

If You Find Problems with Genetically Modified Foods: Watch Out!

Arpad Pusztai

Biologist Arpad Pusztai had more than 300 articles and 12 books to his credit and was the world's top expert in his field. But when he accidentally discovered that genetically modified (GM) foods are dangerous, he became the biotech industry's bad-boy poster child, setting an example for other scientists thinking about blowing the whistle.

In the early 1990s, Dr. Pusztai was awarded a \$3 million grant by the UK government to design the system for safety testing genetically modified organisms (GMOs). His team included more than 20 scientists working at three facilities, including the Rowett Institute in Aberdeen, Scotland, the top nutritional research lab in the UK, and his employer for the previous 35 years. The results of Pusztai's work were supposed to become the required testing protocols for all of Europe. But when he fed supposedly harmless GM potatoes to rats, things didn't go as planned.

Within just 10 days, the animals developed potentially pre-cancerous cell growth, smaller brains, livers, and testicles, partially atrophied livers, and damaged immune systems. Moreover, the cause was almost certainly side effects from the *process* of genetic engineering itself. In other words, the GM foods on the market, which are created from the same process, might have similar affects on humans.

With permission from his director, Pusztai was interviewed on TV and expressed his concerns about GM foods. He became a hero at his institute—for two days. Then came the phone calls from the pro-GMO prime minister's office to the institute's director. The next morning, Pusztai was fired. He was silenced with threats of a lawsuit, his team was dismantled, and the protocols never implemented. His Institute, the biotech industry, and the UK government, together launched a smear campaign to destroy Pusztai's reputation.

Eventually, an invitation to speak before Parliament lifted his gag order and his research was published in the prestigious *Lancet*. No similar in-depth studies have yet tested the GM foods eaten every day by Americans.

Irina Ermakova

Irina Ermakova, a senior scientist at the Russian National Academy of Sciences, was shocked to discover that more than half of the baby rats in her experiment died within three weeks. She had fed the mothers GM soy flour purchased at a supermarket. The babies from mothers fed natural non-GMO soy, however, only suffered a 10% death rate. She repeated her experiment three times with similar results.

Dr. Ermakova reported her preliminary findings at a conference in October 2005, asking the scientific community to replicate her study. Instead, she was attacked and vilified. Her boss told her to stop doing anymore GM food research. Samples were stolen from her lab, and a paper was even set fire on her desk. One of her colleagues tried to comfort her by saying, "Maybe the GM soy will solve the overpopulation problem."

Of the mostly spurious criticisms leveled at Ermakova, one was significant enough to raise doubts about the cause of the deaths. She did not conduct a biochemical analysis of the feed. Without it, we don't know if some rogue toxin had contaminated the soy flour.

But more recent events suggest that whatever caused the high infant mortality was not unique to her one bag of GM flour. In November 2005, the supplier of rat food to the laboratory where Ermakova worked began using GM soy in the formulation. *All* the rats were now eating it. After two months, Ermakova asked other scientists about the infant mortality rate in *their* experiments. It had skyrocketed to over 55%.

It's been four years since these findings were reported. No one has yet repeated Ermakova's study, even though it would cost just a few thousand dollars.

Embryologist Andrés Carrasco told a leading Buenos Aires newspaper about the results of his research into Roundup, the herbicide sold in conjunction with Monsanto's genetically engineered Roundup Ready crops. Dr. Carrasco, who works in Argentina's Ministry of Science, said his studies of amphibians suggest that the herbicide could cause defects in the brain, intestines, and hearts of fetuses. Moreover, the amount of Roundup used on GM soy fields was as much as 1,500 times greater than that which created the defects. Tragically, his research had been inspired by the experience of desperate peasant and indigenous communities who were suffering from exposure to toxic herbicides used on the GM soy fields throughout Argentina.

According to an article in *Grain*, the biotech industry "mounted an unprecedented attack on Carrasco, ridiculing his research and even issuing personal threats." In addition, four men arrived unannounced at his laboratory and were extremely aggressive, attempting to interrogate Carrasco and obtain details of his study. "It was a violent, disproportionate, dirty reaction," he said. "I hadn't even discovered anything new, only confirmed conclusions that others had reached."

Argentina's Association of Environmental Lawyers filed a petition calling for a ban on Roundup, and the Ministry of Defense banned GM soy from its fields.

Judy Carman

Epidemiologist Judy Carman used to investigate outbreaks of disease for a state government in Australia. She knows that health problems associated with GM foods might be impossible to track or take decades to discover. Moreover, the superficial, short-term animal feeding studies usually do not evaluate "biochemistry, immunology, tissue pathology, gut function, liver function, and kidney function" and are too short to test for cancer or reproductive or child health. Dr. Carman has critiqued the GMO approval process on behalf of the Public Health Association of Australia and speaks openly about her concerns. As a result, she is repeatedly attacked. Pro-GM scientists threatened disciplinary action through her Vice-Chancellor, and circulated a defamatory letter to government and university officials.

Carman was awarded a grant by the Western Australia government to conduct some of the few long-term animal feeding studies on GMOs. Apparently concerned about what she might find, GMO advocates wrote letters to the government demanding that the grant be withdrawn. One scientist tried to convince the Western Australia Agriculture

minister that sufficient safety research had been conducted and he should therefore cancel the grant. As his evidence, however, he presented a report summarizing only 60 GMO animal feeding studies—an infinitesimal amount of research to justify exposing the entire population to GM foods.

A closer investigation, however, revealed that most of the 60 were not safety studies at all. They were production studies, measuring, for example, the animals' carcass weight. Only 9 contained data applicable to human health. And 6 of the 9 showed adverse effects in animals that ate GM feed! Furthermore, there were several other studies with adverse findings that were mysteriously missing from the compilation. Carman points out that the report "does not support claims that GM crops are safe to eat. On the contrary, it provides evidence that GM crops may be harmful to health."

When the Western Government refused to withdraw the grant, opponents successfully interfered with Carman's relationship with the university where she was to do the research.

Terje Traavik

Prominent virologist Terje Traavik presented preliminary data at a February 2004 meeting at the UN Biosafety Protocol Conference, showing that:

1. Filipinos living next to a GM cornfield developed serious symptoms while the corn was pollinating;
2. Genetic material inserted into GM crops transferred to rat organs after a single meal; and
3. Key safety assumptions about genetically engineered viruses were overturned, calling into question the safety of using these viruses in vaccines.

The biotech industry mercilessly attacked Dr. Traavik. Their excuse?—he presented unpublished work. But presenting preliminary data at professional conferences is a long tradition in science, something that the biotech industry itself relied on in 1999 to try to counter the evidence that butterflies were endangered by GM corn.

Ironically, three years after attacking Traavik, the same biotech proponents sharply criticized a peer-reviewed publication for *not* citing unpublished data that had been presented at a conference. The paper shows how the runoff of GM Bt corn into streams can kill the "caddis fly," which may seriously upset marine ecosystems. The study set off a storm of attacks against its author, ecologist Emma Rosi-Marshall, which *Nature* described in a September 2009 article as a "hail of abuse."

Companies Prevent Studies on Their GM Crops

When Ohio State University plant ecologist Allison Snow discovered problematic side effects in GM sunflowers, Pioneer Hi-Bred International and Dow AgroSciences blocked further research by withholding GM seeds and genes. After Marc Lappé and Britt Bailey found significant reductions in cancer-fighting isoflavones in Monsanto's GM soybeans, the seed seller, Hartz, told them they could no longer provide samples. Research by a plant geneticist at a leading US university was also thwarted when two companies refused him GM corn. In fact, almost no independent studies are conducted that might

find problems. According to a scathing opinion piece in an August 2009 *Scientific American*, “Agritech companies have given themselves veto power over the work of independent researchers. . . . Only studies that the seed companies have approved ever see the light of a peer-reviewed journal.”

A group of 24 corn insect scientists protested this restriction in a letter submitted to the Environmental Protection Agency. They warned that the inability to access GM seeds from biotech companies means there can be no truly independent research on the critical questions. The scientists, of course, withheld their identities for fear of reprisals from the companies.

Restricted access is not limited to the US. When a Japanese scientist wanted to conduct animal feeding studies on the GM soybeans under review in Japan, both the government and the bean’s maker DuPont refused to give him any samples. Hungarian Professor Bela Darvas discovered that Monsanto’s GM corn hurt endangered species in his country. Monsanto immediately shut off his supplies. Dr. Darvas later gave a speech on his preliminary findings and discovered that a false and incriminating report about his research was circulating. He traced it to a Monsanto public relations employee, who claimed it mysteriously appeared on her desk—so she faxed it out.

GMO Contamination: Don’t Ask and Definitely Don’t Tell

In 2005, a scientist had gathered seed samples from all over Turkey to evaluate the extent of contamination by GM varieties. According to the *Turkish Daily News*, just before her testing was complete, she was reassigned to another department and access to her lab was denied.

The unexpected transfer may have saved this Turkish scientist from an even worse fate, had she discovered and reported contamination. Ask Ignacio Chapela, a microbial ecologist from UC Berkeley. In 2001, he discovered that the indigenous corn varieties in Mexico—the source of the world’s genetic diversity for corn—had become contaminated through cross pollination with GM varieties. The government had a ban against GM corn to prevent just this possibility, but apparently US corn imported for food had been planted nonetheless.

Dr. Chapela submitted the finding to *Nature*, and as a courtesy that he later regretted, informed the Mexican government about the pending publication. He was called in to meet with a furious Director of the Commission of Biosafety and GMOs. Chapela’s confirmation of contamination would hinder introduction of GM corn. Therefore the government’s top biotech man demanded that he withdraw his article. According to Chapela, the official intimidated and threatened him, even implying, “We know where your children go to school.”

When a traumatized Chapela still did not back down, the Underminister for Agriculture later sent him a fax claiming that because of his scientific paper, Chapela would be held personally responsible for all damages caused to agriculture and to the economy in general.

The day Chapela’s paper was published, Mary Murphy and Andura Smetacek began

posting messages to a biotechnology listserv called AgBioWorld, distributed to more than 3,000 scientists. They falsely claimed that Chapela was biased, that his paper had not been peer-reviewed, that Chapela was “first and foremost an activist,” and his research was published in collusion with environmentalists. Soon, hundreds of other messages appeared, repeating or embellishing the accusations. The listserv launched a petition and besieged *Nature* with a worldwide campaign demanding retraction.

UC Berkeley also received letters from all over the world trying to convince them not to grant Chapela tenure. He had overwhelming support by his college and department, but the international biotech lobby was too much. Chapela’s tenure was denied. After he filed a lawsuit, the university eventually reversed its decision.

When investigators later analyzed the email characteristics sent by agitators Mary Murphy and Andura Smetacek, the two turned out not to be the average citizens they claimed. According to the *Guardian*, both were fabricated names used by a public relations firm that worked for Monsanto. Some of Smetacek’s emails also had the internet protocol address of gatekeeper2.monsanto.com—the server owned by Monsanto.

Science and Debate is Silenced

The attacks on scientists have taken its toll. According to Dr. Chapela, there is a de facto ban on scientists “asking certain questions and finding certain results.” He says, “It’s very hard for us to publish in this field. People are scared.” He told *Nature* that young people “are not going into this field precisely because they are discouraged by what they see.”

New Zealand Parliament member Sue Kedgley told a Royal Commission in 2001: “Personally I have been contacted by telephone and e-mail by a number of scientists who have serious concerns about aspects of the research that is taking place . . . and the increasingly close ties that are developing between science and commerce, but who are convinced that if they express these fears publicly, . . . or even if they asked the awkward and difficult questions, they will be eased out of their institution.”

University of Minnesota biologist Phil Regal testified before the same Commission, “I think the people who boost genetic engineering are going to have to do a mea culpa and ask for forgiveness, like the Pope did on the inquisition.” Sue Kedgley has a different idea. She recommends we “set up human clinical trials using volunteers of genetically engineered scientists and their families, because I think they are so convinced of the safety of the products that they are creating and I’m sure they would very readily volunteer to become part of a human clinical trial.”

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.