



## THE NATURAL DANGERS OF SOY

The now popular soybean had a humble start in the United States. During crop rotations farmers did and still do plant soybeans in the weakened fields to rejuvenate the soil. Initially the use and or need for soybeans ended with the tilling of the field. The big business of today's farming and food industries realized the revenue loss in discarding a mature crop and decided to find some uses for it. This move has created a "cash crop" generating billions of dollars in financial support from interested parties including Uncle Sam. Worldwide Sales Estimates of Soy Products Are Now \$100 Billion or More!

### SOY - ANYTHING BUT NATURAL

In response to increased worldwide demand for the soybean and its by-products, the farming industry adapted and developed new genetically modified classes of the soybean. These "New and Improved" soybeans are resistant to many of the environmental dangers that plagued the original species. Altering the genetic code enables the bean to withstand much higher doses of herbicides and pesticides ultimately making them much more commercially viable and at the same time raising the risk of chemical residue tainting the end product. Genetic modification makes great sense for farmers and food processors who are concerned with the "bottom line" however this adulteration of mother nature brings with it many risks much of which have yet to be seen. Estimates Suggest That 80% of the U.S. Soy Production is Now Genetically Modified!

During harvest and packaging the soybean endures a chemical onslaught. Processing methods can include but are not limited to a bath in alkaline soaking solutions which may result in harmful residual levels of lysinoalanine (a carcinogen) and aluminum in the end product purchased by the consumer. In addition, aggressive processing denatures the proteins of the soybeans so they become very difficult to digest and have greatly reduced effectiveness.

### What The Experts are Saying

On February 18, 1999, Dr. Daniel Doerge and Daniel Sheehan, who at that time were the Food and Drug Administration's (FDA) two key experts on soy, presented an official letter of protest to the FDA regarding the health claims that had approved and were to be made public. The letter stated the following: "there is abundant evi-

dence that some of the isoflavones found in soy, including genistein and equol, a metabolite of daidzein, demonstrate toxicity in estrogen sensitive tissues and in the thyroid. This is true for a number of species, including humans. Additionally, isoflavones are inhibitors of the thyroid peroxidase which makes T3 and T4. Inhibition can be expected to generate thyroid abnormalities, including goiter and autoimmune thyroiditis. There exists a significant body of animal data that demonstrates goitrogenic and even carcinogenic effects of soy products. Moreover, there are significant reports of goitrogenic effects from soy consumption in human infants and adults."

In October 1999, the FDA responded to these concerns by giving the soy industry the equivalent of a license to print money when it issued a health claim concluding cholesterol levels can be positively effected by soy intake. This statement resulted in the soybean being marketed as a panacea for everything from osteoporosis and heart health to prostate and breast cancer.

- National Institutes for Health (NIH) concluded in a three-decade study, that soy tofu may have a connection to accelerated aging in the brain. Findings in the study demonstrated greater brain aging and shrinkage among elderly men who were all Japanese-American and living in Hawaii who had eaten tofu at least twice a week during middle age. Exaggeration of the usual aging patterns in terms of brain function, and memory cognition was realized.
- USDA study suggested that test animals that were fed soy protein isolates develop enlarged organs, particularly the pancreas and thyroid gland, and increased deposition of fatty acids in the liver.
- A study in the Journal of the American Oil Chemists' Society demonstrated that use of soy protein isolates increased requirements for vitamins E, K, D and B12 and created deficiency symptoms of calcium, magnesium, manganese, molybdenum, copper, iron and zinc.

### IS SOY WORTH THE RISK?

Hormones have a role in many of the body's functions and consciously or unconsciously altering their balance could result in sexual dysfunction, loss of muscle mass, hypothyroidism and possibly even cancer.

Soy Contains:

Phytic acid - blocks the absorption of key minerals

Enzyme inhibitors - interferes with protein digestion in the

small intestine

Goitrogen - substances that depress thyroid function and may cause goiters

Hemagglutinin - a clot-promoting substance that causes red blood cells to clump together. Daniel Sheehan and Dr. Doerge (the FDA researchers) concerns are with the chemical make-up of soy: beyond the protein, exists a natural chemical (phytoestrogen) that mimics estrogen, the female hormone. Some studies in animals show that this chemical can alter sexual development. And in fact, as little as two glasses of soy milk a day, over the course of a month, contains enough of the chemical to change the timing of a woman's menstrual cycle. A Japanese study showed evidence of goiter development and hypothyroidism after taking only 30 grams (two table-spoons) daily for one month! Nearly 60% of All Manufactured Food Products In The U.S. Today Include Soy!

### **WHAT WILL BE THE LONG-TERM EFFECT OF SOY ON OUR CHILDREN?**

- Daily exposure of infants to isoflavones in soy infant formula is 6 to 11 times higher on a body weight basis that the dose that has hormonal effects in adults consuming soy food.
- 25% of the bottle-fed children in the United States receive a soy-based formula.
- an infant exclusively fed a soy formula receives the estrogenic equivalent (based on body weight) of at least five birth control pills each day.

One must understand that male infants undergo a "testosterone surge" during the first few months of life, when testosterone levels may be as high as those of an adult male. During this period, the infant is programmed to express male characteristics after puberty, not only in the development of his sexual organs and other masculine physical traits, but also in setting patterns in the brain characteristic of male behavior. In monkeys, deficiency of male hormones impairs the development of spatial perception (which, in humans, is normally more acute in men than in women), of learning ability and of visual discrimination tasks (such as would be required for reading). Learning disabilities, especially in male children, have reached epidemic proportions. As for girls, an alarming number are entering puberty, such as breast development or pubic hair, before the age of three; by age eight, 14.7 per cent of white girls and almost 50 per cent of African-American girls have one or both these characteristics.

The prevalence of phytoestrogens from soy found in the majority of packaged foods and common in infant formulas, which began in the early 1970's, cannot be ignored as a probable cause for these tragic developments.

### **SOY - FEEDING THE CANCER**

While soy has shown to be successful in lowering the risk of breast cancer these results are far from unilateral. But studies now indicate the chemicals found in soy may enhance a widely found kind of estrogen-feeding breast cancer. In this case, phytoestrogens found in soy can speed up the divisions of cancer cells that depend on estrogen for their growth.

### **PROTEIN - CHOOSE WISELY**

It is time for soy users to reconsider their source of protein. The risks associated with consistent soy intake far outweigh the health benefits and unfortunately many of the dangers are still unknown. Individuals truly interested in promoting their long-term health have many safe options for protein including but not limited to eggs, lentil beans and of course whey. Roex believes in providing the best nutrition that money can buy for each and every one of its customers adults and children alike. Like all of our offerings, when we decided to bring out a protein product we wanted to know first that it was the safest and most efficacious product available. In researching the many possibilities, we summarized that whey is the superior form of protein. Whey offers a full amino acid spectrum, the highest biological value and is free of the risks associated with soy. Roex's Perfect Whey Meal Replacement is formulated with four types of whey and includes a full compliment of vitamins, minerals and antioxidants. Perfect Whey Meal Replacement is a healthy, low fat, low lactose, low carbohydrate delicious meal alternative - order yours today!

For a detailed bibliography on the dangers of isoflavones in soy and soy-based foods go to the Roex homepage and click on "Healthy Reads" and then click on "Soy - Scientific Research and Abstracts."

Source: Doerge, DR. "Goitrogenic and estrogenic activity of soy isoflavones," *Environ Health Perspect* 2002 Jun;110 Suppl 3:349-53  
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