

# GENE TINKERING **BLUES**

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## Genetic engineering is a wolf in sheep's clothing

Genetic engineering (gene tinkering) is a process in which genes from widely different organisms such as plants and animals or bacteria and animals including humans are blended in the laboratory. Such combinations are used to treat genetic diseases including cancer and to create new kinds of crops. For the most part the medical applications have been handled with reasonable care while the development of crops has developed with little regard for human safety and for the safety of the environment. Indeed, the technology is being promoted in a truly imperialistic manner.

The greed of the developers has led them to delete evidence of harm and to regard human populations appropriate for experimentation. Already, the release of a gene tinkered health food, tryptophan containing a dangerous by product has killed over forty Americans and crippled thousands. Such findings are deliberately ignored during deliberations on the field testing and release of gene tinkered crops.

The main concerns about gene tinkered crops include production of diseases of the immune system including allergy and auto immunity. Many of the novel genetic constructions involve use of bacterial and virus genes that are known or likely to produce allergy or debilitating auto immune diseases which killed people in the tryptophan poisonings. Food allergy can not only kill but can create migraine and a range of digestive disorders. Mental disorders are associated with wheat gluten but such problems are ignored by those "improving" food quality by introduction wheat genes into other crops. The industry has protected themselves by fighting the labeling and identification of gene tinkered crops. If crops are not labeled those who suffer injury will have little chance to identify what is causing their disease.

The other problems specific to gene tinkering include the creation of new and dangerous virus diseases by the process of genetic recombination. Such virus are a mainstay in gene tinkering and it has already been shown that new a dangerous viruses are created by pumping virus genes into every cell of crops whose mass and number of genes exceeds all the viruses ever made before. The rule with genetic recombination is that bad things are bound to happen when you get lots of virus genes together Thousands will die and more will be crippled.

Other problems encountered with gene tinkered crops are related to production of antibiotic tolerant bacteria because such genes flood the environment from the crops. The use of herbicide tolerant crops is expanding. These crops depend on highly toxic herbicides which are used in relatively small quantity. Insect poisoning genes are used in crops along with genes to poison other disease organisms. Botulism toxin genes are found to ward off a range of plant diseases including human predation, perhaps). Recent studies show that about ten percent of tinkered crop genes escape into wild and weedy relatives. Thus genetic engineers are providing planned obsolescence. The clever engineers are planning ahead.

The gene tinkering industry argues that genetic engineering is an extension of the normal plant breeding and selection that went on for about fourteen thousand years. Most crop plants would agree that they have not been mating with farm animals or people and only technology has made such gene transfers possible. Human genes have been combined with trees and crops. In this regard, failing to label crops makes it difficult for people with religious or philosophical concerns about their food. The biotechnology industry is ruthlessly exploitive.

Cattle are being treated with genetically engineered hormones that cause the animals to suffer pain and have diseases of the teats leading to excessive use of antibiotics and spread of disease resistance. The hormone is being used even though there is evidence that drinking milk from treated cows will increase breast cancer in people. There is one example with a potential lesson. Cattle suffer from the "shipping disease" a nervous anxiety and anorexia when being shipped to market. A human hormone gene was found to cure that problem.

In conclusion, people should ensure that their elected politicians hear their views. We should demand labeling and adequate testing of our food.

## **Crop Genetic Engineering Is Done Heedlessly**

Above, it was made clear that crop genetic engineering is going forward without adequate testing of the modified crops. Industry has manipulated politicians to allow them to market the tinkered crops without labeling them. This strategy grew out of an incident in which about forty people were killed and thousands were crippled when a gene tinkered health food product was marketed containing a by product causing a deadly autoimmune disease. The earlier article stressed the danger from crop tinkering leading to allergy or autoimmunity along with the threat of creating super viruses. The current article will discuss some current alarming developments in crop genetic engineering.

A number of gene tinkered crops have been released in the United States and Canada and are appearing on the market shelves. The most notable of these a long shelf lived tomato proved to have problems in shipping and did not prove to be a major success. In the United States thirteen new gene tinkered crops are in the process of being prepared for market. These include modified corn, cotton, tomatoes, potatoes and squash. Most of the crops are modified with genes for herbicide tolerance while the tomatoes are variations on control of ripening. Gene tinkered Soybeans, resistant to the herbicide Round Up are being produced. Soybeans are used to produce food oil and animal feed along with industrial uses including printers ink and as additives in paints and oils. Much of the crop production is exported to Europe which has not yet approved the gene tinkered beans for market.

## **Crop Genetic Engineering is Driven by Greed and Overpowering Desire for Quick Bucks**

The multinational chemical company, Monsanto, which patents the crop has urged that tinkered beans be added to unmodified beans so that the modified beans cannot be readily detected. The companies

"gun boat" diplomacy will be backed by the might of the United States rendering any political action by Europe to be futile and unnecessary. Such manipulations have been largely ignored by the press. It is worth pointing out that the modified beans are likely to produce allergy in a large number of people consuming the product or being exposed to paint or print.

Field testing gene tinkered crops has been expanding rapidly. This year, gene tinkered crops include barley, broccoli, carrot, chicory, cranberry, creeping bentgrass, eggplant, ladiolus, grape, pea, pepper, raspberry, strawberry, sugarcane, sweetgum, watermelon and wheat. Field testing has begun on an insect virus modified to contain a gene for a toxin from an African Scorpion. The virus will be sprayed on leafy vegetables such as lettuce, broccoli and cabbage. The test is going ahead even though the modified virus has an unexpectedly greater infection rate than the unmodified virus. The virus has other unexpected and unexplained characteristics that gravely concern some scientists. The experiment shows that both the environment and the public are part of the field test. However, the experiment is a poor one because the experimenters are trying to conceal the outcomes of the experiment.

Components of the rabies virus have been added to tomatoes to provide a low cost mass vaccine. This experiment poses some danger because the virus genes introduced into chromosomes of plants or animals has the ability to join wild viruses by the process called genetic recombination. The addition of virus genes to every cell of a target crop plant greatly increases the number of total virus genes in the environment and along with it the chance that the virus gene will recombine with a wild relative. Virus genes are frequently added to the cells of crops to confer resistance to invading viruses (the commercial virus resistant squash targeted to baby food production is that type). Not only does the virus have the ability to recombine but such genetic construction often lead to synergism or greatly enhanced growth of unrelated or distantly related viruses.

Transcapsidation is another effect in which viruses genes are packaged by an unrelated virus leading to wider spread of virus genes. All of the means by which viruses can make super viruses have been observed in nature and in gene tinkered crops. Such revelations have barely slowed commercialization of virus tinkered crops.

## **Adding Foreign Genes Such As Human Genes to Crops Will Change the Crops Surprisingly**

Farm animals are being altered with human genes to provide replacement parts for human transplantation or to provide human factors in milk to treat diseases. A pig named Astrid was first modified with human genes so that her organs could be transplanted to humans. Astrid's numerous and grand progeny are being prepared for

human use. Each organ for transplantation will be marketed for about sixteen thousand dollars. Human factors produced in animal milk are advancing. Rabbits engineered to produce human growth hormone were mainly sterile but a few animals were recovered which produced milk rich in human growth hormone. Such rabbits could escape and spread as hurabs [a cross between humans and rabbits]. The topic hasn't been discussed in public.

Human genes have been spliced to crop plants or forest trees. The gene, human metallothienin, used in these experiments produces a product that ties up toxic metals such as mercury or cadmium in the body. The modified plants would remove pollution from the soil. Unfortunately, the human gene has the property of a cancer gene in breast and testicular cancer where it is greatly amplified in cancer cells. Release of cancer genes to the environment is unwise.

In conclusion, there is little that people can do other than keep fighting.

## Genetic Experiments Threaten Southern Ontario

During the past year gene tinkered crops have begun to flood the marketplace. These crops need not be labeled nor have they been tested to assure their safety both for humans and for the environment. Such production is going forward even though there is clear evidence that about one in ten tinkered genes escapes from its original crop and spreads to weedy relatives. The crops designed to resist viruses incorporate virus genes that recombine with wild viruses to create stronger (super) races of viruses. The greed of multinational companies that own most tinkered crops drives them to risk human and environmental injury from crops that are designed to grow obsolescent from spread to weedy relatives. Recently Agriculture Canada began testing a gene tinkered construction in Southern Ontario that has frightful characteristics. The population of this area are being used as white mice in a gigantic experiment. The experiment is a poor one because its results will not be clearly and carefully recorded and public relations experts from government and multinational companies will obfuscate the results and trick and mislead the public about them. The questionable experiment is to insert a gene for scorpion toxin into an insect virus then to spray the tinkered virus onto produce crops in the field. The tinkered virus is now highly potent in destroying insects both pests and their natural predators and the pollinators.

The scorpion toxin may not be threatening to humans as a toxin when it is eaten but its impact on cuts and open sores is a concern. Such toxins are frequently allergens as well as nerve toxins. Food allergy causes effects ranging from migraine headache to death.

The danger from a small field test is tangible provided the experiment is not well thought out and controlled. Genetic recombination is a significant concern in such experiments. The scorpion toxin gene can be spread by recombination to insects that suck blood as

well as insects that suck plant juice. The virus that acquires a toxin gene will achieve a new ecological niche and is likely to be a formidable parasite.

## Scorpion Toxin Can Be Spread by Insect Viruses:

### *Genetic Recombination Can Move the Toxin Gene into Wide Ranging Insects Pests of Plant and Man*

Even though it is relatively inexpensive to monitor the scorpion toxin using a technique called ELISA and to monitor spread of the toxin gene using PCR (a highly sensitive technique used in genetic fingerprinting) such monitoring will not be done in Ontario. The reason that the experiment will not be monitored is the mistaken belief that the scorpion gene will not be an advantage to the insect virus which will die out and have to be continually replaced from the company store. Furthermore, it is equally clear that the agricultural authorities are not eager to have adverse monitoring reports slow the development of a product capable of enriching companies beyond their wildest dreams.

The use of a scorpion genes to enhance the killing ability of insect viruses is not new. Somewhat similar experiments on trees sparked violent controversy in the United Kingdom. Most of the tests on gene tinkered crops have been done in the United States and Canada and most of the marketed gene tinkered products have been released in the United States and Canada. While the issue has sparked extensive debate in Europe the extensive testing in North America has mainly been ignored by news media and government. Most of the huge North American population is unaware of the testing and marketing of unlabelled gene tinkered crops even though the populations are totally immersed in news media of rich variety but little diversity.

The use of microbes to control insects is well established. A bacterium called Bt has been used to fight insects for many years. The bacterial toxin that kills insects has been added to the genes of potatoes and corn among a growing number of crops. Such gene tinkered potatoes are being marketed in Canada. The gene tinkered crops have two disadvantages, first the crops promote rapid appearance of resistant crop varieties and second, the Bt toxin may cause allergies in some people or toxicity in people taking ulcer medication or antacids (the toxin is inactivated in the acid environment of the stomach). The gene tinkered insect virus bearing scorpion toxin will be sprayed on leafy vegetables such as lettuce. People eaten poorly washed lettuce will ingest modified virus. The toxin is known to cause allergic responses along with poisoning animals and people.

Furthermore, recent studies show that people may take genes from viruses or modified food into the genetic makeup of their tissues.

Vaccines are being created by injecting or feeding genes containing the information for epitope creating the vaccination. However, gene products like scorpion toxin are very likely to make tissues autoimmune, in turn creating diseases related to arthritis, Lupus and a range of related conditions. If people are not made aware of their exposures they will never learn what caused their diseases. Gene tinkering has already caused profound alterations on the environment through the extensive testing programs in Canada and the United States. Current test are growing riskier all the time even though release of a carelessly gene tinkered health food product caused death of at least 37 Americans and crippled thousands. We must insure that gene tests and releases do not kill and maim thousands more.

## 'Sneaky and Underhanded'— Paying Off Agriculture Canada

The world has begun to awake to the threat of genetic engineering and the genetically altered crops that are being marketed without labeling and without adequate safety checks. The United States created a furor by adding genetically engineered soybeans to the general pool of soybeans for export. Genetically engineered corn is to be forced onto importing countries in a manner similar to the handling of modified soybeans. The strategy behind concealing the identity of the gene tinkered crops is to avoid and delay the identification of those injured or killed by exposure to the genetically altered crops.

Canada is marketing Canola oil to the world without separating gene tinkered from normal oil. Genetically altered potatoes are foisted off upon consumers without identification. Gene tinkered crops from the United States are imported into Canada without the confrontation encountered in Europe. Canada achieves these astonishing impacts on the population by concealing the introductions from sleepy and technically illiterate news media.

Indeed, it is clear that the government industry handling of genetically engineered crops is based on a philosophy of sneaky underhandedness. Things hidden from the public won't hurt a government and make big bucks for multinational companies. Sneaky underhandedness is the use of government to conceal activities of multinational companies that may injure or kill a significant number of people exposed to them. Already gene tinkered products are known to have killed about forty Americans and to have crippled thousands of other people. Paying for such injury can decimate or destroy companies as was shown in the Johns Mansville asbestos injuries or the Dow Corning breast implant tragedy. To forestall or prevent financial ruin from injury, the companies influenced government to prevent labeling and testing which would uncover potential injury. Governments agreed to use the populations as test animals in experiments that are poorly monitored.

Extreme sneaky underhandedness was shown by the Ministry of Agriculture Canada when it agreed to take 36 million loons from multinational companies to do research in Canada that would benefit the

companies. In reality the research is of little importance and the money is paid to facilitate acceptance by the Canadian government of gene tinkered crops and unsafe chemical pesticides (mainly herbicides). The Ministry of Agriculture is required to regulate gene tinkered crops and chemical pesticides yet it is taking substantive money to promote the products it must regulate. It is no wonder that the Canadian government is allowing indiscriminate use of toxic pesticides and dangerous genetically engineered crops.

It is safe to say that Canadian politicians are left in the 'dark' as much as the general public regarding testing and marketing of dangerous products and the money being paid to get cooperation from the government. Elected officials are dominated by unscrupulous bureaucrats and have begun to accept as natural and normal the politicians exclusion from decision making. The issues are deemed too complex for politicians by those politicians and their bureaucratic masters. I foresee a time, in the near future, when the pretext of research will be dropped and the money will be used to enrich high level bureaucrats.

Recently, I and some others concerned about the safety of genetic engineering met with bureaucrats from Agriculture Canada and from Health Canada. One expressed concern was that the Ministers were not responding to evidence about the danger and injury from gene tinkered products, but instead the Ministers or assistant deputy ministers were simply reiterating dogmatic conclusions that ignored the evidence in question.

Interestingly, the press have not been willing to question the 'authoritative' comments of officials no matter how silly the official pronouncement nor how contrary to existing evidence. A week after we left the mildly heated meeting, a letter was sent by a chief bureaucrat who had excused herself from the meeting. That bureaucrat charged that our motives were questionable and hinted that we were dangerously subversive. Her letter exuded the sense that the bureaucrats felt themselves to be unquestionable authorities. I have learned that such letters are often used to coerce the employers of those accused of being insubordinate to the bureaucrats.

The public must be made aware of the extent to which bureaucrats are representing the interests of multinational companies. Politicians must be urged to stand up to the excesses of the bureaucrats.

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