Genetically Engineered Foods Pose Health Risk for Children

By Jeffrey M. Smith, author of Seeds of Deception

In a study in the early 1990's rats were fed genetically modified (GM) tomatoes. Well actually, the rats refused to eat them. They were force-fed. Several of the rats developed stomach lesions and seven out of forty died within two weeks. Scientists at the FDA who reviewed the study agreed that it did not provide a "demonstration of reasonable certainty of no harm." In fact, agency scientists warned that GM foods in general might create unpredicted allergies, toxins, antibiotic resistant diseases, and nutritional problems. Internal FDA memos made public from a lawsuit reveal that the scientists urged their superiors to require long-term safety testing to catch these hard-to-detect side effects. But FDA political appointees, including a former attorney for Monsanto in charge of policy, ignored the scientists' warnings. The FDA does not require safety studies. Instead, if the makers of the GM foods claim that they are safe, the agency has no further questions. The GM tomato was approved in 1994.

Americans eat genetically modified foods everyday. Although the GM tomato has been taken off the market, millions of acres of soy, corn, canola, and cotton have had foreign genes inserted into their DNA. The new genes allow the crops to survive applications of herbicide, create their own pesticide, or both. While there are only a handful of published animal safety studies, those conducted by the biotech industry are often dismissed by critics as superficial and designed to avoid finding problems. Scientists who voice their criticism or discover incriminating evidence have been threatened, stripped of responsibilities, denied funding or tenure, or fired. For example, a UK government-funded study demonstrated that young rats fed a GM potato developed potentially pre-cancerous cell growth, damaged immune systems, partial atrophy of the liver, and inhibited development of their brains, livers and testicles. When the lead scientist went public with his concerns, he was promptly fired from his job after 35 years and silenced with threats of a lawsuit.

Other research shows: Rats fed GM corn had problems with blood cell formation. Those fed GM soy had problems with liver cell formation, and the livers of rats fed GM canola were heavier. Pigs fed GM corn on at least 25 Midwest farms developed false pregnancies or sterility. Cows fed GM corn in Germany died mysteriously. And twice the number of chickens died when fed GM corn compared to those fed natural corn.

Soon after GM soy was introduced to the UK, soy allergies skyrocketed by 50 percent. This might be due to the fact that the most common allergen in soy, called trypsin inhibitor, is substantially elevated in GM soy. In addition, GM soy contains a protein that was never before part of the human food supply, and might be allergenic. In fact, sections of that protein are identical to those found in shrimp and dust mite allergens, which should have disqualified GM soy from approval, according to World Health Organization recommendations. Moreover, since the sequence of the gene that was inserted into soy has inexplicably rearranged over time, the protein it creates is different than the one intended, and was never subject to any safety studies. It may be allergenic or toxic.

Without follow-up tests, we can't be sure if the introduction of GM soy was the cause of the allergies, but we do know that the composition of GM soy is different. Ask the animals. Eyewitness reports from all over North America describe how several types of animals, when given a choice, avoided eating GM food. These included cows, pigs, elk, deer, raccoons, squirrels, rats, and mice.

Differences in GM food will likely have a much larger impact on children. They are three to four times more susceptible to allergies. Also, they convert more of the food into body-building material. Altered nutrients or added toxins can result in developmental problems. For this reason, animal nutrition studies are typically conducted on young, developing animals. After the feeding trial, organs are weighed and often studied under magnification. If scientists used mature animals instead of young ones, even severe nutritional problems might not be detected. Monsanto's study on their GM soybeans used mature animals instead of young ones.

The UK government also sponsored a study on GM soy—the only human feeding study ever conducted. It showed that the gene inserted into soybeans spontaneously transferred out of food and into the DNA of gut bacteria. This has several serious implications. First, it means that the bacteria inside our intestines, newly equipped with this foreign gene, may create the novel protein inside of us. If it is allergenic or toxic, it may affect us for the long term, even if we give up eating GM soy.

The same study verified that the promoter, which scientists attach to the inserted gene to permanently

switch it on, also transferred to gut bacteria. Preliminary results also showed that the promoter transferred into rat organs, after they were fed only a single GM meal. Research on this promoter suggests that it might unintentionally switch on other genes in the DNA—permanently. This could create an overproduction of allergens, toxins, carcinogens, or antinutrients. Scientists also theorize that the promoter might switch on dormant viruses embedded in the DNA or generate mutations.

Kids are regularly fed GM soy-based infant formula. The digestive capacity of small children is less than adults, suggesting that more GM DNA might survive with more transgenes ending up inside gut bacteria or possibly inside organs.

What about corn genetically engineered to create its own pesticide? If the inserted gene were to transfer from the corn that children eat into their gut bacteria, it could theoretically transform their intestinal flora into living pesticide factories. Preliminary evidence shows that thirty-nine Philippinos living next to a pesticide-producing cornfield developed skin, intestinal, and respiratory reactions while the corn was pollinating. Tests of their blood also showed an immune response to the pesticide. Mice fed the pesticide developed an immune response equal to cholera toxin, misshapen and excessive cell growth in their small intestines, and an increased susceptibility to allergens.

GM corn and most GM crops are also inserted with antibiotic resistant genes. FDA scientists described this as "A SERIOUS HEALTH HAZAARD." They, and health organizations worldwide, are concerned about the possibility that these might transfer to pathogenic bacteria inside our gut and create new, antibiotic resistant super-diseases. The biotech industry countered these fears by insisting that the DNA was fully destroyed during digestion and therefore no such transfer of genes was possible. The human feeding study described above, published in February 2004, overturned this baseless assumption. Unfortunately, children prone to ear and other infections may be at risk of facing antibiotic resistant strains of bacteria, due to the use of antibiotic resistant genes. The British Medical Association cited this as one reason why they called for a moratorium of GM foods.

No one monitors human health impacts of genetically modified foods. If the foods were creating health problems in the US population, it might take years or decades before we identified the cause. One epidemic in the 1980's provides a chilling example. A new disease was created by a brand of the food supplement L-tryptophan, which had been produced through genetic modification and contained tiny traces of contaminants. The disease killed about 100 Americans and caused sickness or disability in about 5-10,000 others. The only reason that doctors were able to identify that an epidemic was occurring, was because the disease had three simultaneous characteristics: it was rare, acute, and fast acting. Even then it was nearly missed entirely.

Children are more susceptible to problems with milk

Milk and dairy products from cows treated with the genetically engineered bovine growth hormone (rbGH) contain an increased amount of the hormone IGF-1, which is one of the highest risk factors associated with breast and prostate cancer. The Council on Scientific Affairs of the American Medical Association called for more studies to determine if ingesting "higher than normal concentrations of [IGF-1] is safe for children, adolescents, and adults." Sam Epstein, M.D., Chairman of the Cancer Prevention Coalition and author of eight books, wrote, "rbGH and its digested products could be absorbed from milk into blood, particularly in infants, and produce hormonal and allergic effects." He described how "cell-stimulating growth factors . . . could induce premature growth and breast stimulation in infants, and possibly promote breast cancer in adults." Dr. Epstein pointed out that the hormones in cows could promote the production of "steroids and adrenaline-type stressor chemicals . . . likely to contaminate milk and may be harmful, particularly to infants and young children."

Schools can protect children

Our entire population is being fed GM foods daily, without knowing the impact of these foods on our health, our behavior, or our children. Thousands of schools around the world, particularly in Europe, have decided not to let their kids be used as guinea pigs. They have banned GM foods.

With the epidemic of obesity and diabetes and with the results in some schools showing that food influences student behavior, parents and schools are waking up to the critical role that diet plays. When making changes in what kids eat, removing genetically modified foods should be a priority.

To become more informed of the dangers of GM foods and to learn how to avoid buying and eating GM foods, see www.seedsofdeception.com.