

Frankenfood

A Documentary Film

To be directed by Joe Berlinger and produced by Christof Bove

Based on the book Seeds of Deception by Jeffrey Smith

Lawrence Bender Productions
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Betty Hoffing, at the age of sixty-five, was a bit of a local character in her hometown of Skokie, Illinois. A travel agent for twenty-five years, Betty's infectious humor and unbounded energy made her a favorite not only in her travel office but also in the volunteer organizations where she spent after-work hours each week. She was in excellent health and never had any serious health problems in her life. Not until August 1989.

One day at work, Betty was suddenly overcome with intense pain in her chest and down her left arm. Her doctor, thinking it was a heart attack, had her go immediately to the intensive care unit at a nearby hospital. But two days later, after batteries of tests came up with nothing, the doctors sent Betty home. There was no heart attack, no explanation.

The next month, she developed a mysterious rash all over her body. Soon after came a horrible cough. By the end of September, Betty was crippled with severe muscle weakness and extreme pain. "It was hard to walk, hard to do anything," she said. Her muscles were going haywire. Her physicians were baffled.

On a day in March that same year, Harry Schulte, a Catholic deacon living in Cincinnati, was sitting in front of his television when all of a sudden he heard what sounded like a shotgun go off in his head. "I thought I was going crazy," he recounted. He wasn't. He was experiencing the first symptom of a disease that would turn his life upside down.

Within weeks, the nightmare began. "I would sit up on the side of the bed and try to sleep sitting up because of the intensity of the pain. My legs became—you wouldn't believe it unless you saw it—they became as big as a telephone pole. They split and water oozed from them. No amount of medicine they gave me calmed the pain."

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Eventually, the Center for Disease Control would determine that these cases and many others were caused by a genetically modified amino acid called L-tryptophan. The substance had been prescribed to these victims as a dietary supplement. The CDC named the disease eosinophilia-myalgia or EMS. In its final calculation, the agency estimated that there were almost 10,000 cases, nearly forty of them fatal. Needless to say, had the substance been part of something like toothpaste or a hamburger patty, the numbers would have been exponentially higher.

The deadly version of L-tryptophan was traced back to a Japanese company, Showa Denko, that had genetically re-engineered the material in order to increase their yield, without ever properly testing it for human safety. Showa Denko is one of many biotech companies involved in genetically modifying the organisms (GMOs) that humans ingest. Monsanto is the mother of all these companies—a biotech behemoth with a number of food staples including corn and soybeans currently in our food supply.

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SEEDS OF DECEPTION

Jeffrey Smith's Seeds of Deception is an internationally best-selling exposé of the biotech industry and genetically engineered foods. Smith systematically describes the biotech industry as manipulating the government, our food and the media, putting all of us at risk. In pursuit of profit and market share, companies like Monsanto are literally *retooling* the genetic structure of human food, with – say Smith and the scientists he consults – little scientific regard for the potential consequences. Smith asserts that genetic modification not only risks human health, but alters forever life as it has evolved over millennia. Once genetic changes are released into the environment, they cannot be un-changed. Once they exist, they exist forever.

But biotech firms like Monsanto, as well as a majority of U.S. politicians, maintain that GM (genetically modified) foods are the wave of the future – harmless technological advances that make the food we eat more convenient, plentiful and delicious. Not only that, but they claim that GM foods hold the key to solving the problem of world hunger.

THE FILM

Using Smith's book as a springboard, **Frankenfood** will be a documentary exploration of the world of genetically modified foods and the biotech industry, told from all sides. The film will explain the scientific process of genetic modification as well as the political and media efforts undertaken by its proponents. It will examine the true nature of the potential dangers and benefits of this new technology in an engaging, entertaining and enlightening way.

Acclaimed filmmaker Joe Berlinger (*Brother's Keeper*, *Paradise Lost*, *Metallica: Some Kind of Monster*, *Iconoclasts*, *10 Days that Unexpectedly Changed America*) is renowned for his storytelling ability and his knack for turning complex, difficult subject matter into compelling, thought-provoking entertainment. His work has won Independent Spirit Awards, a Sundance Audience Award, multiple Emmys, a Peabody, a DGA Best Director Award, and countless other accolades. His films have appeared on the "Top 10 Films of the Year" lists of over 80 major U.S. film critics and have played in theatres, television and film festivals throughout the world. With **Frankenfood**, Berlinger intends to create an in-depth portrayal of the biotech industry, combining history and science with personal stories from people most deeply involved in the ongoing controversy, to craft a gripping and informative narrative.

The film will feature interviews with experts on the front lines of the debate, including scientists, politicians, activists, corporate representatives, and farmers. We will also utilize archival material and cutting edge graphics and animation to help explain the scientific processes involved. We may even conduct our own experiments, overseen by independent scientists. **Frankenfood** will be an unbiased, no-holds-barred investigation into one of the most potentially explosive but underreported issues of our time, one that

has potentially enormous consequences for us all... consequences that we may already be experiencing.

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In 1985 pigs were engineered with a human gene that produces a human growth hormone. The scientists' goal was to produce a faster-growing pig, so that more pig product could be brought to market sooner. What they got was a freak show. "With their bristly hair and wide muzzles, these animals looked nothing like the pigs on the farm owned by my grandfather," wrote Bill Lambert for the St. Louis Dispatch. In one of the first litters born with the growth hormone genes, a piglet was born with no anus or genitals. Some of the others were too lethargic to stand. Others had arthritis, ulcers, enlarged hearts, dermatitis, vision problems or renal disease.

*This was an early example in a long line of experiments with unpredicted results. In fact, the single most common outcome of genetic engineering has been surprise. More often than not, scientists who engineer organisms to create one effect end up with **something altogether different**, like these deformed pigs.*

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"Something altogether different" may be fine in a laboratory, but it can be toxic or even deadly when introduced into the human food chain. Currently, we are already eating a massive amount of food that is altogether different. And we have little idea of the long-term consequences to the food chain, the environment and our bodies because biotech industry practices do not include conducting long-term scientific research.

Indeed, the biotech industry appears to have gone to incredible lengths to squash scientific work that warns of the consequences of GMOs. They have fired, sued, and physically threatened scientists who have spoken out against their products. They have used their massive war chests to buy political influence and crush opposition. They have succeeded in silencing the world's biggest media and news organizations. Monsanto, for example, has been called "more evil, more dangerous than the tobacco industry," because you can stop smoking and undo its effects, but the effects of genetic manipulation cannot be undone.

And our government appears to have condoned and supported these practices, sometimes passively and sometimes with, to some, disturbing complicity. The FDA is often referred to as a "revolving door" for the biotech industry. Frequently, its senior staff are former or future industry executives.

Dr. Arpad Pusztai, working for the Rowett Institute in Scotland, was one of the very first scientists to conduct a serious study of genetically modified food. In his case, a potato designed by the biotech firm Unilever. His trials proved that the potatoes severely damaged the immune systems and organs of rats. By any serious scientific standard concerning foods or medicines, this was a critical red flag.

Dr. Pusztai went public with his research data. The next day he was fired after thirty-five years and silenced with threats of lawsuits. His research team was disbanded, and the Institute denied and distorted his findings, as part of a campaign to smear his impressive career and standing in the scientific community.

However, the firing and gagging of a renowned scientist, after he revealed health dangers of genetically modified food destined for the grocery shelves, made headlines throughout Europe. The European public was up in arms, refusing to be the guinea pigs of the biotech industry, and their rejection of the stuff has kept GM foods and products out of the continent.

By contrast, the story of Dr. Pusztai went largely unnoticed in the U.S.. The media watchdog group Project Censored calls this one of the 10 most unreported stories. Likely because of this lack of coverage, 60% of Americans believe that they have never eaten GM foods. In fact, we eat it in most of our meals, brought to us by the same companies that removed genetically modified ingredients from their European foods but continue to sell the stuff to uninformed U.S. citizens.

Nearly the entire food manufacturing and retail industry of Europe has banned genetically modified food. Because of the difficulty of segregating GM crops from non-GM crops, many overseas buyers have simply rejected all corn, soy, canola and cotton from the U.S. and Canada. Since these four GM crops and their derivatives are found in most processed foods from the U.S., American-made packaged foods are also off limits in many markets, which obviously has a massive ripple effect on the US economy.

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In 1998, Howard Vlieger harvested both natural corn and a genetically modified Bt variety on his farm in Maurice, Iowa. Curious about how his cows would react to the pesticide-producing Bt corn, he filled one side of his sixteen-foot trough with the Bt and dumped natural corn on the other side. Normally, his cows would eat as much corn as was available, never leaving leftovers. But when he let twenty-five of them into the pen, they all congregated on the side of the trough with the natural corn. When it was gone, they nibbled a bit on the Bt, but quickly changed their minds and walked away.

“If a field contained GM and non-GM maize, cattle would always eat the non-GM first.” – Gale Lush, Nebraska

“A neighbor had been growing Pioneer Bt corn. When the cattle were turned out onto the stalks they just wouldn’t eat them.” – Gary Smith, Nebraska

According to a 1999 USA Acres article, cattle even broke through a fence and walked through a field of Roundup Ready corn to get to a non-GM variety that they ate. The cows left the Gm corn untouched.

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Everywhere we turn, genetically modified food is leaching into the food chain. Nearly all soy is now a GMO, as is 60% of corn, 83% of cotton and 60% of canola oil. About 80%

of all these crops are engineered to withstand deadly applications of herbicides, and 20% are engineered to generate their own pesticides. (An example is the “Round-Up Ready” Tomato from Monsanto, which is designed to withstand Monsanto’s own Round-Up, the most widely used herbicide in agriculture.) And there are dairy products from cows injected with genetically modified bovine growth hormone. Every year these numbers go up. In the United States, the FDA has consistently blocked efforts to properly label genetically modified products, most recently the labeling of beef from genetically modified cows.

In other words, the vast majority of us do not know what we are eating or what it might do to us, especially children, the sick and the elderly.

Seeds of Deception brings this reality into sobering perspective. The film *Frankenfood* will aim to do the same. It will aim to shock as well as educate. It will take the position that the public should not fear experimental science but rather the irrational decision to let it out of the laboratory into the world before we truly understand it. And it will investigate whether all of the worry overseas is really worthwhile, if the claims by the biotech industry and the U.S. government that we have nothing to fear are in fact founded in truth.

The film will follow a simple but sharp line of exploration. Smith and some scientists claim that genetically modified foods and other organic material, like cotton, are making people and animals sick now, and that in some cases, these GMOs are already causing death. They claim to prove that genetically manipulating (and cloning) animals is unpredictable, often producing gruesome results. Many in the scientific community believe they have proven that GMOs are dangerous to humans and the human food chain. Whereas European countries have responded to these perceived threats, the United States government has allowed the biotech industry to unleash their products on Americans and others around the globe, especially third world countries. And finally, we will explore the possibility that GMOs are activating changes that we cannot predict or deactivate.

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Did you know that there is cow pus in the milk you drink?

Dairy cows are now regularly injected with a genetically engineered growth hormone rbGH. The hormone increases milk production. At the same time, it increases types of infections including udder infection and injection site infection. Increased infection means increased pus. The dairy and biotech industries refer to the levels as the “pus count.” Even manufacturers of rbGH like Monsanto had to warn that the hormone raises the pus count of milk from cows injected with the hormone. But they intentionally downplayed their warning, under-reporting the statistical data. Independent research has found that they were off the average by at least 20%. This begs the question: How much pus is in your milk?

RbGH provides a classic example of the GMO narrative. In the late 1980s, after three FDA scientists expressed concerns about possible human health problems related to dairy products from rbGH-treated cows, they were fired, stripped of responsibilities or

forced out. Remaining FDA whistle-blowers had to write an anonymous letter to Congress, complaining of fraud and conflict of interest at the agency. In 1998, six Canadian government scientists testified before their Senate that they were being pressured by superiors to approve Posilac (Monsanto's brand of rGBH), even though they believed it was unsafe. They also testified that documents were stolen from a locked file cabinet and that Monsanto offered them a bribe of \$1-2 million to approve the drug. (A Monsanto representative went on national Canadian television claiming that the scientists misunderstood, that the "bribe" was an offer for research money. This year, Monsanto was fined for offering bribes to 140 Indonesians, as part of a campaign to gain approval for their genetically modified seeds.)

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The examples of potential danger only mount:

-A leading scientist from the Russian Academy of Sciences reported that more than half (55.6%) of the offspring of rats fed GM soy died within three weeks. By contrast, only 9% of rats died whose mothers were fed non-GM soy. When her institute started buying rat chow that contained GM soy, the mortality rate among all the rats shot up 50%.

-In June 2005, a German court ordered Monsanto to make public a study, in which rats fed GM corn developed kidney inflammation, altered blood cell counts and organ lesions. The rats were fed corn genetically engineered to produce a pesticide called *Bt*-toxin. (*Bt* is a genetically engineered pesticide.) A French expert who reviews GM safety assessments for the French government says that these and other studies indicate that *Bt* crops create reactions similar to chemical pesticides. Monsanto, however, convinced regulators to overlook the findings using arguments that were criticized by some as unscientific. Then in 2007, an independent scientific panel announced that, "with present data it cannot be concluded that GM corn is a safe product."

-In November 2005, a 10-year, \$2 million GM pea project in Australia was abandoned when the peas were found to aggravate immune reactions in mice. The results, which indicate that the peas might create potentially life-threatening allergic reactions in people, were discovered only after scientists employed advanced tests that have never been used for evaluating GM food. If those peas had been studied in the normal way, they might have been approved.

-Medical reports from India say that hundreds of farm workers handling Monsanto's GM cotton developed moderate to serious allergic reactions, forcing hospitalization for some.

-There were also reports that numerous animals died after eating the *Bt* cotton plants. According to a report compiled in April 2006, approximately 25% of the sheep from about 50 flocks, died within a week of continuous grazing on *Bt* cotton plants. And an estimated 10,000 sheep died that year.

-In 2005, the Indian government confirmed that *Bt* cotton's disastrous yields cost millions. One state even kicked out Monsanto, after they refused to compensate farmers' losses. Tragically, hundreds of debt-ridden cotton farmers committed suicide. In 2007, the Indian government is warning farmers not to use plants containing *Bt* as feed.

-As if these weren't enough, once released into the environment, GM crops can cross-pollinate with non-GM crops and weedy relatives, and their inserted genes may also transfer into bacteria in the soil or human intestines. Indeed, the only published human feeding study confirmed that genes transfer from GM crops into the DNA of our gut bacteria. If the pesticide producing *Bt* gene transfers, it could turn our intestinal flora into a living pesticide factory, possibly for the rest of our lives. Our bodies would be manufacturing poisons that can cause health problems, infertility, birth defects and death.

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A scientist working for Monsanto knew of a species of Arctic fish that was resistant to freezing in cold temperatures. He wanted his tomatoes to resist cold so they wouldn't die in frost. The scientist didn't have to wait for the unlikely event of the fish mating with the tomato. He figured out which fish gene keeps it from freezing and inserted it into the tomato's DNA. The anti-freeze gene has never ever, ever existed in a tomato. But now it is in the tomato and all of its offspring with effects we cannot predict.

While it may be the new tool in the breeder's toolbox, many scientists are adamant that the technology must not be mistaken as equivalent to traditional cross-breeding practices. George Wald, Nobel Laureate in Medicine and former Higgins Professor of Biology at Harvard, said that genetic engineering presents "our society with problems unprecedented not only in the history of science, but of life on Earth. It places in human hands the capacity to redesign living organisms (very much like cloning), the products of some three billion years of evolution. The nub of the new is to move genes back and forth, not only across species lines, but across any boundaries that divide living organisms. The results will be new organisms, self-perpetuating and hence permanent. Once created, they cannot be recalled. So going ahead in this direction may be not only unwise, but dangerous. Potentially, it could breed new animal and plant diseases, new sources of cancer and unexpected epidemics."

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The biotech industry's stated goal is to genetically engineer and patent 100% of all commercial seeds in the world, forever altering our food, our health and our planet. The industry is attempting to transform world agriculture and food on a scale never before seen. Along the way, they have allegedly bribed officials, rigged research, omitted and distorted data, ignored dangerous findings, silenced critics and hijacked regulatory agencies. In the film, we will track scientists who were fired and gagged, reporters who were threatened and silenced, consumers who became sick or disabled, and regulatory agencies that were taken over by the very companies they are supposed to regulate. If the allegations are true, what can we do about it?

This film will shake awake the American public, drawing its attention to a little-known issue that affects us all, engaging and enlightening audiences in the debate: is GM food a savior that will allow us to live more comfortably and feed the world's hungry, or is it a potentially catastrophic Pandora's Box whose lid is already halfway off?