

Poison on Your Plate: GM Foods and the Right to Know

By Peter Leighton

For the first time ever, the U.S. Supreme Court is reviewing a case on genetically modified organisms (GMO) and their approval process. Monsanto Company is being sued because of concerns that their genetically engineered Roundup Ready alfalfa seeds can cross-contaminate nearby fields planted with organically produced alfalfa. It is also argued that because these GMO seeds have been engineered to resist a commonly used herbicide that Monsanto makes, killing off such unwanted plants would be extremely difficult.

Monsanto contends that using its seeds helps the environment because farmers don't have to use as much weed killer on their fields. Yet in a 2009 report, "*Impacts of Genetically Engineered Crops on Pesticide Use: The First Thirteen Years*", the authors contend that GE (genetically engineered) crops are pushing



pesticide use upward at a rapidly accelerating pace. In 2008, GE crop acres required over 26% more pounds of pesticides per acre than acres planted to conventional varieties. The report projects that this trend will continue as a result of the rapid spread of glyphosate-resistant weeds.

But the issues surrounding GMO's and Monsanto specifically are not really new, but perhaps they are now coming to the light of day. In 2005 a European court ordered the release of confidential scientific data from Monsanto's 2002 rat feeding trial of its GM corn (Mon863, Mon810 and NK603). While many food safety agencies had previously approved these corn varieties for

human consumption, independent researchers found a link to organ damage.

In both a 2007 data analysis published in *Environmental Contamination and Toxicology* and a 2009 research study which was published in the *International Journal of Biological Sciences*, researchers have linked organ damage with consumption of Monsanto's GM corn. According to a molecular biologist at the University of Caen involved in the research, the data "clearly underlines adverse impacts on kidneys and liver, the dietary detoxifying organs, as well as different levels of damages to heart, adrenal glands, spleen and hematopoietic system."

The researchers were very critical of Monsanto's research, finding it "systemically neglects" key health effects, saying, "This is a very serious mistake, dramatic for public health."

Some key problems with the Monsanto research data:

- The standard protocol for drug and pesticide safety testing is the use of three mammalian species. Monsanto used only rats, yet curiously won approval of their products in more than a dozen nations.
- Most chronic problems are not discovered in short term studies, which is why they last up to two years. Monsanto's research was a 90 day study.
- Monsanto's analysis muddled the results because they compared unrelated feeding groups instead of GM vs. its non-GM equivalent.

In what is being described as the most comprehensive study of the effects of genetically modified foods on mammalian health, the researchers concluded that the raw data from the studies reveal novel pesticide residues will be present in food and feed and may pose grave health risks to those consuming them.

Genetically-engineered corn, soybeans, and cotton now account for the majority of acres planted to these three crops. Almost half of all US cropland was planted to genetically engineered crops in 2009. Ninety-nine percent of GMO crops either tolerate or produce insecticide. This should sound the alarm about both human health and environmental concerns. Beyond the mounting evidence of negative health reactions in animals and humans, there may be a steep environmental toll to pay.

Gene insertion disrupts the DNA and can create unpredictable health problems, and transgenes may be unstable and rearrange over time. It is speculated that GM foods might create antibiotic-resistant diseases, and it is believed that transgenes proliferate in gut bacteria over a long period of time. The transfer of viral genes into gut microorganisms may create toxins and weaken peoples' viral defenses. Furthermore, disease-resistant crops may promote human viruses and other diseases. GM crops may also increase environmental toxins and bioaccumulate toxins in the food chain. These issues are compounded as crops cross-pollinate from field to field. Already a gene from a Brazil nut carried allergies into soybeans, and the GM proteins in soy, corn and papaya may be

allergens. Some believe GMO crops are the reason behind the mysterious bee colony collapse disorder and massive butterfly deaths. Some of the GMO fed animal data has shown:

- Offspring of rats fed GM soy showed a five-fold increase in mortality, lower birth weights, and the inability to reproduce
- Male mice fed GM soy had damaged young sperm cells
- The embryo offspring of GM soy-fed mice had altered DNA functioning
- Several US farmers reported sterility or fertility problems among pigs and cows fed on GM corn varieties
- Investigators in India have documented fertility problems, abortions, premature births, and other serious health issues, including deaths, among buffaloes fed GM cottonseed products

In the only human feeding study ever published on genetically modified foods, seven volunteers ate Roundup-ready soybeans. In three of the seven volunteers, the gene inserted into the soy transferred into the DNA of their intestinal bacteria and continued to function long after they stopped eating the GM soy. GM soybeans have as much as seven times more trypsin inhibitor, a known allergen, versus non-GMO soy. Another newly identified allergen has been found in GM soy; an allergen which blocks the absorption of nutrients.

Michael Taylor is the FDA authority that was responsible for the 1992 decision not to require GM foods to be labeled as such. Ironically, Mr. Taylor is a former Monsanto attorney. He claimed that there was no evidence demonstrating that GM foods were any different than conventional foods. Yet, as I pointed out previously, there is significant documentation to the contrary. In fact, the FDA's own scientists overwhelmingly believed that GM foods were dangerous and could cause allergies, toxins, new diseases and nutritional problems.

It is not surprising that both political and economic interests are influencing policy. With an economic meltdown, there is sure to be pressure on supporting the biotech industry, and there is a lot of money to be had in GM seed crops. But this brings us back to the beginning of our story.

As the U.S. Supreme Court hears the lawsuit against Monsanto, consider the fact that Justice Clarence Thomas also served as a Monsanto attorney. It's a small world, and hopefully one that we won't continue to poison.