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Soy Foods Glossary



Black Soybeans are a dark colored variety of soybean. They cook more quickly and are milder in flavor than the more common yellow soybeans.

Edamame, also known as sweet soybeans, are a variety of fresh green soybeans harvested just prior to maturity. These delicious beans can be purchased frozen and cook in only three to five minutes.

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.

Soy Analogs are a variety of soy products made to resemble meat or dairy foods. Products like soy burgers, soy yogurt and soy cheese fall into this category.

Soy milk is the nutritious beverage traditionally made by grinding blanched soybeans with water and pressing out the rich liquid. Flavorings and sweeteners are often added.

Soy Flour is made from soybeans that have been processed into flakes and then ground into flour. Because soy flour does not contain gluten, it is usually used with wheat flour.

Soy Nuts are not nuts at all, but are mature soybeans that have been soaked and roasted. These crunchy ‘nuts’ are often salted or flavored.

Soy Protein Isolate is a highly processed form of soy that is very high in protein. It is highly digestible and has very little flavor of its own.

Tempeh, a staple food in Indonesia, is a fermented soybean product. It is generally available in rectangular “cakes” that are kept chilled.

Textured Soy Protein (TSP), is an easy-to-use dry soy food made from defatted soy flour that has been texturized through an extrusion process and formed into granules.

Textured Vegetable Protein, or TVP®, is a registered trademark of the Archer Daniels Midland Company.

Tofu is a soy “cheese” made from soymilk. Silken tofu has a creamy texture and is usually available in aseptic cartons that do not need refrigeration until opened. Tub tofu, which has a firmer texture, is packaged in water and kept chilled.



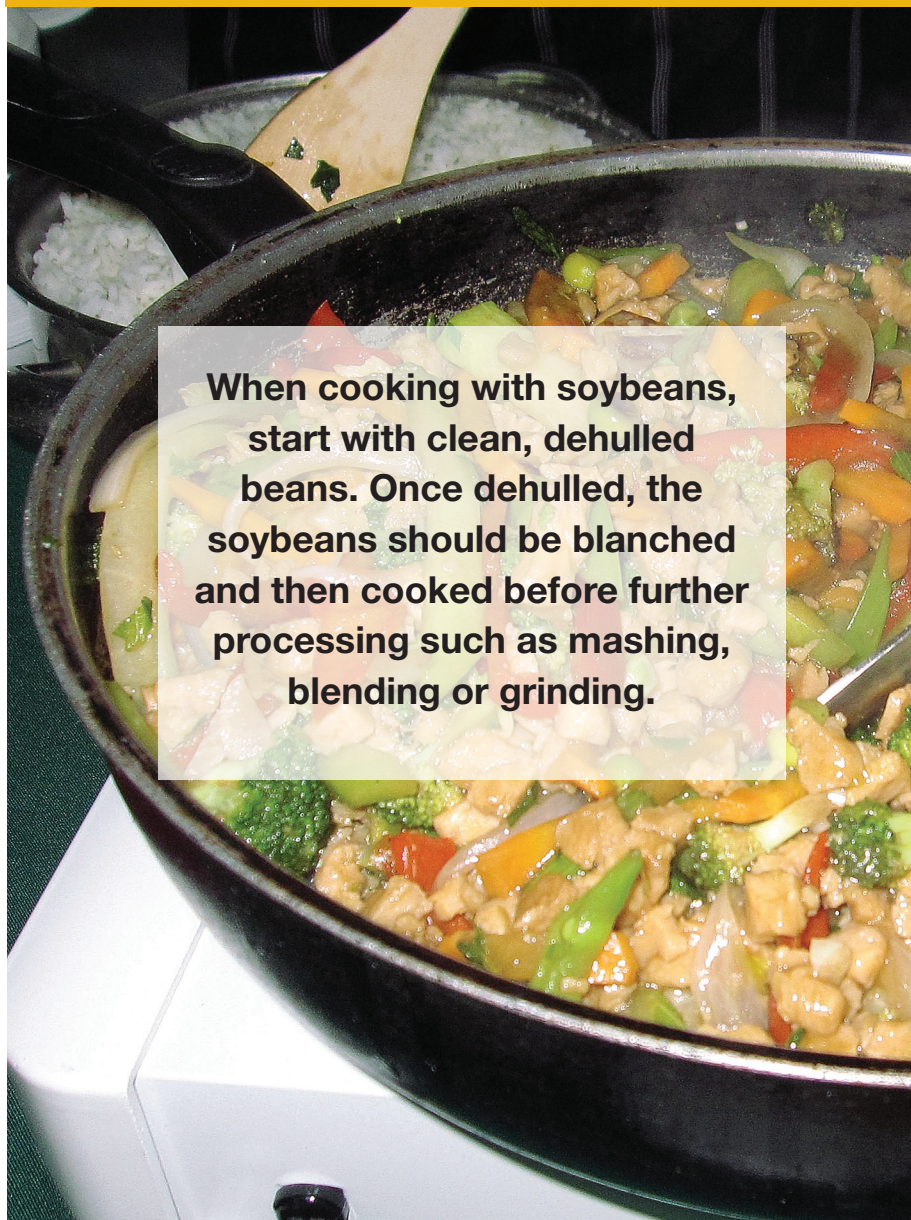
Soy Food Nutrient Table

Soy Food	Serving	Kcal	Pro	Fat	CHO	Fiber
Edamame	½ c	95	9	4	8	4
Mature soybeans, cooked	½ c	149	14	8	9	5
Black soybeans, canned*	½ c	120	11	6	8	7
Roasted soynuts	¼ c	120	12	4	9	5
Soymilk, “traditional”	1 c	120	9	5	11	3
Commercial soymilk*, plain	1 c	100	7	4	8	1
Commercial soymilk* light plain	1 c	70	6	2	8	1
Commercial soymilk*, vanilla	1 c	100	6	4	10	1
Commercial soymilk*, chocolate	1 c	140	5	4	23	2
Commercial soymilk*, unsweetened	1 c	80	7	4	4	1
Tempeh	½ c	160	15	9	8	0
Soy nut butter	2 Tbsp	170	7	11	10	3
Tofu, silken, firm	3 oz.	52	6	2	2	0
Tofu, silken, extra firm	3 oz.	46	6	2	2	0
Tofu, silken, lite firm	3 oz.	31	5	1	1	0
Tofu, silken, lite extra firm	3 oz.	32	6	1	1	0
Tofu, silken, soft	3 oz.	46	4	2	2	0
Soy yogurt	1 c	150	5	3½	24	1
Soy cheddar cheese	1 oz.	60	7	3	0	0
Miso	2 Tbsp.	68	4	2	9	2
Soy flour, full-fat, raw	½ c	183	15	9	15	4
Soy flour, low-fat	½ c	164	21	3	17	5
Soy flour, defatted	½ c	165	24	1	19	9
Textured Soy Protein (TSP)	¼ c	80	12	0	7	4

* Information from manufacturer’s Nutrition Facts Label, all other information from the Nutrient Database Laboratory, USDA Food Composition Data, USDA. Always check the Nutrition Facts label on soy food products, as they will vary from brand to brand.



Cooking with Soybeans



When cooking with soybeans, start with clean, dehulled beans. Once dehulled, the soybeans should be blanched and then cooked before further processing such as mashing, blending or grinding.

Dehulling Soybeans

1. Drop the whole soybeans into boiling water. Simmer the beans for 25-30 minutes.
2. Drain the water and rinse the beans. Keep the beans in a bowl with cold water. Scrub the beans between two hands to force the hulls from the cotyledons. Drain the water with the hulls and repeat operation until most of the hulls are removed from the cotyledons.
3. These cotyledons can be directly used for preparing many soy foods such as soymilk, soy nuts, soy grits and tempeh. For the future use, they must be dried.

Note: Soybeans are blanched before cooking to destroy lipoxygenase, an enzyme that can lead to a beany off-flavor. Adding a pinch of baking soda to the cooking water will help soften the soybeans and shorten cooking time.

Blanching whole soybeans

- 1 cup whole dry soybeans
 - 1 pinch of baking soda (if available)
 - 5 cups water for boiling (plus more water for rinsing)
1. Bring about 5 cups water to a boil.
 2. Add 1 pinch of baking soda to the boiling water.
 3. Drop the whole dry soybeans directly into boiling water.
 4. Let the soybeans cook at a low boil for 10 minutes.
 5. Drain off the boiling water and rinse the soybeans in cold water.
 6. Blanched soybeans are not ready to be eaten. They must be cooked before eating.

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Recipes





Soy Spaghetti

Ingredients	25 Servings	50 Servings
Vegetarian Meat, protein, soy, textured, TSP	4 ¼ oz	8 ½ oz
Water, tap, municipal	4 ¾ cups	9 ½ cups
Onion, yellow, fresh med, whole, 2 1/2 "	3 each	6 each
Garlic cloves, fresh	1½ each	3 each
Black pepper, spice	2 ¼ tsp	1½ Tbsp
Tomatoes, red, fresh, year round avg., med, 2 3/5"	3 ½ lbs	7 lbs
Herb, parsley, dried	2 Tbsp	¼ cup
Herb, basil, leaves, dried	1 Tbsp	2 Tbsp
Herb, Oregano leaves, dried	1 Tbsp	2 Tbsp
Salt, table	2 Tbsp	4 Tbsp
Water, tap, municipal	3 gallons	6 gallons
Pasta, spaghetti	2 ½ lbs	5 lbs

Directions

1. Add water to TSP. Chop onions and add to TSP.
2. Add garlic, pepper. Tomatoes, parsley, and oregano. Simmer about 1 hour.
3. Heat water to rolling boil. Add salt.
4. Slowly add spaghetti. Stir constantly, until water boils again. Cook 10-12 minutes or until tender, stir occasionally.
5. Stir into tomato sauce.

Source: USDA recipe modified for Honduras school lunch menu

Nutrients Per Serving (694 g):

Calories: 220	Saturated Fat: 0 g	Iron: 2.7 mg
Protein: 10 g	Cholesterol: 0 mg	Calcium: 60 mg
Carbohydrate: 40 g	Vitamin A: 500 IU	Sodium: 720 mg
Total Fat: 1½ g	Vitamin C: 9 mg	Dietary Fiber: 4 g

Spaghetti con Salsa de Tomate y Carne de Soya

Ingredientes	25 porciones	50 porciones
Carne vegetal, proteína, soya texturizada o TSP	4 ¼ oz.	8½ oz.
Agua potable	4 ¾ tazas	9½ tazas
Cebolla amarilla mediana	3 unidades	6 unidades
Dientes de ajos frescos	1 ½ unidad	3 unidades
Pimienta negra molida o especies	2 ¼ cucharita	1½ Cucharada
Tomates, rojos, frescos medianos	3 ½ lb.	7 lb.
Hierba: perejil seco	2 cucharadas	¼ taza
Hierba, asilica, hoja seca	1 cucharada	2 cucharadas
Hierba, Orégano hoja seca	1 cucharada	2 cucharadas
Aceite de cocinar	2 cucharadas	4 cucharadas
Sal de cocina	2 cucharadas	4 cucharadas
Agua potable	3 galones	6 galones
Pasta o spaghetti	2 ½ lb.	5 lb.

Instrucciones

SALSA:

1. Agregar agua bien caliente al TSP, dejar reposar, luego escurrirle el exceso de agua.
2. Picar la cebolla, agregar al TSP y mezclar bien
3. Agregar los ajos, pimienta negra molida, tomates picados, perejil y orégano. Sofreír. Agregar un poco de agua. Cocinar fuego lento por 1 hora.

PASTA:

1. Hervir agua para la pasta, agregar sal y aceite para que no se pegue.
2. Dejar caer suavemente los spaghetti al agua.
3. Remover constantemente, hasta que hierva otra vez. Cocinar 10-12 minutos. Escurrir bien.
4. Agregar la salsa de tomate
5. Servir con queso seco rayado

Source: USDA recipe modified for Honduras school lunch menu

Nutrientes Por Porción (694 g):

Calorías: 220	Grasas saturadas: 0 g	Hierro: 2.7 mg
Proteínas: 10 g	Colesterol: 0 mg	Calcio: 60 mg
Carbohidratos: 40 g	Vitamina A: 500 IU	Sodio: 720 mg
Total Grasas: 1½ g	Vitamina C: 9 mg	Fibra Dietética: 4 g



Spanish Rice

Ingredients	25 Servings	50 Servings
Vegetable Oil, Soybean	1 Tbsp	2 Tbsp
Onion, yellow, fresh, med, whole, 2 ½"	1 each	2 each
Peppers, bell, green, sweet, fresh, med, 2 ½"	1 each	2 each
Celery, fresh, diced	1 cup	2 cups
Water	3 cups	6 cups
Broth, beef, pwd, pkt	1 each	2 each
Vegetarian meat, protein, soy, textured, TSP	1 lb	2 lbs
Rice, white, med grain, enrich, dry	¾ lbs	1½ lbs
Black pepper	½ tsp	1 tsp
Spice, chili pepper, pwd	½ Tbsp	1 Tbsp
Spice, cumin, seeds, ground	1 tsp	2 tsp
Spice, paprika	½ tsp	1 tsp
Tomatoes, red, fresh, year round avg, med, 2 3/5"	1 ½ each	3 each
Ketchup	¼ cup	½ cup

Directions
1. Heat oil. Add chopped onions, green peppers, and celery. Cook for 5 minutes.
2. Add beef broth, TSP, water and spices.
3. Stir in rice, and pepper. Return to boil. Boil for 5 minutes. Reduce heat and cover tightly. Cook over low heat for 5 minutes.
4. Stir in tomatoes and ketchup.

Source: USDA recipe modified for Honduras school lunch menu

Nutrients Per Serving (84 g):

Calories: 170	Saturated Fat: 0 g	Iron: 2.7 mg
Protein: 10 g	Cholesterol: 0 mg	Calcium: 80 mg
Carbohydrate: 19 g	Vitamin A: 200 IU	Sodium: 75 mg
Total Fat: 2½ g	Vitamin C: 6 mg	Dietary Fiber: 4 g

Arroz Español (Spanish Rice)

Ingredientes	25 porciones	50 Porciones
Aceite vegetal.... de soya	1 cucharada	2 cucharadas
Cebolla, amarilla, fresca, mediana	1 unidad	2 unidades
Chiles dulces verdes, frescos grande	1 unidad	2 unidades
Zanahorias tiernas grandes picadas	2 unidad	4 unidad
Apio, fresco en cuadros	1 taza	2 tazas
Agua potable	3 tazas	6 tazas
Caldo o consomé de res, un sobre	1 unidad	2unidad
Carne vegetal, proteína de soya o soya texturizada, TSP	1 lb.	2 lb.
Arroz blanco, enriquecido, grano mediano crudo	¾ lb.	1 1½ lb.
Especies pimienta negra molida	½ cucharita	1 cucharita
Especies chile picante molido	½ cucharada	1 cucharada
Especies comino molido	1 cucharita	2 cucharita
Especie, paprika molida	½ cucharita	1 cucharita
Tomates rojos frescos, medianos 3/5"	1½ unidades	3 unidades
Salsa de tomate Ketchup	¼ taza	½ taza

Instrucciones
1. Calentar el aceite. Agregar las cebollas, chiles dulces y apio picados. Cocinar por 5 minutos.
2. Agregar el caldo o consomé, TSP, agua, zanahorias y especias, hervir.
3. Agregar el arroz y los chiles, remover. Volver a hervir por 5 min. Bajar el fuego y tapar la olla. Cocinar a fuego lento 5 min.
4. Agregar los tomates picados y salsa de tomate ketchup.

Source: USDA recipe modified for Honduras school lunch menu

Nutrientes Por Porción (84 g):

Calorías: 170	Grasa Saturada: 0 g	Hierro: 2.7 mg
Proteína: 10 g	Colesterol: 0 mg	Calcio: 80 mg
Carbohidratos: 19 g	Vitamina A: 200 IU	Sodio: 75 mg
Total Grasas: 2½ g	Vitamina C: 6 mg	Fibra: 4 g



Conversion Tables

Common Cooking Conversions	
Measure Equivalents	
1 tablespoon (Tbsp) =	3 teaspoons (tsp)
1/16 cup (c) =	1 tablespoon
1/8 cup =	2 tablespoons
1/6 cup =	2 tablespoons + 2 teaspoons
1/4 cup =	4 tablespoons
1/3 cup =	5 tablespoons + 1 teaspoon
3/8 cup =	6 tablespoons
1/2 cup =	8 tablespoons
2/3 cup =	10 tablespoons + 2 teaspoons
3/4 cup =	12 tablespoons
1 cup =	48 teaspoons
1 cup =	16 tablespoons
8 fluid ounces (fl oz) =	1 cup
1 pint (pt) =	2 cups
1 quart (qt) =	2 pints
4 cups =	1 quart
1 gallon (gal) =	4 quarts
16 ounces (oz) =	1 pound (lb)
1 milliliter (ml) =	1 cubic centimeter (cc)
1 inch (in) =	2.54 centimeters (cm)

Cooking Temperature Conversion	
Fahrenheit (° F)	Celsius (° C)
-10°F	-23.3°C (freezer storage)
0°F	-17.7°C (water freezes)
32°F	0°C
50°F	10°C
68°F	20°C (room temp)
100°F	37.7°C
150°F	65.5°C
205°F	96.1°C (water simmers)
212°F	100°C (water boils)
300°F	148.8°C
325°F	162.8°C
350°F	177°C (baking)
375°F	190.5°C
400°F	204.4°C
425°F	218.3°C
450°F	232°C
475°F	246.1°C
500°F	260°C (broiling)

Conversion Factors

Fahrenheit to Celsius: subtract 32 from the Fahrenheit figure, multiply by 5, and divide by 9 to get Celsius figure.

Celsius to Fahrenheit: multiply Celsius figure by 9, divide by 5, and add 32.

Metric Conversion Factors		
Multiply	By	To Get
Fluid Ounces	29.57	grams
Ounces (dry)	28.35	grams
Grams	0.0353	ounces
Grams	0.0022	pounds
Kilograms	2.21	pounds
Pounds	453.6	grams
Pounds	0.4536	kilograms
Quarts	0.946	liters
Quarts (dry)	67.2	cubic inches
Quarts (liquid)	57.7	cubic inches
Liters	1.0567	quarts
Gallons	3,785	cubic centimeters
Gallons	3.785	liters



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The National Soybean Research Laboratory is engaged in research, outreach and education related to soybean production and nutrition. We also find ways to overcome malnutrition through the use of soy in international development programs. We promote innovative processing and marketing techniques involving soy. We educate society on the advantages of a soy enriched diet along with promoting the health benefits of eating soy. We engage in soybean research that benefits producers. We also explore the genetics of soybeans and assist in expanding the scope and size of the soybean industry and the profitability of soybean farmers.