

THE MARKETING EDGE

Soy has earned quite a reputation for a plethora of health benefits ranging from cancer prevention to warding off coronary heart disease. In fact, the Food and Drug Administration (FDA) awarded a health claim for soy's cholesterol lowering properties in 1999.

Soy protein's reputation appears to have had a "halo effect" on soybean oil, too. According to the 2005 *Consumer Attitudes about Nutrition* survey, consumers consider soybean oil to be among the healthiest of all vegetable oils and rank it higher than canola and sunflower oil.

Manufacturers of packaged goods have recognized this halo effect and the health cache that soy carries as a marketing opportunity. Instead of listing "vegetable oil" on the ingredient label, some have begun to prominently feature soybean oil on their packaging.

+ Soybean oil is **one of three oils** consumers say they use most often.

VERSATILE & AFFORDABLE

For decades, food manufacturers have selected soybean oil for its versatility and competitive pricing. The neutral flavor and well-balanced fatty acid profile of soybean oil make it a desirable ingredient for a variety of applications ranging from baked goods to salad dressings.



	SATURATED FATTY ACID	OLEIC ACID	LINOLEIC ACID [Ω6]	LINOLENIC ACID [Ω3]	AOM [HRS]
Soybean Oil	14	24	54	7	12-15
Corn Oil	13	28	57	~1	15-20
Palm Oil	50	39	10	~0.3	40-50
Sunflower Oil	13	19	67	~0.7	10-12
Canola Oil	7	61	22	9	12-15
Cottonseed Oil	26	19	54	~0.7	15-19
Olive Oil	16	75	7	~1	n/a

NUTRITIONALLY BALANCED

Liquid soybean oil is among the healthiest of all edible oils and has a very favorable fatty acid profile. It is low in saturated fat and high in poly- and monounsaturated fats. The new Dietary Reference Intakes (DRI) acknowledged that these unsaturated fatty acids reduce blood cholesterol and lower the risk of heart disease when they replace saturated fats in the diet, and the report provided recommended intakes for both linoleic and alpha-linolenic acid (ALA).

OMEGA-3 FATTY ACIDS

Soybean oil is one of the few non-fish sources of omega-3 polyunsaturated fatty acids, which have various physiological benefits including potent cardioprotective effects. While fish oil is the preferred source of omega-3s because of the bioavailability of eicosapentaenoic (EPA) and docosahexaenoic acid (DHA), the alpha-linolenic acid (ALA) in soybean oil is the principal source of omega-3s in the American diet. Soybean oil features a favorable omega-6 to omega-3 ratio of 7.5, well below the DRI suggested ratio of 10.

VITAMIN E

Soybean oil is the primary commercial source of alpha-tocopherol, also known as vitamin E. Vitamin E is the body's primary lipid-soluble antioxidant defense against free radical induced cell damage, which has been linked to a number of cancers, heart disease, cataracts, premature aging and arthritis.

+ **Eighty percent** of all edible oil consumed in the United States is soybean oil. And, soybean oil is the most widely produced edible oil in the world.

+ **Eighty-eight percent** of Americans recognize soybean oil is healthy, according to the United Soybean Board's 2005 *Consumer Attitudes about Nutrition* survey.



PHYTOSTEROLS

Soybean oil contains a number of phytosterols including β-sitosterol, campesterol and stigmasterol. In particular, β-sitosterol and its hydrogenated and esterified derivatives, known as sitostanol esters, have been shown to reduce serum cholesterol and LDL cholesterol by up to 10 percent without decreasing levels of the beneficial HDL cholesterol.

Soybean oil provides 327 mg of phytosterols per 100 grams and is a common source of phytosterol preparations. A number of margarines, spreads and salad dressing products containing β-sitosterol or sitostanol esters are being marketed as cholesterol-lowering products.

FUNCTIONALITY

Approximately 50 percent of the soybean oil used for domestic food production does not require hydrogenation. The balanced fatty acid profile and neutral flavor make liquid soybean oil a favorite for salad dressings and light frying applications.

Hydrogenation is the process of adding hydrogen molecules directly to the poly- or monounsaturated fatty acid to convert the liquid oil to a solid state for stability and functionality. The process of hydrogenation creates trans fatty acids, which have been compared to saturated fats in terms of overall effects on serum lipid levels and cardiovascular function. Partially-hydrogenated oils were introduced as an alternative to other oils, which are high in saturated fat. It is important to keep in mind that even today, trans fats represent only 2.6 percent of the average American's total caloric intake while saturated fats represents approximately 12.5 percent of total calories. Most health authorities do not recommend replacing trans fats with saturates, and instead advocate reducing the total amount of fat in the diet.

QUALISOY™

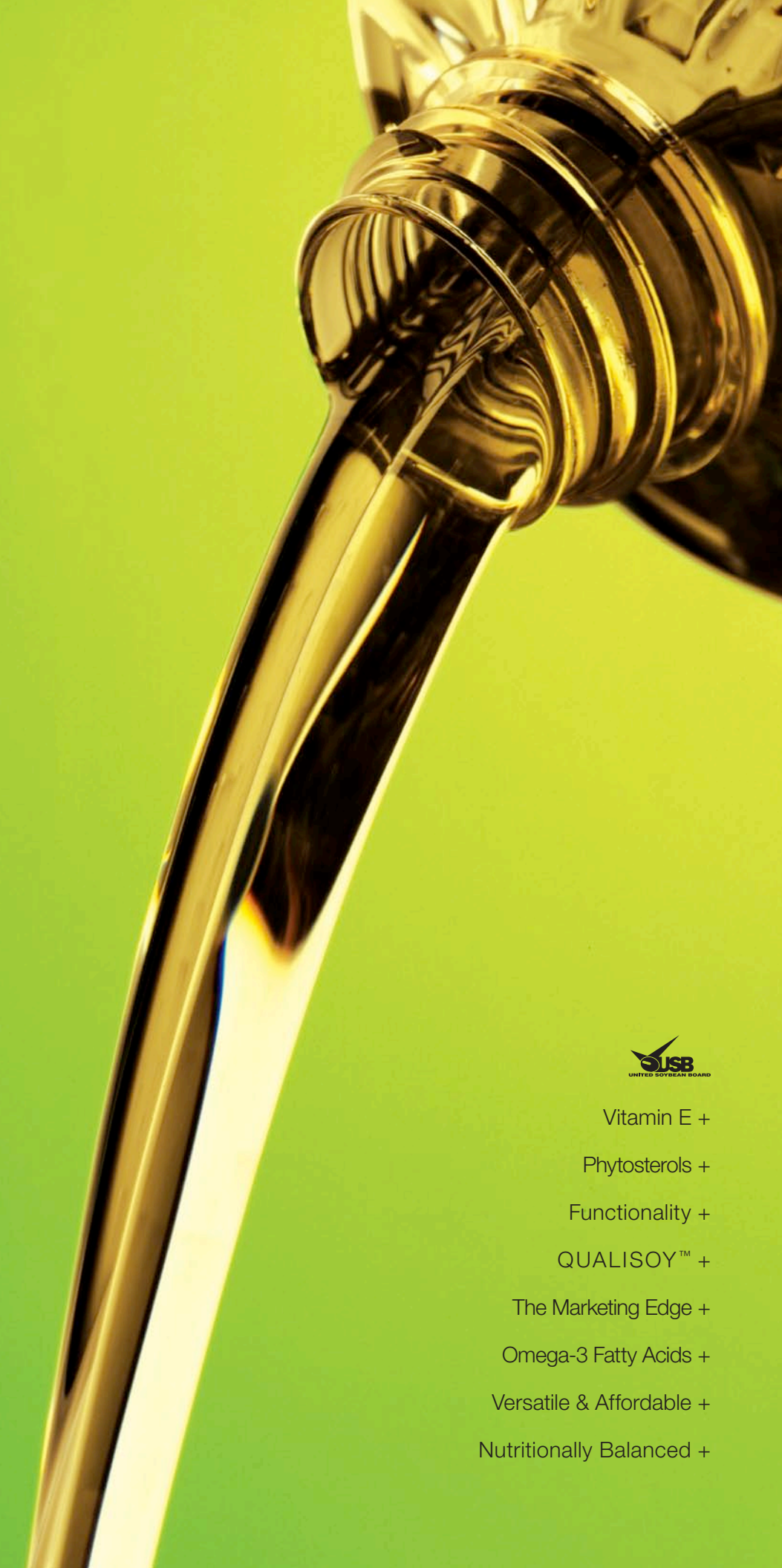
The United Soybean Board (USB) recognizes that the needs of the food industry and the demands of end users are constantly changing. Although soybean oil continues to be the number-one choice for food processors and manufacturers, USB is working with industry leaders and private and public seed breeders to develop a soybean oil that does not require hydrogenation but still has the same superior functionality and flavor characteristics that the food industry has come to expect from soybean oil. Soybean oil applications that meet high standards will carry the QUALISOY™ certification mark, a symbol of their quality.



LOW-LINOLENIC SOYBEAN OIL— THE FUTURE IS NOW



well balanced
SOYBEAN OIL



- Vitamin E +
- Phytosterols +
- Functionality +
- QUALISOY™ +
- The Marketing Edge +
- Omega-3 Fatty Acids +
- Versatile & Affordable +
- Nutritionally Balanced +

3RD EDITION

6322-022006-1000

THE FIRST ENHANCED OIL TO EMERGE OUT OF THE RESEARCH PIPELINE

Low-linolenic soybean seeds developed by Monsanto, Pioneer and the U.S. Department of Agriculture's Agriculture Research Service (USDA-ARS) contain less than three percent linolenic oil. Soybean oils from these seeds include Monsanto VISTIVE™ Low-Linolenic Soybean Oil and DuPont/Pioneer NUTRIUM™ Low-Linolenic Soybean Oil, each with a range of two to three percent linolenic acid. Please note that these numbers reflect normal ranges, and may vary slightly according to environmental and growing conditions.

Another low-linolenic seed from Iowa State University (ISU), under normal growing conditions, will deliver less than 1.5 percent linolenic acid. Asoyia™ Ultra Low-Linolenic Soybean Oil is the primary oil marketed with ISU seed, and its linolenic acid content ranges from 0.98 to 1.5 percent. Additional sources include Zeeland Soya and Innovative Growers.

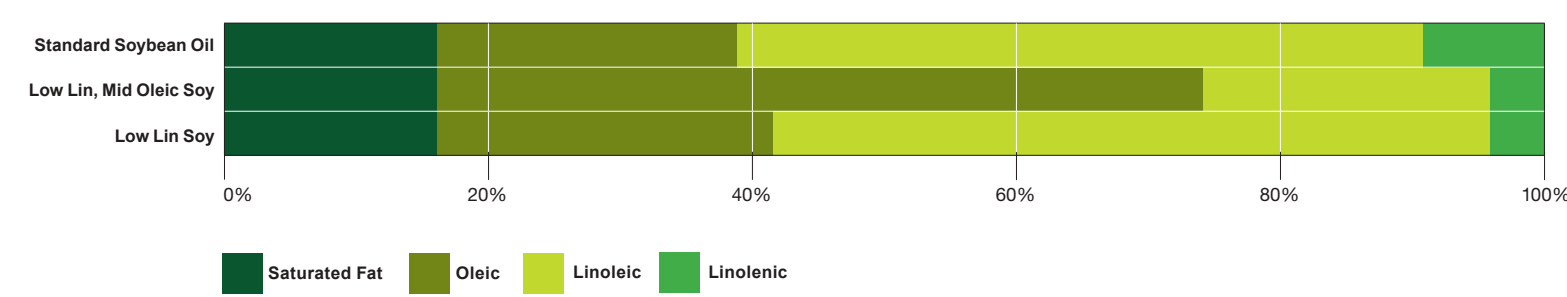
EFFECTS OF LOW-LINOLENIC OIL ON CONSUMER CONSUMPTION OF ALA

Low-linolenic soybean oils are designed to replace a portion of partially hydrogenated oils currently used in the frying market, which contain lower levels of an omega-3 fatty acid called alpha-linolenic acid (ALA) than non-hydrogenated soybean oil. Both low-linolenic soybean oils and partially hydrogenated soybean oils contain low amounts of ALA, so replacing one for the other will not have a significant impact on the amount of ALA in the average American diet. It is important to remember that liquid soybean oil remains an excellent source of ALA for a healthy heart.

MID- AND HIGH-OLEIC IN THE PIPELINE

A mid-oleic oil is also in the research pipeline, and will help the baking industry develop trans-free products. Bakers require trans fat solutions that work with solid fats in order to produce baked goods with pleasant taste and texture. This oil will have 50 percent or greater levels of oleic acid, while keeping linolenic acid at or below three percent. High-oleic soybean oil is also in the research pipeline. In several years, it will offer food manufacturers another option for heavy-duty frying applications.

The chart below summarizes this data:



Continue to expect new trait enhancements to emerge from the research pipeline!
For the latest innovations, please visit www.talksoy.com or www.qualisoy.com.



Dedicated to the future of edible oils: As consumer demand for soybean oil increases, the United Soybean Board (USB) is committed to ongoing research and continuous improvement of an already superior product. USB has established a core team of exceptional academic and industry professionals who are developing an enhanced soybean that will result in a soybean oil that better meets the needs

of food industry professionals, and provides additional health benefits to consumers. A farmer-led organization comprised of 64 farmer-directors, USB oversees the investments of the soybean checkoff on behalf of all U.S. soybean farmers. For more information, please visit: www.talksoy.com