

## THE MAGIC BEAN? SOY-TAINLY NOT!

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Conventional Wisdom— what everybody thinks. In today's world of controlled information, people think what they're told to think - over and over and over and over. **Mass opinion on most topics is a commodity that is bought and paid for. We don't even know that we don't know.**

### Soy

Conventional wisdom says that soy is a natural protein substitute which can supply our complete protein requirements without the nasty drawbacks of contaminated, high food chain, cholesterol-laden animal protein. Championed by vegetarians, sanctified by Orientals, venerated by health food stores, spotlighted by Madison Avenue with just a hint of Woodstock, soy now rules as the "perfect protein."

Same with **margarine**. We know that cholesterol is bad and the cause of most major heart disease, and now most people are afraid to eat butter. (thank God)

Next we're programmed to see margarine as our savior because it's made from "pure cholesterol-

free vegetable oil," the vegetable being soybeans. OK, great. And then we have millions of tons of soybean oil separated from the bean, which leaves as a by-product a mountain of what? Right - soy protein.

Now, instead of throwing this by-product out or just feeding it to the pigs, Madison Avenue steps in. What if we could program people to think that this artificial food was actually a complete food in itself, and even better, make them think it was a superior form of natural, complete protein? Wow! And that's just what happened. The ads are everywhere:

"Soy is Fantastic!"

"No Saturated Fat or Cholesterol!"

"Eat Better - Live Better"

"Great-tasting meatless alternative"

-inside cover *Mother Jones* May 00

Not just dairy products, like soy milk, soy butter, soy cheese. No, now we have soy yoghurt, soy ice cream, soy flour, soy baby formula, soy sloppy joes, soy tacos, soy chili, soy cereals, soy falafel, soyburgers, etc. (www.fantasticfoods.com) What's next? Soy Pepsi?

Hopping on the flailing vegetarian bandwagon, soy is being hawked as a complete meat substitute, as well as a dairy substitute. This is a marketing masterpiece.

### Who do you think is directing the show?

Nutritionists? Dieticians? Doctors? Try MBAs and CEOs of the world's top chemical cartels, together with the country's top ad and marketing people. What do you think their focus is? Your health? Your child's well-being? Will they blatantly deceive you, compromise your children's health, whip up endless "scientific" reports from their junk science research masters, pervade the popular press with unsupportable claims about soy's health value and tasty 'healthful' recipes?

Well, did they go to business school to learn how to improve our nation's health?

Doesn't it seem odd how we all became so wise about soy in just a few years? Subconsciously we

congratulate ourselves on having the wit to have discovered this perfect food that was right under our noses the whole time.

That's not even mentioning genetically modified hydrogenated soybean oil, now present in over **60%** of food items on the shelves of American supermarkets. It's the **main** ingredient in most commercial pies, cakes, ice cream, chocolate candy, donuts, pastries, cookies, and salad dressings, and a hidden ingredient in practically everything else. It has no food value, cannot be well digested, and contains many contaminants.

How did all this happen in just a few years, and how come most of us don't know a thing about it?

### A LITTLE PERSPECTIVE

Let's back up a little. The slightest bit of collateral research shows that the prom queen is pregnant. Even at the outset, there are a lot of problems with soy:

- Soy is not a complete protein**
- Soy is not a natural food**
- Soy has many contaminants**
- Soy is among the most processed of commercial foods**
- Most US soybeans are genetically modified**

Let's just look at these simple points one at a time.

### NOT A COMPLETE PROTEIN

What does that mean? Why is it an issue? Well, most of us know that humans require food in 3 main forms: fats, protein, and carbohydrates.

Because that's what our bodies are made of. And we also know that humans require certain forms of these three substances. Snake venom is loaded with protein, for example. So is sewage, and so is your desk.

**The idea is that humans require a certain type of protein for survival. And that type is described as complete protein.** What are proteins made of? Right, **amino acids**. Complete proteins are those that can supply the 10 essential amino acids necessary for building and maintaining human cells.

In this context, essential means those we must get from our diet. So if a given protein can be broken down into the 10 essential amino acids that we must get from our diet, it's a keeper. (Erasmus, p. 82)

All cultures have combinations of food staples that yield complete protein: beans and rice, beans and corn, beans and wheat, etc. The point is, no bean is a complete protein because beans lack two of the most important essential amino acids - **cysteine and methionine** - the only ones that contain sulfur. (Erasmus) Corn and rice supply these two. But a diet in which beans are the only protein source causes an abundance of health problems from the ensuing protein deficiency.

In his classic work, *Nutrition and Physical Degeneration*, Weston A. Price proved 70 years ago that raw dairy can well provide the complete protein requirements for human nutrition. He traveled around the world studying culture after culture, looking for the perfect diets. In isolated villages of the Swiss Alps, Price found the healthiest people in Europe - those with the finest physiques and least incidence of degenerative disease. Their total diet: raw dairy and rye cakes. That's it.

Raw milk is not only a complete protein - it also provides fat soluble vitamins A, E, and D in their most perfect form. So these Swiss were getting their total requirements of essential amino acids from this complete protein source, as well as their fat soluble vitamins. They had no tooth decay, cancer, arthritis, or diabetes.

None of this applies, of course, when pasteurized milk took over. Just the opposite, in fact. When enzymes are artificially removed from milk by pasteurization, the result is a non-food not fit for humans or animals. Dairy products then become indigestible foreign proteins, sensitizing allergens, and the cause of chronic arthritis, osteoporosis, colitis, arteriosclerosis, heart disease, and asthma. And this is why milk is no longer a complete protein and is just another junk food. (Robbins, Twogood, Douglass, McDougall) At least with milk, the original substance before processing was a complete protein. With soy, it was not.

### **NOT A NATURAL FOOD**

Soybeans are not like other beans, like lima beans and pinto beans, that people can just sprout and eat.

In ancient times, soy was used only in crop rotation as a **nitrogen fixer**. That means that certain bacteria on the rootlets of the soybean plant are able to restore nitrogen to the soil. Soy was planted in fields in alternating seasons for this purpose, because most crops use up the nitrogen in the soil during their growing season. Nitrogen depletion = soil depletion.

Originally soy wasn't a food crop itself. This was before Baron von Leibig came up with the idea of adding NPK (Nitrogen- Phosphorus-Potassium) to the soil instead of rotating the crops. After the harvest, the soybeans were then fed to the domestic animals, or else just turned under for the next crop.

Later, people found that if soybeans were fermented for awhile, they were humanly digestible. Examples are tempeh, miso soup, and soy sauce. Later still, the farmers learned that if the soybeans were precipitated into curd form, the result was edible as **tofu**. (Erasmus) The point is, soybeans alone are not a natural food.

**Unlike other vegetables, soybeans take a lot of time and changing in order to be digestible at all by humans. It is only through mass advertising and marketing that we have forgotten that before modern processing methods, soybeans were never a staple food.**

### **SOYBEANS CONTAIN SO MANY CONTAMINANTS**

First off, soybeans contain high amounts of **enzyme inhibitors**, particularly blocking trypsin and other human digestive enzymes. (Fallon) These enzyme inhibitors are not removed by cooking. They interfere not only with the soybeans own digestion, but with digestion of other foods in the tract that happen to be present. How can a food that blocks digestion be beneficial?

The second main contaminant is soy's extremely

high content of **phytic acid**. Present to some degree in all types of beans, phytic acid upsets mineral uptake --- iron, magnesium, calcium, and especially zinc. These minerals are necessary for dozens of cell life functions, and deficiencies of any of them can cause several diseases.

**Soybeans have the highest levels of phytic acid of any legume, and as such have an extraordinary ability to cause mineral deficiencies.** (Leviton) For this reason, even the high temperature cooking that is the first step in soybean processing does not completely remove the phytic acids from soybeans. (Finucan)

Researchers have known for years that phytic acid blocks mineral absorption. (Keen) This is especially bad news for infants, because soy chelates all **zinc** from the baby's system. Zinc controls iron uptake. Without it, abnormally high iron levels are allowed. Excess iron harms the liver.

Zinc is also critical for growth and **brain and nervous system development**, as well as protein digestion. (Guyton, p 900). Neurological development retardation is exemplified today in the unprecedented rise of learning disabilities, attention deficit, Guillain Barre, and autism. ( ADD )

Zinc is also necessary for normal insulin function and for immune system development. These are just some of the reason why **no baby should be given refined soy as soy milk**. Nor should an adult who doesn't want zinc deficiency, which in the US runs as high as **60%**. (Erasmus, p 75)

Even the American Academy of Pediatrics admits that early exposure to soy through commercial infant formulas may be a leading cause of **allergies** among older children and adults. (Finucan) So if your baby has any allergies or asthma whatsoever, soy is the last thing you want to use as formula.

Difficulty in the chemistry encountered in attempting to remove the phytic acid is the main reason why the processing of soybeans is so harsh, as we will see. Enough phytic acid remains

in the final soy products to cause mineral deficiencies.

A less commonly known contaminant of soy is **hemagglutin** -a clot-causing agent (Finucan). As the red cells are made to clump together, the oxygen supply to the entire body is thus diminished. Such circulatory disruption is hardly an attribute of a perfect food. The dangers of soy in the diet of those who already have a history of heart problems should thus be apparent. High temperature cooking during soybean processing does not remove hemagglutin from soybeans.

Fallon also points out that soy has an **aluminum content 10x higher than pasteurized milk.** An established cause of Alzheimer's in adults, aluminum damages the newly forming kidneys of an infant when they drink soy 'formula.' (p 4)

Worse yet, aluminum directly damages the infant brain, because the blood brain barrier has not formed yet. (Blaylock) Aluminum content is increased even more if the product has been hydrogenated, like it usually is. (See below.)

Finally, a by-product of one of the steps in soybean processing -alkaline soaking - is a known carcinogen: **lysinealine**. (Finucan)  
Some 'perfect food.' Maybe there's a reason nature didn't intend this food for humans.

## **PROCESSING**

Finucan illustrates the paradox that **the same processes used to render soy edible are the very processes which render soy inedible.**

Soybeans are processed into oil, protein isolate, and protein concentrate. **Extreme methods are employed because of the necessity for trying to get rid of the phytic acid and enzyme inhibitors. Unfortunately, all the enzymes, minerals, fiber, vitamins, and nutrients are also lost along the way.** At each step towards the end products of soybean oil or soy protein, more of these natural nutrients are lost. **The end products - commercial soybean oil and soy protein isolate - are totally artificial, devitalized commercial foods.**

The following few paragraphs summarize those steps.

## **Cooking**

The first of these methods is high temperature cooking. The purpose is to try and get rid of some of the phytic acid. As we know, high temperatures above 105°F denature the natural enzymes of the bean. (Howell) Soybeans are first heated to temperatures up to **248°F!** (Erasmus, p 95)

Without enzymes, a plant becomes a devitalized food, very difficult to digest in the human digestive tract. In addition to interfering with breakdown of the food, enzyme depletion also interferes with mineral absorption as well as vitamin activity.

Remember that enzymes, vitamins, and minerals are three legs of the tripod of metabolic activity. That means cell and tissue function. Take away any one and the other two are stumped. Mineral activity was already a problem with soy, because of the phytic acid. Superheating and enzyme loss compound this deficiency.

In addition, a constant problem with oil processing is **rancidity**, which means oxidizing when exposed to air and light. Oxidation produces the dread **trans-fatty acids** and a boatload of **free radicals**.

There are two chemical terms: *cis* and *trans*, used to describe the shape of a fatty acid. Humans require natural fatty acids, which are in the *cis* form. Processing changes the *cis* forms to the unnatural *trans* configuration.

**Trans fatty acids are manmade - something nature would never have dreamed up.**

Trans fatty acids cannot be broken down by human fat enzymes. They cool down to hard fat, just like bacon grease in that unwashed skillet left in the sink overnight.

Imagine the implications in the arteries and in the intestines, to be eating foods that can't be broken

down. Erasmus explains how superheated oils are **100x** more reactive to oxygen (p. 95), thus becoming a potent vehicle for free radical introduction into the consumer's body. We have seen how free radicals are the direct cause of aging, heart disease, and cancer. **That's why products containing trans fatty acids are actually illegal in Holland.**

After the cooking, one of two paths is chosen for removing oil: pressing or solvent extraction.

### Pressing

After cooking, the beans may be extruded through a press for maximum oil extraction. Shallow conventional wisdom says that as long as the oil is cold-pressed, everything is fine. This idea is false, as we shall see.

Erasmus explains why the term **cold-pressed** is meaningless. People think that cold-pressed insures that the nutrients will remain in the oil because heat wasn't involved in the processing. The first problem is that what they don't tell you is that the beans were already cooked at these superhigh temperatures before being put into the press. As long as no heat is added in the actual press, they can call it cold-pressed.

Huge oxidation already took place at the cooking step. Much worse than the heat, the main problem however is the free radical production from exposure to light and air during the pressing process. This is where rancidity and trans fatty acids come in. To have a true unrefined wholesome food-grade oil, it is critical that air and light be meticulously excluded throughout the pressing step. The oil must then be put immediately into amber bottles. A very small percentage of soybean oil is processed in this way. Unrefined oils of any kind must come in amber or opaque bottles.

### Solvent extraction

Besides pressing, an easier but more toxic method of oil extraction is the use of solvents. Several are used in the soybean oil processing.

The first solvent used on soybeans is an **alkaline**

**solution** which will attempt to get rid of the trypsin inhibitors. (Fallon, p 3) Even though the solution is thoroughly rinsed out of the beans, a carcinogenic by-product results from the interaction of the soybeans with the alkaline soak: **lysinealine**.

Next, for oil to be extracted, an organic solvent - **hexane** is the standard chemical employed. (1997 Soy Stats) Like gasoline, hexane is a petroleum distillate! (Dorland's, p322) Temperatures of up to **149°F** are applied. In the rinsing process, traces of this carcinogenic solvent are left behind in the finished products, both in the oil and in the protein isolate.

### Degumming

The next step in the refining process is the removal of residual fiber, or **gum**, from the oil. Water, phosphoric acid, and heat (up to **140°F**) are used. This is the same step in which lecithin is separated from the oil. The problem is that valuable trace minerals like calcium, copper, magnesium, and iron, as well as chlorophyll are all removed at this step. (Erasmus p96)

### Lecithin

Lecithin is a common ingredient in foods and supplements. The majority of it is derived from soybeans during this step.

**Note all the preceding steps** - this is some health supplement.

### Drano

This one I didn't believe, but it's true. The next step is that the refined oil is mixed with **sodium hydroxide - NaOH** - which most of us know as Drano, at a temperature of 167°F. That's right - the exact same corrosive lye you pour down your drain when it's clogged. (Erasmus, p 96) The purpose of adding this corrosive is to remove any free fatty acids which may be 'contaminating' the 'pure' refined oil. **Anyone for a Dranoburger?**

### Bleaching

By this stage the oil still retains some pigments, giving it a reddish brown appearance. Since that's not the desired 'pure' look that customers have been trained to expect, clay is added, heated to

230°F, then filtered out. This high heat again causes the formation of the toxic free radicals, called peroxides. In the presence of air or light, their formation is increased geometrically.

### DEODORIZING

Next the oil is steam-distilled at 518°F for 30 minutes, to destroy any natural aromatics from the dead, refined oil. **Note the incredibly high temperature.** At 302°F trans fatty acids begin forming.

These weird, manmade molecules are mutagenic to human DNA - **they can alter human DNA.** Trans fatty acids exist nowhere else in nature - man has created them. As the temperature is raised higher, trans fatty acid production increases geometrically.

After deodorizing, the oil is absolutely tasteless, and cannot be distinguished from any other processed seed oil. The oil is now devoid of any vitamin, mineral, enzyme or nutrient content whatsoever. **And even though it has undergone extreme high temperatures at several steps, as long as no external heat was added during the pressing step, the oil can still be sold as "cold-pressed"!**

Sometimes mixtures of pressed oil and solvent-extracted oil are sold as "unrefined" oil. These types of labels are simply unregulated. (Erasmus)

Reviewing this summary of processing steps, it is a wonder that processed soybean oil is allowed to be sold at all or to be made into margarine and cooking oil, let alone for claims to be made about its nutritional superiority. **But this is still not the worst of it. The real bad news is hydrogenation.**

### HYDROGENATION

As if no further biological indignity could be levied against the already lifeless processed oil, way back in the 1930s, the boys at Dupont figured out a way to harden the oil into a perfectly engineered non-food: **margarine**. Their only two criteria: **spreadability** and **shelflife**.

At least **80%** of margarine made in the US comes from refined soybean oil. (Erasmus). Scientists found out that if they subjected the refined oil to yet another round of infernal temperatures - up to **410°F**- and **forced hydrogen gas in the presence of a metallic catalyst through the oil for five or six hours**, the result was a substance possessing the desired spreadability, as well as a shelf life that can be described as 'From Now On.' That's what hydrogenated means.

Margarine is another quantum level removed from anything resembling human food, and actually is closer to the category of plastics. Since all the Essential Fatty Acids (usable fats) have been destroyed, and all the enzymes are long gone, there is nothing left to 'go bad' - it can't spoil.

**Guess what their favorite metal catalyst contains. Right - it's usually 50% aluminum. Neurological disorders, Alzheimer's, cancer.**

### THERE ARE TWO TYPES OF HYDROGENATION

Partial complete with partial hydrogenation, weird unpredictable 'intermediate compounds' are formed from the surviving fatty acids. These include the mutagenic (gene-altering) trans fatty acids.

But scientists themselves don't even know what kinds of molecules are being created by the hydrogenation of fatty acids. They vary completely from batch to batch, and with different temperatures and catalysts. These molecules should be thought of as random toxic additives. The only reason hydrogenation is legal is that it has been around for so long. When it was invented, the effects weren't well understood. Now decades later, with billions in lobbying money in place, a few details like cancer and Alzheimer's aren't going to get in the way.

Who controls which 'scientists' get published?

The commercial value of partial hydrogenation is that the density of the desired final product can be precisely controlled: semi-liquid, margarine, shortening, hard (for chocolate), or anything in between.

Here's a good way to think of hydrogenation. In the old days of potato chips, if you left the bag open all night, next day the chips would be limp and soggy. Today we have potato chips that are crispy to perfection. You can leave them out on the counter for days and they'll still be perfectly crisp. Sealed potato chips in those round, perfectly stacked tubes will last a year or more!

This phenomenon has nothing to do with food or nutrition. **It is a masterful feat of plastics engineering.** The potato chip has been completely soaked in hydrogenated oil, protected from the external environment - kind of like dry mounting a photograph, or polymerizing a marlin you're going to hang over the fireplace. Once inside the stomach, the chips continue to do what they were designed to do: resist breakdown. The food value for humans is in the negative. Hydrogenated foods then are TOXIC because they contain

- free radicals
- no enzymes
- no vitamins
- no minerals
- no nutrients
- no ability to be broken down or assimilated.

In the body, hydrogenated foods contribute to **aging- cancer- tissue breakdown- digestive disease- clogged arteries- arthritis- Alzheimer's- neurological diseases.**

### **MOLECULAR STABILITY - FOREVER IS A LONG TIME**

The fiction that hydrogenated margarine is superior to butter can be seen for what it is: marketing hype - Madison Avenue on Ecstasy.

And the reason is what - no cholesterol? Please! Of course margarine contains no cholesterol - it's closer to a plastic than to a food. That's why soybean oil is also used as a base for **paint, varnish, and linoleum**, as well as **printer's ink!** (Bernard)

Without artificial flavoring additives, margarine would taste like a formica desktop. Humans don't

need foods to be that stable.

Our digestive systems have about 12 hours to metabolize what we eat. If breakdown doesn't happen during that time, very likely we'll be wearing the stable residues for a long, long time.

Start looking at labels. You'll see why they're printed in micro-fonts. When you see the word 'hydrogenated' think **plastic**. When you see the words "partially-hydrogenated" think plastic and free radicals.

It's not only margarine, salad oil, and cooking oil. Hydrogenated oil is a mega industry. What is the #1 oil in the food industry? Soy bean oil!

**Soybeans account for 82 percent of the edible consumption of fats and oils in the United States. (Soybeans Stats Reference Guide) And 60% of all foods on the shelves of America's supermarkets contain soy in some form or other. (Wolfson)**

### **SOY PROTEIN**

The phenomenon surrounding the soy protein fad is more recent. With \$20 billion worth of soybeans being made into oil every year, there was a lot of product waste. After the oil was removed, what was the waste made of? What was left? Protein.

So again, who is trained to see an angle in every situation - Madison Avenue. Advertising steps in and sets it up: what are two things that Americans are obsessed with? **Obesity** and **cholesterol**. The latest fad in weight loss is the high protein diet. Skip all those nasty carbs and fats - just eat meat and fish. Then watch the poundage melt away. But wait! What about all that cholesterol? Oh yeah, that's bad for the heart, isn't it? Hey, isn't that soy stuff supposed to be the best healthy protein for you these days? Yeah, think I'll try those soyburgers - get all my protein requirements with none of the cholesterol downside.

This thought conditioning didn't just happen. It's been coming on for years, with persistence and saturation. It costs millions, and we can see it every day: in newspapers, magazines, TV, in supermarkets, on the internet - anywhere there's

advertising.

A few problems right off the bat. **Soy protein is a by-product of oil processing.** Originally it was either thrown out or used as animal feed. Fact is, soy protein has already been through all the oil processing steps before beginning the additional processing for protein. That means we're starting with a dead substance.

A summary of how protein is derived from soybeans can be found at this website.

<http://www.spcouncil.org/defs.html>

Here's an excerpt:

## Soy Protein Isolates

"Isolates are the most highly refined soy protein products commercially available. They represent the major proteinaceous fraction of the soybean. Soy isolates are prepared from dehulled and defatted soybeans by removing most of the non-protein components as summarized in the accompanying chart.

The protein is extracted from defatted soybean flakes with water or mild alkali in a pH range of 8 to 9 followed by centrifuging to remove insoluble fibrous residue; adjusting resulting extract to pH 4.5 where most of the protein precipitates as a curd; separating curd by centrifugation from the soluble oligosaccharides, followed by multiple washings, and then spray-drying to yield an 'isoelectric' isolate."

Like most grains, the majority of soybeans' vitamins and minerals are in the hulls. De-hulled and de-fatted. This simply means that after all the fats have been burned away by heat and solvents, the carbohydrates are soaked and spun out of the remaining residue. What's left over is technically protein, but again protein which has no remaining food value.

The con here is its protein derived from a bean, so therefore it must be natural. But three big problems persist:

1. As we have seen, this particular bean has some properties which do not make it suitable for human

nutrition.

2. And we also remember that no beans contain complete protein

3. And this protein is already the by-product of some of the harshest most life-destroying food processes ever devised, containing no surviving nutrients.

**Soy protein isolate is big business.** One of the biggest producers of soy protein is Protein Technologies International of St. Louis, a DuPont subsidiary. (Finucan) We must appreciate the brilliance of taking a waste product from an already extremely processed food source and getting the majority of the population to think of this dead by-product as a food staple.

In general, the vast majority of soy products today are examples of a **super-refined artificial food, devitalized, and devoid of nutritional value.** It is a true **food of commerce**, as Royal Lee would have said.

### **THE GOLDEN BEAN**

Why doesn't anyone know about all this? How can we go from a perfect food to a non-food and have 99% of the population know nothing about it?

When this familiar scenario appears, it always means one thing: time to follow the money.

In that regard, here's some interesting statistics:

Today, the soybean is **America's third largest crop** (harvesting 58 million acres in 1998), supplying more than **50 percent of the world's soybean demand.** (Soy Stats Reference Guide, 1999, also Bernard)

### US Soybean production in millions of bushels

1940 - - - 78  
1971 - - - 1,176  
1998 - - - 2,757

US soybean oil production for 1996 was over **6 million tons.** (1997 Soy Stats)

### **US Soybean Crop Value**

1971 - - - \$ 3.56 billion  
1996 - - - \$16.3 billion

- source: 1997 Soy Stats Reference Guide

By 2000, the crop value was close to **\$20 billion per year**. Keep in mind, this figure does not take into account the retail market of the dozens of finished soy food products sold in supermarkets. That total probably approaches **\$100 billion**.

It's not just the soyburgers and margarine and cooking oil and soy milk.

### **HIDDEN SURPRISE**

Now present in 60% of America's foods, soy turns up in a lot of places where it's not even listed as soy. Names like

"vegetable flavoring" "natural flavoring" "vegetable shortening" "hydrolyzed protein" "textured vegetable protein"

Generally these terms indicate that the product contains hydrogenated soybean oil.

### **GENETIC MODIFICATION**

Wait, there's more! **Just when you think the picture couldn't possibly get any worse, we descend to a new rock level of political and economic depravity: genetic modification.**

Some **58 million acres** in the US are now planted with GM crops. (Teitel) Most, if not all, soybeans now produced in this country have been genetically modified. (Lappe)

Also called **biotech, transgenics, agri-tech, genetic engineering, and agriscience**, this topic is undergoing the usual media whitewash. It's one of those subjects everyone thinks he knows about when it's brought up - the popular press rarely feels the need to explain the term. In actuality, very little is commonly known about the specifics of this horror unleashed.

### **Exactly what is Genetic Engineering?**

"Genetic engineering is the process of modifying cell information, particularly by artificially transferring the genes of one organism into another. While traditional breeding techniques can exchange genes between similar species, genetic engineering allows the insertion of genes **from any plant or animal into any other organism.**"-

R. Wolfson, PhD

From any plant or animal into any other organism. Bacteria into tomatoes. Virus into soybeans. Scorpion into virus. Iguana into an oak tree. It's all doable. But what would be the advantages? Why would the agribusiness giants go to all this trouble?

Many reasons, all of them ultimately economic, **most having to do with selling herbicides.** [From here on out 'GM' will indicate genetically modified.] A GM tomato - **New Leaf - has been engineered to splice a gene into its DNA from a bacterium, in order to produce a plant that is its own pesticide. (Pollan) A bug takes a bite of the plant and drops dead. Farming efficiency - no pesticides. Is it safe for humans? Who knows?**

It was never tested before being marketed. And when distrustful American consumers rejected the New Leaf tomato causing it to be pulled off the market, Monsanto just changed its name to **McGregor** and reintroduced it the following year! Only this time they were smarter: this time there was no GM label. (Lappe, p. 117)

Many other crops, like soybeans, have had a gene inserted that makes them resistant to herbicides. (Wolfson) In this way, they can withstand more herbicides being sprayed around them to kill weeds and other plants. Nice clean fields, with only soybeans. Farming efficiency - less weeding. But isn't there a toxic buildup of herbicides within the GM soybean plant itself, known as bioaccumulation? Or increased pollution of soil and water? How about unpredictable effects in the soybean DNA? Of course, but these aren't the scientists' problem.

### **DNA ROULETTE**

Don't be so impressed: genetic engineering is really not that scientific, as true scientists will tell you. Beginning to study GM, one is struck by the inexactness of the "science."

The isolated gene is shot or inserted into the host DNA completely at random - they have no idea where the novel gene will end up in the gene

sequence. This also means that the "engineers" don't know how the new gene will be expressed - what it will do. That is why it takes thousands of tries before they get a plant with the desired trait.

Once a plant has the desired trait, it's a keeper. Its seeds are replanted and saved, and often even marketed after one single generation. This ignores the entire principle of the recessive gene - some traits don't show up right away - they may be latent for a dozen generations. And those traits may be harmful to humans.

### LAST ROUNDUP

With soybeans, one GM version is called **Roundup Ready** soybeans. RoundUp is one of the most powerful herbicides ever invented. Roundup Ready soybeans have been genetically modified so that they can take up to **10 times** the amount of RoundUp as natural soybeans can. The idea is that the herbicide will kill the surrounding weeds but not the soybeans. Everyone seems to ignore the fact that the soybeans are **assimilating** 10x more herbicide than before.

The other main thing that nobody seems to know is that after just a few short years, as of 2000, almost all commercial soybeans now grown in the US are GM! (Lappe, p 58)

It's all economics: the inventor of RoundUp Ready soybeans is the same as the inventor of RoundUp: Monsanto! Monsanto owns the patent on the GM soybean as well as the patent on the herbicide. (Benbrook) Monsanto sells over **\$2 billion** of RoundUp each year. (Teitel, p. 77)

You probably missed that, so here it is again. Monsanto owns the patent on a GM soybean called RoundUpReady. Owning the patent means that the farmers can't save the seeds each season for the next planting, the way they've been doing for the past 10,000 years. Nor can they exchange seeds with their neighbors. Instead, they have to buy new seeds each year from Monsanto, which cost **3x** as much as normal soybean seed. And the reason the farmers do this is so that they can save money on labor and herbicide - they only have to spray twice a year, because the herbicide

RoundUp kills all the weeds but not the soybeans. Are you following this? Monsanto owns patents on both the seed and the herbicide. They make money both ways, and they control the farmers' future. Small farmers are being edged out, and they account for more than **40%** of total farm income. (Lappe, p. 99)

Are RoundUp Ready soybeans in any way better than natural? No. Actually they're worse. All this talk about "feeding the world" is slick PR. Monsanto has never proven its claims of increased productivity. In fact most independent studies have shown that RoundUp Ready GM soybeans actually **decrease** productivity, acre for acre. (*Against the Grain* p. 82)

**Funny thing that the only crops being developed by the biotech corporations to "end world hunger" are coincidentally those for which those same companies already own the patents on the herbicides.**

Another problem is that the original value of soybeans was as a nitrogen fixer in the soil, remember? RoundUp destroys this power by killing the microbes in the plant rootlets.

An even worse problem is that RoundUp makes agricultural workers sick: it is now the **third most common cause of illness** in California agriculture workers. (Teitel p. 30) **Nine** verified deaths happened in Japan from accidental ingestion of RoundUp. (Lappe, p. 54)

Another huge problem that is being ignored is **herbicide drift**. That means that nearby non-GM crops get contaminated or killed by RoundUp that the wind blew over to them, often from crop dusters. There are many unresolved lawsuits currently in the courts from affected farmers. Like two thirds of all GM plants, soybeans have not been altered for any demonstrated nutritional reason whatsoever. (*Against the Grain*, p. 55)

Despite the unsupported claims of increased productivity and nutrition, the reality is that GM is just a complex marketing tool to sell herbicides. The grand design for corporate dominance over

entire crops is the reason why Dupont, Monsanto, and Dow are buying up the world's biggest seed companies:

Hartz, Asgrow, Holden, Naturemark, DeKalb, Delta & Pineland, Stoneville Pedigreed, Gargiulio - Against the Grain, p 39

**Whoever controls the seed controls the crop.**

### THE LONG TERM PICTURE

One reason that organizations like Greenpeace are opposed to GM farming is that it disrupts what is known as **sustainable agriculture**. There is an ecological continuity in agriculture from one year to the next, a dependence. So many factors in this year's soybean crop affect next year's. Any weaknesses, or strengths, will be felt next year.

With GM, when the inevitable failures become apparent down the road, the weaknesses may be profound enough to cause a gap in the yearly chain - no crops.

Even Monsanto knows that weeds will soon learn to be resistant to RoundUp. Probably within 10 years, it won't work any more. By that time, however, most soybean farmers will be committed to Monsanto, having signed technology agreements. If farmers try to go back to planting nonGM soybeans, they will be years behind in catching up with natural evolution of the plants.

The soil will be much weaker from having gone all those years without the classic soybean benefit of nitrogen fixing. It is likely that everyone will learn the meaning of short term thinking.

Using any single herbicide or pesticide year after year will encourage weeds and pests to become resistant, so it's ultimately a self-defeating process. It's great for the manufacturers of these poisons, however, because new ones are always waiting to be tried. But not only are we poisoning ourselves and our animals in the process; we are also destroying the natural flora (microorganisms) in the soil. Good soil must be living soil, full of microorganisms. Much of our soil is almost dead.

Herbicides and pesticides are themselves a disease. As their use grows, we lose a greater percentage of crops every year. How does that help world hunger?

"In the past 40 years, the percentage of annual crop loss to insects and disease has doubled." - Lappe p. 102

During that same period, US pesticide use has gone from **200 million pounds in 1945 to over 2000 million pounds.**

This whole GM business is about one thing: the sale of herbicides and pesticides. If the huge agritech companies were really interested in increasing world crop production, **why have they spent no money experimenting with existing seeds banks to try to alter genetics in a natural way? All efforts are in the area of herbicide resistance.**

The goal of GM is uniqueness: **patentability**. The developer wants to claim ownership of the new plants, the same way he owns the herbicide. And soon the farmer.

### THE ANGLE

Taken together, the sale of soybeans, hydrogenated soybean oil, and retail sales of finished soy products, it's a very big picture, approaching **\$100 billion per year**. Remember, soy now appears in some form or other in **60% of the foods on the shelves in American supermarkets.** (*Gerson Newsletter*, also Wolfson)

This huge market orchestrates the enormous outflow of 'information' about soy that is visible in the popular press, advertising venues, and the Internet.

Another huge economic opportunity has appeared in the area of GM. **Patenting** of seeds, of new plants, controlling the output of the whole soy industry has immense economic and political ramifications.

### SO THEN, WHO ARE THE TOP PLAYERS?

Ready for a surprise? For starters, the three

biggest US companies involved in genetic engineering of soybeans are:

**Monsanto, Dow Chemical, and Dupont - RAFI Genotypes**

Aren't these the same gentlemen who brought us saccharin, aspartame, Agent Orange, dioxin, fluoridation, napalm, bovine growth hormone, RoundUp, Chlordane, and a host of carcinogenic industrial solvents including **PCBsPCEsTCEsvinyl chloride freon - "Silicon to Soybeans," p 26**

**So from the outset we can expect the highest in ethics and environmental consciousness, right?**

**Aside from the huge profits in retail sales of finished soy products, a separate fortune emerged with the science of genetic modification: the Terminator plants.** As we saw above, this new hybrid plant produces sterile seeds. With most crops, farmers collect the seeds, to be used for the next planting. But Terminator seeds don't grow. Therefore the farmers are forced to go back to Monsanto every year to buy more seed, thus putting control of agribusiness in the hands of the GM giants. Farmers who can't save seeds year after year, like they've been doing since the dawn of agriculture, can be made into compliant serf robots. (Teitel, p. 99)

**By the way, guess how the seeds get sterilized. They're soaked in tetracycline, a powerful antibiotic.** (*GM Foods*, p. 40)

## **OPPOSITION TO GM**

Like Japan and most of Europe, many countries are opposed to the sale of GM produce. England is a prime example:

**"Monsanto claims in its letter to me that there is no difference between ordinary soya beans and what it calls round-up soya beans, and therefore that they should not be segregated. I maintain that members of the public who notice what is going on simply do not believe that, and will increasingly demand to know**

**what is in the food they eat - roundup or otherwise... the Government and the EU should resist the power of the giant food companies in the United States, which are effectively dictating what we must eat, without giving any convincing estimates of the long-term effects."** - Colin Pickthall, Member of Parliament for West Lancashire, speaking in the House of Commons, 13th December 1996

Some of Europe's reactions to GM:

The **Austrians** are really against GM foods. Fully **20%** of their population signed a petition, not just to label, but to ban GM foods from their country. Biggest petition in history.

**Denmark** requires full labeling of all GM foods.

**Switzerland** destroyed 500 tons of chocolate when they learned it contain GM soy lecithin.

**Luxembourg, Italy, and Austria** have banned importation of GM corn.

All GM foods sold in the **European Union** must be labeled. - Lappe, 121

The entire EU and **India** have now stopped allowing experimentation with GM foods in the field until more is know about long term effects of genetic manipulation. (Teitel p.72) **Japan** also has strict labeling requirements for GM foods.

Even we normally complacent, sheep like Americans are starting to speak up. 500,000 signatures were on a petition that was presented in Washington at a summit meeting in June 1999 on GM food demanding that Congress and the FDA now require labeling on GM foods. (Allen)

## **NO LABELS - THE USDA, FDA AND EPA TOE THE LINE**

Despite strict labeling requirements for GM foods in most other countries, especially in England and the EU, as well as all the worldwide opposition, at the present time the FDA requires no GM label either on produce or on finished retail products.

Therefore American consumers have no idea if the foods they are buying at the supermarket contain GM soy. With heavy interconnections with

the Big Three GM companies, both the FDA and the EPA are playing Spin the Bottle, each coming up with semantic technicalities about why it's not their job to regulate or require reporting of GM ingredients.

Clinton's former and now Bush's FDA appointees have so many connections with Monsanto, before, during and after their FDA tenures, that the *Toronto Globe* went so far as to refer to Monsanto as a "retirement home for members of the Administration." (Teitel, p 64)

With million-dollar positions waiting for them after they leave the FDA, the officers will not be disposed to bite the hand that feeds them, during their tenure.

Lobbying has scored big: the agri-tech corporations have even figured out how to get the government to pay for research on products which will then be patented by those same corporations! For example, over **\$10.5 million** in government grants per year are given to the biotech companies to develop herbicide resistant crops. (*Against the Grain*, p88)

A huge problem with labeling is a legal twisting of the **First Amendment** by lawyers representing GM giants. First Amendment is supposed to be freedom of speech, right? Well, these EPA lawyers have taken the position that it violates free speech for an organic farmer to label his produce "non-GM," the reason being that this may suggest that GM products are somehow inferior.

With no scientific data whatsoever, the FDA's stated position is that GM foods and non-GM foods have an "**equivalence**." (Lappe, p. 76) And that's their basis for denying American consumers the benefit of identifying labels.

**"If the FDA is serving corporate interests, who is serving the public?" - GM Food p. 65**

When you consider the stringent labeling requirements now on all foods and packaged products of any kind, especially in California with Prop 65, it's fantastic to think that the consumer is

not allowed to know whether a food is GM or not. That is a most fundamental item of information.

This is the first time since the FDA began requiring disclosure of food ingredients at all that the consumer is being kept in the dark on such a large scale. The fact that soon almost all food will contain GM components is not really an argument.

We have a right to know what we're eating. Deeper investigation into the subject of labeling is beyond the scope of this article. Suffice it to say that labeling has become an area of big politics and big deceptions, having as much to do with the prevention of consumer awareness as with adding to it.

### **IF It's ORGANIC, IS IT GM?**

Not yet, but almost. The US Dept. of Agriculture met in March 2000 to redefine the term **organic**. Despite huge lobbying efforts from the GM giants to allow GM foods to be included under the organic umbrella, it didn't work. Not yet, anyway. At this time genetic modification still prevents a food from being labeled organic. But with the FDA's current stance that GM and non GM foods are "equivalent," as well as the millions of lobbying dollars floating around Washington, the future does not look particularly bright for the non GM status of organic foods.

### **EPA and FDA WIMP OUT ON TOXICITY LEVELS**

Since 1987, the EPA and Congress both showed that they understood which side their bread was buttered on, in three separate acts:

In 1987, immediately prior to Round Up's debut, without any study or proof whatsoever, the EPA arbitrarily raised the toxicity limits of RoundUp **from 6 parts per million to 20 parts per million**, simply because Monsanto requested it! (p.75, *Against The Grain*)

After repeated requests from Monsanto for "exemption from further review or tracking" of RoundUp Ready soybeans, the EPA granted its approval! (p79)

Buckling under industry pressure, Congress

scrapped the proposals for creating a Biotechnology Commission, whose job would be monitoring long-term biological effects of GM foods (p 130) At present, there is **no tracking system** or government agency in place to even study human toxicity from GM foods! We're being forced to rely on the word of the manufacturers, who continue to insist that these foods are safe, even though no long-term, or even short-term, studies have ever been done.

Another area in which lawmakers have quietly betrayed the people is the recent introduction of **environmental audit privilege laws**. In a show of astounding and blatant patronage, the FDA has granted the giant agritech corporations the right of self policing. The way this fantasy works is that in exchange for keeping their toxicity research secret from the public, the company has to promise to conduct "self-inspections" and to voluntarily report any "alleged misconduct." (Lappe p. 74) **The honor system! Assigned to companies who have demonstrated a century of systematic poisoning of the global environment.**

At present, no matter how shaky the scientific basis for its safety, once a GM plant is released for full-scale commercialization, it is no longer subject to regulation!

### **THE PHYTOESTROGEN HOAX**

Don't fall for this one. We've all heard the claims about soy being great for women approaching menopause because it adds a safe level of "natural" estrogen, preventing osteoporosis, etc. **Isoflavones** - the supposed magic ingredient - you've seen the ads. All that is known for sure is that RoundUp raises the levels of isoflavones in the soybean. The advertisers have made the incredibly brash assumption that increase in phytoestrogens is desirable. For one thing, having come from a GM plant, isoflavones are definitely not natural. Moreover, the amount of increase may well be pathological - it's never been studied.

**Infants have been shown to have their phytoestrogen levels raised from 13,000 to 22,00 times the normal blood levels of**

**estrogen through ingestion of phytoestrogens and other estrogen mimickers!** High levels of these estrogens can promote sex organ malformation, organic tumors, and menstrual disruption. **(HRT)**

**The fact is, these possibilities have never been ruled out by scientific studies before promoting soy milk for infants. Or for menopausal women. It's unsubstantiated marketing hype. The consumer is the experiment.**

" we are eating our own genetic experiments."  
- *Against the Grain*, p 148

### **WHY INFANTS SHOULD BE KEPT AWAY FROM SOY PRODUCTS**

If you're giving your baby soy milk or soy products, except for advertising, where are your sources of information that soy is OK? Throughout this article several referenced sources have been cited that point out the following likely toxicities of soy products for infants:

increase of blood **estrogen** levels to 22,000 times normal- blocks absorption of **zinc**, which is necessary for brain formation

introduces **free radicals** into system, which can retard any formative tissue- blocks stomach **enzymes**, promoting chronic indigestion

cannot itself be digested, promoting **chronic indigestion and allergies**

lack of fat soluble vitamins available in unprocessed animal products

high levels of **aluminum**, preventing normal brain and intestinal formation

**Disagree? Cite your sources.** Journal articles in slick Alternative Lite magazines don't count. They tend to favor contributions from their own advertisers' junk science writers. What a shock.

### **LESSON #666**

By 1859, Charles Darwin had discovered the phenomenon of **natural selection**, outlined in his masterwork Origin of the Species. In a nutshell, Darwin showed how all species evolve through the centuries by minute little changes made in their physiology, which better adapt them to their environment. The ones who adapt best, survive.

This has been nature's design, from the beginning of life on earth. Much later, in the 1950s, this adaptation to surroundings was related to genetic structure, when Watson and Crick discovered the shape of DNA.

Now we're into the 21st century and science has come up with a technology that can theoretically splice genes from any plant or animal into the DNA of any other plant or animal. Genetic changes that would have taken 10,000 generations, and many that would never have occurred at all - suddenly these artificial hybrids are brought into being, at random, practically overnight.

The huge difference with GM is that instead of evolution, we have this random game of genetic **cut-and-paste**. The technicians ram the selected gene into a random location within the host's DNA, and then they see what happens. After thousands of times, one favorable plant may result, and that's the keeper.

But the DNA is the genetic code - the blueprint for future generations. Many alterations don't appear immediately. Those that do may also have other unpredictable effects on the offspring. Teitel talks about the GM salmon who were "engineered" to grow larger, which they did, but not without turning green. (p. 11)

Another scary issue is the experimentation with virus and bacterial genes spliced into plants. We are introducing the possibility of creating **superviruses and superbugs** that have never existed before, some of which may be resistant to any known form of control. Like the Chimera virus in *Mission Impossible 2*, except without the antidote. And without the theater.

## THE END OF BIODIVERSITY

Nature's way is for any given crop to be as genetically diverse as possible. This will allow for survival of the species in the event of pests, toxins, or natural disasters like heat waves, droughts, floods, and freezes. If all the plants are genetically identical, any stressor that can kill one of them can kill them all. This is the real danger with biotechnology that the big corporations are doing their best to keep from public awareness: genetic uniformity means the end of biodiversity.

Biodiversity is the strength of the evolutionary process that has allowed all life forms to develop to their current versions.

In 1845, two million Irish died from starvation in the **Great Potato Famine**. The reason: there were only two genotypes of potatoes in all of Europe, and both were susceptible to the same blight. That was a lesson in biodiversity. (*Against the Grain*, p99)

**Lesson # 666: It's Not Nice To Fool With Mother Nature.** Repeat until learned.

## WHAT DO THE REAL EXPERTS SAY?

Many of the world's highest ranking biologists, like Harvard's George Wald, see the connection between Darwin and GM:

**"Recombinant DNA technology [genetic engineering] faces our society with problems unprecedented not only in the history of science, but of life on the Earth. It places in human hands the capacity to redesign living organisms, the products of some three billion years of evolution.**

**Such intervention must not be confused with previous intrusions upon the natural order of living organisms; animal and plant breeding, for example; or the artificial induction of mutations, as with X-rays. All such earlier procedures worked within single or closely related species. The hub of the new technology is to move genes back and forth, not only across species lines, but across any boundaries that now divide living organisms.**

The results will be essentially new organisms. Self-perpetuating and hence permanent. Once created, they cannot be recalled.

Up to now living organisms have evolved very slowly, and new forms have had plenty of time to settle in. Now whole proteins will be transposed overnight into wholly new associations, with consequences no one can foretell, either for the host organism or their neighbors. It is all too big and is happening too fast. So this, the central problem, remains almost unconsidered. It presents probably the largest ethical problem that science has ever had to face. Our morality up to now has been to go ahead without restriction to learn all that we can about nature. Restructuring nature was not part of the bargain. For 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, novel epidemics." - Dr. George Wald, professor emeritus from Harvard, Nobel laureate in medicine.

Once created, they cannot be recalled. That's just great. Genetically modified crops spread their assault on nature in a totally unpredictable manner. With our 58 million acres of GM plants, consider the effect of cross-pollination alone, just by bees flying into non-GM crops.

The father of molecular biology, Erwin Chargoff refers to genetic modification as a "molecular Auschwitz."

**He see GM of plants and animals as a bigger threat to human survival than nuclear war.**

"I have the feeling that science has transgressed a barrier that should have remained inviolate you cannot recall a new form of life...It will survive you and your children and your children's children. An irreversible attack on the biosphere is something so unheard of, so unthinkable to previous generations, that I could only wish that mine had not been guilty of it." - *Heraclitean Fire* Guess Dr.Chargoff won't be invited on any Monsanto junkets to Acapulco.

There is a long list of quotes from world class scientists on the dangers of GM, available at

<http://www.purefood.org/ge/sciquotes.htm>.

Many scientists, like Dr. Joseph Cummings foresee the creation of new diseases as a result of GM of plants:

"Probably the greatest threat from genetically altered crops is the insertion of modified virus and insect virus genes into crops. It has been shown in the laboratory that genetic recombination will create highly virulent new viruses from such constructions. Certainly the widely used cauliflower mosaic virus is a potentially dangerous gene it multiplies by making DNA from RNA messages. It is very similar to the Hepatitis B virus and related to HIV." - Cummins

**Most soybeans are GM. Is this really the kind of food you want to put into your baby's formula as a replacement for mother's milk?**

### **SOYLENT GREEN**

Way back in the 70s, Charleton Heston made a science fiction movie called *Soylent Green*. The story was set in the apocalyptic future, with a totalitarian Big Brother government, similar to the one in *The Matrix*. In *Soylent Green*, fruit and vegetable crops, as well as meat and dairy, are things of the distant past. Food is totally controlled and provided by the government - everyone eats these green biscuits called soylent green, which are supposed to be complete nutrition sources. The movie uncovers the typical operations of a sinister government which has succeeded in controlling all aspects of human life. Then at the end, the shocker is when Charleton finds out that soylent green is actually made from people. Hope I didn't spoil it for you, if you can find the thing! The similarities of this movie to our present situation are remarkable indeed, considering that it was made almost thirty years ago. The fact that the biscuits were soy-based is so apt, considering what we now know from the above chapter about the widespread presence of soy in our processed foods. Our food choices are increasingly being controlled and limited by the government, through agencies like the FDA and the EPA. It is no secret that the directors of these agencies have close ties to the giant food and chemical corporations.

Legislation about the safety and content of our

food is dictated not from the standpoint of health, but from a position of economics and control. This is the light in which the above information should be viewed. It's not only that we're losing control of our choices, but that through mass advertising the toxic realities of processed foods are being systematically hidden. Animal crackers are so cute, but they contain partially hydrogenated soybean oil, which is loaded with free radicals, and has no food value. It's not really a conspiracy; it's simply the nature of corporate control. Corporations have one fundamental purpose - to make money for their investors. The problem here is the written contract that we have with agencies of the government. Their stated purpose is to protect our health and well-being from rampant, wholesale exploitation from powerful special interest groups. Instead, the people in the regulating agencies have joined forces with the exploiters, for their mutual benefit.

### **GM SOY - It's EVERYWHERE**

Lappe has a partial list of verified products using genetically altered soybeans:

- Crisco- Kraft salad dressings
- Nestle's chocolate
- Parkay margarine
- Isomil and Prosobee infant formula
- Wesson oils- McDonald's French fries
- Doritos
- Tostitos- Ruffles
- Pillsbury foods
- Similac infant formula. **p. 92, 119, 124**

**Today's list would be much more extensive since by now the vast majority of soybeans grown in the US are genetically engineered. So if the label mentions soybeans, it's probably GM.**

### **ACTION**

Soy products are not substitutes for human protein requirements. Processed soy products are devitalized, enzymeless non-foods, devoid of nutrient content. Moreover, the aluminum, free radicals, and other contaminants make soy products toxic to human metabolism, giving them an overall negative nutrient value.

Armed with your new knowledge, the following experiment will blow you away. Go to your local supermarket with your glasses or a magnifying glass, without being in a hurry. Start anywhere and just read all the fine print on food labels. Check out the frozen dessert section - you know, all those boxes with the beautiful pictures of homemade pies and cakes and turnovers. You'll be amazed to see that hydrogenated soybean oil is not simply an ingredient in many of these desserts, but that it is the **main** ingredient. Next try the salad dressing aisle. Start with the creamies - bleu cheese, Ranch, etc. Partially hydrogenated soybean oil - the main ingredient. Next go to the commercial bread and pastries section. Most breads have the ingredients printed in orange microfonts so that you can't make them out with the bread as the background. This is no accident. Here you'll see not only a ton of hydrogenated soybean oil - you'll also see beaucoup high fructose corn syrup - another neurotoxic non-food. Next try the soup section - read every word. Then cruise on over to the pasta section. Don't forget the commercial cookies section. Soon it will dawn on you, like it dawned on Charleton Heston, we are **becoming** partially hydrogenated soybean oil!

From your surveillance post on a bench in any mall concourse in the US, watch the unisex soybean units trudge by.

What can we do? Stay informed. Follow the sources in the Reference list below. Make choices for our children that are not determined by ads we saw on TV, or read in some junk science flyer that came in the mail.

And try to keep ourselves and our children away from the 60% of the foods on our shelves that contain processed soy products.

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### WARNING:

The information in these articles is not intended to replace medical advice or treatment. Questions about symptoms, specific dietary needs and medications, general or specific, should be discussed with your physician. The information in this article is for informational purposes only, and is not medical advice or a substitute for a physician's consultation and/or examination.

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<http://www.afcm.org>