Jeffrey Smith -- "Don't Put That In Your Mouth" (2008)

http://seedsofdeception.com/shop/dont-put-that-in-your-mouth-audio-cd/
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Contents

00:40 Introduction

So we're going to talk about what is very likely the most dangerous aspect of food and future of food but also one of the easiest problems to fix. And we'll talk about that, we'll be sure to come out on a positive note. I'm telling you this because we're going to go on a journey together on disease, deception, denial – you know, FDA stuff. We're going to do it together, we're going to come out on the other side with a plan and ways to protect ourselves and ways to protect our families.

01:18 The genetically engineered (GE) foods

Alright, so what are the genetically engineered foods? Genetically engineered foods – genes are taken from one species and put into the DNA of another species. That's genetically modified organism. So some fun examples, real life examples… they've taken genes from spiders and put them into goats, in the hopes they can milk the goat for spider web protein to make bullet proof vests. There's another goat with 15% human genes. There are pigs with jellyfish genes so their noses glow in the dark. Why? Because they can do it. They have pigs that have cow hides. They have corn with a human gene in it that produces a spermicide. They have rice growing in Kansas with human genes to produce pharmaceuticals for children. So they're mixing and matching across the species barriers, turning animals and plants into whatever, and factories. Among the foods we eat… our soy, corn, cotton, canola… all genetically engineered. Soy, corn, cotton, canola. All of them used for vegetable oil, right? Now these are the minor crops. Hawaiian papaya, a little bit of zucchini, a little bit of crookneck squash, some alfalfa was approved and then denied but some is out there right now and it'll just stay out there. There's also quest brand tobacco.

02:49 Avoiding GE foods

Now, for the food side, in order to avoid eating genetically engineered foods, you have to either buy organic, buy products that say non-GMO or specifically avoid the ingredients on the label. And that's particularly difficult with soy and corn because their derivatives are practically omnipresent in the US diet. I'm guessing that 90% of packaged, processed foods contain at least some small amount of genetically engineered ingredients. If you go to a fast food restaurant, forget it. You're cooked. It's GMO city. But if you go to a restaurant that cooks food from scratch, it's pretty easy to identify if there's GMOs in the food or not. Corn and soy in whole foods – tofu, soy sauce, corn tortillas, corn chips, corn on the cob, popcorn is not GMO, white corn, blue corn, not GMO, and the percentage of corn on the cob is less than the percentage overall. But it's easy to avoid the whole foods when it's mostly soy or mostly corn. But if it's a processed food, it likely has it as an ingredient. But if they cook from scratch, what's hidden from view is the vegetable oil. So you go into the restaurant and say what kind of oil do you cook in? if they say vegetable oil, you can say can you cook mine in olive oil or butter or no oil? And then you can pretty much avoid eating genetically engineered foods in restaurants unless they're having some kind of teriyaki sauce or things like that that are pre-processed.

04:21 The FDA position -- no need to test

Alright, the crops. Let's talk about the crops. The reason why I'm here talking about genetically engineered foods is because of a single sentence in the FDA policy. And the sentence claims that the agency is not aware of any information showing that the foods created from these new methods differ from other foods in any meaningful or uniform way. That is the reason why we're here. Because on the basis of that sentence, the FDA said no testing is necessary. If Monsanto

and Syngenta and Bear and Dow and Dupont and BASF – the 6 big agricultural biotechnology companies – if they want to introduce a genetically modified food into your diet, they don't have to tell the FDA because the FDA is not aware of any information showing that the foods are different so no testing is necessary. This is a 1992 policy which continues to exist today. However, secret documents made public from a lawsuit show that that sentence was a lie. 44,000 internal documents were made public and when people started going through them they realized these scientists as a whole were uniform – overwhelming consensus that these foods could cause allergies, toxins, new diseases, nutritional problems. That these foods could create problems which would be hard to detect. So what did they recommend? Long-term safety studies required for each product. What did they get? They got that sentence. The sentence was a lie.

So who overruled the scientists? Well the White House had told the FDA "promote biotechnology." So the FDA created a new position. The deputy commissioner of policy and put into that position Michael Taylor, Monsanto's former attorney. And while he was in charge – and you can see these in the documents, every rewrite of the policy systematically removed the concerns of the scientists. One scientist commented "What's become of this policy? It's become basically a political document. There's no science in it." And it does not discuss the unpredicted side effects. So, Michael Taylor worked with the FDA in charge of policy, then he worked with the USDA on biotech issues and then of course he became Monsanto's vice-president for a job well done.

06:31 The Flavr-Savr tomato and animal rejection of GMOs

Now the first genetically engineered crop that was part of the voluntary review process that is supposedly all the genetically engineered crops have gone through with the FDA was the Flavr-Savr tomato engineered for longer shelf life. And this was the very first dossier presented to the FDA and the only one in which raw feeding study data was presented. Everything since has been summaries. Basically worthless. But this one had raw feeding studies data from a rat study. And it turns out the rats refused to eat the tomato. What did they know? You know it's not just rats that refused to eat the genetically engineered tomato but farmers and scientists and reporters report that when given a choice, a whole slew of animals have avoided eating the genetically engineered choice. Cows. Pigs. Elk. Deer. Raccoons. Geese. Squirrels. Mice and rats. Have all shown a preference – or complete avoidance – when given a choice between the GM and the non-GM. So it's my job to raise people's awareness to the level of animals. So they force-fed these rats the tomato. Seven of 20 females developed stomach lesions. Seven of 40 died within two weeks and were replaced in the study. Now there's no more flavor savor tomato on the market. It was taken off for marketing reasons. The tomatoes are gone. There's no more potatoes on the market. They were here and then they also left for marketing reasons.

08:12 The Pusztai study

There was another set of potatoes that was very famous and that came out of the UK's desire to create long term safety studies. The same type of studies that the FDA scientists had asked for but were denied. But the UK government – very pro GM – they wanted to prove to bolster the confidence of consumers about GMOs. So they offered a grant of about $3 million and gave it to this man, Dr. Arpad Pusztai, the world's leading expert in his field, worked with a top nutritional research institute at the UK. And he was working with 20 scientists over three different institutes to create the long term safety testing protocol that was to be implemented as policy for the UK government and was eventually planned to be implemented EU wide.

Now, what Dr. Pusztai did was he created some potatoes with his team genetically engineered to create an insecticide. They took a gene from a snow drop plant. They put it into the potato and the potato was supposed to kill certain insects that tried to eat the potato plant. But he put his potatoes through the protocol and he fed it to rats and he fed with a complete and balanced diet the genetically engineered potato. Raw, baked, and boiled. Three different groups. He also took natural potatoes as a control. Then he took a third control – natural potatoes spiked with the pesticide that the genetically engineered potatoes were engineered to produce. So this was natural potato plus insecticide. This was GM potato creating the same insecticide in the same quantity. And then there was natural. It turns out only this group got sick. Only the group eating the genetically engineered potatoes showed significant damage in 10 days. The groups that ate the potato or the potatoes spiked with the insecticide did not show that damage. So what caused the problem? Somehow it was the process of genetically engineering the potato that apparently created changes in the potato that caused damage to the rats.

10:20 Suppression of the Pusztai study

Now, Dr. Pusztai, soon after discovering this was invited to speak on television in the UK and he was given permission by his director to discuss a bit about his research – not the details because it hadn't been published yet. And so he was interviewed and he went on for two and a half minutes and he said he didn't think it was appropriate for the companies to be treating the population as guineas pig.

Well, when this came out in Europe, it was very significant. The top researcher in his field, working with the top research institute, working on the protocols for testing that was going to be part of the EU's and the UK governments protocols was saying that GM foods were unsafe. Well he was a hero at his prestigious institute. The director took all the phone calls, actually rerouted the calls so they wouldn't actually get to Arpad Pusztai. It all came to the director. He wrote his own press release that this was very world-class studies. He was expecting that a lot of money was going to pour into the institute to repeat this.

However, he was a little naïve, right? In retrospect. The TV show was placed Monday night. Tuesday afternoon, two phone calls were allegedly placed from the UK prime minister's office. Forwarded through the receptionist to that director. The next morning Dr. Pusztai was fired from his job after 35 years. He was silenced with threats of a lawsuit. The 20-member research team was disbanded. They never implemented the long-term safety protocols. Instead, the institute started putting out a series of statements designed to destroy the reputation of Dr. Pusztai and in particular his study, and to bolster the reputation of the biotechnology industry. And for seven months they continued the tirade and he was unable to speak until in the 7th month, he was invited to speak to the parliament. And that lifted the gag order and allowed him to get his data back, which was then submitted and published in *The Lancet*, and it remains the most in-depth animal feeding study yet on genetically engineered foods showing it's the process that is likely dangerous.

12:37 The X-files stuff

Now I asked Dr. Pusztai, I said what was your most shocking moment? Can anybody guess why I asked that question? Because I was writing a book. I'm looking for shocking moments. I don't want this to be boring. I figured I needed to get the X-files stuff, and I got it. I got it. I got a UC Berkeley professor who says a senior Mexican government official threatened him claiming we know where your children go to school, trying to get him not to publish evidence that GM corn

had contaminated the indigenous corn varieties in Mexico. I got FOX TV news reporters shut up by Monsanto's attorney promising dire consequences to FOX news and Rupert Murdoch if they blew the whistle on their genetically engineered bovine growth hormone. I got threats from Monsanto's attorney that canceled books, that caused shredded magazines, that rigged research, hidden evidence that was made public, stolen documents from the FDA that were published. Here's one. When Monsanto wanted to show that injections of bovine growth hormone did not interfere with fertility of cows, they apparently added cows to the study that were pregnant before they were injected. That was from stolen documents from the FDA, later published. So I was looking for X file type stuff and I got it. And I was asking the question. This is because… yeah, yeah. And this has become the world's bestselling book on GMOs, because people like to read that kind of stuff. So I wove into the stories why the stuff is dangerous and the science so if people don't necessarily read it for the science, they get it by the time the story is over.

14:13 Dr. Pusztai's most shocking moment

So, I was the only one who asked Dr. Pusztai that question, because I was the only one who reported it, and it turns out that it wasn't being fired from his job that was the most shocking moment. It wasn't discovering the damage to the rats. It was months earlier when he was still a pro GM scientist working in his office. The director, Dr. Philip James, walked in, put a stack of about 700 papers on the desk. And they invited Arpad's wife Susan into the room. She was a senior researcher there. The professor said "These are the submissions from the six or seven biotech companies for their crops submitted to the committee to approve them." He was on the committee with seven others. "The Minister of Agriculture is in a meeting in Brussels and wants a scientific opinion on these pages." Now, Arpad Pusztai looked at these pages on his desk. He looked at his director who he had known for years. He looked back at the pages and realized this man would never read these many pages. Nor would the other 11 members of the committee. They were committee men. They weren't working scientists. He and his wife however had been part of the team designing the ideal testing protocol for more than 2 years. They were among the most qualified humans on earth to evaluate the stack. He said, "How much time do we have?" The professor said, "Two and a half hours."

Those two and a half hours were the most shocking moments. He said to me, "Jeffrey it was a turning point in my life. I realized what I was doing and what they were doing was diametrically opposed. I was doing safety studies. They were doing as little as possible to get their foods on the market as quickly as possible." He said, "It was flimsy, superficial, poor." He knew what bad science was and this was bad science. So he called the minister and said, "I wasn't planning to give you a strong recommendation after only two and a half hours, but there's definitely not enough information to allow these foods to be fed to human beings." The minister said, "I don't know why you're telling me this. Those foods are already approved. They've been on the market for two years." So it was a shock also to find out that the committee just let it fly by. And that the foods – none of the scientists knew that the GM foods had already been on the market. The people in the UK didn't know.

But what Arpad Pusztai realized was that his potatoes would have made it onto the market also, if industry had done their studies on the potatoes, because they didn't check for the things he checked for. What was worse however was that the soy and corn and potatoes that made it into the market had never been tested for those things, and were created from the same process that he used to create the potatoes. Remember, it was the process that caused the problem, not the insecticide.

So what happened to those rats? Well they had potentially pre-cancerous cell growth in the digestive tract. Smaller brains, livers and testicles, partial atrophy of the liver, damaged immune system among others. Here's a picture of the intestinal wall with the GM fed rats on the right and the non GM on the left, showing proliferative cell growth. Here's a picture of the stomach wall of the rats, to scale. This is potentially pre-cancerous. They didn't find tumors but this was 10 days. And this kind of reaction might be happening in us, but we don't know because the soy and corn and cotton and canola, they've never been tested to the extent that Arpad Pusztai's tests had tested for the potato. So this is the first possible problem that the process itself can cause significant damage to the DNA and the composition of glands.

17:51 About the books: *Seeds of Deception* and *Genetic Roulette*

Now what I'm going to do is I'm going to change channels here a bit. I told you that my first book was about shocking moments. It's a storybook. So that was a story. The first chapter of the book is about Arpad Pusztai. There's a chapter about… there's different chapters about different stories. But then I wrote the book. I traveled around the world. 30 countries, 6 continents and was speaking to a lot of senior political leaders, and I realized I was giving them my book and I was hoping that they'd actually read a book. Now, I know that some have and I know it's made a big difference. For example, a coop in Vermont… set out a table outside the coop and if you give 10 bucks to them, they gave a book to a legislator. They gave it to all the legislators and Vermont was the first state to pass any state regulation on GMOs, and someone – a masters student – did a thesis on *Seeds of Deception* on the vote and it turns out it had a significant vote, a significant impact on the vote. One representative said it spread like wildfire and was the basis for every conversation about GMOs once it arrived. He said he changed his vote in the middle of it. I went to the state house. Others came to me and said, "I read your book, it changed my mind." So I know if they get through it, it'll have an impact and I have – after four years of it being on the market, I get these emails and they kind of vibrate: "I just finished your book and I've been through every cupboard in my house and I've taken everything. Now what can I do?" So I know it has power.

But getting these ADD politicians to read it is a tough row to hoe. So I had this conundrum – I had a second book in mind to do the same kind of stories about agriculture and the environment. This is all about health. Then I have this vision about a format that could satisfy the ADD politician *and* the scientist. And so I wrote a second book which I thought was going to take three months – it took two years – and it has two-page spreads. ADD politician and staff. See? I gave this book to the Secretary of Agriculture in May and I gave it to him and I said, "I wrote this book for you." I said, "I worked with more than 30 scientists over the last two years to combine all the known health risks of GMOs and here it is." He took it and said, "Thank you very much." Then I took it back from him and I said, "I wanted to show you… you only have to read this line. And flip the page and read this line. And if you want to read the bullet points and the quotes from the scientists, fine. And give it to your staff to read this side." And I closed it, gave it to him. He said, "*Thank* you very much."

So, this book came out in April. And I have since presented it to him and the chairman of the Ag Committee, the senate Ag Committee and 75 congressional offices, and the European Parliament in Brussels and the European Parliament office in Dublin and UN conference, and to the senior people in the government in Brazil and it's been presented by about 30 organizations around the world to their policy makers and to the media, basically saying this is overwhelming irrefutable evidence that genetically engineered foods are unsafe. 65 health risks, 20 adverse reactions and

45 theoretical risks. Of the adverse reactions, we see thousands of allergic and toxic reactions in humans. Thousands of sick, sterile and dead animals, damage to virtually every system studied in lab animals and numerous assumptions that were used as the basis for safety which have been overturned. So this is being used to re-frame the debate around the world saying these 65 risks are now your checklist. Which means that the industry now has to respond with evidence to counter each of the risks. If they do, we have no health safety argument. If they can't, they have no defense for putting their crops in our mouths. So this has opened doors to speak to medical people, to speak to decision makers, superintendents of schools, science teachers, nutritionists. They look at it and they go, "Oh my God."

22:06 The transgenic process and the 5 categories of what can go wrong

Let's go over this. I'm going to change channels and go over this. I want to describe just five of the categories – I divided it into eight categories of what can go wrong – we'll look at five of them and just give some choice examples of things that have gone wrong or can go wrong with genetically engineered foods. So I'm going to change from the story mode to the science mode.

So this is a schematic of a trans gene. A trans gene is what you take and you put inside the DNA of another organism. You notice there's a promoter, there's a gene and a terminator. The promoter is the on switch, like the light bulb that turns the whole thing on. It says start reading here, continue to read, continue to read, continue to read and it causes the DNA to be turned into RNA. I don't want to use too much jargon here. DNA, RNA, proteins. Stuff. So, the DNA turns to RNA and it starts that process with a promoter. And then the terminator – it's not terminator technology with sterile seeds. It's just an F-stop signal. It says stop reading here. So that has to be read over and over again. And so they take – let's say they want to turn corn into a pesticide, which they've done. They take a gene from soil bacterium called *bacillis therengyensis* which creates a pesticide. They take the gene out, they make some changes into it, make it a synthetic gene so it works better in plants. They make millions of copies and they put it into a gene gun. Literally a gene gun. They used actually a 22 caliber, now it looks nicer. And they blast the millions of genes into millions of cells hoping that some of those genes make it into the DNA of some of those cells. That's their precise method of insertion. They don't know where it ends up, they don't know what happens when it gets in there, and they can't tell where it ends up or if it's gotten into those genes. So they have to add one other thing, Between the promoter and the gene, they put an antibiotic resistant marker gene – something that when it gets into the DNA, it'll promote, it'll create a protein which renders the cell invincible to a particular antibiotic. So what they do after the gene gun shot, is they douse the whole plate of cells with an antibiotic, killing them all except the very few that ended up with the gene inside the DNA. Then they take those cells which have been selected – meaning they've been properly transformed – and they grow them through cloning or tissue culture into a plant. Sometimes they grow it from there into many plants so they can have lots of seeds.

24:36 Problem 1: Mutations, and the network-of-genes reality

Now this process – the blasting of the gene – creates mutations, right around the site of the insertion and other places as well. It can delete genes. One study showed 13 genes were knocked out when a single gene was put in. Sometimes it'll end up nested inside a gene or next to it and infect its functioning. It can turn genes off permanently. The promoter, which is only supposed to turn on this foreign gene, can actually turn on other natural genes permanently 24/7 around the clock at high volume, overproducing who knows what? Carcinogen, allergen, toxin, anti-

nutrients, something good, we don't know. It's a genetic roulette – which is the name of my book. And I was thinking about this dart throwing into the gene as a kind of genetic roulette, one of the ways we're gambling with our health. So, lots of mutations, deletions can occur as a result of this process.

Now in addition, one study inserted a gene into the DNA and up to 5% of all the expressing genes changed their levels of protein expression, indicating the genes don't act like individual units, like Legos that you can snap into place, like individual things. Hardly anything in life actually works that way. But that *is* the assumption behind genetically engineered foods. But it turns out that assumption has been broken by a scientific understanding – and this is a July 1st *New York Times* article that says "The presumption that genes operate independently has been institutionalized. It is the economic and regulatory foundation on which the entire biotechnology industry is built. Evidence of a network genome shatters the scientific basis for virtually every official risk assessment of today's commercial biotech products from genetically engineered crops to pharmaceuticals." Yet today every attempt to challenge safety claims from Biotech products has been categorically dismissed or derided as unscientific.

So let's say you mess up the DNA, ok? What can that do? Well it can change the RNA, which also can change proteins, and they interact to create natural compounds and that can be messed up, and a plant can have thousands of natural compounds, any of which might change its expression. Or it might have new proteins and new natural compounds, maybe new unnatural compounds. So we're talking about massive collateral damage – and that is the appropriate terminology – you have an intention to do one thing and you do massive collateral damage throughout the DNA and throughout the plant. That's the first cause of problems. You'll be tested on this.

27:17 Problem 2a: The intended protein is harmful: herbicide resistance

The second is the protein that you intend to produce may be harmful. Let's pretend as the biotechnologists do, that you can just snap a gene into place like a Lego and it'll produce the protein that you want. What are the proteins that they're producing? Well there are two major traits.

The first is herbicide tolerance. Here's how that goes. Monsanto found a bacterium growing in a chemical waste dump facility in the presence of their herbicide Roundup, and they figured, "Let's put it in the food supply." So they took the gene out of the bacterium that allowed the bacteria to survive Roundup and put it into soy beans and corn and cotton and canola. Let's talk about soy beans. And now the soy bean plants grow in the field and you can spray the field with Roundup herbicide, and the Roundup-ready soy beans don't die – just all the other biodiversity in the field. All the weeds, all the plants, they die. So you end up with a clean field. It's basically a weed management system. Actually it's a money making system for the former chemical company Monsanto to sell more of its herbicide. Because when you buy the Roundup-ready seeds, you sign a contract that you will only buy Monsanto's version of the Roundup herbicide. And you sign a contract saying you will not re-plant your seeds, which will go back to the seed dealer every year. There's Liberty Link products which are designed to tolerate Liberty herbicide.

28:56 Problem 2b: The intended protein is harmful: insecticide-factory cells

Then there's these pesticide producing crops – corn and cotton are the two commercialized crops that contain this BT toxin from a soy bacteria that we talked about. About 80% of the crops are

herbicide tolerant, 20% are BT producing. There's actually some overlap with both. Now let's take a look at the BT toxin. Of the farmers or gardeners that are here, how many have actually sprayed their garden with BT or their crops with BT? It is a natural pesticide. You take the spores in the bacteria, put it in spray form and you spray it and it kills bugs. And the EPA and the biotechnology companies say, "See it has a history of safe use. Let's put it in the food. In fact," they say, "Even if you did eat it, it's destroyed during digestion. Even if it did survive digestion, no problem, because there are no receptor cells in human beings or mammals. So it's completely harmless. And so, because of those assumptions, we don't have to test to see if our assumptions are correct."

Well it turns out the assumptions were wrong. People do react to the spray. In fact, about 500 people reported allergic type reactions, some had to go to the hospital, when in the Pacific Northwest, they sprayed BT for gypsy moths. And there's plenty of evidence in the literature that farmers, when mixing the BT or spilling it on themselves, have to go to the hospital, had some severe problems. When they fed the BT in its natural form to mice, it survived digestion – in fact it destroyed some of the cells in the lower part of the small intestine, also creating excessive cell growth there. It also created an immune response in the mice as powerful as cholera toxin. It created kind of a multiple chemical sensitivity in the mice so that they were now reacting to other compounds that they were formerly not reacting to. And the actual composition of the BT has sections that are identical to known allergens.

Now, the BT in the crops, however, is not the same as the BT in the spray. It's thousands of times more concentrated in the crops. In the spray, it's not only less concentrated but it can wash off, it can biodegrade in the sun – it does biodegrade in the sun – but not when it's produced inside every cell in every bite of a corn crop. And it's designed to be *more* toxic. In its natural form, it's got a safety catch. When it's produced, it actually is called a protoxin. It waits until it gets into the alkaline gut of the insect and then it breaks through the gut's walls, killing the insect. But they create changes in the genetic structure when it's put into the crop so it's immediately active and immediately toxic. The safety catch is not created in the plant.

31:39 Problem 2c: India

Now, in India, hundreds of laborers dealing with BT cotton got a surprise when they started introducing BT varieties into their fields. All of a sudden, many, many are now developing allergic type reactions, from picking the cotton, from loading it onto trucks, from cleaning it in ginning mills and ginning factories, where some people have to take antihistamines everyday just to go to work. Even leaning against a pile of cotton has been a cause for allergic type reactions in some of these workers. Now, what is of great interest is the specific symptoms that they are reporting are identical to the symptoms reported by the 500 or so people in the Pacific Northwest. The list is identical except for exacerbations of asthma in those that were sprayed for BT. Otherwise, it's sneezing, runny nose, watery and red eyes, itching, burning, inflammation, red and swelling skin, fever and some went to the hospital. So I submit that they're reacting to the same BT – although in the cotton it's more concentrated. Which means in cotton, at some point, hopefully the BT is denatured, but maybe not. Maybe it's still in diapers. Maybe it's still in bandages, feminine hygiene products. We don't know, because no one has tracked it. But it is in the cotton fiber, apparently, where these people are picking.

33:01 Problem 2d: Other countries

Now after they harvest the cotton out of the plant, they allowed sheep to graze in the fields and

within one week, one out of four sheep died. An estimated 10,000. This year – that was last year – this year, not only are sheep dying, but there's also reports of cattle dying and goats dying, so the Andrapradesh government has advised farmers not to allow their animals to graze on BT cotton plants. In Germany, a farmer claims that 12 of his cows died and others had to be killed who were sick because of a certain variety of BT corn that he was field testing for Syngenta. Syngenta actually paid part of his bill for the loss but didn't admit fault. About 25 farmers in the Midwest report that their pigs or cows became sterile after eating a certain variety of genetically modified corn. The pigs had false pregnancies or gave birth to bags of water or were sterile. And the sterility also happened in cows and bulls.

In the Philippines, when one community – one village – woke up one day, while the corn started to pollinate, there was this big stench coming from the corn field. Someone went in to check it out. His face swelled up, he had trouble breathing, and these mysterious symptoms of disease started spreading from those closest to the corn field to those furthest away. So virtually this whole village was stricken by this disease during the time of pollination. The following year, the same types of seeds were planted in four more villages, with the same results. Now the results – the types of symptoms they had – were not identical for those who were picking the cotton or being sprayed. There was overlap, as you can see, with sneezing, asthma, coughs, nose bleeds, swelling, fever. But they also had headache, stomach ache, dizziness, diarrhea, vomiting, weakness and numbness. They also report deaths among water buffalos, horses and chickens, and five unexplained human deaths.

In Monsanto's own study that was made public because of a lawsuit, it turns out the rats that were fed the genetically engineered corn had symptoms of toxicity in the liver and kidneys. They also had indicators of blood pressure problems, allergies, infections, or disease, higher blood sugar and anemia. But Monsanto's an incredible… the way that they are, dismissed it as not biologically significant without proper explanation. So, this is the second reason why things could go wrong: even if the protein you're intending to produce is produced, it might cause a problem.

35:33 Problem 3: The protein produced isn't what was intended

But the third reason is that the protein that you get in the plant may be very different than the protein that you intended to produce in the plant. Here's why.

Remember the trans gene is put into the DNA, it's got a specific code on it. The code is like a computer program that creates a complementary RNA strand. That has the code on it, which gets translated into amino acids. And so the code of the DNA ultimately dictates the amino acids. The amino acids are the building block or the backbone of proteins. Right?

36:11 Problem 3a: Shuffling or truncating or failure to stop coding at end

So, when you put that gene into the gene gun or through the bacterial infection method which we haven't talked about, it can cause changes in the genetic code in the trans gene. It can mix it up. It can have other codes thrown in. It can truncate sections. In fact, if you look at the corn on the market right now, you have one that has 30% lopped right off. Only 70% of the trans gene ended up in there. That stop signal never made it. So when it's being read, it continues to read and starts to read into the plant DNA also, so the protein it creates includes some of the amino acids coded from the plant, kind of like a fusion between the two. Another corn variety has a point mutation where something's different. It's now creating a different protein. One single amino acid difference could change a harmless protein into a deadly one.

36:59Problem 3b: Instability

In addition, once it's in there, it might theoretically be unstable. It might rearrange over time. In fact, in Europe, when they looked at six varieties of genetically engineered crops, and they actually sequenced the trans gene, in every single case it was different than the sequence that had been registered by the companies – suggesting that it's rearranging over time, suggesting that it's creating proteins that may be completely different than intended and never tested. And even if it is the exact same sequence that you want, it might start in a different place and end up with a completely different protein or it might be processed to produce multiple proteins. It's operating in a different environment, not the same species where it evolved.

37:46 Problem 3c: Correct sequence, misfolding

Let's pretend – as they do – that it creates the exact amino acid sequence that you're looking for – and by the way, they don't even check. They'll look at five or 25 amino acids out of 600 or more, and say well the first five were what we expected so we expect the rest to be the same. And if you do research on their plants, sometimes you have to sign a contract saying, "I will not sequence the amino acids." I wonder why.

But suppose it's the right amino acid sequence. It still might be a problem because once proteins are created, that sequence of amino acids gets folded all up into massively complex formulations. And it's often done by these other proteins called "chaperone folders" that have evolved in the same plant for thousands or millions of years. But now you have a gene producing a protein that's never before been in that plant. So maybe it will get misfolded. Can that be bad? Well prions are an example of a misfolded protein. They're responsible for mad cow and the human equivalent. Parkinson's is tracked to an aggregate misfold called ameloid fibrosia. These are real potential dangers of misfolded proteins.

38:58 Problem 3d: Correct sequence, wrong attached sugar chains

Another example of changes in the protein, even if the amino acid sequence is the same, is these additional molecules that attach themselves to the protein, like sugar chains, which are known to be potentially allergenic. And they can change a harmless protein to a potentially deadly one. And it appears to be what happened with these peas – Australian peas being developed to produce an insecticide. They took a gene from a kidney bean and they put it into the pea, so that the pea now spontaneously kills pea weevils. And then these scientists decided to do a little test. So they isolated the protein from the kidney beans and they exposed it to mice, and the mice were fine. Then they isolated the protein from the peas and they exposed it to mice, but the mice were not fine. They had an inflammation reaction, which suggests that now the peas are allergenic and might kill people with anaphylactic shock. So, they decided in their wisdom not to put the peas on the market because if they had they would have exported it from Australia to India, where they make it into Mattar Paneer, which could have all of a sudden changed the reactions of people who have been eating peas for generations.

What was interesting was, they actually sequenced the amino acids and the amino acids were the same in the kidney beans and in the peas. So how come these identical proteins caused different reactions? So they used another study and found that there was a subtle change in the attached sugar molecules, and they were so surprised because the kidney bean and the pea are very closely related species. They weren't expecting to see any change. In genetically engineered crops, you take genes from bacteria and put them into plants – very unrelated species – but they don't even check to see the changes in the protein. They just assume it's the same.

What's of interest is that these peas had already passed the studies that were necessary to get them on the market. This mouse study that was used had never before been used to test genetically engineered food crops. It is not necessary, it has never before been done. The study which showed the slight changes in the sugar chains? I know of only one GM food crop where that had been used. So those peas would have made it to the market. So when Monsanto was asked by a reporter, "What do you think about these peas being taken off the market?" the Monsanto spokesperson said, "Well this shows the regulatory system works." It shows that the regulatory system works. He didn't mention that none of his products have ever been through those studies.

41:50 Problem 4: More herbicide on crops; "they have got bad science down to a science"

Now the fourth possible problem is that there could be more herbicide – there are more herbicide residues – on herbicide tolerant crops. You spray right on top of the crops and you spray a lot more. And so we're taking more herbicides into our body when we eat genetically engineered crops. Now this Liberty Link variety – it's very interesting because of some technical issues – it takes the toxic herbicide and it detoxifies it. Studies have shown that that detoxified residue builds up in the plant tissue and we eat that. However, when they take that same detoxified – supposedly detoxified – compound and they feed it to mammals, some of it re-toxifies inside the gut and ends up deposited in the organs. So if we eat this Liberty Link rice, which is not yet out there, or corn, which is, it might actually create herbicides inside of us. Now they fed some of this Liberty Link corn to these chickens and they died at twice the rate. But this was an industry funded study, and the way they designed it – man, it's unbelievable how good they are at rigging their research. They have got bad science down to a science. In this case, even a doubling of death rate was not statistically significant.

43:09 Problem 5: Horizontal transfer of genes into gut bacteria or our DNA

So, the fifth possible cause is that genes might transfer to gut bacteria or into our DNA. Meaning that the gene you stick into the corn, soy, cotton, canola may end up inside our DNA producing this BT toxin or this Roundup-ready toxin or thing or whatever. Now, originally, studies at the FDA when the Flavr Savr tomato was first presented, they were asked – the division of anti-infective drugs – what do you think about using an antibiotic resistant marker gene in the food? Well they were appalled. They wrote in all capital letters, "IT WOULD BE A SERIOUS HEALTH HAZARD." It would be a serious health hazard to introduce a gene that codes for antibiotic resistance into the intestinal flora of the general population. Can anyone guess why? We are in a situation where our antibiotic medicine is becoming less and less effective because when you expose it over and over to bacteria, the bacteria mutate and develop resistance. So now you have antibiotic resistant diseases because of the overuse of antibiotics in animal feed, in antiseptics, etc. And they were concerned that using these antibiotic resistant marker genes in food – they might transfer to soil bacteria, and if we eat this food, it might end up transferring to gut bacteria, which can mate with pathogenic bacteria, passing on the resistance, causing the pathogenic disease not to be killable by antibiotics.

What did the biotech industry say? No problem, we've thought of that, but we have an assumption, and here's our assumption. Our assumption is: genes are destroyed during digestion. So they can't transfer. They didn't consider it might transfer to bacteria in the mouth. But never mind, genes are destroyed during digestion. So they let it on the market. So, in 200 million acres – I don't know, a huge number of acres – there's antibiotic resistant genes in the food. Now, the

FDA scientists say, “Well if you put it in the market, please monitor to see if it is causing problems.” They never did that.

In fact there has not been one human clinical trial on GM food. There’s only been one human feeding study on genetically engineered foods, and it was to look at whether genes are destroyed during digestion. A brilliant study – they took seven human volunteers with colostomy bags. They had their lower intestines removed... not for the study. And they fed them a soy burger, soy milkshake – genetically engineered soy – looked in the colostomy bag and whoa. Genetically engineered DNA survived passage through the stomach and the small intestine in much higher quantities than they anticipated. But they also found, in three of the seven volunteers, inside the bacteria of the DNA, in their gut bacteria, was the part of the gene that had been inserted into soy beans from a previous meal. Before they were fed. It was stably integrated there. And they took those microorganisms and they applied Roundup-ready’s herbicide – active ingredient – and they didn’t die. So we have Roundup-ready gut bacteria.

The gene that was found in the chemical waste dump, put into the soy is now living inside human beings in their gut bacteria along with the promoter which turns it on, likely creating this protein inside of us. The protein which may be toxic or allergenic – we don’t know.

So, what can transfer? The promoter can transfer – it does transfer – to gut bacteria, maybe transfers to our own DNA. It’s an on switch. It can turn other things on, so if it transfers to gut bacteria, it might turn on something and overproduce that. If it transfers to our own DNA, it might turn on something and overproduce that. Inside our DNA and in plant DNA are ancient embedded viruses. Ancient – passed on from ancient species. Usually they’re degraded but maybe they’re intact but simply lack their promoter. The promoter put into the GM crops are very aggressive. They’re from viruses and they turn on all sorts of things. It’s possible it turns on an ancient virus. It’s possible it turns on a carcinogen. It’s also, on its own, unstable. It has a recombinant hotspot. It might break up and rearrange. So now we might be creating random on-switches, random virus activations and instability in genes.

Now normally genes don’t transfer readily from plants to bacteria. There are natural barriers. The structure of the gene is different. It’s not easily transferred. If it is transferred, it generally doesn’t work. But there’s a section in my book – one of those two page spreads – the natural barriers have been removed. They use bacterial genes in the plants which are recognized by the bacteria in the gut bacteria – in the DNA. And it has its own on-switch. So if it is transferred, it’s on. And a number of other things, which mean that we may be allowing genes to transfer between these species inside of us all the time with no barriers that are normally there, colonizing our bacteria. The antibiotic resistant marker gene might transfer. That was the concern. In fact the British Medical Association called for a moratorium on GMOs and partly because of the antibiotic resistant marker gene. We know that the Roundup-ready gene transfers, but what if the BT gene transfers? The BT, that pesticide that was associated with the toxins and the allergic reactions, the deaths among the sheep? It might turn our intestinal flora into living pesticide factories, possibly for the rest of our life, from eating a genetically engineered corn chip. They have never tested that. Why? Because the people that did that study with the colostomy bags was funded by the pro GM UK government and we heard about them. No more studies were done with that group. So we don’t know what’s transferring inside us.

49:12 Do the problems exist ? -- the soy example

So these were the five possible reasons that we talked about. Let’s apply them to soy. Let’s see if

soy beans have these five possible things that can go wrong.

Problem 1 / Soy: Damaged DNA

What was the first thing that can go wrong with genetically engineered crops that we discussed? Memory loss. It was the mess-up of the DNA, right?. The process. Yes, the process. So, years after GM soy was on the market, they found, "Yes, oh, by the way, there's a damaged section of DNA right near the insertion, which we didn't identify before it went on the market. Oh, and there's two gene fragments we didn't even see but they got in there also." They found altered nutrient levels in the soy. They found that a new allergen known as trypsin inhibitor was as much as seven times higher in the cooked GM soy sample compared to the non GM soy sample. They found a new protein – one that had never been intended, somehow created in the soy bean – that was able to bind with IGE antibodies, meaning it could be an allergen. And these are from the mess-up process within the soy. So one out of one so far.

50:26 Problem 2 / Soy: Intended protein is dangerous

What's the second possible cause of problems besides memory loss, anyone? The protein itself that you intend to produce in the crop might be dangerous. Now, when you stick a protein that's created from bacteria into the food supply, and it's never before been in the food supply, you really can't tell if people are going to develop allergic reactions. Why? Because people need to be exposed over time. So there is no surefire guaranteed set of tests to say, "You're not going to get an allergy from this novel protein in your diet." So the WHO and others say, "Let's just look at the structure of the protein and see if it has characteristics similar to known allergens." It's definitely not a robust, powerful gate. It's more like a sieve that lets a lot through, but that's their test. They say, "If it has sections identical to a known allergen, it should not be approved, or at least it should require further tests." It turns out the protein of the soy has sections identical to known allergens, but it was approved and it was never subjected to further tests.

51:30 Problem 3 / Soy: Resulting protein different from intended

The third possible problem is that the protein that you intend to create may be different than the one that you get. So it turns out – let me explain what happened here. This study in Europe looked at the RNA that the trans gene was created. And so, it's supposed to start at the beginning of the trans gene and it did. OK, there's the RNA, there's the RNA, and there it's supposed to stop. But it's not there. It didn't stop. It's continuing. And the RNA is also there from that extra transgene fragment that got inserted and no one knew about for years, so now that's also turned into the same part of the RNA. But now, over here, it's producing RNA from that scrambled section of DNA that have never before been in nature. Scrambled because of the process of gene insertion. So now the size of the RNA is way longer than it was supposed to be. And then the cell processed the RNA into four different variations, shuffling it around. So now you have four different RNA variants, none of which were intended, and all of which might create proteins which might be allergenic or toxic. S, now, what was supposed to happen – the mechanics – was completely broken down, and the scientists in their published peer review scientific literature said, "By the way, this stop signal that's used in soy is also used in most of the other genetically engineered crops, and it's faulty." Which means that *all* the crops out there might be producing some type of RNA that was never intended, it might produce some proteins that were never intended. So that's three out of three so far for soy.

53:04 Problem 4 / Soy: Increased herbicide residues/use

Fourth is increased use of pesticides, of the herbicides. And so it turns out Roundup – when you spray it over and over again, the weeds develop resistance. Just like the bacteria becomes antibiotic resistant, the weeds become herbicide tolerant. At the beginning, when they started planting this herbicide use went down. Then it leveled off, then it went up, and now it's skyrocketing. In the first nine years, 138 million pounds more herbicide was used in the United States. By 2004, approximately 86% more Roundup was used on Roundup-ready soy acres than non-Roundup acres. But last month, we discovered, when we looked at USDA statistics by Charles Benbruck who did the study, now in the last two years an additional 200 million pounds have been used. So it went from 134 million in nine years, in addition to 120 million in two years. There was a 38% increase in a single year from 2005 to 2006, approximately doubling the use of Roundup over 10 years. In fact, because Roundup is so ineffective against these things, the farmers have to use really toxic stuff to kill – like 2,4-D, up 138% between 2004 and 2006. So now, we've got four out of four with Roundup-ready soy.

54:19 Problem 5 / Soy: Horizontal gene transfer

The fifth of course, you know, genes transfer. That was the only study they tested. So yes, it has five out of five potential things that can go wrong in the mechanics within the plant. It doesn't mean that the plant is harmful. It just means it's out of control. Well, I guess the herbicides would be harmful, definitely.

54:40 Any case studies of GE soy problems?

Are there any case studies of problems with genetically engineered soy? Well, I've got to tell you: there's very few published peer review animal studies. About two dozen. We're talking two dozen, and that means... that's pathetic. So we have to build a case, with some of the research that's studied, that's published, some of the research is not published, medical evidence, anecdotal evidence, to look at the whole picture like epidemiologists do.

So, we know that soon after soy was introduced to the UK, soy allergies skyrocketed by 50%. Why? Well, we've discussed a known allergen – trypsin inhibitor – up by seven times in one study in cooked soy. Maybe that's it. There's a new allergen protein in soy. Maybe that's it. The protein that's created has sections identical to a known allergen. Maybe that's it. There's more herbicide residues, maybe that's it. There's also a reduction in pancreatic enzymes that help break down proteins. So if proteins last longer in the digestive system, it means they're longer available to create an allergic reaction. Maybe that's it. We don't know. We just know a coincidence maybe.

However, one very small study did a skin prick test where they found, "Oh, there's eight people who are reacting to GM soy, but only seven of them react to natural soy. One person reacts only to the GM soy. So there's something different about the profile. Let's not follow up." That's the thing. When these problems happen, they don't follow it up. They're either ignored or denied or suppressed.

When mice and rabbits were fed Roundup-ready soy beans, they developed altered cell structures and altered enzymes or gene expression in livers, kidneys, pancreas and hearts, and the higher metabolic activity was suggestive of a toxic insult. Mice fed GM soy had altered sperm cells. (Those were the male mice, in case you were wondering.) And then when both parents were fed GM soy, the embryos had changed DNA expression compared to those who were fed natural soy.

Now, I spoke at the European Parliament office in June and I spoke with – one of the panelists there was a scientist and leading researcher at the Russian National Academy of Sciences, And she presented evidence which I've already talked about in other cases about her rat study. These are Russian speaking rats, and they volunteered to participate in a study with Roundup-ready soy. And these are female rats that started eating GM soy. with a complete and balanced diet. two weeks before they conceived, and continued through pregnancy and lactation. And within the first three weeks after giving birth, more than 50% of their offspring died. More than half. The mothers who were fed natural soy only had an offspring mortality of 10%. In addition, one day's death rate is the picture of the rats. Now the rats looked different. The size was different, the shape was different when the mothers were fed GM soy. Those are the ones who were fed non-GM soy, those are the ones who were fed GM soy, and the size among about 36% of the GM soy group – very small. Here's a comparison of GM-fed versus natural-fed. Same age. Another one. Now, they tried to mate those offspring and they couldn't mate. So there were indications, preliminary evidence of sterility. Here's a picture of testicles from rats that were fed genetically engineered soy in Russia. Different color. You could see the cell structure is completely different as well. And here's – on the right side – liver size of GM-fed rats compared to the ones on the left – just very different. I'm not qualified to comment on these. These were given to me after lunch with members of Parliament by the scientist whose explanation I haven't had the chance to follow up.

58:38 Why don't we see more problems? -- the L-tryptophan epidemic

So if GM crops are so bad, how come we don't see more problems? Well there's a very chilling reason why we don't. And that was made clear in the late 1980s, when thousands of people got sick – actually 5000 to 10,000 fell sick. Some were permanently disabled, about 100 died, because of L-tryptophan – a food supplement. But not L-tryptophan generically – L-tryptophan from Showa Denko KK, a corporation in Japan that was genetically engineering the bacteria to produce the tryptophan more economically. You've seen genetically engineering is prone to unpredicted side effects, and this particular line of L-tryptophan for years had contaminants and these contaminants almost were certainly the result of the genetic engineering process ,and were almost certainly the cause of this epidemic.

But it took years to identify. And even then it was almost missed. The reason they found it was because the disease had three concurrent characteristics.

1. It was rare – it actually was a new disease. It was with rare or unique symptoms.
2. It was acute – serious enough to get people to go to hospitals and doctors.
3. And it came on quickly.

What would happen if all three were not in place? What if it were cancer, diabetes, asthma, obesity, heart disease? It would still be on the market. What if it were not serious? What if it were a frequent cold or memory loss? Or memory loss? It's still on the market. What if it didn't come on quickly – what if it took 20 years, what if it took the next generation?

So what about the GM crops already on the market? Might they be responsible for the huge increase in migraine medicine sales, in obesity and diabetes, in the doubling of food related illnesses between 1994 and 2001? In autism? We don't know because no one is looking. There's no post-market surveillance, no human clinical trials, no proper evaluation of all the things that could go wrong inside the DNA, RNA, proteins or compounds. And the approvals are based on disproved or untested assumptions and industry studies designed to avoid finding problems.

Maybe someday in the future, we can predictably and safely manipulate the DNA for the benefit of human health and the environment, even in our food. But right now we're feeding the products of an infant science to millions of people and putting them in the environment where they can never be recalled. We don't have a technology to recall genetically modified salmon from the ocean, mosquitoes from the air – and yet there are genetically modified salmon in laboratories waiting to be introduced, and there's genetically modified mosquitoes waiting to be let out. And we have not technology to fully clean up the gene pool that's already contaminated with corn and soy, etc. It can outlast the effects of global warming and nuclear waste.

1:01:40 Bovine Growth Hormone -- example of a tipping point

I just want to give a microcosm of one other genetically engineered food product, and that is bovine growth hormone. We've mentioned it briefly. I'm not going to describe the whole information about it, just to touch on it so you'll know that this is also out there, and there's some good news about it as well. Now, my organization – the Institute for Responsible Technology – has with other organizations educating consumers about potential health dangers of genetically engineered foods, but in this case rBGH treated milk, and we have together achieved something great.

There's a tipping point – a slow motion tipping point – with rBGH. September 2006, the Boston Globe wrote "The region's biggest dairies are rushing to rid their bottled milk of artificial growth hormones. If more dairies jump onboard it could be a tipping point." October 2006, *New York Times*: "Dairy companies are bowing to the natural food trend by shunning milk from cows treated with GE growth hormone. A manager of a milk producer's coop was quoted saying, 'It seems to be an explosion in the industry'. Starbucks has committed by the end of this year to eliminate all milk products from its company-owned stores that are from rBGH treated cows. Safeway in their Pacific Northwest processing plants has removed it." Reuters reported the same. Kroger's took it out. Publix took it out. It is like this chain reaction going around.

The tipping point has arrived because consumers are at the top of the food chain and there is enough consumers now shunning hormones in milk so that Monsanto is backed against the wall. And they actually tried to get the FDA and the FTC to make it illegal for companies to put the label on their milk saying "no rBGH." Now they're running radio ads in Ohio to consumers saying, "rBGH helps farmers, so you should drink milk with rBGH injected cows."

So what could be the tipping point for GM crops? I think the tipping point for GM crops could happen very soon. Now, we look at the tipping point and we compare it to what it was – that was the plans of Monsanto. What were they expecting by now? It turns out Monsanto's plans were to genetically engineer 100% of all commercial seeds in the world and patent them, according to Arthur Anderson, their consultant – who also was Enron's consultant, not incoincidentally. And another company, in January 1999, projected that by 2004, there would be a 95% takeover of all commercial seeds in the world by genetically engineered foods. So, it didn't happen. There's now very few. So what happened?

1:04:20 Release of Arpad Pusztai (from *Seeds of Deception*)

This happened. Arpad Pusztai. Let me read you what happened. Remember the announcements of projections of five years was in late January of 1999. So listen to what happened and when it happened. This is the first page of the first chapter of my book "A Lesson From Overseas" from *Seeds of Deception*.

When Susan answered the door, she was stunned to see several reporters standing in front of

her. More were running from her cars in her direction and she could see other cars and TV news vans parking along her street.

"But you all know we can't speak about what happened. We would be sued."

"It's ok now," The reporter from channel 4 television interrupted, waving a paper in front of her. "They've released your husband. You can talk to us.

Susan took the paper.

"Arpad come here," she called to her husband.

Arpad Pusztai, a distinguished looking man in his late 60s was already on his way. As his wife showed him the document, the reporter slipped past them into the house but Arpad didn't notice. He was staring at the paper his wife had just handed him.

He recognized the letterhead at once -- The Rowette Institute, Aberdeen, Scotland. It was one of the world's leading nutritional institutes and his employer for the previous 35 years until his sudden suspension seven months ago. And there it was clearly spelled out. They had released their gag order. He *could* speak.

The document was dated that same day, February 16th, 1999. In fact, less than 20 minutes before 30 reporters had sat at the Rowette Institute press conference listening to its director Professor Philip James casually mention that the restrictions to Dr. Pusztai speaking to the press has been lifted. Before James had finished his sentence, the reporters leaped for the door. They jumped into their cars and headed straight for the Pusztai's house on Ashley Park North, an address most were familiar with, having virtually camped out there seven months earlier. Now those 30 reporters with TV cameras and tape recorders were piled into the Pusztai's living room.

Arpad Pusztai read the document -- twice. As he looked up, the reporters started asking him questions all at once. He smiled and breathed more easily than he had in a long time. He had all but given up hope. Now finally he had the chance to share what he knew about the dangers of genetically engineered foods...

1:06:25 The UK/European tipping point

Within a week, 159 column feet of articles was written; within the month, 750 articles. One reporter said it divided the industry into two warring blocks. April of the same year: Unilever publicly committed to remove genetically engineered ingredients from its European brands. Within a week, so did virtually everyone else – McDonalds, Burger King, Safeway, Nestles – from the European brands. But not from the US brands. Why? Because if you ask the average American, "Have you ever eaten a genetically engineered food in your life?" 60% say "No," 15% say "I don't know."

But the European rejection has caused a limit of GM expansion to four major crops in six countries with two major traits. They still *want* to implement their big plan. They have 172 different species that have been field-trialed and more than 50,000 field trials in the United States waiting to be approved, more in the laboratory. But, as long as the European Union – not the governmentbut the people, the industry responding to the people like rBGH in this country – as long as they're rejecting it and there's no market, it has stalled the introduction of new varieties.

I think Oprah Winfrey could end the genetic engineering in the food supply in 60 minutes. Now why do I say that? What is the tipping point that would cause the same kind of stampede away from GM in the United States? Is it like a vote? Do we need 51% of Americans avoiding brands

with GM ingredients in order for them to say, “Well we’ve lost half our market share, I think I’ll change.” GM crops are not like trans fats or sugar. There’s no consumer benefits. Kraft Food, the largest manufacturer in the United States, can simply like Whole Foods, Wild Oats and Trader’s Joe’s before them tell their supply chain, “Take GMOs out of our brand.” I think if 5% of US consumers were buying non-GM products consistently, that would be more than the tipping point.

Spreading the word by leveraging

I think Oprah Winfrey could do it in one show. I think a Gore film could do it, but we don’t have to wait to see if they do it. We can do it ourselves. My Institute is looking not only to try and get to Oprah Winfrey, and to create a Gore film, but we’ve identified targets. Groups of low hanging fruit, very receptive. Religious groups are like the sleeping giant in this debate. If one stirs, there’s like… the evangelicals believe the GMOs mean God Move Over, it’s over. Health professionals – if the food industry realizes that doctors are prescribing to patients not to take their food because it’s got GMOs, it’s over. Here’s one allergy specialist: “I used to test for soy allergies all the time but now that soy is genetically engineered, it is so dangerous that I tell people never to eat it unless it says organic.” So we’re going to speak to health professionals and we know have the tools to do so. If they’re busy or if they’re not.

School meals are under intense scrutiny. Removing junk foods is a big deal right now. There are wellness plans in every school in America. Wellness committees. Improved behavior has been linked to better food. We are pushing out a GM free school campaign in communities around the United States. We have a video called *Hidden Dangers in Kids’ Meals*. It’s instant activism – just add DVD and stir. You show it to a group and you say “How many people want to work on a GM free school campaign,” and the hands go up. We have little signup sheets which say, “Please tell us what you’re interested in, what school you’re associated with, what resources you have – we have a 60 page manual, pre-written articles, your own website, your own listserv.” I welcome you to participate in that.

Health conscious shoppers – the fourth demographic. There are 28 million Americans that already buy organic on a regular basis. That’s 9.3 % of Americans. That’s the tipping point. Another 54 million buy organic on an irregular basis. You ask any of these people, “Would you choose to eat a GMO?” If they had the choice, they’d say no. But they don’t generally conscientiously avoid it. All of us here are health conscious people. We saw the changes here. How many would do it? The hands would go up if they knew that healthy eating starts with no GMOs, and how to do it.

So the Institute has promoted a program called “The Campaign For Healthier Eating in America.” And we’re working with the entire natural food industry

* to take out all remaining GM ingredients from that sector
* to create GMO education centers in all the health food stores
* to create non-GMO shopping guides in all the health food stores.

And to define a new standard for non-GM which requires third party verification, so we’re sure that companies are following what they’re saying. And we’re going to give consumer choice ultimately by in-store on-shelf labels within two years of products that may still contain GMOs in natural food industry. And we think this alone might do it. and this is going to come to a health food store near you beginning next year.

So these are the ways we're working on this issue. And I want to invite you to participate. We have ways for you to get the information out, to help reach this tipping point. I will offer you some tools. We have a free monthly column, it's called *Spilling the Beans* and you can sign up for it at the back, or leave your business card. We have a 3-disc set called *The GMO Trilogy*, with lots of sponsors in the natural food industry so it brings the price down. It's two DVDs plus a CD. One of the DVDs is called *Hidden Dangers in Kids' Meals*, which we talked about. It's got an award winning European documentary which talks about some of the environmental/agricultural problems. It's got an audio CD called *You're Eating What? Stop Eating Genetically Engineered Foods.* Please copy this to your friends. And that's available as a standalone for a dollar and you can download it off my website for free and make as many copies as you want. We have the book *Genetic Roulette*, which is more of the scientific presentation and, of course, *Seeds of Deception*, which is the story book.

So I want to say, it's been fantastic talking to you who've taken food to heart and food to health, and now I feel like I have a whole team, a whole team. So let's create a GM free world together, thank you.

Jeffrey Smith's Institute For Responsible Technology is working with world leaders and consumers to help stop the genetic engineering of the food supply. For a consumer tool kit that will give you what you need to avoid buying and eating GM foods, visit www.responsibletechnology.org. You can also become a member of the Institute and receive a free DVD with your support. We are grateful for any level of support you can provide. Safe eating everyone