

## **GMO, Failed Promises; Flawed Science: A Serious Health and Safety Issue**

Opinions touting the benefits of genetically modified food need correcting. There is nothing in biotechnology that has increased the intrinsic yield potential of any crop. Instead, there is a consistent yield reduction when the integrity of the normal genetics is disrupted by genetic engineering. Yield and quality factors are complex genetics accomplished by traditional breeding and not amenable to 'silver bullet' tinkering. Genetic engineering is more like a virus infection than a normal breeding process, and "substantially equivalent" is a myth.

As Professor Smith of Oxford University said, "Yes, all plants and animals contain protein, fat or oil, and carbohydrate; the DNA of all living organisms is made up of just four nucleosides; and virtually all proteins are made from just 20 amino acids. This does not imply that everything containing these basic building blocks is safe for humans. The same units arranged in different ways are contained in the small pox virus, bubonic plague, and influenza; deadly nightshade and other poisonous plants; creatures such as poisonous jellyfish, scorpions, deadly snakes, and sharks; and people who talk about absolute non-sense."

Rather than encouraging independent research on GMO safety or performance, the companies have denied access to them, forbidden publication of data, and threatened legal action if negative data are disclosed. The indiscriminate use of glyphosate and GMO crops are precipitating a major chronic health and environmental crisis. Rather than the way to feed the world, current genetic engineering is a disaster in the making.

The benefits claimed for GMOs are failed promises. Reduced root growth, lower nutrient density, increased disease, greater stress susceptibility of GMO crops and need for more pesticides are well documented. The abundance of weeds and insects resistant to GMO plants, or the chemicals they were engineered to tolerate, complicate our ability to control these pests. GMOs should be characterized as toxic chemical accumulating and pesticide containing foods.

Contrary to the common claim of safety, a large volume of peer-reviewed scientific information shows that genetically engineered products and the Roundup® herbicide that 85 % of GE plants were engineered to tolerate, are chronically toxic to human and animal tissues and lead to cancer, premature death, kidney and liver failure, and blood disorders. There are NO peer-reviewed scientific studies that show GMO crops, or the chemicals they are engineered to tolerate or produce, are safe for human or animal consumption.

Medical data indicates that millions of children and adults are suffering from the chronically toxic GMO products or the glyphosate (Roundup®) these plants accumulate. Massachusetts Institute of Technology scientists have documented the biochemical disruption caused by genetic engineering and concluded that glyphosate (Roundup®) is the most chronically toxic chemical in our environment. Ninety-three percent of women tested had the GMO Bt toxin in their blood, and 80% passed this toxic pesticide to their developing child in the womb.

As a patented powerful antibiotic, the herbicide glyphosate is toxic to microorganisms in the soil and GI tract of humans and animals that are essential for mineral absorption, vitamin production, tryptophan synthesis in autism, and defense against pathogens such as *E. coli*, *Salmonella*, and *Clostridium*. The increase of 'gut related' diseases such as Alzheimer's, autism, birth defects, breast cancer, celiac, chronic fatigue, end stage kidney failure, infertility, irritable bowel, leaky gut, Parkinson's, peritonitis, rheumatoid arthritis, and many others are directly correlated with GMO proteins and glyphosate residues in food and feed products.



The indiscriminate use of glyphosate and GMO crops are precipitating a major chronic health and environmental crisis. Drift from spraying glyphosate on GMO crops increased birth defects, reproductive failure and cancer in adjacent towns up to 450 % in Argentina. As little as 0.1 part per billion Roundup® in drinking water increased breast cancer, kidney failure, liver failure, endocrine hormone disruption and cytotoxicity to cells and tissues.

Rather than fewer pesticide applications, there has been a many fold increase in pesticide use with GMO crops. Much of this increased pesticide accumulates in food and feed products. EPA has approved residue limits 4,000 times higher than previously permitted – all without any safety evaluation! The USDA, EPA, and FDA have NO independent testing on safety, and rely on statements of the companies that the higher levels are safe.

It is much more than a 'right to know' issue! GMOs are a serious chronic health and safety threat to us and to our environment. Future historians may well look back upon our time and write, not about how many pounds of pesticides we did or did not apply, but about how willing we are to sacrifice our children and jeopardize future generations for this massive experiment we call genetic engineering that is based on failed promises and flawed science, just to benefit the bottom line of a commercial enterprise.

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#### **Some suggested reading**

Antoniou, M., Robinson, C., Fagan, J. 2012. GMO Myths and Truths: An evidence-based examination of the claims made for the safety and efficacy of genetically modified crops. Earth Open source June 2012.

Carman et al, 2013. A long-term toxicology study on pigs fed a combined genetically modified (GM) soy and GM corn maize diet.

Samsell, A. and Seneff, S. 2013. Glyphosate's suppression of cytochrome P450 enzymes and amino acid biosynthesis by the gut microbiome: pathways to modern diseases.

Seralini, G-E, Clair, E., Mesnage, R., Gress, S., Defarge, N., Malaesta, M., Hennequin, D., and de Vendomois, JS. 2012. Long term toxicity of a Roundup herbicide and a Roundup-tolerant genetically modified maize. Food Chem. Toxicol.

<http://dx.doi.org/10.1016/j.fct.2012.08.005>.

. Shehata, A., Schrodler, W., Aldin, AA., Hafez, HM., Krueger, M. 2012. The effect of glyphosate on potential pathogens and beneficial members of poultry microbiota in vitro. Current Microbiology DOI 10.1007/s00284-012-0277-2.

**N.L. Swanson. 2012. Genetically Modified Organisms and the deterioration of health in the United States. Seattle Examiner.com.**