

A Soy Foods Primer

Today you find many products containing soy, some as the main ingredient and some in small amounts. The products listed below are either traditional soy foods, like tofu or soymilk, or newer products that are entirely or mostly soy.

Soy Flour

Soy flour is made from soybeans that have been processed into flakes and then ground into flour. The flakes are often roasted to give the beans a nutty, slightly sweet flavor. Soy flour typically comes in two types: full-fat soy flour, which contains the natural oil of the soybean, and defatted soy flour, which has the oil removed.

Buying and storing soy flour. Soy flour comes packaged in boxes or bags like wheat flour. It can be found on the shelf either in the baking aisle of the grocery store or in the health foods section. Some natural foods stores also sell soy flour from bulk bins. Soy flour can be stored in an airtight container for up to a year; full-fat soy flour should be stored in the refrigerator to keep it fresh.

Using soy flour. Soy flour is very different from wheat flour. Soy proteins do not form the structural protein (gluten) that is necessary in all baked products. Soy flour does not contain starch, which is needed for cake structure. This means that only a portion of the flour in baked goods can be replaced with soy flour. For those with wheat or gluten allergies, soy is a great addition to the wheat-free flour blends.

The amount of soy that can be added without altering taste or texture to a baked product depends on whether it is a yeast or quick bread. For yeast breads you can substitute about 15 percent of the wheat flour with soy flour – this is like adding two tablespoons of soy flour in a measuring cup and then finish filling the cup with wheat flour. Quick-breads can often handle up to 25 percent soy flour - use 1/4 cup soy flour and 3/4 cup wheat flour for each cup of flour called for in a recipe.

Always stir soy flour before measuring because it can pack down. The higher protein content of soy flour helps the product brown nicely, but using higher amounts of soy flour can lead to over browning. Reducing the baking temperature by about 25 degrees Fahrenheit should help.

Soymilk

Soymilk is the nutritious beverage made by grinding soybeans with liquid. Manufacturers often fortify soymilk with calcium, making it a good product for people who want to use it instead of cow's milk. Flavored soymilks are also a great way to tempt your taste buds.

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Buying and storing soymilk. Cartons of soymilk are available from the dairy case of most supermarkets. Store soymilk in the refrigerator and use it by the date stamped on the carton, or within about a week of opening. Soymilk also comes in shelf-stable cartons that have a long shelf life and do not have to be refrigerated until they are opened. Make sure you shake soymilk thoroughly before pouring.

Using soymilk. Substitute soymilk for cow's milk in almost any recipe. You won't note much of a taste difference unless the recipe calls for a large amount of liquid. When the soymilk flavor is obvious, you may want to mix soymilk with dairy milk if you are sharing the dish with people who will be expecting a dairy taste.

Tofu

Just as cottage cheese is made by forming a curd from cow's milk, tofu is made by forming a curd from soymilk. The curds are then pressed to remove extra liquid and then formed into blocks of tofu.

Buying and storing tofu. Many supermarkets carry regular tofu, which comes in refrigerated tubs, or silken tofu, which is found both refrigerated and in shelf-stable packages. Store the tub tofu in the refrigerator and use it by the date stamped on it, or within a few days of opening. Once opened, refrigerate the tofu in a closed container with a little water. Shelf-stable packages of silken tofu can be stored on the shelf until they are opened, then refrigerated and used within a few days.

Using tofu. Tofu can be eaten plain, or marinated in whatever sauces or flavors you choose and then lightly sautéed. Silken tofu can be puréed and used as a base for dips and spreads or to give a creamy texture to soups and casseroles. It can replace all or most of the sour cream or mayonnaise in dips for a huge fat and calorie savings. In baking, tofu can function as an egg and/or oil replacement and for dairy products in creamy pie fillings or cheesecakes. There is not a simple formula for substituting tofu in a recipe. Try substituting tofu for dairy products in some of your recipes or replacing only part of the eggs or oil in a recipe with a similar volume of puréed tofu to see how well it works.

Textured Soy Protein

Textured soy protein (TSP) is an easy-to-use soy food generally made from soy flour and formed into different shapes and sizes. Traditionally these are used as a meat replacement because they have a chewy, meat-like texture when they are cooked in liquid. In baking, these chewy bits can add interest to a recipe and greatly increase the protein content.

Buying and storing textured soy protein. Nutritious textured soy protein is also found as TVP™, a registered trademark of Archer Daniels Midland. Look for textured soy in the bulk bins of the natural foods section of a supermarket or health foods store or in small bags. At home, store the dry TSP in an airtight container on the shelf.

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Using textured soy protein. TSP is a dry product that usually requires hydration with an almost equal amount of liquid, but it can sometimes be used dry, especially if the recipe has enough liquid to rehydrate it while it cooks. To use TSP in your own recipes, choose a recipe that has some textured ingredients and then experiment with adding small amounts of dry or hydrated TSP. Since the dry amount doubles in volume once it soaks up the liquid, it makes for very cost-effective protein source.

Edamame

Edamame, also known as sweet soybeans, are fresh green soybeans harvested just prior to maturity. They are a common snack in Japan and are becoming increasingly popular in the United States. Some brands of frozen mixed vegetables now include edamame, and recipes that call for them can be found in popular cooking magazines.

Buying and storing edamame. These are usually found with the frozen vegetables. Purchase them shelled or frozen in the pod and keep them frozen until ready to cook. Once cooked, stored in the refrigerator.

Using edamame. These delicious beans cook in just three to five minutes. Boil them according to directions on the package, then serve them as a side dish or mix shelled edamame with other vegetables. Shelled edamame are also good stirred into soups, casseroles, or salads. If you want to serve them as part of a pasta dish, simply add the frozen shelled beans to the boiling pasta a few minutes before the pasta is done. Edamame in the pod, cooked and lightly salted, are a fun snack. Kids love popping the beans into their mouth! Remember, do not eat the pods!

Soy Nuts

Soy nuts aren't really nuts at all but are mature soybeans that have been soaked and roasted. They contain all the nutrients of the whole soybean.

Buying and storing soy nuts. Soy nuts are marketed under a variety of brand names and come in many flavors. Health foods stores often carry plain or salted soy nuts in bulk bins. You can store them on the shelf in an airtight container for several months.

Using soy nuts. Soy nuts make a great snack on their own or when mixed with dried fruits, pretzels, and other nuts. Sprinkle them over salads and casseroles to add a little crunch. When baking with soy nuts, choose plain soy nuts or some with a sweet flavor that will blend with the recipe. Soy nuts absorb liquid and soften slightly when mixed with a batter, so they lose a little of their crunch. They can be used in a dry topping to keep them firm and crunchy.

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Soy Analogs

Soy products that have been made to look and taste like meat or dairy products are known as soy analogs. Some of these analogs are 100% soy, but most have other ingredients added as flavoring. Read the Nutrition Facts Label to see about how much soy is in the product you are buying. The ingredients are listed by their percentage of total weight of the product, from highest to lowest. Look for products in which soy is one of the first ingredients.

Buying and storing soy analogs. Look in the dairy case for soy cheese, soy sour cream, and soy cream cheese. Keep these refrigerated and use by the date stamped on the package, just as you would dairy products. Try different brands and choose your favorite. Soy analogs for meat are usually in the freezer section, although some lunchmeat analogs may be refrigerated. Grocery stores carry certain brands right next to the traditional meat products, but check the natural foods section or specialty stores for a wider variety.

Using soy analogs. Soy analogs can usually be used just like their meat and dairy counterparts; check the package to see if there are any special instructions, as brands may vary. For instance, many soy “cheeses” won’t melt like their dairy counterparts, unless their label says they will. Most of the soy “meats” are pre-cooked and require less preparation time.

Miso

Miso is a fermented soybean paste with a rich, complex flavor. Some people liken the flavor to mushrooms or wine. Grains, such as barley or rice, may also be used when making miso. Generally, a lighter color miso has a milder flavor. Red miso is a rich red-brown color and is traditionally used as the base for miso soup. Miso is salty, so if you include it to a recipe, be sure to decrease any added salt.

The National Soybean Research Laboratory, located at the University of Illinois, promotes soybean research, education and outreach in the areas of production, nutrition and international development. Visit our website for more information and recipe ideas: www.nsrll.illinois.edu at the Nutrition tab.

We work hand-in-hand with industry stakeholders including USDA, Illinois Soybean Association, American Soybean Association, United States Soybean Export Council, United Soybean Board, North Central Soybean Research Consortium and the State of Illinois. We also work with many private firms, government agencies and non-government agencies to find ways to incorporate soy and minimize malnutrition, improve economic development of an area and encourage sustainable value chains.