Show Transcript
Deconstructing Dinner
Kootenay Co-op Radio CJLY
Nelson, B.C. Canada

June 22, 2006

Title: The GMO Trilogy, You're Eating What?

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Transcript – AJ Alexander

Jon Steinman: And welcome to Deconstructing Dinner, produced and recorded at Kootenay Co-op Radio in Nelson, British Columbia. My name's Jon Steinman.

Deconstructing Dinner is a syndicated weekly one-hour radio program available on both radio and as a downloadable podcast, and on this program we take apart our food, and explore how the food choices we make and don't make, impact all that exists around us.

All broadcasts of this program are archived onto the Deconstructing Dinner website, and that website can be found at www.cjly.net/deconstructingdinner.

Today's broadcast marks the first of a three-part series released in April of 2006 titled the GMO Trilogy, produced by best-selling author Jeffrey Smith, who became world-renowned for his book Seeds of Deception. The book explores how biotechnology companies have rigged research, have hidden health dangers and pressured government regulators to approve food that even government scientists in both the US and Canada said was unsafe. And these foods in question are those that have been genetically modified – a common subject here on Deconstructing Dinner.

Jeffrey Smith is the director of the Institute for Responsible Technology and he currently lives in Iowa, where he is surrounded by genetically modified corn and soybeans. His book Seeds of Deception has been translated into seven languages and has become a ground-breaking publication on the topic of genetically modified foods and human health.

Now, the trilogy itself consists of two DVDs and an audio CD, and this three-part *radio* series will feature those two DVDs in audio format. Featured on one of those DVDs are, among others, renowned food activists Vandana Shiva, Andrew Kimbrell and Percy Schmeiser. Highlighting the second DVD, Jeffrey Smith explores the dangers of genetically modified foods in the diets of children, and again, both of those DVDs will be featured here on Deconstructing Dinner on future broadcasts, but on today's broadcast we will take a listen to the audio CD featuring Jeffrey Smith as he spoke to an audience about the health risks of genetically modified foods.

Often, the dangers of genetically modifying plants are spoken of in terms of the environment, rarely is the genetic modification of our food supply spoken of in terms of human health. And as Jeffrey Smith will expand on during today's broadcast, the reason for this is simple – and that is because almost no scientific testing has been done on the subject. But that aside, can the consequences of genetically modified foods on human health be accurately tested when not even science can predict how the human body will react to such an experiment long into the future.

increase music and fade out

JS: One reminder before we take a listen to author Jeffrey Smith is that today's broadcast is extracted from the GMO Trilogy which is available for purchase on the Seeds of Deception website, and there will be links to that site from the Deconstructing Dinner website, or you can simply visit seedsofdeception.com. And here's Jeffrey Smith.

Jeffrey Smith: Thank you. How many people are concerned about eating genetically modified foods? How many people are farmers? How many are gardeners? How many people eat? So, it's relevant.

When I travel around the world, one of the aspects of my talks is after I describe death, disease and deception, I then have to pump people up to get them to change their diets.

The process of getting people to reject genetically modified foods was simple around the world, all it took was education. All it took in Europe was a skeptical press reporting on the potential health dangers, or economic dangers, or environmental dangers, but particularly health.

People ask me how come they are so concerned about genetically modified foods in Europe? Because they know about them.

I was reading the European press next to the US press for many years. I was working as the Vice President of Marketing for a GMO detection laboratory. I was a spokesperson on technical issues on the subject and was interviewed around the world. And I realized that most Americans had no idea what a genetically modified food was. And if they did we probably wouldn't have this problem.

I was also aware there was an incredible amount of material out there for a fun book. There was a scientist who went public with his concerns and was fired from his job after thirty-five years and silenced with threats of a lawsuit. There was a UC Berkley professor who was threatened by a senior Mexican government official who allegedly implied "we know where your children go to school" trying to get him *not* to publish information. There were Canadian scientists who testified before the Senate saying they were offered a bribe by Monsanto and that documents were stolen from their office, that they were being pressured to approve genetically modified products, whistle blowers at the FDA were fired, stripped of responsibilities and forced out.

I say this is good material and I figured I would use this information as stories and then weave the description of the science and the dangers into those stories.

But, I knew from some friends of mine who had put out a book that was critical of Monsanto and genetic engineering that three days before their book came off the printer their publisher received a threatening letter from Monsanto's attorney. The publisher decided not to go ahead with the publication. So, I decided to hide the book from the industry and not accept an offer for publication but to publish it myself. So, when I sent the proofs out, a year ago in the summer, I had shown it to very few people and I was thinking it would have an impact but I wasn't sure.

Then I got my first call from a reporter, I had sent it out just to media, and this is how it went "I just started reading the book last night at 11 o'clock and it's amazing, I never did this before, my girlfriend's been telling me about this for years. This stuff is incredible, it's evil, and they're terrible." This was a reporter. He said to me, "do you think I should write my congressman or senator?" *(laughter from the audience)* He said I feel a moral responsibility to buy organic food from local farmers. I asked how much of the book he had read. He said one chapter. *(laughter from the audience)*

Two hours later I got my second call. It was from an editor of a magazine. He said your book is perfect for my readers. They don't want to eat genetically modified foods but they don't know why. I want excerpts in every article, in every magazine I write, this is great, this is fantastic. I started reading at 11 o'clock last night – I never do that. I said how much did you read? He said ten pages. *(laughter from the audience)*

That gave me an indication. I'm telling you this because of what happened since September 1st of last year was that I have been on a continuous trip. I have been to about one hundred and thirty-five cities, some of them several times, in sixteen countries on five continents and this is my last talk in that marathon run. *(clapping from the audience)* I'm going to tell some of that information and obviously you are going to convert it into how you decide to make changes in your diet and I will explain how to do that as well.

We'll go chronologically. First, we'll talk about what happened in the 1980's. Individuals started to going to doctors with a constellation of symptoms that the doctors had never seen in their practice. The overriding symptom was intense pain, the worst pain that the doctors had ever seen in their careers. One person described how their legs blew up the size of telephone poles, there was water, there was progressive paralysis where individuals eventually couldn't breathe without a respirator, and people's hair fell out, there were a lot of mental problems. One person I spoke with was confined to bed for six months – it took two minutes to turn over from one side to the other because the pain was so intense.

Because of a series of coincidences and because of the nature of this disease, they were able to find that there was an epidemic because this was not a common thing it was just scattered around the country. They discovered those that had this problem were taking L-

tryptophan. How many people have heard of L-tryptophan? L-tryptophan is an essential amino acid it's in turkey and milk naturally.

As the epidemiologists reported in a July 1990 article it wasn't just the L-tryptophan itself, it was a particular brand, one out of six brands that were being imported into the United States. It was a Japanese company that was genetically engineering bacteria to produce the L-tryptophan more economically. This process can lead to a lot of unpredictable side effects which we will talk about. This particular batch, or several batches, had contaminants and this was almost certainly a result of genetic engineering and the contaminants were almost certainly responsible for this deadly epidemic. It turns out about five to ten thousand people got sick. Some were permanently disabled. About one hundred people died.

The following month, after the first epidemiologists said in an article, this raises the question about the safety of genetically engineered foods, the FDA spokesperson said in their next article this person should never have raised the issue of genetic engineering because of what it might do to the industry. This was an early indication of the side the FDA is on and has remained on – in fact it is their mandate to promote biotechnology.

There was a great and successful effort to divert the blame away from genetic engineering and claim that a change in the filter method at the factory in Japan in January 1989 was responsible for the epidemic. And as I travel around the world this is what comes back to me – 'however we bring out new information, in the book, which shows hundreds of people got the disease in the four years prior to the change in the filter and that the information had been withheld by the FDA from the public and from Congress.

It's interesting that if that same deadly L-tryptophan were introduced today it would get on the market. It's not treated any differently because it came from genetic engineering.

But the real lesson I take from this epidemic is the reason why we were able to discover that there was an epidemic in the first place and that we were able to trace it to a genetically modified supplement was because the disease had three concurrent characteristics. It was rare, it was acute and it came on quickly.

What would happen if all three characteristics had not been in place? What if it took twenty years for onset, or the next generation? It would still be on the market. What if there were non-serious symptoms like frequent colds and memory loss? Or memory loss? *(laughter from the audience)* Maybe it's still on the market. What if there were serious symptoms that were common like cancer or heart disease or obesity or diabetes? It would certainly not be discovered because it would be lost in the myriad of statistics we are now facing.

So, it begs the question what of the thousands of products currently being fed to the US citizens that contain ingredients from genetic modification? Maybe they are creating problems that don't have all three characteristics. Maybe they are responsible for the doubling rate of food related illnesses in the United States between 1994 and 2001

corresponding to times a lot of these products were introduced. We don't know because no one is looking. One of the most unscientific statements made by the proponents of biotechnology is that millions of people have been eating them for years and years and no one has gotten hurt. Well, if you don't look you won't find. And, of course, there were those unfortunate victims of L-tryptophan.

The FDA, when they first introduced the first genetically modified bovine growth hormone from Monsanto, injected into cows to increase milk supply, the scientists who were concerned about its effects on health were fired, stripped of responsibilities or forced out. The remaining whistle blowers had to write an anonymous letter to congress claiming that there was fraud and conflict of interest at the agency.

The milk from treated cows has higher levels of IGF1 which a number of studies have linked to cancer, however, the FDS's official statement, which they suggest gets written on the side of cartons that would dare to label something as 'not from cows injected with RGVH' is that the FDA shows no difference between the two even though that their own studies show that there is a difference.

Jon Steinman: And you're tuned in to Deconstructing Dinner, a syndicated one hour radio program produced at Kootenay Co-op Radio in Nelson, British Columbia. We are currently listening to Jeffrey Smith author of the book Seeds of Deception, which exposes industry and government lies about the safety of the genetically engineered foods we eat. The recording featured on today's broadcast is one of a three part series titled the GMO Trilogy produced by Jeffrey Smith and the Institute for Responsible Technology. You can find out more about the trilogy or listen to today's broadcast by visiting the Deconstructing Dinner website www.cjly.net/deconstructingdinner. You can also visit the Seeds of Deception website at www.seedsofdeception.com where the trilogy can be purchased which features two DVDs and one audio CD. Smith is also encouraging the public to spread the word about the trilogy in hopes that increase awareness about this issue will only force the industry to abandon the use of genetically modified foods. And here's the continuation of the first broadcast of the GMO Trilogy featuring Jeffrey Smith.

Jeffrey Smith: Now, what about the crops? They're the ones most well known. The FDA, in 1992, put out their policy, which states 'the agency is not aware of any information showing that these foods differ in any meaningful or uniform way.' It gives the impression that hundreds of scientists went out looking for differences and couldn't find any. On the basis of this statement they said no testing was necessary, no long term safety testing, no short safety term testing, no notification necessary. Which means, if you create a genetically modified food in your basement laboratory you can sell it in the United States without telling the Food and Drug Administration. And that is the basis of US policy and it's been repeated over and over again by US trade representatives and senators and congressmen and ambassadors.

A colleague of mine pioneered a lawsuit against the FDA, tens of thousands of documents were made public and what did it say? That compliance officer summarizing all the submissions by the scientists there said it is the understanding of the technical

experts of the agency that these foods are different and lead to different risks, a direct contrast to the statement by policy. In fact, they listed those risks. The said it could give rise to hard to detect unpredictable allergies, increase of existing toxins, introduction of new toxins, gathering of toxins from the environment, bio-accumulations of toxins in milk and meat, nutritional problems, new diseases, antibiotic resistant diseases. They urged their superiors to require long-term safety studies. Their superiors, however, were not scientists. They were political appointees under direction from the White House to promote the biotechnology industry. The person in charge of policy, whose position had recently been created for him to be the person in charge of policy during the time the FDA was looking into genetically engineered foods and drugs, was Michael Taylor, former attorney to Monsanto. He later became a senior person at the United States Department of Agriculture working on biotech issues and later became Vice President for Monsanto.

This is not uncommon. The current Secretary of Agriculture was on the board of Calgene. Now, Calgene is a subsidiary of Monsanto. Calgene has an interesting history. They introduced the first genetically modified crop to be reviewed by the FDA. And they did something different than any company has done since. They submitted detailed data to the FDA. If a company since then wanted to participate in the FDA's voluntary consultation they can just choose whatever information they want, to summarise it, give it to the FDA - if the FDA asks for further information they are typically ignored. It's not required. Then they get a letter saying Monsanto believes its foods are safe. It doesn't say the FDA believes its foods are safe – it says Monsanto believes its foods are safe.

But Calgene did something different. They gave animal feeding studies for their Flavr Savr tomato fed to rats. Actually, the rats had refused to eat the tomatoes. *(laughter from the audience)* I think they missed a great marketing opportunity here. Don't you? Are rats eating your tomatoes? Try our tomatoes – even the rats won't eat them. *(laughter from the audience)* In fact, I witnessed reports from all over North America showing that, when given a choice, animals avoid eating genetically modified foods. Cow, pigs, geese, elk, racoon, deer, mice and rats... so my job is to get humans up to the level of animals. *(laughter from the audience)* Well, they force fed these rats the genetically modified tomato. Several developed stomach lesions – bleeding stomach. Seven out of forty died within two weeks. The tomato was approved by the Food and Drug Administration. \

Memos describe the statements by the scientists which said this does not show a reasonable certainty of 'no harm' and their superiors approved it. This Calgene Flavr Savr tomato also was to be used in the very first antibiotic resistant marker gene to be inserted into food.

Let me explain what that is. Let's say you wanted to create a genetically modified crop that produces its own pesticide. You find the soil bacterium that produces this protein pesticide. You take the gene out which creates the pesticide and you make changes in its genetic structure, you add an antibiotic resistant marker gene, add a promoter to switch the whole thing on and, typically, you would put thousands of these things in a 'gene gun'. You would blast this gene gun into thousands of cells hoping that some your genes

get into of at least some of the DNA of those cells. This is the industry's precise method of insertion. You can't tell which ones have gotten in or where it's gotten in or if there has been any disturbance to the DNA. So, what you do is you douse the whole thing with antibiotics killing them all except for a very few. The few that survive do so because now they have an antibiotic marker gene inside their DNA producing a protein, which renders it invincible to an antibiotic.

They asked the division of anti-infective drugs of the FDA what do you think of the use of this antibiotic resistant marker gene? They were appalled. They said, in all capital letters, it would be a serious health hazard to introduce a gene with codes for antibiotic resistance into the intestinal flora of the general population. Can anyone guess why that's a problem? The biotech industry assured the political appointees that it wasn't a problem and they approved it. The scientists were concerned that this gene would end up not only in the DNA of the transgenic clans but it would somehow work its way into the DNA of pathogenic bacterium probably inside our intestines. And that means that the bacterium, which was a disease would no longer be able to be treated by those antibiotics. But the industry said not to worry because all DNA is destroyed during digestion in the stomach so horizontal gene transfer is impossible.

There has been only a single human feeding study ever published on genetically modified foods. One study, published this year sponsored by the pro-biotech UK government, they took seven human volunteers and fed them soy bean milkshakes and soy burgers which contained soy which was genetically engineered not to die when sprayed with Round Up herbicide. Monsanto had found a bacterium growing in the dump site behind their factory which wasn't dying in the presence of Round Up so they figured let's put this in the food supply. They took the gene which created the protein which created the invincibility to Round Up and they blasted into the soybeans and now eighty-six percent of the soy in the United States is genetically engineered so that when you spray the field with Round Up after the soy has emerged from the ground the soy survives but every other living thing dies. They took this soy meal and fed it the seven human volunteers – these volunteers had colostomy bags due to the fact that they had their lower intestines removed - not for the study – there are some ethics there – I don't know. They looked into the colostomy bag and were surprised to find out how much genetically modified DNA had survived digestion, passing through the stomach and the small intestine. They also took samples of the bacteria from the colostomy bag before and after the meal and three out the seven volunteers and found some of the bacteria growing inside their intestines was now herbicide tolerant. The gene that had been growing in bacteria in the dump site that had been inserted into the soy had now jumped from, at some previous time it was there in a stable basis, from some soy that they had eaten to their gut bacteria. What are the medical implications of that? We don't know.

I'll give you some potential problems. That protein, which results in herbicide tolerance, has never been part of the human food supply. It might be an allergen. Human beings typically take repeated exposure in order to develop allergies. There's no guaranteed tests you can do on novel proteins to verify that they are not allergenic.

The World Health Organization and the United Nations have a list of criteria designed to minimize the likelihood of these new genetically modified proteins could create an allergy. The soy protein would fail those criteria because two sections of its amino acid structure are identical to two known allergens – a shrimp allergen and a dust mite allergen. So, now we have the protein being produced inside our gut bacteria possibly long after we decide not to eat genetically modified soy again. We don't know because it was a pre-imposed test some hours apart, maybe a day apart, we never checked in the long term. Another problem is with this protein is when we insert this gene that creates the protein they expected that gene to be stable and they actually registered its sequence and now, as of June of last year they found that the sequence is changing. It's not only changing in one direction but two different labs found it changed in different ways. So, now you have the 2003 Indiana version of the soy bean, the 2004 Ira version of this gene.

When a gene changes so does the protein it creates. So, the protein structure is not the one that was intended, and it was never tested so we don't know which of these proteins or what they are that may be being produced inside our guts from the DNA that now has these genes in the bacteria. So, those are some pretty substantial potential long term problems.

What also transferred with the gene into the bacteria was something called a promoter, that's added to the gene which you put in to turn it on. Typically inside the DNA, I'm sure you've all seen this there's this person back there, they set the levels of all the genes, they get a printout, what time is it, how old am I, what part of the physiology am I in, am I under attack? This whole thing is very well calculated. They set the levels of which genes are expressing the proteins and how much.

Then this foreign gene comes in that was not part of the billions of years of evolution of that particular species and it's unrecognized. So, what engineers do is they put in a permanent, artificial on-switch which turns on this gene 24/7, around the clock, full volume, so it produces its protein at top volume no matter what. They assumed that it would only turn on the gene to which it was attached. It can sometimes turn on genes in the DNA at random, permanently at full volume.

So, now in the corn plant or the soy plant or the cotton plant or the canola plant or the papaya plant or the zucchini plant or the crook-neck squash, those are the seven – we'll go over it again. Those may have genes inside their DNA which are now on full blast and so this person back there is saying 'enough – enough - enough' and the gene is saying 'you're not in charge anymore – he is' and you look over and there's this foreign promoter . And what can it be over-producing? Allergens, toxins, carcinogens, anti-nutrients, something great? We don't know. It's genetic roulette.

The promoter transfers to gut bacteria – it might turn on genes at random inside the bacteria. Preliminary evidence released in February at the UN Biosafety Protocol Conference meetings in Malaysia describe how the promoter was found in rat organs after the rats were fed a single transgenic meal. If the promoter were to transfer to our DNA it could, in theory, turn on genes at random, permanently. It also has, in theory, a

hot spot which can cause recombination and mutation, so it could also mess up the structure of our DNA. It can also, in theory, awaken dormant viruses embedded within the DNA.

Because we know the soybean gene transferred, of course, we know the antibiotic resistant marker genes might transfer but they never followed up to find out. And that could be creating super diseases.

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Jeffrey Smith: What about the gene that creates its own pesticide that being used in corn and cotton right now? What if that were to transfer to our gut bacteria? It could render our intestinal flora as living pesticide factories.

If you ask the Environmental Protection Agency which is in charge of these pesticide producing plants about this they will tell you it's all destroyed during digestion.

This particular pesticide BT is used in organic agriculture but it's a different structure when it's created in the food and some describe it as a lot more toxic potentially. When they fed BT to mice it did survive digestion. In fact, they had abnormal and excessive cell growth in their small intestines. They had an immune response equal to that of cholera attacks. They had increased susceptibility to allergens. Preliminary research, also released in February, describes how thirty-nine Filipinos living next to a BT cornfield developed skin, respiratory, intestinal reactions and fever while the corn was pollinating. Blood tests verified that their blood had an immune response to the BT.

These are just some of the ways that genetic engineering can cause problems. We know that even though they are doing no monitoring whatsoever of human health, if you look at just the statistics, soon after genetically modified soy was introduced to the UK soy allergies skyrocketed by fifty percent. Is this due to the novel protein that has identical sections to the known allergens, or maybe a variation of it that has changed over time? We don't know.

We do know the process of the insertion of a gene is not Lego's. You don't just snap it into place and add a trait which is what the industry wants us to believe. The process itself is a violent change. It can damage the DNA. It can also change the levels of expression of lots of the existing genes. A gene chip study monitored the expressions of proteins in the DNA before and after a single gene was inserted and five percent of the genes that were expressing proteins changed their levels of expression. This is huge. This is why the title of Monsanto's study in the journal of nutrition that their herbicide tolerant soy was equivalent to the natural soy. It showed embedded within hard to read tables that there were differences including the increase in trypsin inhibitor – one of the most well known allergens in soy which might be responsible for the increase in soy allergies in the UK. They also refer to other information from their studies where plants are grown side by side in identical conditions which would give a lot more information which they didn't even include in the study. Someone had to dig it out of the archives years later and make it public. It showed that once the soy was heated the difference in trypsin inhibitor was three to eightfold. Also, there was a lectin which is a potential anti-nutrient that had increased. There was also a decrease in protein, a decrease in phenylephrine there's a lot of differences there which they left out under the title of their paper which was that there was no difference or basically they were equivalent. So, there can be a lot of changes in the nutrient levels but they don't check all the nutrient levels they just check a few. So, there can be changes in things we don't even know exist which might impact on health, mood, behaviour, reproduction, we don't know.

They also discovered that a section of the DNA of the genetically modified soy in recent years, years after it was introduced, which is damaged. It became damaged due to the process of insertion. It's long enough to create its own potential protein which could of course be allergenic. That might be the reason for the increase in allergies. We just don't know. There are too many possibilities here. Remember that the FDA had said, one person said it's not possible to ask these manufacturers to be able to determine if their foods are allergenic. And yet there are no long term safety studies. Actually, there have been a few long term safety studies. When I published my book there were ten animal feeding studies on genetically modified foods. Eight were conducted with industry money, two were independent.

There's an interesting coincidence about results. Aspartame – how many people have heard of Aspartame? Everyone should know Aspartame. I read that it was the subject of one hundred and sixty-six studies in 1985 and 1995, divided almost equally between industry sponsored studies and independently sponsored studies. One hundred percent of the independently sponsored studies raised questions about Aspartame including the possibility that it might create brain tumours. It is, by the way, a result of the process of genetic modification. Guess what percentage of industry sponsored studies raised questions? Zero.

So, of these ten, let's focus on one of the independent studies. A man named Arpad Pusztai, a scientist working at one of the most prestigious nutrition research laboratories in Europe; he is at the top of his field in researching a particular type of protein. He had

published more than three hundred studies and twelve books and he was selected by the UK government to lead a UK funded study to determine what the ideal testing protocol would be of every genetically modified crop before it was allowed on the market by the UK government. This protocol was to be adopted by Europe. He won the prestigious grant over twenty-seven competitors because the government felt like if he gave his seal of approval the sceptical public would start to eat genetically modified foods without concern. So he and his team worked on developing the testing protocol which the FDA had asked for and urged their superiors to implement and were ignored. He genetically engineered a potato to produce an insecticide and put it through the protocol of tests and was surprised to find that the rats were damaged.

When he took the potatoes and spiked them with the insecticide the rats were not damaged nor were the rats that just ate the potatoes. In all cases they were given a complete and balanced diet.

So what was the cause of the problem? If it wasn't the insecticide it was likely to be the process of engineering the potato to produce the insecticide. And he used the same process that was used to create the foods on the market. He went public with his concerns and was a hero at his institute for about two days and then two phone calls were likely forwarded from the Prime Minister's office through the receptionist to the director on a Tuesday afternoon. Wednesday morning Arpad Pusztai was fired from his job after thirty-five years, silenced with threats of a lawsuit, the twenty member research team was disbanded and the UK government did not put into place the testing protocol.

He was eventually invited to speak in front of parliament which lifted the gag order, he received his data back, it's published in the Lancet, a prestigious journal, and remains the most in-depth animal feeding study ever conducted on genetically modified foods.

I asked Arpad 'what was your most shocking moment, what was your most dramatic moment – what was the biggest shock you had?' Can anyone guess why I asked that question? Remember I was writing a book. Remember I was looking for shocking stories to write about so people would read it because no one is going to read a textbook on genetic engineering. Well, perhaps I was the only person who asked him that question because he told me stuff he had not told any other investigator. Months earlier when he was still on good terms with everyone this pro-biotech scientist was sitting in his office and the director of the institute, Professor Philip James, walked into the office and put a stack of about seven hundred pages on Arpad's desk, Arpad's wife, Susan, came in, she's a senior researcher there also, the professor explained these are the submissions for the six or seven biotech companies to the UK government for their genetically modified foods. The director was one of twelve committee members that approved these. The director said the Minister of Agriculture is meeting in Brussels to discuss genetic engineering and have a vote and he wants a scientific opinion on this.

Arpad looked at the stack of seven hundred pages and looked at the director and realized this man would never read this many pages. He was not a working scientist, he was a committee man. As were the rest of the twelve members of this committee. Arpad and his

wife, however, had spent the previous two years creating the ideal testing protocol for genetically modified foods. So, he was very interested in evaluating what the industry considered appropriate and he and his wife were among the most qualified humans on earth to do so. He said how much time do we have? The professor said two and a half hours. So, they got to work and they looked immediately at the design and the data.

Arpad Pusztai said to me that was the most shocking moment, more shocking than being fired from his job, more shocking than discovering the damage to the rats, because he realized how poor the science was being done by industry. He said you know what good science is and you know what bad science is and this was bad science, flimsy and superficial. He said I realized what they were doing and what I was doing was diametrically opposed. What I was doing was safety studies. What they were doing was as little as possible to get their foods on the market as quickly as possible. He called the Minister and said I wasn't expecting to give you a strong recommendation after only two and a half hours but there was definitely not enough information here to allow these foods to be fed to human beings or to animals. The Minister said I don't know why you're telling me this – your professors' committee approved these foods two years ago – they're already on the market.

A few weeks later, when Arpad realized the extent of the damage to his rats, potentially pre-cancerous cell growth in the digestive tract, smaller liver, brains and testicles, partial atrophy in the liver, damaged immune system, he realized that the potato had submitted to that same industry research it would have made it to the market and that's where it was intended to go.

However, he also realized that the soy, corn and tomatoes that did make it to the market were never tested for these things and they were created from the same process that he used to create his potato and they still haven't been tested for these things. Remember, it wasn't the insecticide that caused the problem for the potatoes – it was likely the process. The tomato has been taken off the market. It was the Flavr Savr tomato engineered for a longer shelf life but whatever they did didn't work because it's not on the shelves anymore.

There are few other studies. We know even though many of these are rigged to avoid finding problems, according to scientists who reviewed them, rats that were fed genetically modified soy had problems and misshapen components in the nucleus of their liver cells. Rats that were fed genetically modified canola have livers that were fifteen per cent heavier. Rats that were fed genetically modified corn had problems in the development of their blood cells, in their kidneys, and higher blood sugar levels. Rats fed genetically modified tomatoes, as we talked about, had stomach lesions, seven of forty died within two weeks. Twice the number of chickens fed genetically modified corn died when compared with those who were fed non-genetically modified corn. Twelve cows died mysteriously in Germany when they were fed genetically modified corn, several others had to be killed because they were sick.

I spoke with farmers recently in Iowa, representing about twenty-five farmers so far in the mid-west, who have identified that feeding certain genetically modified corn varieties to their animals has caused their animals to have reproductive problems. Primarily it was pigs unable to get pregnant, either they were giving birth to bags of water or had false pregnancies – they looked like they were pregnant but all of a sudden they weren't pregnant anymore.

Cows gave birth to twenty times the amount of twins at this one farm and others had trouble reproducing. So, we are in a situation where we are shaking up and rolling the dice on the DNA. The DNA makes changes in the physiology of the plants we eat which are not being studied. The genes transfer to gut bacteria and, likely, to internal organs which could make changes in the DNA there which are not being studied.

So, even though I consider this to be one of the most serious health and environmental dangers we now face, unlike many other problems in the environment, this is one of the easiest battles to win. Simply by informing people of the health dangers, simply by taking steps to protect ourselves and our families we can bring down this dangerous experiment.

I'm not speaking just theoretically. I'm describing what happened in Europe. In April 1999 Unilever, Britain's largest food manufacturer committed to remove all genetically modified ingredients from their European brands. Within one week every major food company in Europe followed suit, McDonalds, Burger King, Safeway, Nestles, four of their European brands, because in Europe people learned about this. Studies show the more people learned about genetically modified foods the less people trusted them. Imagine that.

In the United States recent studies show that more than fifty percent of Americans say they've never eaten a genetically modified food in their lives. Most Americans eat them at every meal. You know how extensive soy is in the diet – unless it says non-GMO or organic it will be genetically engineered. It's the same with corn – high fructose corn syrup, maltodextrin, dextrose, corn flour, corn oil. And there's canola. And there's cotton, cottonseed oil, Hawaiian papaya, a little bit of zucchini and crook-neck squash and Quest brand tobacco. There used to be a tomato until it was taken off the market. A rice has been approved but not commercialized. Wheat was being threatened by Monsanto until the entire wheat industry virtually erupted in concern and they withdrew temporarily their bid to commercialize it next year. We're facing a situation, fortunately, where consumer concern is growing around the world.

Jon Steinman: And you're tuned in to Deconstructing Dinner. A syndicated one hour radio program produced at Kootenay Co-op Radio in Nelson, British Columbia. We are currently listening to Jeffrey Smith, author of the book Seeds of Deception which exposes industry and government lies about the safety of the genetically engineered foods we eat. The recording featured on today's broadcast is one of a three part series titled The GMO Trilogy, produced by Jeffery Smith and the Institute for Responsible Technology. You can find out more about the trilogy or listen to today's broadcast by visiting the Deconstruction Dinner website www.cjly.net/deconstructingdinner. You can also visit the

Seeds of Deception website at www.seedsofdeception.com where the trilogy can be purchased which features two DVD's and one audio CD. Smith is also encouraging the public to spread the word about the trilogy with the hope that increased awareness about this issue will force industry to abandon the use of genetically modified foods.

And here's the continuation of the first broadcast of the GMO Trilogy featuring Jeffrey Smith.

Jeffrey Smith: Nearly two thousand jurisdictions in Europe have declared themselves GM-free zones in twenty-two countries. There are GM-free zones being established or already established in parts of New Zealand, the states of Australia, Venezuela, most of Brazil, Angola, Sudan, Zambia, Mendocino County in California, Trinity County in California, and on the ballot are four other counties in California where I just came from two days ago. Speaking and listening to the rhetoric of the biotech industry claiming that these foods are safe and have been proven safe by the FDA even though in a lawsuit against them they defended themselves by saying the FDA does not regulate genetically modified foods.

So, there are a lot of myths out there. My job is to pierce the myths and I'm happy to say its working. I'm going to offer you tools to help get this word out – in chapter seven of my book I describe muscling the media, how documentaries and news reports and books and articles have been squashed because of threats by Monsanto's attorneys or others and how there is a concentration of media ownership that was diverting attention away from these issues. So, that's why I wrote the book and I'm happy to say it's shaping policy around the world. It has been translated into six languages and it's the bestselling book on the topic and you can also sign up for my free electronic newsletter. I just created a video and it will be out this month – it interviews a lot of the scientists around the world and the first of the two videos is aimed at taking GM foods out of school meals. Kids are most at risk for sure.

I also recommend getting on an email list with regular news updates. There's two sites that do that well. One is GM Watch. It's a British one and it's beautiful if taken weekly or daily, I think its www.gmwatch.org. The other is www.thecampaign.org. It's the campaign to label genetically engineered foods. I strongly recommend you get on one of these two as well as my own as well because you know you hear it today and then as the days pass it becomes less and less and then it goes away. And this is not something we can allow to happen because we're making changed not just for this generation but potentially for all future generations because we're getting this transgenic pollution that self-replicates.

Imagine being told by a new boss you're an environmentally-minded kind of person – we would like you to do a little project for us. We would like you to recall our genetically modified salmon from the ocean or mosquitoes which I plan to release, or the pollen which has contaminated Mexico's indigenous corn varieties. It's not possible. At least we don't know today how to do it. Again, we're putting these crops out; we're feeding the products of an infant science to millions of people and releasing them into an

environment where they can never be recalled. The genetic engineering science is based on theories that were popular forty years ago but have been overturned. One professor said to the class, as he introduced me to the University of Texas, everything we knew about genetics ten years ago is wrong. Everything we know about genetics today will be considered wrong in ten years and we are manipulating the DNA and putting it out there.

That's why I chose to focus on this because I see on a triage, what we have to handle first - this is one of the things that cannot wait. So, I would like to recommend, one, that you take steps to avoid eating these foods and, two, share this information with others.

I have a programme if you would like to buy the book it's cheaper if you buy a half dozen. This is something, which has been very popular because people realize they take a level of empowerment to actually help get the word out. It's cheaper by the case. I'll send you a trainload. *(laughter from the audience)* We're just trying to pump out the information to break through what has been basically a blackout by the US media. As you can tell by the information I've presented so far it's very serious and demands immediate attention. I'm really grateful for this forum to allow me to present it. Thank you.

Jon Steinman: And you're tuned in to Deconstructing Dinner as that wrapped up the speech given by Jeffrey Smith, author of the book Seeds of Deception. This recording is one of a three part series entitled The GMO Trilogy and following the recording of this speech Jeffrey Smith was presented with a number of questions, a few of which we will play for you right now. And again, you can find out more about the trilogy by visiting www.seedsofdeception.com.

Moderator: Are GM crops economically advantageous?

Jeffrey Smith: Economics was the reason why the United States government pushed it. The council of competitiveness under Dan Quail, under Bush, said we need to promote you as exports and they identified genetically modified crops as one of their key technologies and, on the basis, they put through no real regulations and it's been an economic disaster. Corn growers lost their three hundred million a year European markets. Canada lost its canola market and its honey from canola. The soy market share dropped from fifty-seven percent down to forty-six percent. The amount of subsidies for farmers has gone up about two or three billion dollars, specifically tied to loss of markets due to genetically modified crops. There is also a reduction in yield on average for genetically modified crops – it's only four to six percent, sometimes ten percent for soy, its reduction for canola, the yield sometimes increases in corn if there's an infestation in the European corn borer. Japanese manufacturers have told the US not to send them genetically modified products – they have a labelling regime which allows five percent contamination which is very high. Citizens around the world don't want to eat genetically modified foods. Ninety-two percent of Americans want it labelled. More than half said they wouldn't eat it even if it were labelled. The labelling concept that most people share is if it's derived from genetic modification we want it labelled. A lot of the labels around the world have loopholes. If something is processed and then boiled it's not labelled because there's no DNA in there and we can't find the transgenic protein but because

you're changing the DNA of this soy, cotton and canola you could be making vast changes in its nutrient levels which could show up in the oil so it's still a myth that the oils from processed foods aren't infected. Europe has modernized its labelling regime and it went into effect in April and now if it's derived from genetic modification it has to be labelled so that's the way in which the market is shrinking. Another way it's shrinking is a lot of these foods go into animal feed, soy and corn in particular, and so Europeans are now becoming sensitized to the fact the milk and meat they consume is coming from animals fed genetically modified feed. They are starting to demand more and more so a lot of the activists work in Europe is to increase the spectrum of rejection and they are having a lot of success there.

Moderator: I want to say when I went to Europe, even in restaurants menus say they don't use genetically modified foods. They call them 'frankenfoods'

Jeffrey Smith: This is a policy statement from one UK restaurant in 1999: "In response to concern raised by our customers we have decided to remove, as far as possible, genetically modified soy and maize from all food products served in our restaurant. We will continue to work with our suppliers to replace GM soy and maize with non-GM ingredients. We have taken the above steps to ensure that you, the customer, can feel confident in the food we serve." This statement was in reference to the cafeteria in the Monsanto UK headquarters.

theme music

Jon Steinman: And that was this weeks' edition of Deconstructing Dinner, produced and recorded in the studios of Nelson, British Columbia's Kootenay Co-op Radio. I've been your host Jon Steinman. I thank my technical assistant tonight Dianne Matenko.

All of those affiliated with this station are volunteers and financial support for this station is received memberships, donations and sponsorship from local businesses and organizations. For more information on this station or to become a member you can visit www.cjly.net or you can dial 250-352-9600.

Should you have any comment about today's show you, want to learn more about topics covered or would like to listen to previous broadcasts you can visit the website for Deconstruction Dinner at www.cjly.net/deconstructingdinner. Until next week.