

# BAD BOY SOY

For years, the soybean and its derivatives have been touted as the ultimate in health food, but more and more research shows the direct opposite may be true

BY OMAR SOMMEREYNS

Here's an easy experiment: go to your local supermarket and scan the aisles. Pick up random canned foods and other products, and scrutinize the labels. Chances are, a majority of these contain soy in one form or another. From salad dressings and yogurt to peanut butter and pasta sauces to your basic bag of potato chips, soy has indeed become ubiquitous. And that's not to mention the countless claims of soy as a nutrient- and protein-rich health food that can be consumed in sundry forms.

The popularity of this so-called "miracle bean" rose in the 1930s and '40s since it could be grown cheaply and abundantly, and its high protein content made it ideal for animal feed, while its rather tasteless and colorless quality catalyzed the major role it would come to play in processed food. Meanwhile, health food stores, nutritionists and vegetarians across the country have been promulgating the multiple health benefits of soy as "superfood" — a sacred bean venerated for thousands of years in Asia.

## ISSUES OF CONTENTION

The ancient Chinese actually avoided eating soy until they developed the proper means to ferment it (before that, they regarded the soybean as a sacred grain with strong roots that could fix nitrogen when used in crop rotation). But even then, they didn't really use it as a replacement for animal products, but rather as a condiment, such as tempeh (which is made by a controlled fermentation process that binds the beans into a cake form), and usually with animal protein, such as fish broth, to make the soy digestible.

Americans are under the impression that Asians consume loads of soy or soy-based products on a daily basis — a view that's been ostensibly propagated by the American soy industry and various other soy proponents (including canny marketers). But take into account how the U.S. is one of the world's leading soy producers (often topping that list) and that claim becomes dubious. T. Colin Campbell's respected China Study, for instance, revealed that the average Chinese woman eats only about nine grams (or about two teaspoons) of soy a day. Another study — an annual health survey of Takayama City, Japan — found that Japanese men ate only five grams a day, while women only consumed four. That doesn't seem like much when you consider the 50 to 60 grams a day of protein we typically require, or when some soy manufacturers recommend up to 100 grams a day.

While this may be surprising to some, more and more studies have been coming out warning of the potential dangers of American soy. It's a convoluted subject and one that still requires much more research and time before reaching any permanent conclusions. Yet, given that the soy industry in America is a highly

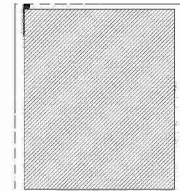
profitable, multi-billion dollar machine — according to the International Agricultural Trade Research Consortium, in 2005, the U.S. exported about 37-percent of the world's soybeans, while China imported 41-percent — the end of this debate is hardly near. In order to investigate such a polemical issue, *FI* conducted dozens of interviews with various doctors, dietitians, chefs, soybean associations, authors, and the Food and Drug Administration (FDA).

Soybean advocates remained staunch about the bean's health benefits, but when it came to independent sources, a majority would not recommend soy as part of a healthy diet (or even as a protein replacement) and advised to only consume fermented soy from organic soybeans (miso, natto, tempeh, and the like — no tofu, soymilk or processed soy such as soybean burgers).

However, this issue is hardly new. Back in August of 2000, two U.S. government scientists, Drs. Daniel Doerge and Daniel Sheehan, released an internal letter within the FDA citing 28 studies indicating the potential harm of unfermented soy products containing isoflavones (e.g. breast cancer in women and brain cancer in both genders). These phytoestrogens mimic estrogen, the female sex hormone, to beneficial or deleterious effect, depending on the subject's age and gender (or the actual study). In their letter, Doerge and Sheehan stated, "There is abundant evidence that some of the isoflavones found in soy demonstrate toxicity in estrogen-sensitive tissues and in the thyroid."

According to nutritionist Judy Stone, "The concentration of phytoestrogens is very high in processed soy foods — things like textured soy protein used in many meat substitute products marketed to vegetarians or snack bars with added isoflavones — and these can ultimately disrupt the hormone system of humans and animals. This is known as endocrine disruption. We see the effects in men who develop breast tissue, or increased infertility; hypothyroidism, females with menstrual difficulties, or fish and animals that possess both male and female reproductive parts."

Various studies have shown soy to potentially have a depressive effect on thyroid function and to increase brain aging. "Soy depresses thyroid function causing fatigue, dry skin, hair loss, weight gain, etc.," says Jillian Finker, a naturopathic doctor in Bellmore, New York. "I have seen many patients who come into my office with these problems and they don't understand why because they have been eating so much healthier than they were before." I usually discern that they recently incorporated a large amount of processed soy products into their diet. When they have their blood work completed, I often discover that they have Hashimoto's thyroid disease. There are



many studies showing that soy can increase thyroid antibodies which is the diagnostic criteria for Hashimoto's disease."

Soy is also a high allergen food, meaning it's on a list of foods to which people are more likely to develop a sensitivity or intolerance. This is exacerbated by the fact that soy is an additive in so many manufactured foods. But a major concern has been the consumption of soy formula instead of mother's milk for infants. "Soy contains phytic acid, a substance that binds with calcium, magnesium, iron and zinc, and reduces the availability of those minerals to your body," Stone explains. "Mineral depletion is a big contributing cause to osteoporosis. Infants on soy formula are also not getting the cholesterol that is so important for their brain development."

Keep in mind that a big majority of soybeans planted in the U.S. (anywhere between 80- and 90-percent, depending on the source) is genetically modified. Yet, despite all these warning signs, respected publications such as the *Journal of the American Medical Association (JAMA)* and registered dietitians (RDs) all over the country still promote the health benefits of soy. "Having spent time with RDs for over two years as a member of their San Diego Nutrition Network, with all due respect, you'd be surprised at how much they look to the facts to decide what they will promote," says Adelaide Zindler, a former pediatric health educator in California. As for *JAMA*, Zindler adds, "It's a publication that I used to read religiously as a consultant to the medical community, and I challenge you to show me three unbiased articles in there. Soy is a highly profitable substance for growers and producers. I've studied the journal for a year and watched it set trends that were quite profitable for its sponsoring organizations, only to backtrack later. Thankfully for them, we, the public, strongly believe in operating on blind faith."

**SOY AND THE FDA**

When contacted with a series of questions regarding soy, Dr. Mitchell Cheeseman, director of the FDA's Office of Food Additive Safety, generally affirmed the safety of eating soy: "The FDA has no information suggesting that it is unsafe to consume soy or soy-derived products as a substitution for animal proteins...[We] have no basis to believe that there are any 'toxins or carcinogens' in soy-derived products consumed in the United States. Much of the public concern around this issue appears to come from the many articles in the public domain that speak about the presence of isoflavones in soy...[We] acknowledge [this] concern; but it comes largely from studies of rodents and monkeys that metabolize isoflavones to equol, a compound thought to be involved in outcomes reported in some studies. It is not clear that these animal studies predict the effect of isoflavones on humans."

However, as of April of this year, soy does not appear on the FDA's GRAS (Generally Recognized as Safe) list, besides one regulation about peptones, a variable mixture produced by partial hydrolysis of certain proteins (including soy protein isolate). The FDA also once encouraged Americans to eat 25 grams of soy protein a day as a way to prevent coronary heart disease. But in 2008, the American Heart Association urged the FDA to revoke that statement, following newfound research data.

It should be noted that, as part of the Farm Act of 1990, the FDA established The Soybean Promotion and Research

Studies show soy can have a depressive effect on thyroid function.

Order to educate the public about the value of soy. According to Randy Karp, author of *Misinforming About Food*, "Grants for millions of dollars a year, paid for by an assessment on all soy growers, were issued to researchers to prove the ability of soy to fight cancer and more. In the end, soy's acceptance had a great deal to do with our desire to reduce our consumption of other maligned sources of protein foods and fat. We sought an alternative and the soy industry rose to the occasion."

According to the *Wall Street Journal*, successful marketing has helped soymilk alone go from a \$2 million product in 1980 to a whopping \$300 million in 2001.

**READ THE LABELS**

Nancy Chapman, executive director of the Soyfoods Association of North America, claims that in 2009, "84-percent of consumers perceive soy products as health", but that's according to a survey conducted by the United Soybean Board, which collects soybean farmers' investments of a portion of their end-of-season profits to fund research and promotion efforts. Meanwhile, Stacey K. Krawczyk, a research dietitian with the National Soybean Research Laboratory, says, "Soyfoods are nutrient-rich and provide a complete protein source that is low in saturated fat and is cholesterol-free. Using an overall balanced approach, soyfoods are an excellent and healthy addition to our diets. As health professionals, we really need to investigate the entire research body of work as a whole."

But it's still hard to ignore the growing opposition. Organizations such as the Weston A. Price Foundation (which promotes the consumption of "nutrient-dense whole foods and vital fat-soluble activators found exclusively in animal fats") have been educating the public about the potential dangers of soy, yet many people are still unaware of the issues. The key is to read the labels on any food product that you buy and also look for covert terms for highly processed soy, such as "isoflavones" (especially in power bars), "genistein", "textured vegetable protein", "soy flakes", and "hydrolyzed soy".

"The soy industry has its own scientists who claim soy is safe and then there are scientists with findings that are disturbing, and some have had their labs shut down," says Dianne Gregg, author of *The Hidden Dangers of Soy*. "In my research, soy scientists recommend that you add 75 grams of seaweed, Vitamin C, Vitamin E, and drink at least one glass of orange juice a day when you consume soy. Doesn't that tell you something? For years, the soy protein left over from soy oil extraction was used to feed animals until they started developing reproductive and other serious health problems. Since the soy industry had so much left over, they didn't want to dump it so they decided to market it as a 'health food' for the elite."

The fact that soy is a plant has certainly made it easier to hype as a wholesome and nutritious food, but the deeper you dig into the soy industry and the research that's emerged, the more you'll feel compelled to at least call those claims into question. □