

Jumping for soy

Humble bean has fans, detractors

By ERICA ANGYAL

Special to The Japan Times

Today the humble soybean has emerged as the closest thing there is to a super-food. Health experts (and food companies) have proclaimed soy a miracle bean and promoted it as the key to maximum longevity and disease prevention. It's said to play a positive role in preventing heart disease, cancer and osteoporosis, as well as helping to relieve menopausal symptoms. One study even suggests that eating soy might reduce hair loss. But is soy another food fad, or is it the magic bean of the 21st century?

Super bean

It wasn't until the Zhou Dynasty (1100-256 B.C.) that humans consumed soybeans, when the Chinese developed a fermentation process to make soybean paste, best known today as miso. In the second century B.C. the Chinese discovered that a purée of cooked soybeans could be precipitated with calcium sulfate or magnesium sulfate to make a smooth pale curd — tofu. *Nattō*, another popular fermented soy food, entered the Japanese diet in Japan between 1,000 and 1,800 A.D. In the West, researchers really stood up and took note when they studied populations where soy was a regular part of the diet, and found that it may be protective against certain diseases.

Whole soybeans are the edible seed of the soybean plant (from the family Fabaceae). Soybeans mature in their pod, ripening into dry, hard beans. Most soybeans are yellow, but there are also brown and black varieties. The word soy is derived from the Japanese word *shōyu* (soy sauce), and if you're in England you'll see soy referred to as soya.

Soybeans have been called the "meat without bones" and the "cow of China" as they're a perfect plant-based protein, meaning they contain all the essential amino acids that your body can't produce.

As an excellent source of vitamins and minerals (including calcium, magnesium, B vitamins, folic acid and iron), as well as soluble fiber and Omega-3 fatty acids, this little legume packs a potent nutritional punch. The mature soybean is about 38 percent protein (compared to about 20-30 percent for other beans), 30 percent carbohydrates and 18 percent oil. And unlike meat and dairy, soy is extremely low in cholesterol and saturated fat.

Soy is also the richest known dietary source of powerful health-promoting compounds called isoflavones. It is these isoflavones that

excite researchers the most. They have antioxidant and protective phytoestrogenic properties. Phytoestrogens are naturally occurring chemicals found in plant foods that can act like estrogen in the body — albeit they have a very weak effect (they contain between 1/100th and 1/1,000th of the potency of human estrogen). It's the actions of these isoflavone compounds found in soy that may help reduce the growth of hormone-dependent cancers, including breast, ovarian and prostate cancers.

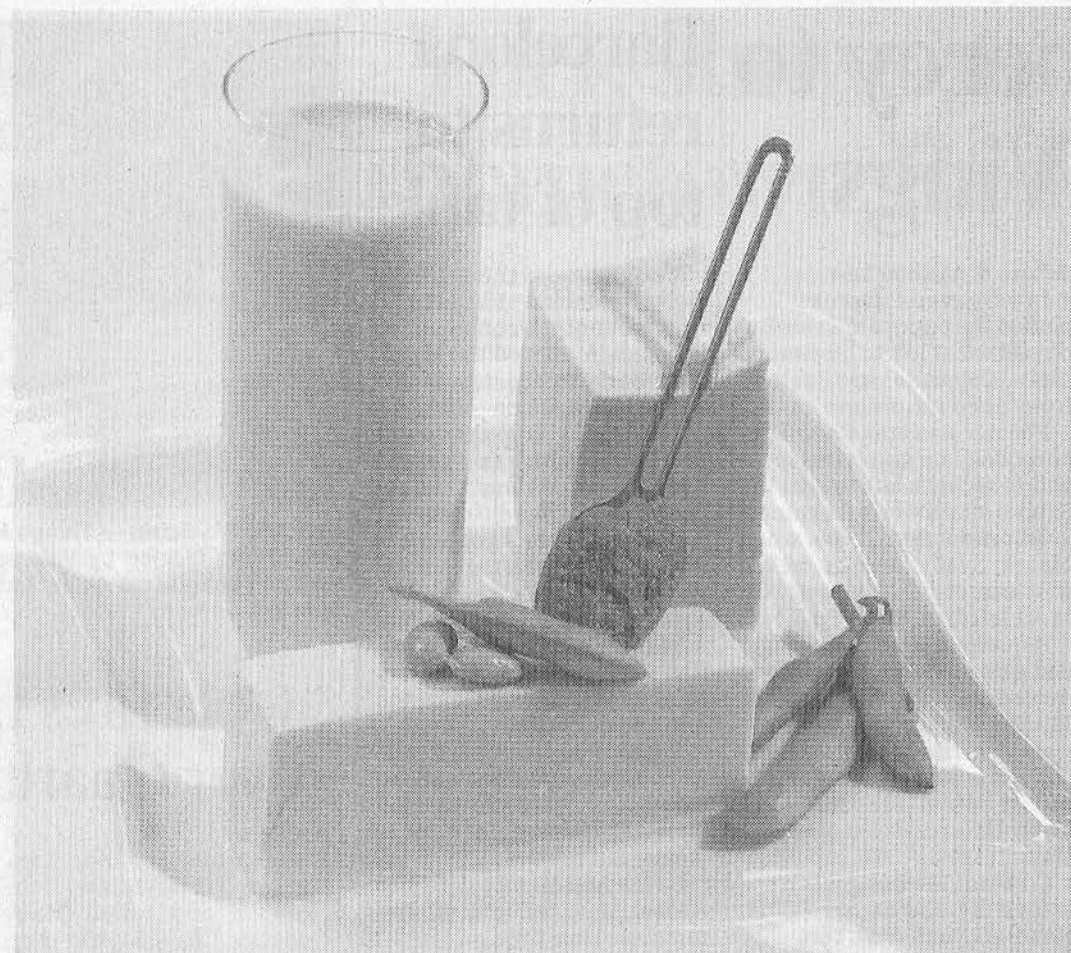
The strongest evidence of soy's health benefits relate to heart disease. A number of studies have shown that soy foods can lower total and LDL ("bad") cholesterol levels, as well as triglycerides, which are a class of fats found in the bloodstream. And in 1999 the U.S. Food and Drug Administration (FDA) gave manufacturers permission to tout soy's known health benefits on their labels — chiefly that 25 grams of soy protein a day may reduce the risk of heart disease by lowering cholesterol.

But don't be fooled by just any food that says it has soy in it. Unfortunately if you're eating soy in the form of soy-fortified muffins, cereals or nutrition bars baked at high temperatures, you won't enjoy a positive impact on cholesterol. To get the cholesterol-lowering benefit, your best bet is to choose forms of soy such as tofu, soymilk, soy nuts or *edamame* beans.

Soy's dark side

Despite the overwhelming evidence of soy's benefits, there are voices of dissent, warning that soy foods are more harmful than healthy. These include New Zealand environmental toxicologist and researcher Mike Fitzpatrick, Ph.D, and Mary G. Enig, Ph.D, a nutritionist, biochemist and author of "Know Your Fats: The Complete Primer for Understanding the Nutrition of Fats, Oils, and Cholesterol." For a good sample of the research that challenges soy's sterling reputation, see the Westin A. Price Foundation's Soy Alert (<http://www.westonaprice.org/soy/index.html>)

Studies have linked soy to digestive distress, thyroid dysfunction, cognitive decline, reproductive disorders, infertility, cancer and even heart disease. Most of these studies have been published in well-respected journals such as the American Journal of Clinical Nutrition; the European Journal of Cancer; and the British Journal of Nutrition. Dr. Jonathan Wright, author of "Nutritional Therapy and Guide to Healing with Nutrition," and columnist for Prevention magazine, posed the



SOY AHOY — You're more likely to get the full benefit of soy's nutrients if you consume it in its whole form, such as soymilk, tofu, miso or *edamame* beans.

question, "Is soy a kind of Dr. Jekyll and Mr. Hyde?" But how does something that's become so synonymous with good health, and that's been consumed for centuries in Asia, get such a bad rep?

The whole story

Many of the studies that show soy in a less than flattering light are based on isolated isoflavone supplements and soy protein, and not on whole soy products such as tofu or miso. It's far too easy to exceed a healthy dietary intake with supplements. The typical Japanese diet contains only about 40 mg of isoflavones per day, while the average supplement contains about 85 mg.

When you concentrate on one nutrient, you lose others and whole soybeans contain many other nutrients that contribute to a healthy diet, such as protein, fiber, essential fatty acids, vitamins and minerals. There are also hundreds of different phytochemicals in soybeans and it's the combined action of all of the components in soy that provide the full health benefits.

It comes back to the age-old argument that foods in whole-food form are far healthier than the processed kind. In Japan and throughout

Asia, soy is consumed in whole form and not as isolated compounds. The Japanese traditionally eat a small amount of tofu or miso as part of a mineral-rich fish broth, followed by a serving of meat or fish. It isn't eaten as a protein replacement; it's used to complement rich protein sources, such as fish. So any reservations about soy may be relevant for people who consume "fake foods" synthesized from manmade components of soy, or high-potency isoflavone supplements, and not for those who consume traditional soy foods in moderation. While products such as soy sausages, chili made with textured vegetable protein (TVP), tofu cheesecake and soy energy bars are now common on the shelves of Western supermarkets, they have, fortunately, yet to take hold in Japan.

The evidence continues to mount that soy in its whole form is indeed a health protector. Therefore, do as the Japanese and other Asians do: consume your soy foods sparingly as part of a balanced diet. Ideally, soy foods should be consumed in fermented form, such as tempeh, miso, *shōyu*, tamari or *nattō*, and not the isolated processed kinds of soy. Just remember: that no single food should dominate a diet and soy is no exception.