GMO Facts and Arguments

There has been a debate raging about GMOs for a long time now. On one side of the debate is the idea that genetic engineering is progress for humanity, a natural extension of more traditional breeding techniques. The other side believes genetically modified foods are unsafe for human consumption and harmful to the environment.

Biotech companies claim that genetic modification yields more precise control over artificial selection. Studies funded by the industry consistently demonstrate safety, but only over the short term. For years, Monsanto, Dow, Syngenta, and other biotech based agricultural companies have told the public that there is nothing to worry about. Genetic modification will be the technology that will improve food in every conceivable way. Food will be more nutritious. Crops will be more vigorous, more disease resistant, etc. There are literally thousands of studies demonstrating GMO safety. Scrutiny reveals these short-term studies are funded by or performed by the industry itself.

As more independent scientists complete long-term studies, a very different picture has emerged about the safety of GMOs and their many other drawbacks. When these studies are not funded by industry, the results show us an uncontrollable, uncontainable, and dangerous technology with serious health hazards.

Seralini’s Research Broke New Ground

One of the first studies to ring the alarm was a 2-year, long-term chronic toxicity study. Don’t believe the hype churned out by biotech that criticizes the Seralini study until you take the time to look into the defense of their methods. The

Seralini study was actually a well-designed and well-conducted study. If we are to accept the argument that Séralini's study does not provide substantial evidence that genetically modified food is dangerous, then we must also conclude that the short-term toxicity studies funded by the agriculture industry (primarily Monsanto) on GM foods cannot prove that they are safe. They are in fact the same type of study, conducted the same way, even using the same type of rats. The only significant difference was the duration of the study. Seralini's study showed how the previous 90-day studies are misleading as 90 days is not long enough to test for long-term effects like organ damage, cancer, and premature death. The first tumors appeared in the rats after four months. This study was able to distinguish the effects of GM food from GM food grown with allotted pesticides. The results provide strong evidence supporting the claim that genetically modified food, especially genetically modified food grown with Roundup, is highly toxic and unfit for animal or human consumption.

New Studies on GMOs

There are other studies showing that GMOs are even worse than what was originally feared. Dr. Kruger's research shows how chronically ill people have higher glyphosate levels than healthy people. Dr. Swanson has linked glyphosate use with America's deteriorating health. Dr. Young's work showed how Roundup, at surprisingly low amounts, is an endocrine disruptor in human cells. It doesn't take much Roundup to disrupt hormones; the levels of Roundup allowed in municipal drinking water is enough to cause harm. There are many other studies that are showing other problems with GMOs. Independent science is coming to a different conclusion than industry-funded science. That doesn't seem all that surprising though, does it?

Even Short-Term Studies (When Independently Done) are Demonstrating Real Safety Issues with GMOs

Dr. Oraby fed rats a diet of GM soy and GM corn for 1-3 months. Despite the short duration of the study, the study ended with a surprising number of dead and unhealthy rats, except of course the control group of rats who weren't fed GMO food. The damage done to these rats from short-term GMO consumption was staggering. This study showed a wide range of toxic effects, including DNA damage, abnormal sperm, blood changes, and damage to the liver, the kidneys and testes – irrefutable evidence that GM foods are hazardous to health.

Most Americans have been eating GMOs for a lot longer than three months. The only reason we're not all dead is because GM foods are not the *only* food we eat. If 100% of all of our foods were genetically modified, our overall health as a nation would be even worse. As a nation, the U.S. is in very poor health, and we have every reason to believe that genetically modified foods are a big part of the problem.

A Controlled Dialog

For years, biotech has tried to frame the argument for genetic modification as one between the knowledgeable and the unknowledgeable. In their efforts to change their image, they have even managed to recruit to aid of Bill Nye and Neil deGrasse Tyson to advocate for the science of genetic engineering. Bill and Neil portray the critics of GMO technology as superstitious and ignorant. They respond to the criticisms of GMO technology as if they were addressing irrational fears. When Bill Nye or Neil deGrasse Tyson talk GMOs, they make all manner of bold pronouncements declaring

GMOs safe and wonderful.

It would be nice to believe that Bill Nye The Science Guy and Neil deGrasse Tyson would never accept money from biotech to promote GM technology, but Monsanto is a master of lobbying and payoffs. It would have been good for business to buy off Bill and Neil. Thankfully, not every scientist is for sale.

By never addressing the evidence provided by long-term studies, independent studies, or the concerns of numerous prominent scientists, biotech furthers the misconception that they are those in the know and everyone else is misinformed. In truth, the science isn't all that complicated. Anyone can come to understand GMOs well enough to become informed.

The public sees both Bill Nye and Neil deGrasse Tyson as spokesmen for science. Unfortunately, neither of them are as broadly trained in science as most people think. They speak on a wide variety of scientific topics, so they give the impression that they just about know it all. In truth, there has not been anyone knowledgeable enough to fill Carl Sagan's shoes since his death, though Bill and Neil have certainly tried. They give the impression of being knowledgeable in all fields of science, as their mentor Carl Sagan *actually* was. (Carl Sagan was adamantly opposed to genetic engineering and he had advanced training in biology). Science needs a spokesperson who's not for sale.

95% of the American Public and Many Scientists Want GMO Foods Labeled

This is not a debate of irrational fears versus a pragmatic technology. This is an argument among scientists and governments. There are those scientists who are employed by the U.S. government and biotech, and then there's just about everyone else. On the issue of GMO labeling, most of us are in agreement. Many countries all over the world ban the

cultivation of GMOs, and many countries mandate that GMOs be labeled. The debate went global a long time ago. While the rest of the world bans GMOs, Americans have been unsuccessful in just getting GM foods labeled.

Scientists have been speaking out against GMOs for some time now. For years they have been pointing out GMO failures in yield, toxicity, safety, and containment. Recently the World Health Organization named Roundup a carcinogen. One of the most common genetic modifications is the modification making crops Roundup ready and immune to the Roundup herbicide. In light of the health concerns raised by skeptical scientists, you would think that the U.S. would be scaling back on its use of Roundup and other suspected or known toxic chemicals in agriculture. Instead of scaling back on the use of pesticides, these kinds of chemicals are being used more widely.

Before the harvest of conventional oats, wheat, and other crops, Roundup is often applied in large amounts, dramatically increasing the American consumers' exposure to this carcinogen. The U.S. government has now approved the use of Agent Orange ready (24-D) soy and corn. No one should consume these chemicals in their food, yet the government says it's okay. Common sense says otherwise. If common sense fails some of us, there is plenty of evidence and hundreds of experts to fall back on.

Scientists All Over the World Have Called For a Moratorium on All Genetic Engineering

Scientists such as Prof. Ruth Hubbard, Geneticist, Harvard University, USA and 814 other scientists have written an open letter to governments and international forums. These prominent scientists are extremely concerned about the hazards that GMOs pose to biodiversity and food safety. They are

“extremely concerned” about the risks GMOs pose to human health and animal health. Experts all over the world are saying it’s time to change our agricultural practices.

Patents are meant to protect property rights, but the patents on genetically modified foods have been used to take farmers’ lands away from their rightful owners. Instead of protecting the freedom to own property, these patents are eroding the rights of property owners.

GM pollen from GM crops can travel miles. It is commonplace for birds, insects, and weather to carry GM pollen and seeds. Animals and natural processes can spread patented genes onto other farms. When this happens, hapless farmers are sued, and contrary to all common sense, they are the ones who usually lose in court.

GM crops cross-pollinate with other crops so voraciously that we can’t seem to get rid of some unapproved GM varieties. Genetically modified wheat keeps popping up in farmers’ fields across the country though it was ordered to be completely destroyed 14 years ago, way back in 2001.

The current techniques used to genetically modify foods are unreliable, uncontrollable, and unpredictable. Hundreds, sometimes thousands, of unwanted mutations result from genetic engineering. These can result in new allergens or toxins, and even new viruses. This makes sense when you consider that GMO foods are made to either be immune to poison or to create their own poisons or both. Traditional breeding techniques are simply more controllable and predictable.

This is an argument made by thousands of farmers and scientists.

These Are Just Some of the Reasons

GM Foods Should Not Qualify as Inventions

GM crops are neither necessary nor beneficial to agriculture. There have been many failures of genetically modified crops. Now that independent research is being done on GM crops, the picture of a failed technology emerges from the research.

- Genetically modified crops have produced inferior yields when compared to their unmodified counterparts.
- GM crops have been shown to have poor disease resistance.
- GM crops engineered to contain BT toxins kill beneficial insects such as bees, lacewings, swallowtails, and monarch butterflies. (Monsanto claims they are concerned about this, but so far greenwashing has been their only response).
- Glufosinate causes birth defects in mammals.
- Fruit abortion (a failure of fruit production) is a problem.
- Glyphosate has been linked to cancer.
- Farmers are experiencing poor financial returns.
- GMOs violate farmers rights.
- GMOs violate human rights and basic human dignity. (The right to know and control what we put into our bodies is a basic and fundamental human right).

The 815 scientists who wrote their open letter to the world are calling for support for research and development of non-corporate sustainable agriculture. Much of this invaluable research has already been done. Bill Mollison and David Holmgren have developed sustainable, non-corporate organic agriculture. They can farm anywhere and their yields are amazing. Their techniques are called permaculture, which means permanent culture. If agriculture does not become sustainable, it will not last, and we will not survive.

Profitable and Sustainable Are Not Always the Same Thing

The biotech industry would have the public believe that they are improving upon life through genetic modification and doing it sustainably. We are told that the benefits outweigh any risks, or even less believable, that genetic engineering is a risk-free technology.

When put into practice, the benefits accrue to Big Agriculture while the costs are paid for by the consumer and society in the form of higher prices, toxic food, and environmental degradation.

The costs of genetically modifying food is also paid by farmers. They face the threat of GMO contamination, pesticide runoff, soil degradation, and higher seed prices. In a successful attempt to manipulate the market, biotech corporations have been buying seed companies for some time. This enables biotech companies to make non-genetically modified seeds more expensive, and harder to obtain after they genetically modify a particular crop such as corn. Non GMO corn seed became much more expensive in North America after Monsanto produced GM corn seed. Even though this is a violation of our antitrust laws, biotech companies are still getting away with it. The same thing is happening in Spain. After allowing GMO cultivation, the variety of maize available to Spanish farmers has declined dramatically. Rising corn prices are sure to follow.

In a successful attempt to manipulate the market, biotech corporations have been buying up seed companies for some time, as the government looks the other way, ignoring anti-trust concerns. As these giant companies monopolize the marketplace, they are able to raise seed prices for both GM and non-GM seeds. When they produce a new GM crop, the seeds for the same non-GM crop become more expensive and harder to obtain. For

example, non-GM corn seed became much more expensive in North America after Monsanto produced GM corn seed. The same thing is happening in Spain. After allowing GMO cultivation, the variety of maize available to Spanish farmers declined dramatically. Rising corn prices are sure to follow.

Genetic engineering is not what Big Agriculture claims it is, and it will never do what they claim it will.

What are Believable Coincidences and What are Unbelievable Coincidences?

Health problems are rising along with with increased GMO consumption. Many will argue that is a coincidence, but a firm belief in coincidence is what biotech has been counting on since the technology was released to the public.

There are no labels, which mean no liability and no traceability. That's only a part of their protection. You can't sue Monsanto for harm caused from their products. They enjoy special legal protection that they lobbied and paid big money for. (That's right American politicians are for sale, or didn't you know?) These legal protections could be taken away from them if more of us would question these coincidences and investigate these correlations.

It will take an overwhelming majority of us demanding change in order for change to happen. The Vietnam War ended under the intense sustained pressure of the American people. That wasn't what the military industrial complex wanted – so it was an uphill battle. This will be an uphill battle as well.

Further Reading:

- *Understanding and Detoxifying Genetically Modified Foods*
- *Scientists Against GMOs – Hear From Those Who Have Done*

the Research

- *Doctors Against GMOs – Hear From Those Who Have Done the Research*
- *How to Avoid GMOs*
- *The Difference Between Heirlooms, Hybrids, and GMOs*
- *How To Detoxify and Heal From Vaccinations – For Adults and Children*

Sources:

- *Soil, Papered Over – Seed Freedom*
- *Open Letter from World Scientists to All Governments Concerning Genetically Modified Organisms (GMOs) – ISIS Institute of Science in Society*
- GMO Seralini – Top 10 Things You Need To Know About The Seralini Study
- GMO Evidence
- GMOs Proven Harmful To Human Health