a million farmer suicides in India annually.

What most pro-GMO campaigners fail to realise or address is that when one problem is barely tackled, another one rises. One could make a crop tolerant to drought, but the plant will not be immortal. It would still die in soil with little organic matter and which doesn't hold water. Hence, genetic engineering is simply a distraction from investing in solutions to real problems facing farmers. We are crusading for the cure when we should actually be fighting for the prevention. We should be curbing overpopulation that leads to increasing food demands, and in turn increasing the burden on land. We should be educating farmers on sustainable and effective farming methods. We should be promoting integrated pest management (IPM), natural fertilizers, contouring and other branches of organic farming. If we take such measures, we would be tackling the cause of environmental crises and disasters that make GM crops necessary in the first place. There could be other solutions as well. Maybe in idealistic thoughts, genetic engineering could even be integrated with sustainable agriculture to promote a “live and let live” world. For example, pests could produce toxins that are actually modified to be useful to crop growth (without leading to overgrowth). Pests themselves could be genetically modified such that they don't attack crops grown by farmers. People could come up with – and implement – ideas that harness the power of genetic engineering in an improved manner. Some ideas might just remain ideas of a utopic society – too good to be true. Others, however, could prove genetic engineering to be a milestone in the development of agriculture.

Genetic engineering is an excellent technology for the field of agriculture. However, it is heading towards the wrong direction. This direction will not solve problems in the long run; rather it will create worse problems. By the time these problems are even discovered, it will be too late. Humans will be facing complications caused by the introduction of new molecules to their immune system. Similarly, flora and fauna will find it harder to adapt to yet another example of human negligence. The ecological balance would have been disturbed beyond repair. Hence, genetically modified foods need to be taken back to laboratories to be studied and improved. For now, the world is not ready for genetically modified foods. Maybe one day, this technology will improve so that it benefits human health with minimal complications, while reducing the ugly scar that humans have left on the environment.