

# Genetically Modified Organisms (GMO's)

by Santoshi Mongiello

GMO's, GMI's, and GM foods and crops are turning up everywhere. We find them in our grocery stores, farmers markets, restaurants, and refrigerators and it may be in our best interest to become well acquainted with their meaning and implications. Genetically Modified Organisms (GMO), Genetically Modified Ingredients (GMI), and Genetically Modified (GM) foods and crops are just what they sound like: foods, ingredients, or organisms that have been mechanically altered. Genetic engineers, hired by the biotechnology industry, alter the genes of natural seeds so that the seed will produce a plant to their liking. This altered seed then gets marketed and sold as a wonder seed to farmers, gardeners, or anyone else willing to buy it.

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Most commonly we hear of genes that are altered to be pesticide tolerant so that high doses of pesticide can be sprayed on the plant without it dying. But the biotechnology industry is growing by the day and many of their engineers are doing more than inserting herbicide tolerant genes. Animal genes can be mixed with plant genes as well to produce traits that are biased towards the needs of corporations, not necessarily consumers. Engineers insert the genes of fish (who can tolerate cold temperatures) into tomato genes to produce a tomato plant that can withstand the cold. Let your imagination run wild and you'll probably come up with an organism in the works. Like plants genetically modified to remove heavy metals from the soil and then store the metals in their tissue. According to the Union of Concerned Scientists,

The purpose of creating such crops is to make possible the use of municipal sludge as fertilizer. Sludge contains useful plant nutrients, but often cannot be used as fertilizer because it is contaminated with toxic heavy metals. The idea is to engineer plants to remove and sequester those metals in inedible parts of plants. In a tomato, for example, the metals would be sequestered in the roots; in potatoes in the leaves. Turning on the genes in only some parts of the plants requires the use of genetic on/off switches that turn on only in specific tissues, like leaves.

Would you want to eat a tomato that grew from mercury laden soil? Or trust that the foods you are eating come from plants that have been coded by humans to have on/off switches or programmed genes? A human cell naturally expresses, or turns on, only a fraction of its genes while the rest are repressed, or turned off. This enables a liver cell to perform liver functions and a brain cell to perform brain functions. This gene regulation is known by scientists to be critical to life, but is still not completely understood by humans. Human modification of genetic switches in living organisms leaves many wondering about nature's response. Once the genetically programmed organism is out of the laboratory how can we accurately assess which parts of the plant have been coded to allow mercury accumulation and which parts have been coded to reject mercury? And how will we assess the sustainability and safety of a human programmed organism, or know of a glitch in the program, once it is growing in the field? It is to our benefit to ask ourselves this question every time we make a food purchase. How much of our money and bodies do we want to donate to this GMO experiment?

Without even getting into the many negative environmental impacts of GM foods, the negative health effects of GM foods are staggering. Many studies have found that GM foods were lower in nutrition than their non-GM counterparts. In fact lab animals have refused GM foods and in many cases had to be force fed the food during the experiments. GM foods have been linked to liver problems, reproductive problems, sterility, disease, and death in animal testing. There are no human clinical trials of GM foods. The only published human study showed that long after you eat GM foods the gene continues to function inside your body. Another highly adverse effect of eating GM foods is that they can pose serious threats to those with allergies. Considering that GM foods do not have to be labeled as such, the consumer does not even know what his or her corn could have been inserted with. Perhaps the corn crop had milk genes inserted, or nut genes, or even wheat genes. Even if you are allergy free, ingesting GM foods can cause allergic reactions to things once tolerated.

We can look at the ever increasing numbers of the population who have allergies to foods, or at the decreasing populations of wildlife and wonder if somehow humans are playing with nature in ways that are proving to be less than beneficial, if not entirely detrimental. It behooves us to educate ourselves and others on this issue and begin to make healthy food choices that are in tune with our natural constitution. It is often the case that issues like this one cast many into a state of denial because it *seems* easier to deny then it does to restructure our daily eating and buying habits. Seemingly easier denial rarely if ever proves to be a healthy choice.

And as we sit in denial, the biotech industry grows bigger and bigger. The majority of corn, soy, and cotton grown in the United States are genetically modified already. And with the very recent approval of GM alfalfa: organic dairy, honey, and grass fed beef are soon to be long gone. Organic food, by definition cannot contain GMO's. But now that alfalfa is a new GM crop it could easily cross pollinate and contaminate organic alfalfa and the animals eating contaminated alfalfa will no longer be deemed as organic.

If you're a gardener, a nature lover, or a science student you understand that GM crops cannot be contained. Bees, butterflies, birds, bats and other pollinators fly around and pollinate. They eat nectar from plants and flowers and the pollen from one plant hitches a ride with them to the next plant, creating pollination. Natural pollination cannot be controlled by humans. So as pollen from a GM plant gets carried to a non-GM plant, both plants become GM. Monsanto, a biotech giant, has even sued organic farmers for using their patented genes when it was natural pollination that created the situation. Unless we wake up, and soon, one day all the plants on Earth will be human engineered seeds. No more organic, no more choices.

Many citizens, including farmers, scientists, and activists are working incessantly to bring awareness of the issue to the masses and to protect the consumers right to know. As mentioned earlier, GMI's are not listed on packaging, and they say that the average American, who does not choose to eat exclusively organic, is ingesting GMI's daily in large doses. The approval of GM alfalfa was a big setback, but the present moment is wide open for change. It'll take us to change it though.

We, as consumers, have a lot of power to turn the tides in the ever increasing number of GM foods and crops. Every dollar we spend is a vote either for or against GM food and the giant corporations that make them. Organic foods are non-GMO and so buying organic supports those farmers who are working hard to maintain the integrity of food and farming practices. There are many companies who do not have the organic certification but are refusing to use GMI's in their products. You can find a list of these companies by googling the Non-GMO Project. Another handy reference is the Non-GMO Shoppers Guide, which again you can find by googling. This guide gives you guidelines to follow when buying non-organic to minimize your purchase of GMO's. There are also a few websites listed below that you may want to explore. Teach yourself and then teach others.... it may be a gift to the world.

Actively researching and working until you gather enough information and/or insight to make a choice on whether or not you'll choose to support GM foods in the future is reasonable. Waiting to educate yourself on this issue is not. Educate yourself now, *Do It Now*, as Sri Swami Sivananda would say, and from there move forward consciously and deliberately. This is your Earth, your body, and your family, it's important to care for them in a most balanced and educated way.

And lastly, remembering that the Yogi diet best consists of sattvic food, ask yourself how sattvic can a GM food be knowing that it was born from forcibly inserting a single gene from a species' DNA into another unnaturally. Genes have protective barriers to prevent hybridization, so humans must shoot and/or pierce the cell's DNA to make this happen. This certainly doesn't seem like a sattvic diet based on natural foods and harmlessness.

As Guruji lovingly reminds us, follow a few simple guidelines and you can optimize the quality of your diet and your yogic life. Eat food that is organic whenever you can. Let your diet consists of food that is as natural as possible. Whole grain brown rice is better than whole grain rice crackers, for example. When you cook keep a clear mind and happy attitude. Negative vibrations are transmitted in and through food. Chew well, eat when hungry, and maintain a peaceful, contented attitude while you eat - regardless of what you are eating. And say a prayer or mantra over the food before you eat. That final act, along with a peaceful positive attitude can bring a lot of healing vibration into the food and into your body and mind.

Truth, Peace, and Love

<http://topdocumentaryfilms.com/the-world-according-to-monsanto/>

<http://www.responsibletechnology.org/>

[http://www.ucsusa.org/food and agriculture/science and impacts/genetic engineering/impacts-of-genetic.html](http://www.ucsusa.org/food_and_agriculture/science_and_impacts/genetic_engineering/impacts-of-genetic.html)

<http://www.seedsofdeception.com/Public/AboutGeneticallyModifiedFoods/FAQs/index.cfm>

<http://www.raw-wisdom.com/50harmful>.