COMPANY RESEARCH ON GENETICALLY MODIFIED FOODS IS RIGGED

In 2004, the peer-reviewed *British Food Journal* published a study claiming that when shoppers in a Canadian farm store were given an informed, unbiased choice between genetically modified (GM) corn and non-GM corn, most purchased the GM variety. The research, which was funded by the biotech industry and conducted by four staunch proponents of GM foods, other findings around the world that show how people avoid genetically modified organisms (GMOs) when given a choice. The controversial article was nonetheless given the Journal's prestigious Award for Excellence for the Most Outstanding Paper of 2004. It is often cited by biotech advocates as proof that people are embracing GM foods.

Fortunately Stuart Laidlaw, a reporter from Canada's *Toronto Star*, had visited the farm store several times during the study and described the scenario in his book *Secret Ingredients*. Far from offering unbiased choices, huge signs placed over the non-GM corn bin read, "Would you eat wormy sweet corn?" It further listed the chemicals that were sprayed during the season. By contrast, the sign above the GM corn stated, "Here's What Went into Producing Quality Sweet Corn." No wonder 60% of shoppers avoided the "wormy corn." In fact, it's a testament to people's distrust of genetically modified organisms (GMOs) that 40% still went for the "wormy" option.

In addition to the signs, the "consumer education fact sheets" in the store were nothing more than pro-GM propaganda. And the lead researcher, Doug Powell, was even seen trying to convince a customer who purchased non-GM corn to switch to the GM variety.

THE SCIENCE OF RIGGING STUDIES

Cambridge University's Dr. Richard Jennings, a leading researcher on scientific ethics, described the study as "flagrant fraud." But there are plenty more examples of "cooked" research in the much more critical area of GMO safety assessments.

- When dairy farmers inject cows with GM bovine growth hormone (rbGH), there are plenty of changes in the milk—including an increase of that hormone itself. To allay fears, the FDA claimed that pasteurization destroys 90% of the hormone. In reality, the researchers of this drug (then owned by Monsanto) pasteurized the milk 120 times longer than normal. But they only destroyed 19%. So they spiked the milk with a huge amount of extra growth hormone and then repeated the long pasteurization. Only under these artificial conditions were they able to destroy 90%.
- To demonstrate that rbGH injections didn't interfere with cows' fertility, Monsanto appears to have added cows to their study that were pregnant BEFORE injection.
- When Aventis CropScience prepared samples to see if the potential allergen in StarLink GM corn was intact after cooking, instead of using the standard 30-minutes, they heated the corn for 2 hours.
- When independent researchers published a study in July 1999 showing that Monsanto's GM soy contains 12%-14% less cancer-fighting phytoestrogens, Monsanto responded with its own study, concluding that soy's phytoestrogen levels vary too much to even carry out a statistical analysis. Researchers failed to disclose, however, that they had instructed the laboratory to use an obsolete method of detection—one that had been prone to highly variable results.
- To prove that GM protein breaks down quickly during simulated digestion, biotech

companies use thousands of times the amount of digestive enzymes and a much stronger acid than what the World Health Organization recommends.

- Monsanto told government regulators that the GM protein produced in their high-lysine GM corn was safe for humans, because it is also found in soil. Since people consume small residues of soil on fruits and vegetables, the protein has a long safe history as part of the human diet. But the actual amount of the GM corn protein an average US citizen would consume (if all their corn were Monsanto's variety), would be "about 30 billion-4 trillion times" the amount normally consumed in soil residues. For *equivalent* exposure, people would have to eat as much as 22,000 pounds of soil *every second of everyday*.
- Monsanto's high-lysine corn also had unusual levels of several nutritional components, such as protein and fiber. Instead of comparing it to normal corn, which would have revealed this significant disparity, Monsanto compared their GM corn to obscure corn varieties that were also far outside the normal range *on precisely these values*. On this basis, Monsanto could claim that there were no statistically significant differences in their GM corn.

Methods used by biotech companies to hide problems are varied and plentiful. For example, researchers:

- Use animals with varied starting weights, to hinder the detection of food-related changes;
- Keep feeding studies short, to miss long-term impacts;
- Test Roundup Ready soybeans that have never been sprayed with Roundup—as they always are in real world conditions;
- Avoid feeding animals the GM crop, but instead give them a single dose of GM protein produced from GM bacteria
- Use too few subjects to obtain statistical significance
- Use poor or inappropriate statistical methods, or fail to even mention statistical methods, or include essential data
- Employ insensitive detection techniques—doomed to fail

Monsanto's 1996 *Journal of Nutrition* study, which was their cornerstone article for "proving" that GM soy was safe, provides plenty of examples of masterfully rigged methods.

- Researchers tested GM soy on mature animals, not the more sensitive young ones. GMO safety expert Arpad Pusztai says the older animals "would have to be emaciated or poisoned to show anything."
- Organs were never weighed
- The GM soy was diluted up to 12 times which, according to an expert review, "would probably ensure that any possible undesirable GM effects did not occur."
- The amount of protein in the feed was "artificially too high," which would mask negative impacts of the soy.
- Samples were pooled from different locations and conditions, making it near impossible for compositional differences to be statistically significant.
- Data from the only side-by-side comparison was removed from the study and never published. When it was later recovered, it revealed that Monsanto's GM soy had

significantly lower levels of important constituents (e.g. protein, a fatty acid, and phenylalanine, an essential amino acid) and that toasted GM soy meal had nearly twice the amount of a lectin—which interferes with the body's ability to assimilate nutrients. Moreover the amount of trypsin inhibitor, a known soy allergen, was as much as seven times higher in cooked GM soy compared to a cooked non-GM control.

In December 2009, a team of independent researchers published a study analyzing the raw data from three Monsanto rat studies. When they used proper statistical methods, they found that the three varieties of GM corn caused toxicity in the liver and kidneys, as well as significant changes in other organs. Monsanto's studies, of course, had claimed that the research showed no problems. The regulators had believed Monsanto, and the corn is already in our food supply.

Safe eating.

[Citations for studies are available in Part 3 of *Genetic Roulette*, by Jeffrey M. Smith, www.geneticroulette.com.]

To learn more about the health dangers of GMOs, and what you can do to help end the genetic engineering of our food supply, visit www.ResponsibleTechnology.org.

To learn how to choose healthier non-GMO brands, visit www.NonGMOShoppingGuide.com.

International bestselling author and filmmaker Jeffrey Smith is the leading spokesperson on the health dangers of genetically modified (GM) foods. His first book, *Seeds of Deception*, is the world's bestselling and #1 rated book on the topic. His second, *Genetic Roulette: The Documented Health Risks of Genetically Engineered Foods*, provides overwhelming evidence that GMOs are unsafe and should never have been introduced. Mr. Smith is the executive director of the Institute for Responsible Technology, whose Campaign for Healthier Eating in America is designed to create the tipping point of consumer rejection of GMOs, forcing them out of our food supply.