Soy Good, Soy Bad, Soy Vey!
By: Anisa Abeytia

If you walk into a store, even a health food store and pick up a packaged food item and read the label, you would be hard pressed to find one that did not contain soy or one of its various derivatives. How did this product that was obscure in the US in the early 20th century become the commercial mammoth of the 21st century, raking in $4 billion in 2003?

Some experts advise you to pack it in and others advise to avoid it like the plague, soy- to eat it or avoid it? The soy industry cite the cancer protective features that soy exhibits and state that Asians do not get breast, prostate and uterine cancer to justify eating tofu burgers and adding it to everything. It may be true that Asian women do not get breast cancer at the same rate as their Western counter parts, but they do get cancer. They get cancer of the thyroid (Hashimoto's) and various gastrointestinal track cancers (Philmore). These cancers can be directly linked to soy consumption as proven in tests conducted on animals (Fallon, *Promoting Soy*).

Traditional Asian societies, in their wisdom, do not consume unfermented soy products. They recognize the toxicity of unprocessed soy (Fallon & Enig). Miso, tempe and soy sauce are the traditional condiments of Asian cuisine. Soy was not used as a dairy or animal protein substitute. Soy was a condiment, not more than a few grams, 18 grams per day in Japan, were consumed per meal (Fallon & Enig, Colpo). This is a far cry from the multi-million dollar soy industry of today. Even modern Asians bought into eating large amounts of soy.

Where Did It Come From?

Soy was not always in the food supply, not even in China where it originates. It was not until the process of fermentation was introduced sometime during the Chou Dynasty (1134-246 BC) that soy was eaten by humans. Before that, it was not considered fit for human consumption, even though it was considered a sacred grain (Fallon & Enig). It was used as a "green manure." The first soy product was soy sauce and it was not until 1000 AD when natto appeared and 1600 AD for temphe (Colpo). So as far as food items in the human diet, soy is a relative new comer. Wheat is a much older food crop, emerging in the Neolithic period and then baked into bread by the Egyptians as s early as 5000 BC.

The soy bean made its way to the U.S. in 1829, some say as early as the 1700's, Benjamin Franklin having his hand in it (lightlife.com). The soy industry in the U.S. was in full swing in the 1950's, and in 1998, 72 million acres were harvested for the world wide market (Finucan & Gerson). Yet, what is soy?

What is Soy?

Soy, the bean, is a yellowish hue. Unprocessed it is inedible and requires the body to expend more energy then the body receives. Soy though, is much more than the bean. It is added to every imaginable food product. I already addressed the fermented products, so let me list a few of the processed products available on supermarket shelves.

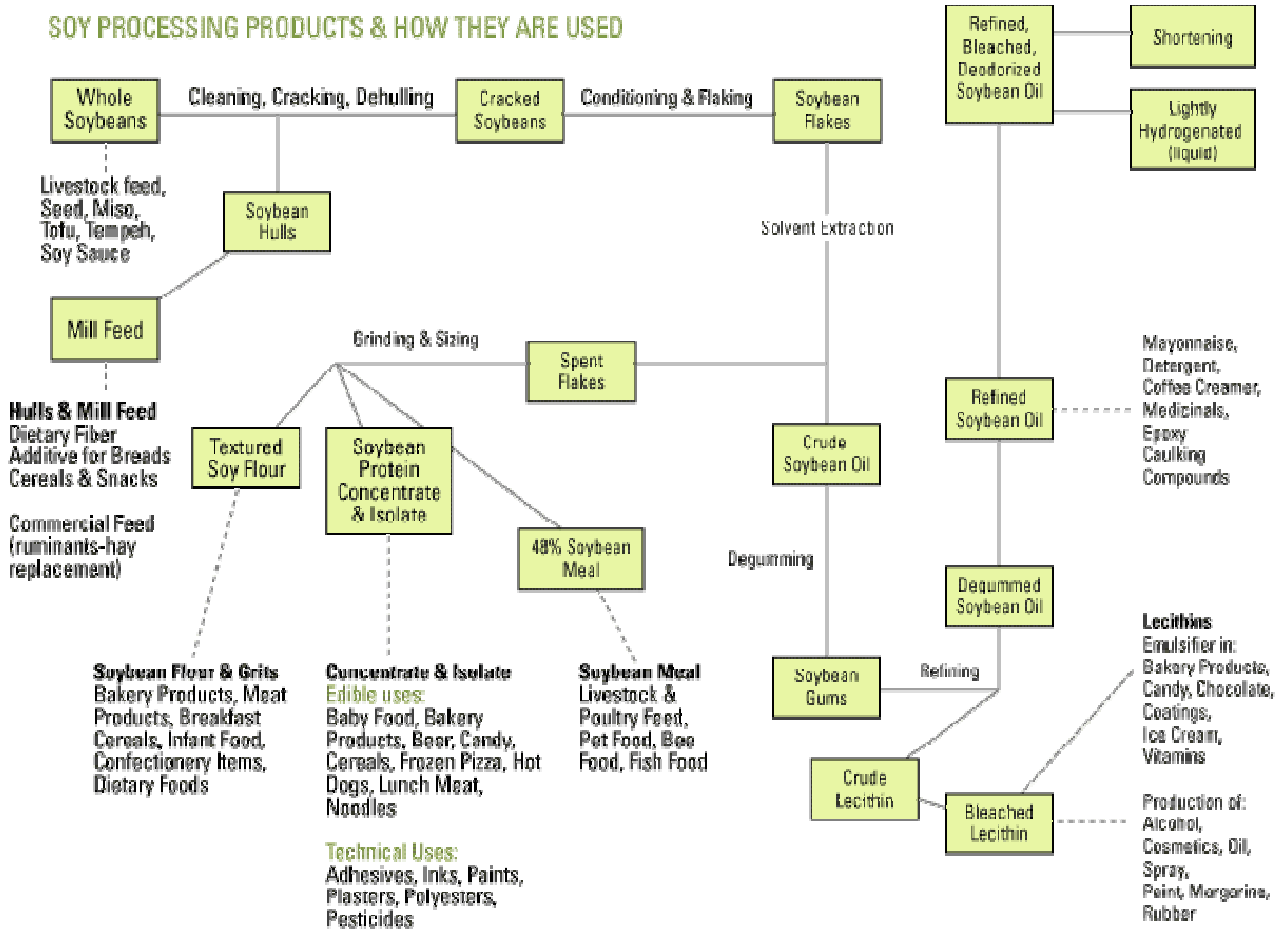
There are soy milks, soy dogs, soy turkey, tofu, soy boost in drinks, power bars, cookies, frozen foods, candy bars, canned foods and bakes goods. Letcithin, soy oil, soy flour, the derivatives are almost endless. These are but a few. Many of these products are industrial sludge that remain after the production of soy oil. After the 1950's, the soy industry had such a surplus of this sludge that they decided to turn this waste product into profit (Fallon, *Promoting Soy*). Soy lecithin is a desrivitive of soy oil with all of its solvents, residues and damaged protines.

Lecithin is a gum like substance that is found in the cells of all living things. Before soy, the main source of lecithin was eggs. The problem with lecithin and with soy oil is that soy protein remains in them, as well as all the potential health problems we will discuss later (Daniels, *Soy Lecithin*). Soy is not recognized as Generally Accepted As Safe (GRAS) by the FDA. It is only approved by the FDA to use as a cardboard binder, yet we feed it to our newborns (Colpo).

Soy infant formula was first used as early as 1901 to allow working moms to return to their factory jobs before weaning their babies, but soy formulas did not gain in popularity until the early 1960's. A baby whose only source of food is soy based formula is being subjected to the same amount of hormones found in four birth control pills (Setchel).

Kissing our future goodbye.

Infancy is a critical time in the development of a child. Baby boys can have surges of testosterone equal to that of an adult male. When there is too much estrogen present, testosterone can be quelled, resulting in more "feminine qualities" in males and more aggressive behaviors in females. Females also enter puberty and develop "women's bodies" earlier (Herman-Giddens, Klein, Irvine). What will happen to these little girls with women's urges who do not have the emotional stability and life experience to handle the plumbing being put in too early? There are other health risk factors. The amounts of isoflavones, which are plant estrogens, a formula feed child is exposed to is enough to induce hormonal changes in an adult within one month *(*Weston A. Price Foundation). These changes can lead to suppression of the thyroid. There are also serious nutrient deficiencies in soy-based formulas. They lack cholesterol that is needed to develop a healthy brain. It is also a poor substitute for cow's milk because it lacks the same amount of nitrogen. Also lactose, the sugar found in milk, is substituted with sugar. This may lead to cavities and unhealthy eating habits, such a food addictions latter in life. (Setchell). If this is not enough to persuade anyone to breast feed or make formula themselves, please visit the wed site for the Weston A. Price Foundation. You will also find recipes for homemade infant formulas there.



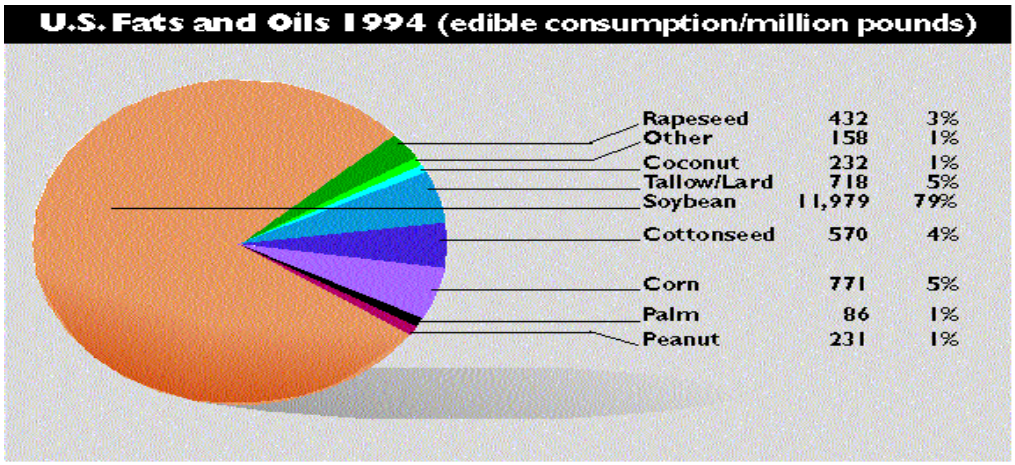
Source: National Soybean Research Laboratory

Why Do We Eat It?

We eat soy for one reason- marketing. Colpo states, "the phenomenal rise of soy has been built entirely on clever and aggressive marketing, distortions of fact, and downright lies." It was first marketed to vegetarians and the poor as a protein substitute (Fallon, *Promotion of Soy*). In 1975, a soy industry representative had this to say, "the quickest way to gain product acceptability in the less affluent society . . . is to have the product consumed on its own merit in a more affluent society" (Falon, *Promotion of Soy*). Hence the soy boom was born.

Soy then received the endorsement of the FDA in 1998 for its alleged ability to lower cholesterol levels (they supported the statement, but never tested it for approval as GRAs). The soy industry was then able to plaster their nutrient dead products with the label "heart healthy." However, the health claims did not stop there. It was also claimed

that soy "demonstrated powerful anticancer benefits" (Fallon, *Promotion of Soy*). Once again the argument that Asians consume much soy and do not have high rates of cancers of the prostate, uterus and breast were sited as evidence.



How Much Soy?

Source: Environmental Health Perspectives

The Downside of Soy

Soy is touted as a panacea, but it is not. Soy was tapped to help prevent bone loss and in cancer prevention, but does it really do that? Robert Bernardini, MS points out that soy is not all that it is cracked up to be and makes this comparison "[o]n paper, one of the most nutritious plants in nature is tobacco. It's loaded with vitamins, minerals . . . Problem is, it also contains a substance called nicotine, which is deadly . . . The same with soy" (Bernardini, 301).

In a study conducted by Kim *et* al. on the correlation of soy isoflavones and bone fracture, the results were mixed at best. Kim *et* al state that "[m]any studies have investigated the effects of isoflavone on bone mass, but they have not show consistent results" (Kim *et* al, 439). One more puzzling piece here is that Kim *et* al states that whole-grain products also naturally contain the isoflavone's "hormone –like diphenolic phytoestrogenic effects." So why not look to whole-grains? Could it be because there is not money to be made by people baking their own bread, while a pharmaceutical company isolating the isoflavone and putting it into a pill will?

Soybeans contain high amounts of digestive enzyme inhibitors, particularly blocking the enzyme trypsin. These inhibitors can not be "cooked out" of the bean. Soaking and sprouting also have no effect (Weston A. Price Foundation) Also, soybeans with its high levels of phytic acid cause a deficiency in zinc, calcium, magnesium and iron. These are all common mineral deficiencies seen in developing countries with diets rich in soy (Bernardini, 302-303). Lecithin in soy compromise the gastrointestinal track as well as the immune system (Colpo). Then there are the negative effects of soy on thyroid function. Daniel points out in her book, *The Whole Soy Story* that the rise in thyroid diseases corresponds with the introduction of soy into infant formula (Colpo). Currently 20-27 million Americans have a thyroid disease, fifty percent are undiagnosed (Hudson).

Then there are the phytoestrogens that are endocrine disrupters. Estrogen dominance can lead to development disorders in males and females and could cause cancer. Soy is also linked to infertility. This is soy in its "raw" state. What happens when it is processed or genetically modified (GMO)?

Soy is submitted to the same over processing as many commercial oils-over heating, deodorizing, filtration and degumming. Solvents, caustic acid are used and traces of aluminum are found in some soy infant formulas (Bernardini, 301-304). Most soybean crops are Monsanto GMO crops that have a gene inserted into them allowing them to be sprayed more often with herbicides. This process of inserting genes weakens the plant's immunity, because the plant first must be infected with soil bacteria to weaken it into accepting foreign genetic material (*Garcia).* Does soy still sound like something you want to put in your mouth? I hope not.

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Soy Processing Products and How They Are Used

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