Submitted to Enjoy Whole Health Magazine Nov/Dec. 2001 issue

Genetically Engineered Food -- Allergies and Food Sensitivities

Biotechnology, the technology of genetic engineering (GE or GMO), put forth by transnational corporations such as Monsanto and Novartis, is the practice of altering or disrupting the genetic blueprints of living organisms -- plants, animals, humans, microorganisms – then patenting them, and selling the resulting gene-foods, seeds, or other products for profit. These corporations proclaim, with great enthusiasm, that their new products will make agriculture sustainable, eliminate world hunger, cure disease, and vastly improve public health. In reality gene splicing may actually add new toxicants to the food, mutant genetic material may transfer to the gut microflora, where it could interfere with the GI tract's natural functions or provoke a dangerous immune response, additionally new proteins may cause allergic reactions to otherwise common foods.

Over 70% of the clients and patients that come into our clinic, Center for Natural Health, in Austin, Texas, have complained of symptoms ranging from anxiety, chronic diarrhea, eczema, fatigue, headache, muscle aches, obesity, and nasal congestion. Many of them have been medically diagnosed with: allergies, arthritis, asthma, clinical depression, diabetes, ear and upper respiratory infection, chronic fatigue, Inflammatory bowel disease, and fybromyalgia. Besides the routine tests we do at Center for Natural Health, the ALCAT food sensitivity blood test is often included. 100% of the clients that were given that test showed allergies or sensitivities to many foods. Up until now, few food items (such as peanuts, soybeans, milk, wheat, peanuts, fish and shellfish, and eggs) caused most food allergies. Now, more than 160 foods are known to be allergenic.

Food allergies are a major concern as a result of genetically engineered crops because the context of a gene pattern may be altered so that gene products are mixed in an atypical configuration. The result is that the body no longer recognizes the protein components of a genetically engineered food.

A paper written by Dr. Michael Antoniou, a renowned molecular biologist discusses the inherent unpredictability of genetic engineering. First and foremost, the concept of genetic engineering emerged at a time when it was still believed that genes were simple carriers of properties, independent of the surrounding situation. This has turned out to be incorrect. "Modern research has established that the effect of a gene is dependent on the interaction with other genes and on the surroundings. This means that a gene inserted from a foreign organism may have unpredictable effects in its new environment, including the creation of unexpected substances."

Second, Dr Antoniou points out that genes are arranged in an organized sequence of commands that is important for normal functioning. "The artificial insertion of a gene disrupts this sequence and this random splicing of the foreign gene into the host DNA will always result in a disruption in the normal genetic order in the "string of pearls"." In this manner, the close control of the extraordinarily intricate assortment of cellular activities may be disturbed in an unpredictable way. Toxic intermediary substances that normally occur in very small amounts may increase considerably. There is a significant risk that the interference may lead to loss of substances that are important for maintaining normal metabolism.

With Genetic engineering, host genes can be inactivated or improperly altered resulting in either a deficiency of a given protein(s), the presence of the wrong protein(s) in the wrong place, or in the wrong quantity, or all of these combined. In addition, it is also assumed that the introduced

gene and the protein that it creates, will function in exactly the same way in it's new host as it does in it's native environment which often will not be the case. Gene and protein functions have evolved over millions of years to work together in any given organism. The anti-freeze gene/protein in the arctic sea flounder for example, has evolved to work together with the other genes/proteins in this fish, but who knows how it will interact with a strawberry or a tomato. It is pure speculation that it will work in precisely the same way with no unwanted side effects in a new host where it will now be surrounded by plant proteins!

The resulting disturbance in biochemical function can unexpectedly produce novel toxins, allergens and reduced nutritional value. Some of you may remember back in the late 80's when the FDA took the nutritional supplement L-tryptophan off the market because a batch was contaminated. Within a few months of this product being on the market, it caused the deaths of 37 people and caused 1500 more to be permanently disabled. It was never widely publicized that the contaminated batch was genetically engineered. It took months to discover that the poisoning was due to toxin present in the tryptophan produced using Showa Denko's genetically engineered bacteria. One factor contributing to this time delay was the fact that the product was not labeled to distinguish it from tryptophan produced through conventional methods.

The balance of nature is a delicate one; man has brought us to the critical edge of imbalance on this planet in many ways. Insects and weeds that we call pests play an intricate part in this delicate balance. Organic farmers have been able to work harmoniously with these elements for the last 10,000 years.

Imagine one day having an allergic reaction to every food you put in your mouth. We're not talking about building a new rocket ship, or developing another electronic device; this is tampering with the food chain. The price of a mistake could cost us the human race.