

Soyfoods Guide



TIPS AND INFORMATION FOR USING SOYFOODS

NEW! How soy fits into the new food guide pyramid
Nutritional information
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Good For Your Heart

In 1999 the Food and Drug Administration (FDA) announced that foods containing soy protein may reduce the risk of coronary heart disease (CHD). Foods that meet the FDA guidelines can label their products with this claim.

The soy health claim is based on the FDA's determination that 25 grams of soy protein per day, as part of a diet low in saturated fat and cholesterol, may reduce the risk of heart disease by reducing blood cholesterol levels.

To get the heart-healthy benefits of soy protein, the FDA recommends that consumers incorporate four servings of at least 6.25 grams of soy protein into their daily diet for a total of at least 25 grams of soy protein each day.

In order to claim the healthful effects of soy, a soyfood must meet the following criteria:

- 6.25 grams or more soy protein
- Low fat (less than 3 grams)
- Low saturated fat (less than 1 gram)
- Low cholesterol (less than 20 mg)

Foods made with the whole soybean may also qualify for the health claim if they contain no fat in addition to that present in the whole soybean. These would include soyfoods such as tofu, soymilk, soy-based burgers, tempeh, and soynuts.

New food product labels may now say, "Diets low in saturated fat and cholesterol that include 25 grams of soy protein a day may reduce the risk of heart disease. One serving of (name of food) provides _____ grams of soy protein."

Over 40 scientific research studies have been conducted on the effects of soy protein and cardiovascular disease. More than 54 million people in the U.S. have high blood cholesterol (levels over 200), according to the American Heart Association.

For more information on FDA soy health claims, go to the FDA web site: www.cfsan.fda.gov/~dms/fdsoypr.html.



25-Gram Soy Smoothie

Drink one Hi-Protein Soy Smoothie a day for healthy heart benefits.

- 1 cup soymilk (any flavor)
- 1 scoop soy protein powder (any flavor)

Mix well in blender until soy protein powder is completely dissolved.
Serve immediately.

Yield: 1 serving: 1 1/4 cup. Per serving: 250 calories, 5 g total fat (0 g sat fat), 25 g protein (25 g soy protein), 26 g carbohydrate, 320 mg sodium, 0 mg cholesterol, 0 g dietary fiber.

*(Note: Soy protein levels per serving vary depending on the brand.
Read the label for protein content per serving.)*



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Soy Research Continues To Demonstrate Its Role In Preventing Chronic Disease

By Mark Messina, PhD, Adjunct Professor, Department of Nutrition, Loma Linda University, and president of Nutrition Matters, Inc.

It has been 15 years since the scientific community first began actively investigating the role of soy in preventing and treating chronic diseases. Aimed solely at investigating these relationships, five international conferences, and several smaller ones, have been held. There are many potentially beneficial compounds in soyfoods, but much of this interest can be attributed to the soybean being a unique dietary source of isoflavones. Approximately 10,000 scientific and medical articles have been published on soybean isoflavones.

Over the years there have been many noteworthy developments related to soy. In contrast to these developments, however, some scientific findings have been less encouraging. For example, results published over the past couple of years have generally not supported the hypothesis that soy intake in adulthood reduces breast cancer risk. Conversely however, one of the more intriguing hypotheses that continues to gain support is that soy intake during adolescence reduces breast cancer risk later in life. Evidence regarding the ability of isoflavones to alleviate hot flashes is very conflicting, although one explanation for this inconsistency – according to an analysis published in 2003 – is that soy works among women with at least five hot flashes per day, but is less beneficial for those who suffer less frequent hot flashes.

There has been some uncertainty expressed about the cholesterol-lowering effects of soy protein. Soy does lower cholesterol, but it is now generally recognized that the cholesterol-lowering effects have been overestimated. The typical decrease is only about 5 percent, much lower than the 10%-13% decrease often cited. By itself, even this smaller decrease is still important. But the evidence also suggests that soy appears to exert multiple coronary benefits beyond just cholesterol-lowering. Although the effects of each benefit may be modest, collectively, the overall benefit appears to be quite impressive. There is no doubt that soyfoods warrant an important role in a heart-healthy diet.

Although health benefits continue to be the primary research focus in regard to soyfoods, questions about the safety of soy have arisen. Most of these concerns are based on the effects of isolated isoflavones observed in animal studies and studies using individual cells. While findings from these types of studies can not be dismissed, they are generally less useful for predicting health effects in humans. Effects found in rats are not always transferable to humans, and isolated isoflavones may not produce the same results as soyfoods.

Most focus in regard to safety has been on soy infant formula. However, while theoretical concerns legitimately can be raised, no adverse effects of commercial soy infant formula have been seen in the more than 20 million infants who have used these formulas during the past 30 years. In any event, this issue is completely separate from the use of soyfoods by children and adults.

Questions also have been raised about the safety of soyfoods for women who have had breast cancer or are at high risk for this disease. Concerns are based primarily on the similarities between isoflavones and the hormone estrogen. However, isoflavones are different from estrogen and, in some cases, have effects opposite to those of this hormone. Evidence suggesting that isoflavones may be harmful for women with breast cancer comes primarily from studies using animals that have a hormonal (hypo-estrogenic) environment that is very different from that of women.

In fact, in animal studies that more closely reflect the hormonal environment in women, isoflavones inhibit tumor growth. Furthermore, studies in humans conducted over the past two years suggest that soy does not exert estrogen-like effects on human breast tissue.

Likewise, while both soy protein and soy isoflavones have been linked to thyroid problems in a few animal studies, clinical studies show that neither isoflavones nor soyfoods have adverse effects on thyroid function in men or women.

Investigating the relationship between any food and health is an extremely complex task, especially with diseases such as cancer and heart disease. The most meaningful findings come from large, long-term studies in humans, but these studies are very expensive to conduct. Consequently, animal studies, and small, short-term human studies usually are conducted. These types of studies are more prone to produce conflicting results.

For this reason, while it is important to look at all of the evidence, well-conducted human studies should form the basis for any conclusions that are made. Based on this approach, soyfoods appear to be safe and beneficial when consumed throughout the lifecycle. The lack of any adverse health effects among children in Asian populations where soyfoods are a regular part of the diet is certainly evidence of this.

In addition to their potential benefits in preventing chronic disease, soyfoods are a nutritious food, providing high quality protein, omega-3 fatty acids, B vitamins, and more. Clearly, soyfoods can play an important role in diets of Americans.

Soy Serves Up Healthy Benefits

Adapted from “Soy Health News” written for the Indiana Soybean Board by Kim Galeaz, RD, CD, Food & Nutrition Consultant. For comprehensive versions of this information, refer to www.indianasoybeanboard.com.

Soyfoods are a source of high-quality protein. In addition, consumption of soy protein provides health benefits that may help prevent or treat certain chronic diseases. Currently, a great deal of research is being conducted to investigate possible health benefits of soy.

Childhood Obesity

Childhood obesity continues to increase at alarming rates. One way to reverse this trend is to start early and start right by teaching your child good nutrition habits that will last a lifetime. Starting right also means offering soyfoods. Soyfoods provide critical vitamins, minerals, fiber and protein for growing children.

Plus, many soyfoods contain fewer calories and fat grams, making weight loss or maintaining a healthy weight much easier. Many kid-friendly soyfoods are available today including chocolate soymilk, frozen pizza, taco-style meat and chicken-style nuggets.

Weight Loss & Dietary Fiber

Eating more high-fiber foods like fruits, vegetables, whole grains and soyfoods may help with weight loss efforts when substituted for higher calorie foods. Many soyfoods are filled with fiber; ongoing medical research is showing that fiber provides a feeling of satiety and fullness in between meals and reduces hunger cravings. Ultimately, this helps prevent unnecessary eating and excessive calories which can lead to weight gain. Aim for 25 grams of fiber every day. A serving



of green sweet soybeans contains 3 grams of fiber. One soy veggie burger has four grams of fiber and roasted, salted soynuts have five grams.

In addition, many soyfoods contain fewer calories and fat grams, making weight loss even easier.

Weight Loss & Breakfast

Losing weight may be a lot easier if breakfast becomes a priority every day, and soyfoods may help with weight loss efforts when substituted for higher caloric foods. Eating breakfast provides a feeling of fullness, or satiety, which helps curb hunger and prevents overeating of high-calorie snacks and foods. In addition, research indicates fewer calories may be consumed at the next eating occasion or meal.

Soyfoods are perfect for breakfast, especially when trying to lose weight because they are filled with bone-building and heart-healthy soy protein, plus they reduce overall calories and fat grams. For example, traditional sausage links contain 160 calories and 14 grams of fat; soy breakfast links have

only 70 calories and 3 grams of fat. Other soy breakfast foods include bagels made with soynuts and soy cereal with vanilla soymilk.

Fad Diets

Being on a low carb or the next fad diet when trying to lose weight should not come at the expense of having a healthy heart. Eating unlimited amounts of high-protein foods loaded with fat and saturated fat could prove detrimental over time. Soyfoods help promote healthier eating habits with low carb diets, because many soyfoods are naturally low in fat and saturated fat, while being high in heart-healthy protein. For example, the average soy veggie burger provides 12 grams of soy protein with only five grams of total fat, one gram of saturated fat and just three grams of net carbs.

Heart Health and Heart Disease

Soyfoods containing soy protein can be allies in the ongoing battle against heart disease, the number one killer of adult men and women. Over 40 scientific studies have proven the positive effect of soy

protein on lowering cholesterol levels, including the harmful LDL cholesterol, which leads to the decreased risk of heart disease. In fact, the Food & Drug Administration recommends eating 25 grams of soy protein every day as part of a diet low in saturated fat and cholesterol. A serving of soy latte provides seven grams of soy protein, roasted salted soynuts contain 12 grams and a soy cheeseburger has nine grams of heart-healthy soy protein.

Omega-3's

Certain fatty fish, like salmon and tuna, contain the best source of heart-healthy omega-3 fatty acids. But certain plant foods, like flaxseed and soybeans, also contain these fatty acids. Soybeans are one of the best non-fish sources of essential omega-3 fatty acids, which may help reduce the risk of coronary heart disease. Compared to other beans like pinto beans and navy beans, soybeans have a higher fat content, but this fat contains these heart-healthy omega-3's.

Blood Pressure & Soy

Soy protein may provide positive results for people with high blood pressure. According to a recently published scientific study, researchers found that both the systolic and diastolic blood pressure were reduced in middle-aged and elderly women who ate at least 25 grams of soy protein daily. Since supermarkets today are filled with numerous soyfoods, eating 25 grams of soy protein is easy. Start the day with soy cereal for breakfast (eight grams soy protein). Add BBQ soy chips for

lunch (seven grams soy protein). Grab a soy-protein-energy-bar for an afternoon snack (10 grams soy protein). Total soy protein equals 25 grams.

Menopause

While soy protein may or may not help reduce hot flashes for women going through menopause, soy protein has other proven benefits extending well into post-menopausal years. Research has found that consuming soy protein before, as well as after, menopause may help protect bones from becoming weak and brittle. And since post-menopausal women face an increased risk for osteoporosis, keeping bones healthy with soy protein-rich foods is critical.

In addition, soy protein may help reduce the risk of heart disease, another major concern after menopause.

Pregnancy & Omega-3's

The link between omega-3 fatty acids and a healthy heart is well established. But there's yet another reason – geared toward mothers and their daughters – for eating more omega-3's.

A newly released scientific study found that mothers who eat foods rich in omega-3 fatty acids during pregnancy (and while breastfeeding), may help to significantly reduce their daughters' risk of developing breast cancer later in life. In addition, this study found that including omega-3 rich foods throughout childhood and teenage years may continue to help provide protective benefits against breast cancer.

Fatty fish like tuna, salmon and mackerel are the highest source of omega-3 fatty acids, but walnuts, flaxseed and soybeans also contain these critical omega-3's.

Breast Cancer

Including soyfoods during a teenage girl's adolescence years may provide increased protective benefits and reduce the risk of

developing breast cancer later in life. Although there is a lack of evidence that consuming soy as an adult may reduce the risk of breast cancer, ongoing scientific research is showing that consuming soy protein as a teenager may help reduce breast cancer risk as an adult by nearly 50 percent. These impressive results were obtained by eating just 11 grams of soy protein daily. Eleven grams of soy protein is found in one serving of honey roasted soynuts or two servings of barbecued soy chips.

In addition to reducing risk of breast cancer, soy protein-rich foods may promote a healthy heart and strong bones.

Cancer & Soy Isoflavones

Medical research has determined that foods rich in fiber, low in fat and high in phytochemicals may help reduce your risk of developing certain cancers. Consuming soyfoods may prove beneficial when eating to reduce cancer risk because many soyfoods are not only high in fiber, they are low in total fat and high in soy protein and phytochemicals called isoflavones.

Isoflavones are naturally-occurring plant compounds that have been attributed in numerous medical and scientific studies to reducing risk of colon, breast and prostate cancer.

Prostate and Colon Cancer

Some of the same foods that can lower risk of heart disease, like soyfoods, may also reduce the risk of the second most common cancer in men. Medical research has shown that foods rich in soy protein may be protective against prostate cancer by helping to promote healthier prostate tissues. And although a specific level of soy protein hasn't been recommended yet for reducing prostate cancer risk, adding one soyfood every day could be beneficial. Plus soyfoods will provide heart-

healthy and bone-building benefits at the same time.

Colon Cancer

The latest medical research has found that several natural components of soy may help protect against colon cancer, which is the second leading cause of cancer death in the United States. The components of soy that may be helping prevent colon cancer are called isoflavones and saponins. Both are found in soyfoods such as soymilk, soynuts, and green and yellow soybeans.

Many soyfoods are not only good sources of these isoflavones and saponins, but they are high in fiber, and fiber-rich foods have also been associated with lower cancer risk.

Limiting high fat foods may also help reduce risk of developing colon cancer. Substituting soy veggie burgers or tofu for higher fat protein foods will help cut fat considerably.

Diabetes

Several benefits of soy protein exist for the management of diabetes and provide support for the importance of adding soyfoods to a diabetic diet.

First, many soyfoods have a lower glycemic index. Foods with a low glycemic index help keep blood sugar levels more stable, making diabetes much easier to control. Soyfoods like canned yellow soybeans and frozen green sweet soybeans have a lower glycemic index than other soyfoods.

Secondly, many soyfoods are high in dietary fiber, and fiber also helps stabilize blood sugar levels. Everyone – including people with diabetes – should aim for at least 25 grams of fiber daily. Roasted soynuts contain six grams of fiber and a soy veggie burger has four grams.

Plus, soyfoods can provide additional benefits for controlling one of the most prevalent complications of diabetes - heart disease.

Soybean Oil

Although this *Soyfoods Guide* contains information primarily about soy protein, another major component of the soybean, soybean oil, is the most widely used vegetable oil in the country. Liquid soybean oil is low in saturated fat and high in poly- and monounsaturated fats and is among the most healthful of all edible oils. It is also one of the few nonfish sources of omega-3 polyunsaturated fatty acids, which may be beneficial in helping to prevent cancer and heart disease.

Although liquid soybean oil is used in a number of products, including salad dressings, cooking oils, and some brands of margarine, other food applications require a more solid form of oil for increased stability and texture. Hydrogenation is the process of rearranging the chemical structure of a liquid oil to make it more solid, which also produces trans fatty acids. Hydrogenated vegetable oils became very popular in the '70s and '80s as a replacement for oils that are high in saturated fat, such as lard, tallow, and some tropical oils.

More recent research suggests that trans fatty acids may behave similarly to saturated fats in the body, and the Food and Drug Administration (FDA) decided to require food manufacturers to list trans fatty acid content on the Nutrition Facts panel on food labels effective January 2006. In the meantime, the soybean industry is working diligently on creating new varieties of soybeans that will produce a more healthful oil that does not require hydrogenation. Simultaneously, soybean processors are developing new oil-processing techniques that prevent the formation of trans 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, whereas saturated fats represent 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. The American Heart Association's Nutrition Committee suggests total fat intake be less than 30 percent of total calories. The best advice is to look for oils that are high in poly- and monounsaturated fat and relatively low in saturated fat, such as liquid soybean oil.

How Soy Fits Into the USDA's Food Pyramid



The Dietary Guidelines for Americans, 2005, gives science-based advice on food and physical activity choices for health. To see the full 80-page Dietary Guidelines report, go to www.healthierus.gov/dietaryguidelines/.

Soyfoods can be an important part of a healthy diet as proscribed by the new USDA food pyramid. Most soyfoods contain no cholesterol, little or no saturated fat, high quality protein, and dietary fiber. Many soyfoods also provide essential vitamins and minerals, such as B vitamins, vitamins A and D, calcium, iron, and potassium.

Soy protein may help to reduce the risk of heart disease by lowering cholesterol and increasing the flexibility of blood vessels. Soybeans also contain important bio-active components that have begun to show promise in relieving menopausal symptoms, maintaining healthy bones, and preventing cancer.



Grains

- Soy cereal
- Soy grits
- Soy waffles
- Soy pasta
- Soy bread
- Soy flour

Consuming at least three or more ounce-equivalents of whole grains per day can reduce the risk of several chronic diseases and may help with weight maintenance.

Soy flour is part of this group. Substitute up to one-fourth of the total flour in your favorite baked product recipe.

Vegetables

- Green soybeans (edamame)
- Canned soybeans
- Soynuts

One-half cup of green soybeans (edamame) contains 10 grams of soy protein.

All soybeans are a good source of dietary fiber and isoflavones.

Fruits

- No soy-based foods in this category.

Any fruit or 100% fruit juice counts as part of the fruit group. Fruits may be fresh, canned, frozen, or dried, and may be whole, cut-up, or pureed.

Oils

- Soybean oil (also called vegetable oil)

Soybean oil is rich in polyunsaturated fat and contains only minimal saturated fat. Fats, like soybean oil, are needed to regulate your body temperature.

Fats, like soybean oil, help transport fat-soluble vitamins throughout your body.

Soybean oil is a rich source of omega-three fatty acids.

Soybean oil, labeled "vegetable oil," is a good source of the antioxidant Vitamin E.

Milk

- Soy beverage
- Soy cheese
- Soy yogurt
- Soy ice cream

According to the new USDA food guidelines, protein choices for those who do not consume milk products include calcium-fortified soy beverages, soybeans, soy yogurt, soy cheese, and tempeh.

Soy ice cream products are a part of this group, but do not contain as much calcium or protein as the other soy products in this group.

Meat & Beans

- Soy burgers
- Soy hot dogs
- Soy nuggets
- Soy burger-type crumbles
- Tofu
- Soynuts
- Canned soybeans
- Green soybeans (edamame)
- Soy nut butter

According to the new USDA food guidelines, protein choices in this category include all of the above listed soyfoods.

Soybeans are a source of high-quality protein and include all eight of the essential amino acids.

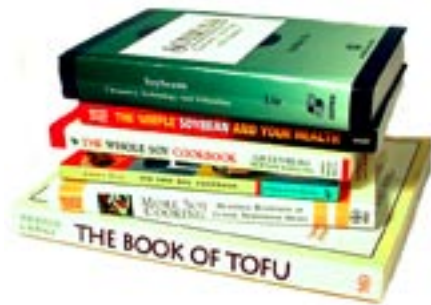
For more information about soyfoods, visit the web site www.soybean.org.

For more information about the USDA Dietary Guidelines Food Pyramid: www.mypyramid.gov

▼ SOYFOODS COMPOSITION

Soyfood	Calories	Protein (grams)	Fat (grams)	Carbohydrates (grams)	Fiber (grams)	Calcium (Mg)	Iron (Mg)	Zinc (Mg)	Thiamine (Mg)	Riboflavin (Mg)	Niacin (Mg)	Vitamin B (Mg)	Folate (Mg)	Sugar (grams)	Sodium (Mg)	Phosphorus (Mg)	Potassium (Mg)
Miso (2 tsp)	21	1.1	.61	2.8	.5	7	.27	.33	.01	.025	.086	.022	3	.47	365	15	16
*Soy Burgers (1 burger)	103	10	3	8.3	3.3	-	-	-	-	-	-	-	-	.7	243	-	-
*Soy Cheese, Cheddar, singles (1 slice)	40	4	3	0	0	-	-	-	-	-	-	-	-	0	185	-	-
*Soy Cheese, Mozzarella, singles (1 slice)	20	2	0	3	0	-	-	-	-	-	-	-	-	1	220	-	-
*Soy Chik Pattie (1 pattie)	150	9	6	15	2	-	-	-	-	-	-	-	-	1	570	-	-
*Soy Crumbles (2/3 cup)	70	9.6	.8	5.3	2	-	-	-	-	-	-	-	-	1	256	-	-
Soy Flour, Defatted (1 cup)	33	4.7	.12	3.84	1.8	24	.92	.25	.07	.025	.26	.057	305	-	2	67	238
Soy Flour, Full-fat, roasted (1 cup)	375	29.6	18.5	28.6	8.2	160	4.9	3.0	.35	.80	2.8	0	193	-	10	405	1735
Soy Flour, Low-fat (1 cup)	327	41	5.9	33.4	9	165	5.27	1.0	.33	.25	1.9	.46	361	-	16	522	2262
*Soy Hot Dog (1 dog)	62	11.3	1.5	2.6	3.3	-	-	-	-	-	-	-	-	.3	323	-	-
Soy Protein Concentrate (1 oz.)	94	16.5	.13	8.8	1.6	103	3.0	1.2	.09	.04	0.2	.04	96	-	1	238	624
Soy Protein Isolate (1 oz.)	96	22.8	1.0	2.0	1.6	50	4.1	1.1	.05	.03	0.4	.03	50	-	285	220	23
*Soy Protein, Textured (1/4 cup)	80	12	0	7	4	-	-	-	-	-	-	-	-	3	2	-	-
*Soy Sausage Pattie (1 pattie)	55	7.2	1.5	4.5	1.2	-	-	-	-	-	-	-	-	.8	235	-	-
*Soy Yogurt (8 oz.)	150	5	3.5	24	1	-	-	-	-	-	-	-	-	13	40	-	-
*Soybeans, Canned, Yellow (1/2 cup)	150	13	7	11	3	-	-	-	-	-	-	-	-	3	140	-	-
*Soybeans, Canned, Black (1/2 cup)	120	11	6	8	7	-	-	-	-	-	-	-	-	1	30	-	-
*Soybeans, Green in pod (1/2 cup)	100	8	3	8	1	-	-	-	-	-	-	-	-	1	10	-	-
*Soybeans, Green bean (2/3 cup)	105	9.5	4	10	8	-	-	-	-	-	-	-	-	2	3.5	-	-
*Soybeans, Roasted (1/4 cup)	136	10	6	8	5	-	-	-	-	-	-	-	-	1	24	-	-
Soymilk (1 cup)	120	9.19	5.1	11.3	3.2	10	1.4	.05	.39	.17	.36	0	5	-	29	120	345
*Soynut Butter (2 Tbs)	170	8	11.6	9.8	3	-	-	-	-	-	-	-	-	2.8	113	-	-
Tempeh (1 cup)	320	30.6	17.9	15.6	-	184	4.48	1.89	.129	.59	4.3	.357	40	-	15	442	684
Tofu, Firm, Water-packed (1/2 cup)	97	10	5.6	3.7	.5	204	1.8	1.27	.11	.13	.01	.07	42	.7	10	185	222
Tofu, Firm, Silken (1 slice)	52	5.8	2.3	2.0	.1	27	0.87	.51	.08	.03	.20	.0	-	1.0	30	76	163

Source unless specified: Nutrient Database Laboratory, USDA Food Composition Data, USDA. Web Site: www.nal.usda.gov/fnic/cgi-bin/nut_search.pl
 * Information taken from commercial product nutrition facts label on package. Saturated fat is not listed because most soy-based products have insignificant amounts of saturated fat. (-) Information not available on nutrition label or USDA database.



Books

- *Soybeans, Chemistry, Technology, and Utilization*, by KeShun Liu
- *The Simple Soybean and Your Health*, by Mark Messina and Virginia Messina
- *Textured Vegetable Protein in the American Kitchen*, by Illinois Center for Soy Foods, Barbara Klein, Editor
- *Tofu in the American Kitchen*, by Illinois Center for Soy Foods, Barbara Klein, Editor
- *The Book of Tofu*, by William Shurtleff
- *The Soy Zone*, by Barry Sears Ph.D.

Web Sites

- www.soybean.org
- United Soybean Board - www.talksoy.com
- Stratsoy (University of Illinois) - www.stratsoy.uiuc.edu/expert/askhealth.html
- Soyfoods Association of North America - www.soyfoods.org
- U.S. Soyfoods Directory - www.soyfoods.com
- Illinois Center for Soy Foods - www.soyfoodsillinois.uiuc.edu
- Soy Isoflavone Database - <http://www.nal.usda.gov/fnic/foodcomp/Data/isoflav/isoflav.html>
- Illinois Soybean Board - www.ilsoy.org
- Iowa Soyfoods Council - www.iasoybeans.com
- Michigan Soybean Promotion Committee - www.michigansoybean.org
- Missouri Soybean Council - www.mosoy.org
- Nebraska Soybean Board - www.soycooking.com
- North Dakota Soybean Council - www.ndsoybean.org
- Ohio Soybean Council - www.soyohio.org

Soy Newsletters

- Soy Connection newsletter on soy health/nutrition - www.talksoy.com/

Soy Research, Health

- Soy/Health Fact Sheets: www.talksoy.com/Health/HealthFactsSheets.htm
- International Symposium on the Role of Soy in Preventing and Treating Chronic Disease: www.talksoy.com/Media/ChronDiseaseSym.htm

Soyfood Protein & Isoflavone Content

Soyfood	Serving Size	Total grams soy protein/serving	Total milligrams (mg) isoflavone/serving
Miso	1 Tablespoon	2	7
Soybeans, Green, Cooked	1/2 cup	11	50
Soybeans, Black, Cooked	1/2 cup	9	40
Soybeans, Yellow, Cooked	1/2 cup	14	78
Soybeans, Roasted, Plain	1/4 cup	15	78
Soymilk, Plain, Unfortified	1 cup	7	10
Soymilk, Plain, Fortified	1 cup	10	43
Soy Flour, Defatted	1/4 cup	12	42
Soy Flour, Full-Fat	1/4 cup	8	33
Soy Flour, Low-Fat	1/4 cup	11	50
Soy Crumbles, Meat Alternative	1/2 cup	11	9
Soy Protein Isolate Powder, Plain	1/3 cup	23	53
Textured Soy Protein, Dry	1/4 cup	11	33
Tempeh	1/2 cup	16	53
Tofu	1/2 cup	10	25

Source: Soyfoods Association of America, *Soyfood Facts*, www.soyfoods.org
 Soy protein and isoflavone levels may vary with products based on manufacturing process and the source of soy protein. Additional information on soyfood isoflavone content can be found at: *Soy Isoflavone Database* - www.nal.usda.gov/fnic/foodcomp/Data/isoflav/isoflav.html

How Does Your Garden Grow?

Want to try growing your own soybeans in the garden? Edamame, large soybeans that are harvested when the beans are still green and sweet tasting are easy to grow in your garden. They like full sun and are adaptable to most soil types. They are ready to harvest in 65 to 90 days, and planting seeds every week or so will let you fresh soybeans throughout the summer. Edamame is best—from both a flavor and nutrition standpoint—if eaten soon after picking. Edamame is a delicious, healthy snack. Because it is something you can eat with your fingers and its flavor has a light sweetness blended with a nutty taste, edamame appeals to children and adults alike. Boil the freshly picked pods for about ten minutes in salted water. Drain the pods and serve them heaped in an attractive bowl. They are equally delectable as finger food whether served slightly warm from cooking, at room temperature, or lightly chilled. Hold the pod and gently push the beans out of the pod, pop them into your mouth, and enjoy their sweet, nutty flavor. For more information about how to grow soybeans in your garden and a list of edamame varieties, visit the National Garden Bureau’s Web site at: www.ngb.org.

25-Grams-a-Day Meal Planner

Day 1 - 25 grams soy protein

Breakfast: Hi-Protein Smoothie (see page 2 for recipe) = 25 g soy protein

Day 2 - 32 grams soy protein

Lunch: 1 cup vanilla soymilk over cereal = 7 g soy protein

Dinner: 1 soy burger = 10 g soy protein

Snack: 1/4 cup soynuts = 15 g soy protein

Day 3 - 29 grams soy protein

Breakfast: 2 soy breakfast links = 6.5 g soy protein

Lunch: soy protein bar = 14 g soy protein

Dinner: 3 oz. water-packed tofu chunks in stir fry = 8.5 g soy protein

Day 4 - 25 grams soy protein

Breakfast: 8 oz. glass of plain soymilk, bowl of soy cereal = 21 g soy protein

Dinner: 1 Soy Soft Taco = 4 g soy protein (see page 18 for recipe)

Day 5 - 25.6 grams soy protein

Breakfast: 2 tablespoons soynut butter on bagel = 8 g soy protein

Lunch: 1 serving Mediterranean Soup = 8.6 g soy protein (see page 17 for recipe)

Dinner: 1 serving Beef, Tofu, Green Soybean Stir Fry = 9 g soy protein (see page 18 for recipe)

Day 6 - 27 grams soy protein

Breakfast: 1 cup Mocha Soy Cappuccino = 19 g soy protein (see page 15 for recipe)

Lunch: Chicken Salad = 8 g soy protein (see page 16 for recipe)

Day 7 - 27 grams soy protein

Breakfast: 1 cup soymilk, 1 slice Tofu Quiche = 12 g soy protein (see page 14 for recipe)

Lunch: 1 cup Creamy Tomato Soup = 10 g soy protein (see page 17 for recipe)

1 bushel of soybeans = 60 pounds

(79% soybean meal, 18% soybean oil, 3% waste)

1 bushel of soybeans can be processed into:

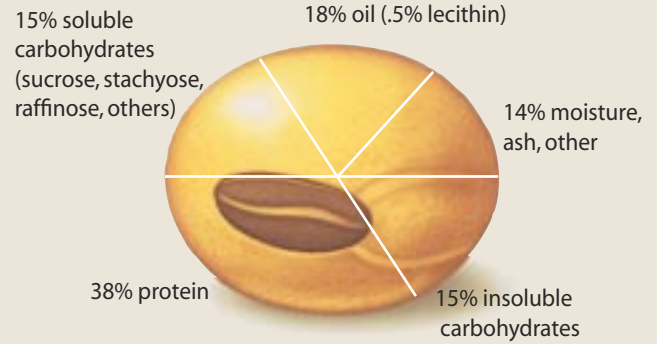
10.7 pounds crude soybean oil

47.5 pounds soybean meal

39 pounds soy flour

20 pounds soy protein concentrate

11.8 pounds isolated soy protein



What's In A Soybean?

As a versatile source of food, the soybean is hard to beat. The soybean is one of a large family of plants called legumes. Although they can be eaten whole after being boiled or roasted, most soybeans are transformed into a great variety of foods, from ice cream to burgers, from milk to nuts.

In addition, a great many foods already found in your kitchen cupboard contain soyfoods, such as soybean oil (often called vegetable oil), lecithin, soy protein concentrate, textured soy protein, and many more. The soyfood descriptions listed here represent the most common soyfoods produced in the United States.

Protein

Soy protein is a complete protein. Soy protein is the only plant protein that is equivalent to animal protein. Soyfoods contain all nine essential amino acids. The USDA evaluates protein quality using the Protein Digestibility Corrected Amino Acids Score (PDCAAS). PDCAAS measures the amino acid pattern of proteins and factors in digestibility. Soy protein has a PDCAAS score of 1.0, equivalent to animal protein.

Fat

Soybean oil is low in saturated fat, rich in the essential fatty acids, and is an excellent source of vitamin E. Like all plant fats, soybean oil has no cholesterol. Soybeans are the world's leading source of edible oil.

The soybean is low in saturated fat, with a content of about 15%; and high in unsaturated fat, with 61% polyunsaturated and 24% monounsaturated fat. Soybean oil is a good source of both linoleic and linolenic acids, which are essential for humans. More than 50% of the fat in soy is linoleic acid, while about 7% of the total fat is linolenic. When soybean oil is hydrogenated, the percentages of these polyunsaturated fats decrease.

Soy Ingredients



Soy Flour (50% protein)

Soy flour is made from roasted soybeans ground into a fine powder. All soy flour gives a protein boost to recipes. Soy flour is 50 percent protein. However, defatted soy flour is an even more concentrated source of protein than is full-fat soy flour. Soy flour is gluten-free, so yeast-raised breads made with soy flour are more dense in texture. There are three kinds of soy flour available: Natural or full-fat, which contains the natural oils found in the soybean; defatted, which has the oils removed during processing; and lecithinated, which has had lecithin added to it.

Hydrolyzed Vegetable Protein (HVP)

Hydrolyzed vegetable protein (HVP) is a protein obtained from any vegetable, including soybeans. HVP is a flavor enhancer that can be used in soups, broths, sauces, gravies, flavoring and spice blends, canned and frozen vegetables, meats, and poultry.

Lecithin

Extracted from soybean oil, lecithin is used in food manufacturing as an emulsifier in products high in fats and oils. It also promotes stabilization, antioxidation, crystallization, and spattering control.



Soy Protein, Textured (Flour or Concentrate)

Textured soy protein usually refers to products made from textured soy flour and textured soy protein concentrates. Textured soy flour is made by running defatted soy flour through an extrusion cooker, which allows for many different forms and sizes. It contains 50 percent protein as well as the dietary fiber and soluble carbohydrates from the soybean. When hydrated, it has a chewy texture. It is widely used as a meat extender. Often referred to simply as textured soy protein, textured soy flour is sold dried in granular and chunk style and is bland in flavor. Textured soy protein concentrates are made by extrusion and are found in many different forms and sizes. Textured soy protein concentrates contain 70 percent protein as well as the dietary fiber from the soybean. When hydrated, they have a chewy texture and contribute to the texture of meat products.

Soy Grits

Soy grits are similar to soy flour except that the soybeans have been toasted and cracked into coarse pieces rather than the fine powder of soy flour. Soy grits can be used as a substitute for flour in some recipes. High in protein, soy grits can be added to rice and other grains and cooked together.



Soy Protein Isolate (Isolated Soy Protein) (90% protein)

When protein is removed from defatted flakes, the result is soy protein isolate, the most highly refined soy protein. Containing 90 percent protein, soy protein isolates possess the greatest amount of protein of all soy products. They are a highly digestible source of amino acids (building blocks of protein necessary for human growth and maintenance). Isolates are bland in flavor.

Soy Protein Concentrate (70% protein)

Soy protein concentrate comes from defatted soy flakes. It contains 70 percent protein while retaining most of the bean's dietary fiber. It is a highly digestible source of amino acids and is bland in flavor.

Soy Fiber (Okara, Soy Bran, Soy Isolate Fiber)

There are three basic types of soy fiber: okara, soy bran, and soy isolate fiber. All of these products are high-quality, inexpensive sources of dietary fiber. Soy bran is made from hulls (the outer covering of the soybean), which are removed during initial processing. The hulls contain a fibrous material that can be extracted and then refined for use as a food ingredient. Soy isolate fiber, also known as structured protein fiber (SPF), is soy protein isolate in a fibrous form.



Soybean Oil & Products

Soybean oil, also referred to as soyoil, is the natural oil extracted from whole soybeans. It is the most widely used oil in the United States, accounting for more than 75 percent of our total vegetable fats and oils intake. Oil sold in the grocery store under the generic name "vegetable oil" is usually 100 percent soybean oil or a blend of soybean oil and other oils. Read the label to make certain you're buying soybean oil. Soybean oil is cholesterol free and high in polyunsaturated fat. Soybean oil also is used to make margarine and shortening.

Traditional Soyfoods



Green Vegetable Soybeans (Edamame)

These large soybeans are harvested when the beans are still green and sweet tasting and can be served as a snack or a main vegetable dish after boiling in slightly salted water for 15-20 minutes. They are high in protein and fiber and contain no cholesterol. Green soybeans are sold frozen in the pod and shelled.

Natto

Natto is made of fermented, cooked whole soybeans. Because the fermentation process breaks down the beans' complex proteins, natto is more easily digested than whole soybeans. It has a sticky, viscous coating with a cheesy texture. In Asian countries natto traditionally is served as a topping for rice, in miso soups, and is used with vegetables. Natto can be found in Asian and natural food stores.

Okara

Okara is a pulp fiber by-product of soymilk. It has less protein than whole soybeans, but the protein remaining is of high quality. Okara tastes similar to coconut and can be baked or added as fiber to granola and cookies. Okara also has been made into sausage.



Miso

Miso is a rich, salty condiment that characterizes the essence of Japanese cooking. The Japanese make miso soup and use it to flavor a variety of foods. A smooth paste, miso is made from soybeans and a grain such as rice, plus salt and a mold culture, and then aged in cedar vats for one to three years. Miso should be refrigerated. Use miso to flavor soups, sauces, dressings, marinades, and pâtés.

Soybeans

As soybeans mature in the pod, they ripen into a hard, dry bean. Although most soybeans are yellow, there are also brown and black varieties. Whole soybeans (an excellent source of protein and dietary fiber) can be cooked and used in sauces, stews, and soups. Whole soybeans that have been soaked can be roasted for snacks. Dry whole soybeans should be cooked before eaten.

Soynuts

Roasted soynuts are whole soybeans that have been soaked in water and then baked until browned. Soynuts can be found in a variety of flavors, including chocolate covered. High in protein and isoflavones, soynuts are similar in texture and flavor to peanuts.



Soymilk

Soybeans soaked, ground fine, and strained produce a fluid called soybean milk. Plain, unfortified soymilk is an excellent source of high-quality protein and B vitamins. Soymilk is most commonly found in aseptic containers (nonrefrigerated, shelf stable), but also can be found in quart and half-gallon containers in the dairy case at the supermarket. Soymilk is also sold as a powder that must be mixed with water.

Soy Sauce (Tamari, Shoyu, Teriyaki)

Soy sauce is a dark-brown liquid made from soybeans that has undergone a fermenting process. Soy sauces have a salty taste, but are lower in sodium than traditional table salt. Specific types of soy sauce are shoyu, tamari, and teriyaki. Shoyu is a blend of soybeans and wheat. Tamari is made only from soybeans and is a by-product of making miso. Teriyaki sauce can be thicker than other types of soy sauce and includes other ingredients such as sugar, vinegar, and spices.

Soy Sprouts

Although not as popular as mung bean sprouts or alfalfa sprouts, soy sprouts (also called soybean sprouts) are an excellent source of nutrition, packed with protein and vitamin C.



Tofu & Tofu Products

Tofu, also known as soybean curd, is a soft, cheese-like food made by curdling fresh, hot soymilk with a coagulant. Tofu is a bland product that easily absorbs the flavors of other ingredients with which it is cooked. Tofu is rich in both high-quality protein and B vitamins and is low in sodium. Firm tofu is dense and solid and can be cubed and served in soups, stir fried, or grilled. Firm tofu is higher in protein, fat, and calcium than other forms of tofu. Soft tofu is good for recipes that call for blended tofu. Silken tofu is a creamy product and can be used as a replacement for sour cream in many dip recipes.

Tempeh

Tempeh, a traditional Indonesian food, is a chunky, tender soybean cake. Whole soybeans, sometimes mixed with another grain such as rice or millet, are fermented into a rich cake of soybeans with a smoky or nutty flavor. Tempeh can be marinated and grilled and added to soups, casseroles, or chili.

Yuba

Yuba is made by lifting and drying the thin layer formed on the surface of cooling hot soymilk. It has a high-protein content and is commonly sold fresh, half-dried, and as dried bean curd sheets. Found in Asian food stores.

Soy-Based Products



Soy Protein Products (Meat Analogs)

Protein products made from soybeans contain soy protein or tofu and other ingredients mixed together to make a protein product. These protein products are sold as frozen, canned, or dried foods. Usually, they can be used the same way as the foods they replace. With so many different protein products available to consumers, the nutritional value of these foods varies considerably. Generally, they are lower in fat, but read the label to be certain. Protein products made from soybeans are excellent sources of protein, iron, and B vitamins.

Soy Beverages

Soy beverages can be made with soymilk or isolated soy protein. Flavorings or fruit juices may be added. They can be purchased ready to drink or in a dry-powder form to which liquid is added.



Soy Cheese

Soy cheese is made from soymilk. Its creamy texture makes it an easy substitute for most cheeses, sour cream, or cream cheese and can be found in a variety of flavors. Products made with soy cheese include soy pizza.

Whipped Toppings, Soy-Based

Soy-based whipped toppings are similar to other nondairy whipped toppings, except that hydrogenated soybean oil is used instead of other vegetable oils.

Infant Formulas, Soy-Based

Soy-based infant formulas are similar to other infant formulas except that a soy protein isolate powder is used as a base. Carbohydrates and fats are added to achieve a fluid similar to breast milk. The American Academy of Pediatrics says that for term infants whose nutritional needs are not being met from maternal breast milk or cow milk-based formulas, isolated soy protein-based formulas are safe and effective alternatives to provide appropriate nutrition for normal growth and development.



Soynut Butter

Made from roasted, whole soynuts, which are then crushed and blended with soybean oil and other ingredients, soynut butter has a slightly nutty taste, significantly less fat than peanut butter, and provides many other nutritional benefits as well.

Soy Yogurt

Soy yogurt is made from soymilk. Its creamy texture makes it an easy substitute for sour cream or cream cheese. Soy yogurt can be found in a variety of flavors in natural food stores.



Nondairy Soy Frozen Desserts

Nondairy frozen desserts are made from soymilk or soy yogurt. Soy ice cream is one of the most popular desserts made from soybeans.



Strawberry Smoothie

- 1/2 cup frozen strawberries, thawed, including juice
- 2 Tbs powdered soy protein isolate
- 2 Tbs water
- 1/2 cup crushed ice

Thoroughly mix thawed strawberries, soy protein isolate and water in blender. Add crushed ice and blend until smooth. Serve in a 12-ounce glass.

Yield: 1 serving. Per serving: 62 calories, 0.4 g fat (0 g saturated fat), 0 mg cholesterol, 113 mg sodium, 7 g carbohydrate, 25 g protein (23 g soy protein), 1.2 g dietary fiber.

Chocolate Junkie

- 1 medium banana
- 2 scoops chocolate soy ice cream
- 1 cup chocolate soymilk
- 2 scoops chocolate-flavored soy protein powder
- 1 box (10.5 oz.) soft silken tofu

Mix all ingredients in a blender until thoroughly smooth. Serve immediately or refrigerate. Shake well before serving.

Yield: 4 cups. Per cup: 267 calories, 11 g fat (1.7 g sat fat), 0 mg cholesterol, 95 mg sodium, 25 g carbohydrate, 12 g protein (11 g soy protein), 4 g dietary fiber.

Cranberry & Raspberry

- 2 cups vanilla soymilk
- 1/2 cup frozen cranberry juice concentrate (undiluted)
- 3/4 cup frozen raspberries

Mix all ingredients in a blender until thoroughly smooth. Serve immediately or refrigerate. Shake well before serving.

Yield: 3 1/4 cups. Per cup: 310 calories, 5 g fat (0 g sat fat), 0 mg cholesterol, 122 mg sodium, 60 g carbohydrate, 6.5 g protein (6 g soy protein), 2 g dietary fiber.

Soynut & Banana

- 2 large bananas
- 2 cups chocolate soymilk
- 1/4 cup soynut butter
- 4 scoops soy protein powder mix

Mix all ingredients in a blender until thoroughly smooth. Serve immediately or refrigerate. Shake well before serving.

Yield: 4 cups. Per cup: 280 calories, 8.5 g fat (1 g sat fat), 0 mg cholesterol, 254 mg sodium, 36 g carbohydrate, 16 g protein (6 g soy protein), 1.5 g dietary fiber.

Strawberry Daiquiri

- 1 cup vanilla soymilk
- 1 can (10 oz.) frozen strawberry daiquiri mix
- 1 box (10 oz.) frozen strawberries
- 1/2 cup silken tofu (soft or firm)

Mix all ingredients in a blender until thoroughly smooth. Serve immediately or refrigerate. Shake well before serving.

Yield: 4 cups. Per cup: 122 calories, 2.5 g fat (.1 g sat fat), 0 mg cholesterol, 92 mg sodium, 24 g carbohydrate, 4 g protein (2 g soy protein), 2 g dietary fiber.

Mandarin Orange

- 1 cup vanilla soymilk
- 1 can (15 oz.) mandarin oranges, well drained
- 1/2 can (12 oz.) frozen orange juice concentrate, undiluted

Mix all ingredients in a blender until thoroughly combined. Serve immediately or refrigerate. Shake well before serving.

Yield: 4 cups. Per cup: 185 calories, 1.5 g fat (0 g sat fat), 0 mg cholesterol, 18 mg sodium, 41 g carbohydrate, 3.2 g protein (1.6 g soy protein), 1.3 g dietary fiber.

Soymilk

Soymilk is the rich, creamy milk of whole soybeans. It is lactose-free and casein-free. Soymilk is available in regular and low-fat varieties, and some brands are fortified with calcium, vitamin D, and/or vitamin B-12. Soymilk comes in plain, vanilla, chocolate, and strawberry flavors. The color of plain soymilk varies from tan to white. Note that soymilk is not the same as soy infant formula.

Storing Soymilk

Soymilk is found in aseptic (non-refrigerated) containers, and in refrigerated plastic or cardboard quart and half-gallon containers. Unopened, aseptically packaged soymilk can be stored at room temperature for several months. Once it is opened, soymilk must be refrigerated. It will stay fresh for about five days. Soymilk also is sold as a powder, which must be mixed with water. Soymilk powder should be stored in the refrigerator or freezer.

Cooking Basics

Soymilk may be consumed as a beverage or substituted for dairy milk in most recipes. Culinary chefs prefer cooking with whole soymilk versus “non-fat” or “light” forms to provide firmer consistency in cooked dishes such as puddings and custards.

Soymilk Tips

- Soymilk can be used in almost any way that cow’s milk is used.
- Use soymilk to make cream sauces that are cholesterol-free and low in saturated fat.
- Make rich pancake and waffle mixes.
- Create your own delicious shakes with soymilk, soy ice cream or tofu, soy yogurt, and fruit.
- Use soymilk to make cream soups.
- Try soymilk instead of evaporated milk to produce lower-fat custards and pumpkin pies.
- Mix 1 teaspoon of your favorite powdered fruit drink mix with 1 cup of soymilk for a refreshing drink.

Protein Power Tip:

- For more soy protein punch:
- Add a box of silken soft tofu in blender to smoothie recipes.
 - Add isolate soy protein powder to favorite smoothie recipe.

Soy Flour

Soy flour is made from roasted soybeans that have been ground into a fine powder. Two kinds of soy flour are available. Full-fat soy flour contains the natural oils that are found in the soybean. Defatted soy flour has the oils removed during processing. Both kinds of soy flour will give a protein boost to recipes; however, defatted soy flour is even more concentrated in protein than full-fat soy flour.

Storing

Full-fat soy flour should be stored in the refrigerator or freezer to preserve its freshness. Defatted soy flour may be stored on the shelf.

Cooking Basics

Soy flour tends to pack down in a container, so always stir or sift it before measuring. Baked products containing soy flour tend to brown more quickly, so you may want to lower oven temperatures slightly.

Substituting Soy Flour

Since soy flour is free of gluten, which gives structure to yeast-raised breads, soy flour cannot replace all of the wheat or rye flour in a bread recipe. However, using about 15 percent soy flour in a recipe produces a dense bread with a nutty flavor and a wonderful moist quality.

Just place two tablespoons of soy flour in your measuring cup for every cup of wheat flour before measuring all-purpose or other flour called for in the recipe.

In baked products, such as quick breads, that are not yeast-raised, up to 1/4 of the total amount of flour called for in the recipe can be replaced with soy flour. For each cup of flour called for, use 1/4 cup soy flour and 3/4 cup wheat flour (all-purpose or whole wheat).

Soy Flour Tips

- In your own kitchen, use soy flour to thicken gravies and cream sauces, to make homemade soy milk, or to be added to a variety of baked foods.
- Premix a batch of 1 part soy flour and 3 parts wheat flour so that it is ready to use when you bake.

Blueberry Muffins

- 1 cup soy flour (or soy protein isolate)
- 3 cups all-purpose flour
- 1 Tbs, 2 tsp baking powder
- 1/2 tsp baking soda
- 1 tsp salt
- 1 tsp cream of tartar
- 2/3 cup granulated sugar
- 2/3 cup vegetable shortening
- 2 Tbs, 2 tsp powdered sugar
- 1-1/2 cups blueberries, fresh or frozen (do not thaw)
- 8 egg whites
- 2 cups orange juice

Preheat oven to 400°F. Spray muffin pans with non-stick aerosol cooking spray.

In a large bowl, combine flours, baking powder, baking soda, salt, cream of tartar, and sugar. Stir until well blended. With a pastry blender, cut in shortening until evenly distributed.

Rinse and drain fresh blueberries, pat to dry. Toss with powdered sugar and set aside. If using frozen blueberries, do not rinse. In a small bowl, beat egg whites and orange juice until blended. Add liquid to dry ingredients, stirring only until moistened.

Fold in blueberries.

Spoon batter, 1/4 to 1/3 cup per muffin, into prepared pans. Bake at 400°F for 20 to 25 minutes. Turn out of pan immediately. Cool right side up on wire rack.

Yield: 3 dozen muffins . Per muffin: 107 calories, 4.1 g fat (1.2 g sat fat), 0 g cholesterol, 155.3 mg sodium, 14.6 g carbohydrate, 2.8 g protein (1.3 g soy protein), 1 g dietary fiber

Tofu Quiche

- 1 Ready-to-use 9" deep-dish pie crust
- 1 pkg (12.3 oz.) tofu, extra firm, silken style
- 2 eggs
- 1/3 cup soy milk, plain
- 1/2 tsp oregano, crushed
- 1/4 tsp garlic, minced
- 1/2 cup onion, chopped
- 2 tsp bacon flavored bits (Bac-Os)
- 1/4 tsp salt
- 1 Tbs soy flour



Preheat oven to 400°F. Place pie crust in middle of oven and bake for 10 minutes. Remove from oven. Reduce oven to 350°F.

While the pie crust is baking, combine the rest of the ingredients in a bowl and blend well.

Pour mixture into baked pie crust. Bake in oven at 350°F for 35-40 minutes. Let stand for 10 minutes. Serves 6.

Yield: 8 slices. Per slice: 154 calories, 8.9 g fat (1.9 g sat fat), 46 mg cholesterol, 256 mg sodium, 12.7 g carbohydrate, 6.5 g protein (5.2 g soy protein), 1 g dietary fiber.

Apple Cinnamon Bread

- (Bread Machine)
- 3 cups bread flour
 - 1/3 cup soy flour
 - 3 Tbs sugar
 - 1 1/2 tsp cinnamon
 - 1 1/2 tsp salt
 - 1 1/2 Tbs margarine
 - 2/3 cup oatmeal
 - 1 cup chopped apple, skin left on
 - 3/4 cup vanilla soy milk
 - 1/2 cup apple juice
 - 2 tsp yeast

Add ingredients to bread machine according to manufacturer's directions.

Yield: 16 slices/loaf. Per slice: 152 calories, 2 g fat (0.3 g sat fat), 0 mg cholesterol, 254 mg sodium, 28 g carbohydrate, 5 g protein (1 g soy protein), .75 g dietary fiber.

Soy Granola

- 3 cups uncooked quick-cooking oats
- 1 cup sliced unblanched almonds
- 3 Tbs margarine
- 1 cup honey
- 1/2 cup vanilla flavored soy protein powder mix
- 1 tsp cinnamon
- 3 cups soy cereal flakes or whole-grain cereal
- 1/2 cup dried golden raisins
- 1/2 cup dried cranberries or cherries
- 1/2 cup dried banana chips or pitted dates
- 1/2 cup roasted soy nuts

Preheat oven to 325°F. Spread oats and almonds in single layer in 13x9-inch baking pan. Bake

30 minutes until lightly toasted, stirring frequently with wooden spoon.

Remove pan from oven and set aside. Melt butter. Combine honey, butter, soy protein powder, and cinnamon in large bowl and blend well. Add oat/almond mixture and toss until completely coated.

Spread mixture in single layer in baking pan. Bake 20 minutes or until golden brown. Cool completely. Break mixture into chunks. Add oat chunks to cereal and dried fruits. Store in airtight container at room temperature for up to 2 weeks.

Yield: 12 cups. Per 1 cup: 363 calories, 12 g fat (2.4 g sat fat), 0 mg cholesterol, 125 mg sodium, 59 g carbohydrate, 11 g protein (7 g soy protein), 6.4 g dietary fiber.

Cherry Almond Muffins

- 1 cup sugar
- 1/2 cup margarine
- 3 eggs
- 1 1/4 cup all-purpose flour
- 1/2 cup soy flour
- 1 tsp baking powder
- 1 tsp baking soda
- 1/4 tsp salt
- 1 Tbs plus 1 tsp almond extract
- 3/4 cup vanilla soymilk
- 3/4 cup (3.5 ounce bag) dried cherries

Preheat oven to 375°F. Cream sugar and margarine in a large bowl until light and fluffy. Add eggs and beat well. In a separate bowl, whisk together flours, baking powder, baking soda and salt. Add to creamed mixture alternately with almond extract and soymilk. Stir until combined. Fold in dried cherries.

Pour batter into greased or paper-lined muffin pan. Bake 20 - 25 minutes or until toothpick inserted in middle comes out clean.

Yield: 12 muffins. Per muffin: 140 calories, 2.5 g fat (.5 g sat fat), 45 mg cholesterol, 199 mg sodium, 25.5 g carbohydrate, 4.5 g protein (2 g soy protein), .9 g dietary fiber.

Mouthwatering Apple Cinnamon Pancakes

- 1 cup buttermilk pancake mix
- 3/4 cup* vanilla soymilk
- 1/2 teaspoon cinnamon, ground
- 1/3 cup apples**, peeled and diced

Mix pancake mix, soymilk and cinnamon together until blended. Stir in apples. Cook as directed on pancake mix package. Makes 8 to 9, 4-inch pancakes.

*The amount of liquid may vary with pancake mix. Use the same amount of soymilk as the liquid amount stated in the package directions.

**May substitute 1/3 cup apple pie filling for the apples.

Yield: 9 pancakes. Per pancake: 170 calories, 2 g fat (0 g sat fat), 0 mg cholesterol, 830 mg sodium, 36 g carbohydrate, 4 g protein (1.72 g soy protein), 0 g dietary fiber.

Mocha Soy Cappuccino

- 1 cup very hot water
- 1 scoop chocolate soy protein powder mix
- 5 tsp cappuccino powder mix

Combine ingredients in a large mug and stir until dissolved.

Yield: 1 cup. Per cup: 130 calories, 2 g fat (1.7 g sat fat), 8 mg cholesterol, 246 mg sodium, 8 g carbohydrate, 20 g protein (19 g soy protein), .4 g dietary fiber.

Soy Breakfast Sandwich

- 1 soy breakfast sausage-style pattie
- 1 biscuit
- 1 (1 oz.) slice soy cheddar cheese

Heat breakfast pattie in microwave. Slice biscuit and place cheese and breakfast pattie between biscuit.

Yield: 1 sandwich. Per sandwich: 200 calories, 9 g fat (2 g sat fat), 1.8 mg cholesterol, 678 mg sodium, 15 g carbohydrate, 14 g protein (8 g soy protein), 2.5 g dietary fiber.

Corn & Soy Muffins

- 1-1/2 cup all purpose flour
- 1/2 cup yellow cornmeal
- 1/4 cup soy flour
- 1/4 cup sugar
- 1 Tbs baking powder
- 1/2 tsp salt
- 1 cup light soymilk
- 2 eggs
- 1/4 cup soybean oil

Mix flour, cornmeal, soy flour, sugar, baking powder and salt. Combine soymilk, eggs and oil; add to dry ingredients and mix only enough to moisten. Fill oiled muffin tins.

Bake at 400°F for 15 minutes.

Yield: 12 muffins. Per muffin: 162.4 calories, 6.2 g fat (1 g sat fat), 35.4 mg cholesterol, 237.9 mg sodium, 22.8 carbohydrates, 4.2 g protein (.6 g soy protein), 1.0 g dietary fiber.



Soy Protein Powder

If you want to get the most soy protein per serving in your meals, then try adding some soy protein isolate powder in your favorite recipes.

Soy protein isolate is a dry powder food ingredient that is made from defatted soy flakes. Containing 90 percent protein, soy protein isolates possess the greatest amount of protein and all the essential amino acids of all soy products.

Soy protein isolate powder is sold in canisters in health food sections of stores. It's often labeled as "soy protein powder drink mix."

Storing

Kept sealed and dry, it is shelf-stable for many months. Look for use-by dates on the container.

Recipe Ideas

- Read the nutrition label of your soy protein powder for the protein level/serving.
- Add a serving of plain soy protein isolate to your favorite soup. Remove a small amount of hot soup and blend it with the isolate powder. Add the mixture to the soup.
- Whisk a serving of plain soy protein isolate powder into cooked Marinara sauce or your favorite sauces.
- Mix a serving of flavored soy protein shake powder with cold juice, milk, or soymilk.
- Mix a serving of soy protein powder into your favorite hot cereal.
- Try mixing soy protein powder to your favorite salad dressings for extra protein kick.

Protein Power Drinks

Most of the soy protein powder drinks on the market are made with soy protein isolate.

Soy protein powders come in plain, vanilla, chocolate, and strawberry flavors.

Many brands are sold in canisters with expirations dates stamped on the bottom. Several brands are fortified with calcium.

Soy Protein Products

Soy protein products (also called meat analogs) are foods made from soy protein and other ingredients mixed together. Food scientists know how to make these products taste quite good.

Where to Find

Look for soy protein products in grocery stores in the following locations:

- Refrigerated case
- Freezer case
- Dry, prepared foods

Storing

Frozen or refrigerated soy protein products should be stored accordingly at home. Others come in dry-mix boxes and may be stored on the shelf.

Cooking Basics

Follow package directions. Soy protein products can be included in many of your favorite recipes.

Recipe Tips

- Soy protein products can usually be used the same way as many of the traditional foods you use.
- Using soy protein products in highly seasoned dishes, such as tacos, minimizes the flavor difference between them and other protein products.
- Use a package of soy crumbles for when preparing your favorite spaghetti, sloppy joe, chili, stroganoff, or hamburger casserole recipes.

Italian Pasta Salad

Great for cookouts, lunches, and potlucks. If you're serving a crowd, the recipe doubles easily.

- 8 oz. corkscrew pasta
- 1 cup frozen shelled edamame
- 1 cup broccoli florets
- 1 small zucchini, sliced in thin quarter rounds
- 1/2 red bell pepper, diced
- 1/2 cup shredded carrot
- 1/4 red onion, cut in thin, quarter-round slices
- 1/2 cup prepared Italian salad dressing
- 1 cup grape tomatoes or halved cherry tomatoes

Bring water to boil as called for on pasta package. Add pasta and cook. About 3 to 5 minutes before the pasta is done, add the edamame. Cook until the pasta is done. Add the broccoli florets, then immediately drain the pot and rinse the pasta with the edamame and broccoli. Transfer to a large serving bowl.

Toss in the zucchini, red bell pepper, shredded carrot, and sliced red onion. Pour the dressing over and mix well. Cover and refrigerate until ready to serve.

Just before serving, mix in the tomatoes.

Yield: 9 cups. Per serving (1 cup): 189 calories, 7 g fat (1.0 g sat fat), 0 mg cholesterol, 16.6 mg sodium, 24 g carbohydrates, 7 g protein (2.5 g soy protein), 2.6 g dietary fiber. Reprinted from Soy for the Last Minute Chef with permission from the Illinois Center for Soy Foods

Chicken Salad

- 2 cups chicken broth
- 2 cups textured soy protein (granulated or chunks pounded into smaller pieces) or use soy chicken veggie strips, diced
- 1/4 cup onion, chopped
- 1/4 cup celery, chopped
- 2 Tbs pickle relish
- 1/4 tsp dried dill weed



Photo courtesy of University of Illinois photographer David Riecks

- Salt & pepper to taste
- 25 white or red grapes, halved
- 1/2 cup salad dressing or mayonnaise

Bring chicken broth to boil in a large pot. Add textured soy protein. Reduce heat and cook until textured soy protein is tender and liquid is absorbed. Let stand for 5 minutes. Transfer textured soy protein to a large bowl and add onion, celery, relish, dill weed, salt & pepper to taste, grapes and salad dressing. Mix well. Chill and serve.

Yield: 6 cups. Per cup: 494 calories, 17.8 g total fat (2.8 g sat fat), 7 mg cholesterol, 685 mg sodium, 76 g carbohydrate, 19 g protein (8 soy protein), 15.3 g dietary fiber.

Cole Slaw

- 1/2 cup soymilk
- 1 pkg (12 oz.) silken soft tofu
- 1 cup mayonnaise
- 1 Tbs sugar
- 1 tsp dried dill weed
- 1 Tbs French salad dressing
- 1 pkg (16 oz.) shredded cabbage
- salt & pepper to taste

Blend soymilk, silken tofu, mayonnaise, sugar, dill weed and French dressing until smooth. Pour blended mixture in cabbage and mix. Salt and pepper to taste. Chill until ready to eat.

Yield: 10 1/2 cups. Per 1/2 cup: 203 calories, 20 g total fat (3 g sat fat), 8 mg cholesterol, 249 mg sodium, 5 g carbohydrate, 3.2 g protein (2 g soy protein), 1.1 g dietary fiber.

Frosted Cranberry Salad

- 1 can (20 oz.) unsweetened, crushed pineapple, undrained
- 1 package (6 oz.) strawberry gelatin
- 1 can (16 oz.) whole-berry cranberry sauce
- 1 cup ginger ale
- 1/2 cup chopped celery
- 1 1/4 cups soy cream cheese (about 10 oz.)
- 1 tsp vanilla extract
- 1/3 cup sugar
- 1 container (8 oz.) frozen whipped topping, thawed
- 1/2 cup coarsely chopped roasted, salted soynuts

Drain pineapple, reserving juice; set pineapple aside. Add enough water to juice to measure 2 cups. Bring to boil and remove from heat. Add gelatin, stirring until gelatin dissolves. Add cranberry sauce, stirring until blended. Stir in ginger ale. Chill until mixture is the consistency of unbeaten egg white. Fold in reserved pineapple and celery. Spoon mixture into a 13 x 9 pan that has been lightly coated with vegetable spray. Cover and chill until firm.

Beat soy cream cheese, vanilla and sugar at medium speed

of electric mixer until light and fluffy. Fold in whipped topping. Spread mixture evenly over gelatin salad and sprinkle with chopped soynuts. Cover and chill until firm.

Yield: 15 squares. Per square: 242 calories, 7 g fat (3.5 g sat fat), 0 mg cholesterol, 213 mg sodium, 39 g carbohydrate, 4 g protein (3 g soy protein), 1.5 g dietary fiber.

Chicken Noodle Soup

- 4 oz. soy spaghetti pasta (regular pasta may be substituted), dry
- 1/2 medium onion, chopped
- 2 tsp vegetable oil
- 1 pkg (6 oz.) soy chicken veggie strips, cut into small pieces
- 4 cups chicken broth
- 1/4 tsp garlic powder
- salt & pepper to taste

Cook soy pasta according to package directions; drain and set aside. In a 4-quart pot, saute onion in oil for 3 minutes or until transparent. Add soy strips, chicken broth, and garlic powder; bring to boil. Reduce heat and simmer for 15 minutes. Stir in cooked pasta, remove from heat. Add salt and pepper to taste.

Yield: 6 cups. Per cup: 98 calories, 3.5 g fat (.7 g sat fat), 2 mg cholesterol, 1190 mg sodium, 9.7 g carbohydrate, 7 g protein (6 g soy protein), 1.9 g dietary fiber.

Three-Bean Chili

- 2 tsp vegetable oil
- 1 1/2 cups chopped onion
- 1 can (15 oz.) white soybeans
- 1 can (15 oz.) black soybeans
- 1 can (15 oz.) red beans
- 2 cans (14.5 oz.) diced tomatoes
- 1 can (15 oz.) tomato sauce
- 2 Tbs brown sugar
- 1/2 tsp salt
- 1 tsp black pepper
- 2 tsp ground cumin
- 2 Tbs minced garlic
- 1 Tbs chili powder

Heat oil in large pot over medium-

high heat. Cook onions until soft. Drain and rinse three beans and add to onions. Stir in all remaining ingredients. Bring to a boil and then reduce heat to low and simmer for 30 to 45 minutes.

Yield: 6 cups. Per 1 1/2 cup: 303 calories, 7 g fat (1 g sat fat), 0 mg cholesterol, 1420 mg sodium, 55 g carbohydrate, 20 g protein (12 g soy protein), 12 g dietary fiber.

Potato and Corn Chowder

- 4 large Yukon Gold potatoes, cut into 1/2 inch cubes, skin left on
- 1 large onion, chopped
- 2 cups water
- 1 tsp chicken or vegetable bouillon powder
- 2 tsp dried parsley
- 1/2 tsp salt
- 1/4 tsp pepper
- 1 (14.5 oz.) can cream style corn
- 1 (14 oz.) can whole kernel corn, drained
- 1 cup plain soymilk

In a medium saucepan, combine the potatoes, onion, water, bouillon, parsley, salt and pepper. Bring to a boil, reduce heat and simmer until potatoes are tender, about 15 to 20 minutes. Remove pan from heat and stir in both cans of corn.

Put two cups of the mixture into a blender and briefly puree. Do not overblend or potatoes will become gummy. Return the pureed mixture to the saucepan, stir in the soymilk and heat thoroughly. Adjust spices and seasonings to taste.

Yield: 6 (1 1/2 cups). Per 1 1/2 cup: 370 calories, 3 g fat (0 g sat fat), 0 mg cholesterol, 1055 mg sodium, 79 g carbohydrate, 12 g protein (1.5 g soy protein), 8 g dietary fiber.

Creamy Tomato Soup

- 1 medium onion, diced
- 2 tsp soybean oil
- 1 large tomato, diced
- 1/2 tsp chopped garlic
- 1 tsp fresh basil, chopped
- 1/2 tsp salt
- 1/2 tsp white pepper
- 1 cup soymilk

- 1 package (12 oz.) firm lite silken tofu, crumbled

In 4-quart saucepan saute onion in oil for 3 minutes or until transparent. Add tomato and garlic; continuing cooking 2-3 minutes. Add basil, salt, and pepper. Blend in soymilk.

Cook, stirring constantly, for 1 minute. Remove from heat and cool briefly. Stir in tofu. Transfer to food processor and puree until smooth. Serve hot or chilled.

Yield: 3 (1 1/2 cups). Per 1 1/2 cup: 181 calories, 8.5 g fat (0 g sat fat), 0 mg cholesterol, 450 mg sodium, 17 g carbohydrate, 12 g protein (10 g soy protein), 3 g dietary fiber.

Mediterranean Soup

- 1 cup chopped onion
- 2 cloves garlic, minced
- 2 Tbs soybean oil (vegetable oil)
- 2 quarts vegetable or chicken broth
- 2 quarts water
- 3 cups textured soy protein (10 oz.)
- 2 cups brown rice, uncooked

- 2 tsp oregano leaves, dried, crumbled
- 1 tsp thyme leaves, dried, crumbled
- 1 tsp salt
- 1 tsp ground pepper
- 3 quarts diced tomatoes, canned
- 2 cups zucchini, diced (3/4 inch)
- 1 cup celery, sliced
- 1/2 cup parsley, chopped (optional)

Saute onion and garlic in oil until tender. Add broth, water, soy protein, brown rice and seasonings.

Bring mixture to boil; reduce heat and simmer, covered, 30 minutes. Add tomatoes, zucchini and celery; return to boil, reduce heat and simmer 20 minutes or until rice is tender.

Portion 12 ounces into large bowls, if desired. Sprinkle 1 teaspoon minced parsley over each serving.

Yield: 6 servings (12 oz. each). 182 calories, 2.2 g fat (1.3 g sat fat), 2.0 mg cholesterol, 510 mg sodium, 31.8 g carbohydrate, 11 g protein (8.6 g soy protein), 3.6 g dietary fiber.





Oven-Roasted Tofu

- 16 oz extra firm tofu, drained
- 3 Tbs balsamic vinegar
- 2 tsp soybean oil (vegetable oil)
- 2 Tbs sugar
- 1 clove garlic, minced
- 1/2 tsp each oregano leaves, dried and crushed, and salt
- 1 sweet red pepper, quartered
- 1 medium onion, quartered
- 4 medium white button mushrooms, quartered
- Chopped parsley for garnish

Cut tofu in half vertically then horizontally. Drain on several layers of paper towels to remove as much liquid as possible. If desired, score surfaces to allow more marinade to penetrate tofu.

Combine vinegar, oil, sugar, garlic, oregano and salt; mix well.

Place tofu and vegetables in a shallow baking pan leaving enough space between the pieces for even roasting; brush with vinegar mixture. Let stand 30 minutes, brush again and let stand 30 minutes longer.

Bake tofu, pepper and onion at 500°F 30 to 35 minutes. Turn once halfway through baking time. Add

mushrooms during last half of roasting time. Transfer to platter and sprinkle with parsley. Makes 4 servings.

QUICK TIP: Serve soy yogurt, drizzled with oil and topped with slivered nuts and pomegranate seeds, as a cooling relish.

Yield: 4 servings. Per serving: 138 calories, 4.6 g fat (0.5 g sat fat), 0 mg cholesterol, 367 mg sodium, 15.5 g carbohydrates, 9.5 gm protein (8.4 g soy protein), 1.3 g dietary fiber.

Soy Soft Tacos

- 1 1/2 cups boiling water
- 2 cups texturized soy protein (TSP)
- 1 lb lean ground beef
- 1 cup onions, chopped
- 1 Tbs soybean oil (vegetable oil)
- 2 cups tomato sauce
- 1 cup canned diced green chilies
- 1 Tbs chili powder
- 2 tsp garlic salt
- 1/2 tsp ground pepper
- 24 tortillas
- 1 1/2 quarts shredded lettuce
- 3 cups fresh tomatoes, diced
- 3 cups lowfat cheddar cheese
- 1 1/2 quarts salsa, prepared

Pour boiling water over TSP. Sauté ground beef and onion

in oil until beef is no longer pink. Add rehydrated TSP, tomato sauce, green chilies, chili powder, garlic salt and pepper; mix well. Bring mixture to boil, reduce heat and simmer 15 minutes.

Prepare each serving as ordered. Wrap tortilla in clean towel and microwave at HIGH (100% power) 20 to 25 seconds. Place tortilla on serving plate, spoon 1/3 cup filling in center of each tortilla. Top with 1/4 cup shredded lettuce and 2 tablespoons each tomatoes and cheese. Fold in half. Serve with 2 oz. (1/4 cup) salsa.

QUICK TIP: Try using black soybeans instead of black beans or chili beans in your next dish.

Yield: 24 tacos. Per taco: 149 calories, 4.8 g fat (2.5 g sat fat), 16.2 mg cholesterol, 560 mg sodium, 16 g carbohydrates, 10.1 g protein (4 g soy protein), 1.5 g dietary fiber.

Beef, Tofu, Green Soybean Stir Fry

- 1 Tbs soybean oil
- 1 large red bell pepper, cut into thin strips (about 1 1/2 cups)
- 1 large bunch broccoli, cut into flowerettes (about 4 cups)
- 1 (10 oz) box frozen green soybeans
- 1 1/4 pound sirloin steak, fat trimmed, and cut into strips
- 1 Tbs soybean oil
- 1/2 tsp minced ginger
- 1 Tbs cornstarch

- 1 to 2 Tbs soy sauce
- 2 Tbs water
- 1 tsp soybean oil
- 7 or 8 oz firm, water-packed tofu, drained, cut into chunks or strips

Heat one tablespoon of soybean oil in large skillet or wok over medium-high heat. Add red pepper strips and broccoli flowerettes. Cook, stirring constantly, until crisp tender. Stir in green soybeans and cook one minute, or until green soybeans are no longer frozen. Remove vegetables with a slotted spoon and place in a bowl and cover. Set aside.

Heat one tablespoon of soybean oil in same skillet or wok. While oil is heating, make a paste of the ginger, cornstarch, soy sauce, water and one teaspoon soybean oil in a measuring cup or small bowl. Set aside.

Add strips of beef sirloin to hot oil. Stir and cook until almost done. Add soy sauce paste mixture and stir well. Add vegetables back to wok or skillet and toss well. Add strips of tofu and toss lightly, until tofu is heated throughout. Serve over hot steamed rice or Asian noodles.

Yield: Approximately 10 cups stir fry (6 servings). Serving size: 1 2/3 cups. Per serving: 336 calories, 14 g fat (3 g saturated fat), 62 mg cholesterol, 255 mg sodium, 12 g carbohydrate, 39 g protein (9 g soy protein), 7 g dietary fiber.





Photo courtesy of University of Illinois photographer David Riecks

Cheesy Potato Tofu Casserole

This is a tasty variation of a mashed potato dish, with the cheese and tofu adding subtle flavors and textures!

- 10 large potatoes
- 6 oz silken tofu
- 6 oz unflavored soymilk
- 1/2 tsp salt
- 1 bag shredded cheddar cheese (3 cups)

Cut potatoes into eighths and boil for 30 minutes or until soft (peeling potatoes optional)

Blend silken tofu and soy milk in blender until smooth.

Place cooked potatoes into 4-quart mixer, blend on low while adding soymilk/tofu mixture. Add salt into potato/tofu soymilk mixture. Continue blending on low-medium speed until potatoes are smooth.

Layer half of potatoes in 3-quart pyrex pan. Spread a layer of cheese over top to fill half of pan. Spread remainder of potatoes over cheese. Spread remainder of cheese over potatoes.

Bake at 375°F for 15 minutes until cheese is melted.

Yield: 10 servings. Per 1 cup serving: 355 calories, 16 g fat (9.7 g sat fat),

36 mg cholesterol, 341 mg sodium, 37 grams carbohydrate, 17 grams protein (1.4 grams soy protein), 2.1 g dietary fiber.

Optional: for additional flavor, 1/2 cup of finely chopped leeks or green onions can be added while blending potato/tofu soymilk mixture Reprinted from Tofu in the American Kitchen with permission from the Illinois Center for Soy Foods

Tofu Satay with Soybutter

- Tofu Satay
- 14–16 oz firm tofu,* drained
 - 1/4 cup low sodium soy sauce
 - 1 Tbs packed brown sugar
 - 1 Tbs each finely chopped green onion and cilantro
 - 1 tsp curry powder
 - 1/4 tsp crushed red chilies
 - 1 red or green bell pepper, cut into 1-inch squares

- Soybutter
- 1/2 cup soynut butter
 - 3 Tbs warm water
 - 2 Tbs soy sauce
 - 1 Tbs each lime juice and honey
 - 1 clove garlic, minced
 - 1 tsp cilantro, chopped
 - 1/4 tsp crushed red chilies

Tofu Satay: Cut tofu into 1-inch cubes. Drain on several layers of paper towels to remove as much moisture as possible. Place in single layer in shallow pan.

Combine remaining ingredients, except peppers, and pour over tofu; turn cubes to coat all sides. Marinate 1 hour turning cubes after 30 minutes. Alternate tofu and peppers on 4 bamboo skewers.**

Grill over medium heat or broil until browned on all sides; baste several times during cooking.

Soybutter: Mix all ingredients with a fork; if thinner consistency is desired, add more warm water. May be served at room temperature or warm over low heat, stirring occasionally, or microwave at High 45 to 60 seconds. Use as dipping sauce for Tofu Satay. Makes 3/4 cup.

Serving suggestion: Serve with bottled hot chili sauce.

* If refrigerated water-pack tofu is not available, substitute shelf-stable (silken) tofu. Broil in oven, without putting cubes on skewer, until lightly browned.

** Soak bamboo skewers in water 1 hour or longer to prevent exposed parts from burning.

Yield: 4 servings (Tofu Satay). Per serving: 167 calories, 8.8 g fat (0 g sat fat), 0 mg cholesterol, 363 mg sodium, 9.7 g carbohydrates, 16.2 g protein (16 g soy protein), 3 g dietary fiber.

Per tablespoon (Soybutter): 65 calories, 3.7 g fat (0 g sat fat), 0 mg cholesterol, 228 mg sodium, 5.3 g carbohydrates, 2.2 g protein (2.2 g soy protein), 0.4 g dietary fiber.

More Recipes

(Listed below are additional “Main Course” recipes located at the web site: www.soybean.org)

- Overnight Beans & Ham
- Chinese No-Meat Balls
- Italian Meat Balls
- Easy Tacos
- Cajun Stew
- Hot & Spicy Burrito Meat
- Sloppy Joes
- Friday Night Supper
- Quick Lasagna
- Macaroni Casserole
- Pasta With Spaghetti Sauce
- Stir-Fry Pork & Vegetables
- Barbecued Tempeh
- Meatless Stroganoff



Whole Soybeans (dry, canned, green)

Soybeans belong to the legume family and are native to East Asia. Soybeans can be purchased as dry whole soybeans, canned yellow or black soybeans, and green (fresh or frozen) and shelled or in the pod.

Green Soybeans (Fresh, Frozen)

Green vegetable soybeans (also called edamame) are harvested at 80 percent maturity. Edamame soybeans are a special bean variety that are bigger and sweeter than traditional soybeans grown in fields by most farmers. Cooked and lightly salted, these little green beans are a popular snack in Asia. These beans are often sold in the freezer section of natural food stores and should be stored in the freezer. Fresh beans, purchased still in the pod, should be cooked and stored in the refrigerator.

Whole, Dry Soybeans

Soybeans are harvested when they are fully mature and dry. As soybeans mature in the pod, they ripen into a hard, dry bean. Whole, dry soybeans can be found in grocery and health food stores.

Most soybeans grown in fields by farmers are smaller than food-grade beans used to make tofu and soymilk. Field beans may be cleaned and used in recipes after they have been soaked and cooked.

Do not eat soybeans raw. Soybeans must be cooked to destroy the protease inhibitor found in soybeans. Heat treatment is necessary to decrease the activity of the inhibitors and improve the digestibility of the proteins.

Storing

Dry soybeans can be stored in an airtight container for long periods of time. Cooked soybeans, both yellow and black, are available in cans in natural food stores.

Cooking Tips

- Do not add salt or acidic ingredients (such as tomatoes, lemon juice, or vinegar) to yellow soybeans until they are thoroughly cooked. Acidic products delay the softening process. However, you may add these when cooking black soybeans to help them retain their shape.
- One 15-ounce can of white or black soybeans is equal to 1 1/2 cups of cooked soybeans.
- Substitute canned soybeans (white or black) in your favorite recipes that call for beans.
- Substitute green cooked soybeans in recipes that call for green peas or beans.

Cooking Dry Soybeans

- Soak soybeans in 4 cups of water for each cup of beans for 8 hours or overnight. If you soak beans longer than 8 hours, place them in the refrigerator.
 - Drain and rinse the beans, then add 4 cups of fresh water for each cup of beans you started with.
 - Bring to a boil, reduce heat, and skim off excess foam. Simmer about 3 hours, adding more water as needed, until beans are tender. They will remain somewhat firm compared to cooked navy beans.
- Yield: 1 cup dry beans = 2-3 cups cooked beans.

Pressure Cooker Method

- Place presoaked (8-12 hours soaked), drained, and rinsed beans in a pressure cooker.
- Add 4 cups of water plus 2 tablespoons of cooking oil for the first cup of beans, and 3 cups of water and 2 tablespoons of vegetable oil for each additional cup of beans (oil controls foaming).
- Do not fill the cooker above the halfway mark! Cook with fifteen pounds of pressure for 9 to 12 minutes.
- Quickly release pressure by placing cooker under cold running water.
- Drain immediately.



Dimsum Baskets

- 6 frozen yeast roll dough
- 3 Tbs thinly sliced shallots
- 1 tsp soybean oil (vegetable oil)
- 4 oz tofu, diced 1/4-inch
- 3 Tsp water chestnuts, drained and diced
- 1/3 cup chopped fresh spinach
- 1-1/2 tsp soy sauce
- 1/8 tsp crushed red chili peppers

Place frozen yeast rolls in well-oiled muffin tins. Thaw and let rise at room temperature about 4 hours. Stir-fry shallots in oil. Stir in tofu and water chestnuts; stir-fry until thoroughly heated. Add spinach, soy sauce and chili peppers; mix well. Press centers of bread dough with thumb, leaving a large indentation in the center. Spoon 2 Tsp stir-fry mixture in center of dough. Bake at 350°F 15 to 20 minutes or until dough is baked.

QUICK TIP: Add an Asian flavor to the table by mixing miso in your favorite salad dressing.

Yield: 6 baskets. Per basket: 138 calories, 3.8 g fat (1.5 g sat fat), 12.3 mg

cholesterol, 226 mg sodium, 20.8 gm carbohydrates, 4.9 g protein (3.5 g soy protein), 1.6 g dietary fiber.

Spinach Dip

- 1 pkg (10 oz.) frozen chopped spinach
- 1 pkg (1.4 oz.) dry vegetable soup mix
- 1 pkg (12 oz.) firm silken tofu
- 1 can (8 oz.) water chestnuts, chopped coarsely
- 2/3 cup green onions, chopped
- 1 cup reduced-fat or light sour cream
- 1/2 cup low-fat mayonnaise

Thaw the package of spinach and squeeze dry. Stir all ingredients together in a large bowl until blended. Cover; chill 2 hours. Stir before serving.

Yield: 4 cups. Per 1/4 cup: 65 calories, 2 g fat (1 g sat fat), 4.5 mg cholesterol, 295 mg sodium, 8 g carbohydrate, 3 g protein (1.5 g soy protein), 0.8 g dietary fiber.

Tofu Jalapeno Poppers

- 8 oz firm tofu
- 24 fresh jalapeno peppers, 2-1/2 to 3-inch size
- 1 1/4 oz taco seasoning mix, prepared
- 2 cups flour
- 4 eggs, beaten
- 1/4 cup water
- 1-1/2 cups dry bread crumbs
- 1/2 cup Parmesan cheese, grated
- 1 tsp salt
- 1/4 tsp pepper
- soybean oil (vegetable oil) as needed

Cut tofu into 2 x 1/2 x 1/2-inch strips. Place tofu on a thickness of several paper towels on a cutting board and position board on a slant to allow excess liquid to drip off. Wash peppers. Use plastic gloves to avoid retaining the hot flavor on your fingers. Slit the pepper lengthwise up both sides, leaving the stem intact. Remove seeds.

Roll tofu strips in taco seasoning. Place into pepper; press pepper together. Roll pepper in flour.

Beat eggs and water together. Mix dry crumbs, cheese, 1 teaspoon salt and 1/4 teaspoon pepper together.

Holding the stem of each floured pepper, dip into egg mixture and then into crumb mixture to coat entire surface; repeat to get a nice coating. Place on waxed paper-lined pan and refrigerate until ready to use.

Deep-fry at 375°F 2 to 5 minutes or until browned. Drain and serve hot.

Nutritional Analysis per popper: 109 calories, 2 g fat (.4 g sat fat), 33 mg cholesterol, 111 mg sodium, 13 g carbohydrate, 4.4 g protein (3.4 g soy protein), 0.6 g dietary fiber.

Green Bean Casserole

- 1 can (28 oz) cut green beans
- 1 can (10.75 oz) cream of mushroom soup
- 1 pkg (12 oz) firm silken tofu
- 1/2 cup french fried onions
- salt & pepper to taste

Preheat oven to 350°F. Drain green beans. In a large bowl, mix green beans, mushroom soup, tofu and 1/2 cup dried onions together and pour in casserole. Add remaining dried onions over top of casserole. Bake uncovered for 45 minutes until bubbly.

Yield: 6 cups. Per cup: 98 calories, 6 g fat (1 g sat fat), 1 mg cholesterol, 295 mg sodium, 7 g carbohydrate, 5.3 g protein (2.8 g soy protein), 0.5 g dietary fiber.

Roasted Soy Nuts

Microwave method:

Use 1 cup of beans that have been soaked 8 hours or more. Drain them well. Spread the beans into a single layer in a 9" or 10" glass pie plate. Microwave on high for 3 minutes. Stir, then cook 3 minutes more. After that, cook for 1 minute at a time, stirring after each minute to ensure even browning.

The total time will vary depending on the moisture of the bean and the wattage of the oven, but will probably take about 9 to 12 minutes. When the beans are beginning to get hard and golden, you may want to cook for 30-second intervals to avoid burning them. They are done when they are golden brown and crunchy.

Oven method:

Use up to 2 cups of beans per baking sheet. Soak beans for 8 hours or more. Drain the beans, then spread into a single layer. Bake at 350°F, stirring after 15 minutes, then stirring every 5 minutes until golden brown and crunchy. The total time will vary depending on the moisture of the beans, but should take about 25 minutes. Watch carefully when the beans are getting close to done.

Yield: 1/2 cup nuts from 1 cup beans. Per serving: 122 calories, 6 g total fat (1 g sat fat), 10 g protein (10 g soy protein), 9 g carbohydrate, 2 mg sodium, 0 mg cholesterol, 5 g dietary fiber.

More Recipes

Additional "Snacks, Sides and Appetizers" recipes can be found on the Internet at www.soybean.org.

Textured Soy Protein

Textured soy protein is one of the most economical soy protein sources on the market. It's made from defatted soy flour or soy protein concentrate that is compressed and extruded into granules or chunks. It is sold as a dried, granular product. When rehydrated with water, textured soy protein has a texture similar to ground beef or other meat products. Textured soy protein is often labeled as TSP® or TVP®. TSP® is a registered trademark of PMS Foods. TVP® is a registered trademark of Archer Daniel Midlands.

Where to Find

Textured soy protein is not always easy to find in the supermarket. It's normally carried in natural food stores in the bulk food area or the flour section. Because it is a dry product, you can find mail-order companies on the Internet that sell it.

Storing

Textured soy protein has a long shelf life. Stored in a tightly closed container at room temperature, it will keep for several months. Once it has been rehydrated, store the textured soy protein in the refrigerator and use it within a few days.

Cooking Basics

Most recipes call for textured soy protein to be rehydrated before it is used in recipes. Read the package directions for rehydration. When using textured soy protein in soups and sauces, you do not have to rehydrate it before use – just be sure the recipe has enough liquid in it. Textured soy protein chunks should be simmered a few minutes before using.

Recipe Tips

- Use textured soy protein to replace all or part of the ground meat in almost any recipe. Replace one-fourth of the ground beef in meat loaf or burgers.
- Generally, textured soy protein will triple in volume when hydrated. For example, 1 pound dry textured soy protein will make about 3 pounds hydrated textured soy protein.
- For one pound of ground beef, substitute 1 1/2 cups dry textured soy protein and hydrate with 1 1/2 cups water.





Lemon Tofu Cheesecake

- 1 cup vanilla wafer crumbs
- 2 Tbs pecans, finely chopped
- 2 Tbs soy margarine, melted
- 1 lb silken tofu
- 1 lb lowfat cream cheese
- 3/4 cup granulated sugar
- 1/4 cup all-purpose flour
- 1 Tbs grated lemon peel
- 1 Tbs vanilla
- 3 eggs (1/2 cup)
- 3 egg whites
- Chopped pecans, optional
- Frozen berries, thawed

Combine vanilla wafer crumbs, pecans and margarine; mix well. Press mixture into bottom of 9-inch springform pan. Bake at 375°F about 8 minutes or until golden brown. Cool on wire rack.

In mixer bowl, beat tofu until smooth. Add cream cheese, sugar, flour, lemon peel and vanilla; mix until completely blended.

Beat in eggs and whites, one at a time; mix well. Pour filling over crust.

Bake at 375°F 50 to 60 minutes or until filling is set and edges of top are lightly browned. Cool on wire rack and refrigerate overnight to cool completely. Remove ring and press chopped pecans into

sides of cheesecake, if desired. Cut into 12 portions, dipping knife blade in hot water between each slice.

Serve 1 to 2 ounces berries over each portion. Makes 12 servings.

Yield: 12 servings. Per serving: 279 calories, 13 g fat (5 g sat fat), 68 mg cholesterol, 272 mg sodium, 27.3 gm carbohydrate, 13.1 gm protein (6.7 g soy protein), 0.5 g dietary fiber.

Chocolate Brownies

- 1 can (15 oz) black soybeans
- 4 oz. unsweetened chocolate
- 1 Tbs margarine
- 2 eggs
- 2 egg whites
- 2 cups sugar
- 3 Tbs all-purpose flour
- 1 Tbs instant espresso coffee powder or instant coffee granules
- 1/2 cup chopped walnuts

Preheat oven to 350°F. Spray a 9"x13" pan with vegetable cooking spray. Place the black soybeans in a colander and rinse thoroughly under running water. Set aside and drain well.

Place chocolate and margarine in a small bowl and microwave for

1 to 1 1/2 minutes until smooth. Stir every 30 seconds.

In a food processor or blender, combine the black soybeans and 1 egg. Blend until smooth.

In a large bowl, combine the bean purée, sugar, flour, espresso powder, and remaining egg and two egg whites. Beat well with electric mixer until well combined. Mix in the melted chocolate.

Pour the mixture into prepared pan. Sprinkle walnuts on top of brownie batter.

Bake for 30 to 35 minutes until the brownie pulls away from the sides of the pan and a toothpick inserted near the center comes out nearly clean. Cool completely in pan before cutting into bars.

Yield: 24 brownies. Per brownie: 133 calories, 5 g fat (1 g sat fat), 18 mg cholesterol, 37 mg sodium, 21 g carbohydrate, 3 g protein (1 g soy protein), 1 g dietary fiber.

Chocolate Tofu Ice Cream

- 1 pkg (16 oz.) silken soft tofu
- 1 cup soymilk (plain, or vanilla)
- 1/2 cup vegetable oil
- 1 cup sugar
- 1/4 cup cocoa
- 1 Tbs vanilla
- 1/8 tsp salt

Blend all the ingredients with an electric mixer until smooth and creamy. Use a home ice cream maker to freeze the blended ingredients, following instructions for ice cream.

Yield: 8 cups. Per cup: 307 calories, 18.7 g fat (2.5 g sat fat), 0 mg cholesterol, 44 mg sodium, 29.5 g carbohydrate, 8.8 g protein (8.2 g soy protein), 1.8 g dietary fiber.

More Recipes

Additional dessert recipes can be found on the Internet at www.soybean.org.

Quick Mix Cookie Bars

- 2 packages (18 oz.) refrigerated chocolate chip cookie or oatmeal chocolate chip, slice and bake cookie dough
- 1 package (12 oz.) firm silken tofu
- 2 eggs
- 1 cup sugar
- 1 tsp vanilla

Preheat oven to 350° F. Soften one roll of cookie dough. Spray the bottom of a 9" x 13" baking pan with non-stick spray. Line the bottom with the softened cookie dough, spreading to all sides.

In food processor bowl, combine tofu and remaining ingredients until smooth. Spread over cookie dough. Drop second roll of cookie dough by teaspoon on top of filling. Bake for 40 to 45 minutes.

Yield: 36 bars. Per bar: 155 calories, 6 g fat (2 g sat fat), 18 mg cholesterol, 65 mg sodium, 23 g carbohydrate, 2 g protein (0.7 g soy protein), 0 g dietary fiber.

Applesauce Cake

- 1 3/4 cups sugar
- 1 1/2 cups unbleached flour
- 1 cup soy flour
- 1 1/2 tsp baking soda
- 1/4 tsp baking powder
- 1 1/2 tsp salt
- 1 tsp cinnamon
- 1/2 tsp cloves
- 1/2 tsp allspice
- 1/2 tsp nutmeg
- 2 cups applesauce
- 1/2 cup vegetable oil
- 1/2 cup soft tofu
- 1 cup raisins, chopped

Preheat the oven to 350°F. In a large bowl, mix with electric mixer sugar, unbleached flour, soy flour, baking soda, baking powder, salt, cinnamon, cloves, allspice, and nutmeg; mix thoroughly. Add the applesauce and vegetable oil; Beat on low for 1 minute, then medium speed for 2 minutes.

In a small bowl, mash the tofu until creamy; add to the batter. Beat until blended. Fold the raisins into the batter.

Pour the batter into a 9-by-13-inch nonstick baking pan. Bake for 45-50 minutes. Cool before serving.

Yield: 12 slices: Per slice: 333 calories, 11.3 g fat (1.4 g sat fat), 0 mg cholesterol, 436 mg sodium, 55 g carbohydrate, 5.1 g protein (3.2 g soy protein), 2 g dietary fiber.

Yellow Shortcake

Serve this cake with layers of fruit and whipped topping for an easy touch of elegance.

- 2 cups cake flour
- 1/2 cup soy flour
- 2 tsp baking powder
- 1/4 tsp salt
- 4 oz soft silken tofu
- 2 Tbs plus 1 cup soymilk
- 1/2 cup shortening
- 1-1/2 cups granulated sugar
- 2 eggs
- 1 tsp orange extract

Preheat the oven to 350°F. Coat two 9" round cake pans with cooking spray.

Sift together the cake flour, soy flour, baking powder, and salt. Set aside.

Blend the tofu with 2 tablespoons soymilk in a blender until smooth. Pour the blended tofu into a large bowl.

Beat in the shortening, sugar, eggs, and orange extract with an electric mixer. Beat in the remaining one cup soymilk.

Add the flour mixture to the liquid mixture. Beat until the mixture is thoroughly combined, scraping down the sides of the bowl as necessary, but do not overmix.

Pour the mixture into the prepared pans. Bake 30 to 35 minutes, until a toothpick inserted into center of the cake comes out clean. Let cool on a wire rack.

Yield: 12 servings: Per serving: 280 calories, 11 g fat (2.4 g sat fat), 36 mg cholesterol, 134 mg sodium, 43 g carbohydrate, 5 g protein (1.8 g soy protein), 2.1 g dietary fiber.

Variation:

To get a more traditional cake-like texture instead of a shortcake texture, omit the tofu, increase the shortening to one cup, and increase the eggs to four.

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More Recipes

Additional dessert recipes can be found on the Internet at www.soybean.org.

Tofu

Tofu is probably the most versatile soyfood to use in cooking. Also known as soybean curd, tofu is a soft, cheese-like food made by curdling fresh, hot soymilk with a coagulant. In recipes, tofu acts like a sponge and has the miraculous ability to soak up any flavor that is added to it.

Types of Tofu

Two main types of tofu are available in American grocery stores.

Water-Packed (Extra-Firm, Firm) tofu is dense and solid and holds up well in stir-fry dishes, soups, or on the grill – anywhere that you want the tofu to maintain its shape. Water must be squeezed out before using.

Silken (Extra-Firm, Firm, Soft, Reduced Fat) tofu is made by a slightly different process that results in a creamy, custard-like product. Silken tofu works well in puréed or blended dishes.

Storing Tofu

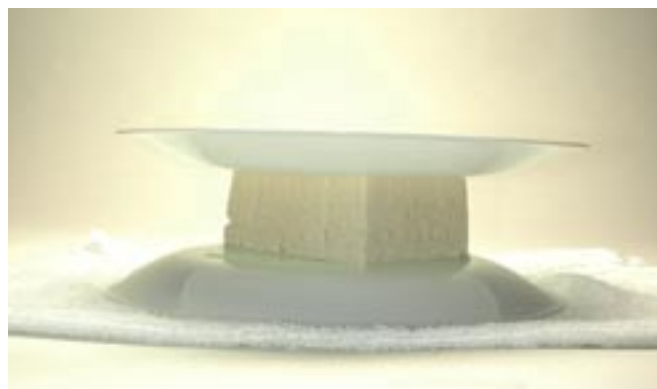
- Tofu most commonly is sold in water-filled tubs, vacuum packs, or in aseptic brick packages. Unless it is aseptically packaged, tofu should be kept cold. As with any perishable food, check the expiration date on the package. Once the tofu package is open, leftover tofu should be rinsed and covered with fresh water for storage. Change the water daily to keep it fresh, and use the tofu within a week.

- Tofu can be frozen up to five months. The texture will be spongy, chewy, and more meat-like. After thawing tofu in refrigerator, squeeze out excess water.

Recipe Tips

- Replace all or part of the cream in creamed soups with silken soft tofu.
- Substitute puréed silken soft tofu for part of the mayonnaise, sour cream, cream cheese, or ricotta cheese in a recipe. Use it in dips and creamy salad dressings.
- Mix 1 box instant pudding mix, 1 1/2 cups soymilk, and 10 ounces of silken tofu for dessert. Chill for 2 hours.
- Crumble it into a pot of spicy chili sauce and it tastes like chili.
- Cubes of firm tofu can be added to any casserole or soup.
- Slices of extra-firm tofu can be baked on broiler pan at 375°F for 20-25 minutes. Marinate slices in your favorite sauce for extra flavor.
- Substitute 1/4 cup soft tofu for 1 egg in your favorite brownie box mix.

Tofu Pressing



Start your morning with 25 grams of soy protein.



6 oz. soy yogurt =
4 grams soy protein



8 oz. soymilk =
7 grams soy protein



Bowl of soy cereal = 13 grams soy protein*

**As an alternative to soy cereal add 1 scoop of
powdered soy protein to your favorite cereal.*

The Food & Drug Administration has concluded that soy protein included in a diet low in saturated fat and cholesterol may reduce the risk of coronary heart disease by lowering blood cholesterol levels. The FDA recommends incorporating 25 grams of soy protein in your daily meals.

For more soyfoods information visit our Web site: www.soybean.org

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