Seeds of Deception

Author Exposes the Corrupt Science of GMOs

Jeff Smith

Books on genetically modified organisms, or GMOs, in the food supply threaten to fill a good-sized shelf, yet so far none of them have even approached the impact of the great muckracking narrative about another destructive segment of the American food industry, Fast Food Nation. *Jeffrey Smith's* Seeds of Deception *could be the one to break through, although it will have to tunnel into the public mind, since the major media can be counted on to shun any work that examines the biotech industry with a cold eye and a sharp blade.*

Smith's book is not the place to go for the complete story of Monsanto's adventures in genetic engineering — that would be Bill Lambrecht's Dinner At the New Gene Café. *What Smith does is to train a relentless eye on the key issues of food safety, shoddy research, and the corruption of science.* Acres U.S.A. *caught up with him last fall in Austin, Texas, where he stopped over to talk about his book and stir up local opinion. He accomplished the latter by calling on the city's school system to stop serving GM food to its students.*

ACRES U.S.A. How did you pick up the thread of the GMO story?

JEFFREY SMITH. It was at a lecture I attended in the mid-1990s because I had heard of the dangers of genetically engineered foods to health and the environment. I was also aware that very few people in the United States were aware of those dangers. I decided to speak up and give talks about it, so I had to study up and learn more about the topic. Before that, I had been involved in nonprofit organizations, worked as a marketing consultant, just general do-gooder kind of things. I was hired as a consultant for an organization that was trying to get these foods labeled, I ran a few campaigns for candidates where that was an issue, and I ran my own campaign for Congress to get information about these dangers into the media. It was District One in Iowa — we have a small population, so it takes in a whole region including Iowa City and Fairfield, where I'm from. Then I worked at a GMO-detection laboratory as a director of marketing and was interviewed around the world. I wrote the book after I left industry. Even though I had been speaking about genetically modified foods for years, it wasn't until I did some of the in-depth research and interviews for the book that I realized the extent of the dangers and the coverup and the rigged research. I had a lot of very lucky breaks in terms of getting information, new information that's never before been in the public domain.

ACRES U.S.A. Can you give an example?

SMITH. The whole L-tryptophan chapter is a good example. A large portion of that material comes from investigator Bill Crist, who spent close to a decade analyzing and making phone calls and gathering documents. He turned over everything he had to me, so I'm releasing his material. It shows how much the FDA was involved in the coverup and the diversion of blame. There was even conflicting information given to him by an FDA official, apparently trying to reduce the blame on biotechnology and raise other questions that in reality were not justified.

ACRES U.S.A. How did they penetrate the FDA, and how far back does it go?

SMITH. I found out there was a long tradition of the FDA working too closely with the drug companies that they were regulating. There were people receiving financial incentives, bribery and payoffs, and there was a revolving door where people would approve drugs at the FDA and then take a position with the companies whose products they had approved. With biotechnology, Dr. Henry Miller, who was in charge of biotechnology issues from the late '70s until 1994, said that the regulating departments of government have done everything big agribusiness has asked them and told them to do.

Reprinted from
ACRES USA
A VOICE FOR ECO-AGRICULTURE
February 2004 • Vol. 34, No. 2

If you look, for example, at recombinant bovine growth hormone (rBGH) there was a series of whistleblowers who complained about how the approval process was putting the public's health at risk. One at a time they were either forced out of the department, fired, or stripped of responsibilities. The remaining whistleblowers resorted to writing an anonymous letter to a congressperson, complaining that their department was engaging in fraud and conflict of interest.

ACRES U.S.A. Tell us more about this so-called revolving door relationship between industry and government agencies.

SMITH. When the FDA was creating a policy for dealing with GM foods, the deputy commissioner in charge of policy was David Taylor, formerly one of Monsanto's attorneys — he created their ideal regulatory framework for the government and then apparently got a position in the government helping to implement it. He later became a vice president of Monsanto. So, as a private lawyer with Monsanto as his client, he worked with FDA to help them determine that rBGH did not need to be labeled on milk, then became a part of the USDA, and then a vice president of regulatory affairs for Monsanto. Under his guidance, FDA claimed that they were not aware that these foods differ from conventional foods in any meaningful or uniform way. That was the impression given to the American public, that the scientists had done their homework and couldn't find any indication that those foods were different. A colleague of mine organized a lawsuit against the FDA — 44,000 documents were made available, and they told a completely different story. The scientists were quite concerned about the potential dangers of GM foods. They elaborated on their capacity to create an increase in known toxins, to create unknown toxins, to gather toxins from the environment, and to cause nutritional problems, allergies, antibiotic resistance, diseases or new diseases. They said that these problems would not necessarily be obvious to the people who create the GM food — to the biotechnology companies; they called them "breeders" — and they said the only way to find out if these foods would create dangerous side effects was to test every variety and submit them to long-term safety studies — *over a period of years.* This was their opinion, and in fact it was the dominant opinion of the FDA scientists doing the review. But they were not in charge of making the policy. Every time it was rewritten it was more and more voided of their concerns. One scientist said, "What's become of this document? There's no scientific basis for it. It reads very pro-industry and political." He said that this is the industry's pet idea, namely, that there are no side effects, but the data doesn't hold up. What was happening, perhaps, was that Michael Taylor, who was in charge of policy development, along with others who were political appointees, were overriding the scientists.

"Pusztai discovered that the rats which were fed a GM potato had developed damaged immune systems, smaller brains, livers and testicles, atrophy of the liver, and potentially precancerous cell growth in the small and large intestines — they were a mess."

ACRES U.S.A. Can you describe what you discovered about the approval process behind the Roundup Ready soybean?

SMITH. The genetic code in the Roundup Ready soybean was scrambled, and this was not known to scientists for years. It was not until gene-chip technology came out, long after GM foods were on the market, that scientists were able to monitor gene expression after only a single gene was inserted. They found that up to 5 percent of the gene expression was modified when a single gene was inserted, meaning that one out of 20 genes in the organism had increased, decreased, or shut off their protein creation altogether on the basis of a single insertion. They only realized last year — with the confirming evidence from the only human food-safety study — that GM genes transfer from the food we eat to our gut bacteria and potentially to our internal organs. This might explain some of the damage that occurred when the British scientist Arpad Pusztai fed GM potato to his rats.

ACRES U.S.A. Dr. Pusztai's study was widely derided. What happened?

SMITH. The man and the study were widely pooh-poohed during seven months in which he was not allowed to defend himself — he was threatened that if he spoke about his research he would be sued for potentially defaming or financially hurting the Rowett Institute in Scotland, where he was working. His background is this: he is the world's leading scientist in the field of lectin research. He worked at Europe's leading research laboratory, where he was part of the team charged with determining the protocol for testing that would be adopted by the British government and eventually by the European Union. He inadvertently discovered that the rats which were fed a GM potato had developed damaged immune systems, smaller brains, livers and testicles, atrophy of the liver, and potentially precancerous cell growth in the small and large intestines — they were a mess. It wasn't the result of the lectin; it wasn't the result or the product of the transferred gene. It was somehow the process of genetic engineering that caused the problem. When he went public, he was fired and gagged with the threat of a lawsuit. Then they ran this audit of his work — it was a hatchet job. They used three scientists who were not nutritionists; they did the entire audit in one day, and did not have access to all of the day. When Pusztai sent the audit results, along with his own data and description, to international scientists of very high regard around the world, they vindicated him and said that his information was sufficient to publish and that it did indicate damage from the GM constructs. It was eventually published in *The Lancet,* Britain's leading medical journal,

Reprinted from
ACRES USA
A VOICE FOR ECO-AGRICULTURE
February 2004 • Vol. 34, No. 2

after they had six peer reviewers look at it, and they published even though the editor has been threatened with the loss of his job by a scientist who was trying to convince him not to run it. There is a lot of disinformation out there on the Pusztai study, but it remains to date the most in-depth research ever done in a GM-food feeding trial.

ACRES U.S.A. The place where he worked was a publicly funded research institute?

SMITH. They received some private funding — in fact, it was revealed that they received some funding from Monsanto. According to people at the Rowett Institute, the receptionist had forwarded two calls from Downing Street the night before Pusztai was fired. Downing Street is the Prime Minister's residence, and the Prime Minister is very pro-biotech. It represented a sudden turnaround in the institute director's reactions. For two days he touted the research as profound and a great success, and the next morning he told Pusztai he was going to be suspended, that there would be an audit, and that they would not renew his contract. They disbanded the entire team of researchers, no one was allowed access to their data, and they put out press releases defaming Pusztai and his research. I asked Pusztai what was the most shocking moment, which I always ask of my interviewees because I look to write dramatic stories and weave the science into them rather than writing a science book. Evidently no one had asked him that question, because he told me something he hadn't told anyone before. He described a scene that had occurred months earlier, when Professor James, his director, walked into his office and put down a stack of six or seven hundred pages on his desk and said, "These are submissions from biotech companies for their foods, and the Minister of Agriculture is meeting in Brussels with other European ministers, and wants a scientific opinion." Pusztai was aware that this professor, his director, had gotten these documents because he was on the committee to approve it, and he knew that the other professors on the committee would never actually read these hundreds of pages — because they were busy men and not working scientists.

ACRES U.S.A. A state of affairs that's all too common, unfortunately.

> "The FDA claims the rBGH is destroyed in the gut, and they base their claims on a rat study that did not hold up upon review by Canadian scientists."

SMITH. But Pusztai had been in the field for two years working to design the protocol for approving these foods, and he was among the most qualified scientists in the world to review this stack of documents. He said, "How much time do I have?" and the director said, "Two-and-a-half hours." Pusztai quickly went to work and said later that reading those studies was the most shocking moment, it was the turning point in his life. He said that what he was doing and what the industry was doing were diametrically opposed. He was doing food safety research, and they were doing as little research as possible so as to get their foods on the market. He said the research was very poor, really bad science. That was the turning point. He called the minister up and said, "I wasn't expecting to give you a strong recommendation after only two-and-a-half hours, but I must say, after looking at this research, there is certainly not enough material here to support introducing these foods to humans or animals." And the minister said, "I don't know why you're telling me this, your professor's committee already approved them two years ago." Pusztai was *shocked* that this flimsy research had been used to get these foods onto the market, that the committee had been approving foods without telling anyone, that it wasn't being subjected to his kind of in-depth research, and that it was already out there. He found out later, when his rats were damaged by the potatoes, that if those potatoes had been submitted by that same flimsy research, the potatoes would have been approved. Moreover, the corn and soy and tomatoes that had been approved based on the flimsy research could be creating the same sort of problems over 10 years — damaged immune systems — and that it would not have been detected in the studies. The experience in human beings would not have been overt enough to create clearly traceable symptoms. That's what we are faced with right now. We have evidence that these foods are causing problems — obviously the L-tryptophan disaster is very serious, and incidence of soy allergies skyrocketed by over 50 percent when GM soy was introduced into the United Kingdom. We know of an increase in an allergen in soy called trypsin inhibitor that might explain that. We know that food-borne illnesses in the United States more than doubled between 1994 and 2001, but we don't know if that's related to GM food, because there's no monitoring.

ACRES U.S.A. Some of it's related to shoddy inspecting resulting from increased production speed in the meat industry, as well as political pressure to relax inspection standards.

SMITH. That's true.

ACRES U.S.A. One of the first big products to hit the market was Monsanto's recombinant bovine growth hormone (rBGH). Were there problems, in your view, with the research that was done to get it approved?

SMITH. Before I go into the rigged research, let me describe the issues around rBGH. The milk from treated cows has an increased amount of hormone called IGF-1 — insulin-like growth factor-1. The IGF-1 in milk is identical to the IGF-1 in the human body; it's one of the most powerful hormones in the human body. People with high levels of IGF-1 have high levels of cancer. Pre-menopausal women with high levels of IGF-1 are seven times more likely to develop breast cancer. Men are four times more likely to develop prostate cancer. It's also implicated in colon cancer. In fact, for breast cancer, outside of family history it's the number one risk factor. We know that milk contains some IGF-1 anyway. We know that milk drinkers increase their levels of IGF-1 as

Reprinted from
ACRES USA
A Voice for Eco-Agriculture
February 2004 • Vol. 34, No. 2

opposed to non-milk drinkers. Now we know that milk that comes from cows injected with rBGH has higher levels of IGF-1. So I'll let you connect the dots. IGF-1 is not destroyed in the human gut. The FDA claims the rBGH is destroyed in the gut, and they base their claims on a rat study that did not hold up upon review by Canadian scientists. The Canadians revealed that the FDA apparently did not review the most incriminating piece of evidence, submitted by Monsanto in summary form, showing that the rats actually were reacting to oral administration of rBGH. There was antibody reaction, there was infiltration to the prostate, there were cysts on the thyroid, and this was with rBGH-fed rats as well as rBGH-injected rats. Speaking of BGH, here's an example of rigged research. It helps to remember that BGH is bovine growth hormone, which is naturally occurring, while rBGH is recombinant bovine growth hormone, which is injected. FDA scientists concluded in the article they wrote to defend the approval that BGH does not increase significantly in milk from treated cows, but it wouldn't matter even if it did, because 90 percent of it is destroyed by pasteurization.

ACRES U.S.A. What about the actual research?

SMITH. I looked at it, and there was a 26 percent incease in BGH from treated cows, but apparently it wasn't statistically significant — they had only injected three cows in the study! They had injected three cows with 10.6 milligrams of rBGH. They used a different company's rBGH, not even Monsanto's version, but one that was never approved, and they injected it on a daily basis. In contrast, rBGH is not injected on a daily basis. In practice it's injected every two weeks at 500 milligrams, 47 times the amount that they used. We know from leaked FDA documents that there is a huge spike in hormone levels in the blood following injection. So by using a smaller dosage every day, the researchers are able to avoid the huge spike and only get a 26 percent increase in the milk. But as the FDA said, 96 percent was destroyed during pasteurization. These same researchers did that study, led by an undergraduate from Canada and three scientists who had ties to Monsanto. They heated milk 120 times longer than the normal pasteurization process to try to destroy the hormone. They *still* couldn't destroy more than 19 percent, so they added powdered hormone, powdered BGH, 146 times the naturally occurring level of BGH, heated that 120 times longer — 30 minutes instead of 15 seconds — and were able to destroy 90 percent of that, and that's what the FDA reported. This is a clear example of research that we would not want to base our food supply on, but we do.

> "There's no ironclad scientific method to prevent allergenic genetic crops from getting on the market. The only way to test them is to feed them to a lot of people and see who has an allergic reaction."

ACRES U.S.A. They did not even try to replicate field conditions?

SMITH. No. In fact, that leads us to another instance of rigged research. When Monsanto did the big study to verify — and I use the world "verify" loosely — that Roundup Ready soy was safe for animals, first of all they didn't spray their own Roundup Ready soy with Roundup before testing it. It's almost inconceivable why a farmer would grow Roundup Ready soy and not use Roundup herbicide. The also diluted their soy 10-to-1 before feeding it to animals, and in another case they diluted it 6-to-1 or 12-to-1, so you had very little soy in there. They didn't feed it to young, fast-growing animals, they fed it to mature animals, which would certainly mask any symptoms. They didn't weigh the animals' organs, they just eyeballed them. They omitted materials entirely from the study that showed there were significant differences in the composition of Roundup Ready and conventional soy, including a potentially anti-nutritional lectin and a potentially allergenic trypsin inhibitor. When they challenged Mark Lappé — the author of *Against the Grain,* whose book was cancelled at the printers due to a threatening letter from a Monsanto attorney — they also insisted that there was no difference in phytoestrogen levels. Well, this clued the critics in to the possibility that there was a difference, so they did more research and found that there was in fact a big difference between the two — about 12 to 14 percent. Monsanto's people heard about the research and quickly sponsored their own, and their conclusion was that in their research there was such a variability of phytoestrogen levels, they couldn't even do a statitstical analysis. It was found out later that they specifically asked the laboratory to use an obsolete testing method that was prone to high variability. Monsanto's brands of GM corn would almost certainly fail the recommended tests by the World Health Organization to prevent allergenic GM crops from entering the market. Also, there's no guarantee, no ironclad scientific method to prevent allergenic genetic crops from getting on the market. The only way to test them is to feed them to a lot of people and see who has an allergic reaction.

ACRES U.S.A. What happens during the process of the genetic modification that creates problems or the possibility of problems?

SMITH. There are many things that can go wrong in genetic modification. Cells can get turned on, can get switched off, can get mixed up. They can become unstable, they can mutate, they can transfer to our gut bacteria. There are all kinds of things that can occur in genetic modification that don't necessarily occur in other types of food. They are impossible to predict; they would have to be extensively tested, and even then there could be unintended results. With respect to the problems with Pusztai's rats, there was a study done by the food standards agency in Great Britain. They took seven volunteers who had colostomy bags because they'd had their lower intestines removed for a prior condition. They fed them soyburgers and soy milkshakes made from herbicide-resistant soybeans, and they

Reprinted from
ACRES USA
A VOICE FOR ECO-AGRICULTURE
February 2004 • Vol. 34, No. 2

found that for three of the seven volunteers, the bacteria in their gut had become herbicide resistant, meaning that the gene had transferred from the food to the gut bacteria in a single meal. Now, we don't know the medical implications of that — it could be devastating, it could be harmless. We do know that in corn, for example, there's a gene that's resistant to ampicillin — it's called the antibiotic-resistant marker gene — that's in GM corn. If that transferred to our gut bacteria and mated with pathogenic bacteria, we could be creating super-diseases that are genetically engineered to survive ampicillin or other antibiotics. Ampicillin is very commonly used and effective antibiotic. When the FDA was asked to approve the first antibiotic-resistant marker gene, the division in charge of the evaluation was shocked and upset about it. The director wrote a memo titled "The Tomatoes That Will Eat Akron" — they were studying a GM tomato with the marker gene — and he wrote in all-capital letters, *"It would be a serious health hazard to introduce a gene that codes for antibiotic resistance into the gastrointestinal flora of the general population."*

ACRES U.S.A. A very powerful warning.

SMITH. It was approved anyway! And the American Medical Association, the World Health Organization, and others expressed concern. The British Medical Association, which called for a moratorium on GM foods altogether, claimed that this danger is one of the reasons. This study was conducted last year, showing that antibiotic-resistant genes might transfer and indicating that other genes might, also. But it also relates to another, even more serious danger. When you insert a GM gene into DNA, you have to turn the gene on somehow. So they attach an altered virus gene called a "promoter," and it switches on the foreign gene 24/7, around the clock. They have discovered subsequently that this promoter can also turn up accidentally in other genes in the host's DNA. It can then force the genes to express proteins which could be allergenic, or carcinogenic, or anti-nutritional, against the wishes of the cell. Some scientists believe that this particular promoter can create uncontrolled cell growth, and could lead to cancer. Now that we know genes can jump from the food we eat onto our gut bacteria, it's simply a matter of extrapolation to know that they might also jump onto our internal organs, and if this promoter were unleashed, it could promote uncontrolled cell growth, which could lead to cancer.

ACRES U.S.A. Would it be safe to say that the more often we do this, the greater the chances something will go wrong?

> "'It would be a serious health hazard to introduce a gene that codes for antibiotic resistance into the gastrointestinal flora of the general population,' wrote the FDA director in charge of the evaluation."

SMITH. Absolutely. The more often we eat it, the more crops that we introduce, and the higher the concentrations of GM food become, the greater becomes the likelihood of these problems occurring. One of the scientists who believes that this promoter could be creating the situation for cancer is Dr. Stanley Euan, and he was the one who actually examined Arpad Pusztai's rats and found uncontrolled cell growth. He's a leading tissue researcher in Scotland. These are some of the clues that I've put together in the book, showing that these foods are inherently unsafe, there's preliminary evidence indicating they have created substantial damage in laboratory animals, they may have been responsible for some of the increased diseases we've seen, and they have already been responsible for a deadly epidemic, at least one that we know about — the L-tryptophan debacle.

ACRES U.S.A. Why is scientific consensus apparently so hard to build against a technology that's obviously fraught with serious risks?

SMITH. I think we can see what's happened to people like Arpad Pusztai and Ignacio Chapela and others who want to publish incriminating evidence — they get viciously attacked. Chapela was attacked by e-mail, his tenure committee received phone calls and letters demanding that they not give him tenure. *[Editor's note: As this issue goes to press, the University of California at Berkeley has denied tenure to Ignacio Chapela.]* Another scientist I know of published a critical article in a journal. He was not from the biotech industry, so he was not used to the response that ensued, which was very, very sharp criticism not normally associated with scientific journals, and he was shocked to see the results. What's been created is a sense of danger. In fact, Ignacio Chapela said that scientists will not even do studies to prove the pro-biotech points because they are afraid of what will happen if they find incriminating evidence. Dan Glickman, the former secretary of agriculture under Clinton and a big cheerleader for GMOs, describes a situation he calls "the mindset." He said, "What I saw generically from the pro-biotech side was that the technology was good, and that it was almost immoral to say that it wasn't good, because it was going to solve the problems of the human race, feed the hungry, and clothe the naked. And if you were against it, you were stupid." He said you felt almost disloyal and alien by trying to present an open-minded view. He also said he just spouted the rhetoric that was written into his speeches. He described an attitude that made it a moral imperative to be pro-GMO, and an almost vicious marginalization of anyone who was against it. This has been the result of a phenomenally successful marketing campaign which has created the mythology that GMOs will save the world.

ACRES U.S.A. What *are* the facts about GMOs and world hunger?

SMITH. In reality, according to United Nations, we're not going to run out of food — in fact we have more food than at any time in history. Starvation and hunger are not the result of lack of production but of economic and distribution realities. The myth about Golden Rice, that it will solve

Reprinted from
ACRES USA
A VOICE FOR ECO-AGRICULTURE
February 2004 • Vol. 34, No. 2

the problem of vitamin A deficiency, is similarly ill-conceived. A 2-year-old would have to eat seven pounds of Golden Rice per day. Not only that, but for emergency measures you can feed a pill twice a year to kids to prevent blindness, at the cost of a nickel per year. That'll be a cost of $25,000 for 500,000 kids, to prevent blindness. This myth, as one CEO said, that "for every month that we delay in the production of Golden Rice, another 50,000 kids go blind," well, according to Greenpeace they spent $100 million developing Golden Rice, and they haven't finished yet, when just a tiny fraction of that could have solved the problem. Or at least prevented a lot of blindness.

ACRES U.S.A. What's the extent of the penetration at the scientific level? How badly has objectivity been compromised?

SMITH. Right now there is a tremendous overlap between academia and corporations. A lot of schools are supported with grants, and often any criticism of biotechnology results in threats to remove corporate funding. Some scientists depend on chairs endowed by biotechnology companies. Thirty percent of the scientists surveyed in Britain admitted that their backer had asked them to change their results. That was only the 30 percent who admitted it. We also know of a dramatic difference between results from industry-sponsored studies and independent studies. Take aspartame, which is a GM sweetener. Between 1985 and 1995 there were roughly 166 studies done on it, and they were split almost evenly between industry-sponsored and independently sponsored — 100 percent of the industry studies found no problems with the sweetener, and 100 percent of the independent studies raised questions. So it's not a coincidence. In fact, Kate Jenkins of the EPA claimed that Monsanto was guilty of fraud, had substituted different products for examination by the FDA, and left out incriminating evidence of medical records from their own employees to try and prove that dioxin was not as bad as it was — so we can see from these reports how these companies might be directly affecting the results.

ACRES U.S.A. What would it take to bring Monsanto's sleaze factor to the surface, where it becomes a byword for scientific corruption, as Enron is now a byword for financial corruption?

> "Dan Glickman said he just spouted the rhetoric that was written into his speeches. He described an attitude that made it a moral imperative to be pro-GMO, and an almost vicious marginalization of anyone who was against it."

SMITH. There are two things to consider: one is what needs to happen, and the other is how to raise the awareness of the Monsanto issue. In Britain, Monsanto is hated. There was a member of Parliament who declared Monsanto public enemy number one. There was a newspaper article called "The Man with the Worst Job in Britain," and it was about the PR man for Monsanto. They are far more notorious than Enron there. In the United States they have been protected by a far more generous press and a very supportive government. It's possible that we can eliminate GM foods without having to defame them if we simply bring out the dangers and educate Americans that these foods can create very serious health problems, and that it is very important to protect yourself since the government is not doing the work for us. This alone could topple the industry. In fact, it happened like that in Great Britain. It was the concern of the consumers, not government intervention, that caused Unilever to commit to remove GM ingredients from its food in April 1999, and within a week almost every major food supplier had made the same commitment. I see the same thing happening in the United States when enough people choose to protect themselves from this dangerous food.

Reprinted from
ACRES USA
A VOICE FOR ECO-AGRICULTURE
February 2004 • Vol. 34, No. 2

ACRES U.S.A. Can we rely on GMOs not being sold in Europe unlabeled?

SMITH. It's a law that GMOs have to be labeled in Europe. It's been a law for years — it's not a recent law. The recent law increased the requirements for traceability. It's an even tougher labeling law.

ACRES U.S.A. What about South America?

SMITH. Most industrialized countries have labeling laws.

ACRES U.S.A. What is the central fallacy behind the idea that genetic engineering is not that big of a risk, that we should not be so worried?

SMITH. There are three central fallacies. One is that it's just an extension of natural breeding methods, and the subtext of that is that you can transfer a gene from one species to another and all you do is add a gene with no unintended consequences. The next one is that these foods have been looked at carefully by the FDA and evaluated before being approved, and the last one is that they will feed the world. The myth that they've been looked at carefully has a subtext that there's no difference between GM and traditional foods. We've already seen that this statement is political and economic in origin, not scientific. In fact, the scientists at FDA were concerned that the foods had very significant risks and needed to be subjected to long-term safety tests.

ACRES U.S.A. Is anyone attempting to organize American scientists on this issue? Their integrity is taking a beating on this issue and others. You'd think they would want to fight back and save their reputations.

SMITH. I don't know of any. I do know some of the scientists in this country have been outspoken on the dangers, and they continuously win their arguments and their debates, but are not heard above the fray. They can completely destroy any pro-biotech scientist who chooses to defend GMOs on the basis of the mythology and lack of studies, but that doesn't seem to translate into change of policy or even into media reporting. When I asked Arpad Pusztai for a list of scientists who could review some research that I wanted to look at on genetic modification, he gave

me a list and said, "You may notice that most of these scientists are retired or of retirement age. That's because they have nothing to lose. Younger scientists generally will not touch this subject because their lifeblood, their profession is at risk if they do." I have a feeling there are plenty of people like Pusztai who discovered problems with GM foods but just did not want to rock their boat. Or if they didn't actually discover problems, they suspected that the problems were there.

ACRES U.S.A. How much economic pressure does it take to influence corporate behavior?

SMITH. We could turn around this situation very quickly. When Coca-Cola changed its formula, I don't believe Coca-Cola had lost more than a couple of points of market share — it was the trend that they saw that they were trying to prevent. I believe that if Kraft Foods or other major manufacturers saw a trend of a dip in their market shares because of a migration of customers leaving GM foods, it would be very easy for them to see the advantages of telling their suppliers to remove GM ingredients. Gerber has done that, Wild Oats and Whole Foods have done that, Trader Joe's, even Frito Lay told their growers they want only non-GM corn. What we are looking at is an opportunity here — unlike other health and environmental risks that require a change in legislation, we can do this entirely by consumers voting with their dollars. It's more than a philosophical vote. That's why I focused on food safety in my book, because people will tend to avoid eating dangerous foods if they *know* that they are dangerous, and they'll especially avoid feeding them to their children. That's why I'm proposing that the school system of Austin remove GM foods from the school lunch program. I'm doing it for three reasons. First, children are most at risk, and it is necessary to protect them — remember, young animals in safety studies are the ones that are more likely to develop reactions to GM foods. Second, the issue for parents could be quite explosive, since parents traditionally work quite hard to protect their children and are often more concerned about their children's diet and health than their own. Third, it raises the issue into public awareness of the health dangers to the general population, and they, we hope, will ask the questions:

Monsanto Faces Serious Price-Fixing Allegations

As this issue goes to press, *The New York Times* has published an article ("Questions Seen on Seed Prices Set in the '90s," by David Barboza, January 6, 2004) revealing that Monsanto executives met "repeatedly" with executives from another major seed company, Pioneer Hi-Bred International, for the purpose of setting the prices of genetically modified seeds at an artificially high level. The newspaper cited interviews with former executives at both companies and court documents as its sources. Having spent billions in the 1980s to invent specialized seeds, Monsanto apparently tried to exert complete control over the market for them in the 1990s.

As long as Monsanto was the sole vendor of the seeds it patented, of course, it could set whatever price the market would bear. According to antitrust law, however, once Monsanto granted another company licenses to sell the seeds, competition was created and discussions about cooperating to keep prices high became illegal. At issue is whether the talks between top executives of Monsanto and Pioneer, which included then-CEOs Robert Shapiro and Charles S. Johnson, respectively, merely involved the terms of the licensing deals or actually involved arbitrary setting of price levels to exploit the success of the products. Monsanto and Pioneer both issued statements to *The New York Times* claiming that they only discussed the prices Pioneer would pay to Monsanto for the licenses.

Business analysts cited in the article estimate that some $10 billion worth of Monsanto's GMO seeds have been sold since they went on the commercial market in 1996. The court documents cited by the newspaper come from a class-action lawsuit filed by a group of farmers in 1999 who alleged that Monsanto tried to form an illegal cartel for the marketing of GMO seeds. If the price-fixing allegations are found to have substance by the Justice Department — which is already looking into allegations of anticompetitive practices in the herbicide market that Monsanto dominates with its Roundup weedkiller — the originator or Roundup Ready soy and Bt corn could be in for an extended legal ordeal. Even the industry-friendly Bush administration would be hard-pressed to ignore price-fixing on this scale. A spokeswoman for the Justice Department declined comment after acknowledging that the department is aware of the seed-pricing talks.

Because Pioneer already had licenses granted in 1992 and 1993, it was exempt from the "value capture" scheme Monsanto debuted in 1995. Under the new regime, farmers had to sign grower-licensing agreements that prohibited the age-old practice of saving seeds from harvest for future planting. Monsanto also required its new licensees to charge a "technology fee" for every bag of biotech seed sold to farmers. According to the *Times* report, Monsanto pressured Pioneer to renegotiate the original licensing deals to preserve the value of the technology, even threatening to leave Pioneer out in the cold, biotech-wise. "In 1997 and 1998," the article contends, "Pioneer executives told Monsanto they would agree to simply charge an 'elite' or premium price — in effect agreeing not to compete with Monsanto and its partners on price — in exchange for Monsanto's giving Pioneer access to new varieties of modified seeds and the technology to make others, according to people who have seen documents relating to this."

In a follow-up story, the *Times* reported that Rodney W. Sippel, a federal judge presiding over the price-fixing case, failed to disclose to the parties involved that he had been listed in court documents as one of the main lawyers representing Monsanto in a 1997-1998 case covering similar issues.

Time will tell if Monsanto crossed the line between mere greed and criminality.

What is it about these foods that's unsafe, which foods are unsafe, what's the evidence, and how can I avoid it? I think that going to school systems is a very potent thing, both for its logical role in protecting children, and for its marketing potential, for getting the information out to the whole society very quickly. It's a flashpoint.

ACRES U.S.A. Do you think the biotech industry is deliberately trying to pollute the global food supply so that genetic modification becomes a *fait accompli* — there will be too much of it out there to weed out?

SMITH. A biotech consultant said that the hope of the industry is that the world will become so flooded with these foods that we'll just give up. There are certainly indications that that is the strategy, aided and abetted by the U.S. government's aid-giving departments. For example, they send out a high, high percentage of GM foods to developing countries. And they send it out in the form of whole, plantable seeds such as corn. When they were trying to send the corn to African nations, certain countries said, "We'll take it but please mill it so it can't be planted." The United States refused to mill it, so the governments themselves did the milling. They know that if they send whole corn, the farmers will save it, plant it, and contaminate their corn supply with GM corn. I know that this is the biotech industry's desire. I know that they do not like the more precise methods of testing for GMOs. They prefer very general, hard-to-pin-down tests, so that it is harder to require strict segregation.

Jeffrey Smith's Seeds of Deception *is available from the Acres U.S.A. bookstore for $18, plus $3 shipping in the U.S. More information on Jeffrey Smith and updates on the dangers of GM foods are available online at <www.seedsofdeception.com>. One of the most comprehensive sources of investigative reporting and educational materials on GM foods and technology is the Say No to GMOs! website at <www.saynotogmos.org>.*