



K-STATE  
Research and Extension

# PRESERVE IT FRESH, PRESERVE IT SAFE BEANS



When preserving fresh foods at home, follow proper procedures to prevent foodborne illness. The following safety-tested methods can be used for preserving snap and Italian beans, and dry beans. **Always wash your hands before preparing any recipe.**

## Snap and Italian Beans — Green and Wax Quality

Select pods that are full but still tender and crisp. Discard diseased and rusty pods.

### Quantity

An average of  $\frac{3}{4}$  pound makes 1 pint of frozen beans.

### Preparation

Wash beans, snip and discard ends, removing strings if necessary. Leave beans whole or cut, or snap beans into 1-inch pieces. Then wash and drain.

### Freezing

Fresh green beans contain enzymes that cause them to lose flavor, color, and nutrients when frozen. Enzymes must be inactivated by blanching to prevent changes. To blanch expose vegetables briefly to boiling water or steam. Then cool rapidly in ice water to stop cooking. Blanching destroys microorganisms on the vegetable surface and is essential for top-quality frozen vegetables.

### Procedure

Freezer manuals offer guidelines for the maximum amount that can be frozen at one time to maintain quality — usually 2 to 3 pounds of food for each cubic foot of freezer space. Approximate freezer storage time is 8 to 12 months.

Blanch 6 cups raw, prepared beans at a time. Place each batch in a blanching basket or colander into 1 gallon of boiling water. Blanch small pieces 2 minutes and large pieces 3 minutes after water returns to a boil. Cool beans quickly in several changes of ice water and drain. Remove excess water with dry paper towels. Fill pint- or quart-size freezer bags or containers. Squeeze to remove air, leaving  $\frac{1}{2}$ -inch headspace. Label and freeze. Bags may be inserted into reusable, rigid-plastic freezer containers for added protection against punctures and freezer burn.

*Nutrition:* Frozen Green Beans

Serving size:  $\frac{3}{4}$  cup — 30 calories, 0 g fat, 5 g carbohydrate, 1 g protein, 2 g fiber, 0 mg sodium, 2 g sugar

### Dehydrating

For information on dehydrating vegetables, see <https://www.rrc.k-state.edu/preservation/drying.html> for resources.

### Canning

To learn more about canning, see *How-to Guide to Water Bath Canning and Steam Canning* (MF3241) and *How-to Guide to Pressure Canning* (MF3242).

#### Preparing Jars and Lids

For all canning recipes processed less than 10 minutes, wash and sterilize jars by placing them inside a boiling water canner and cover with water. Boil jars for at least 10 minutes and keep them hot. For recipes processed longer than 10 minutes, jars will get sterilized during the canning process. All jars must be warm prior to filling with food.

Preheating is not required for standard metal lids. Always wash lids in hot, soapy water before use. If using reusable plastic lid systems with rubber rings, follow the manufacturer's directions.

### Food Safety

Snap and Italian beans are low-acid foods. Unless they are pickled, beans must be pressure-canned for a specific amount of time to avoid the foodborne illness botulism. Pickled beans can be processed in a water bath canner or steam canner.

### Quantity

An average of 14 pounds of beans is needed for a canner load of 7 quarts and an average of 9 pounds for a canner load of 9 pints. A bushel weighs 30 pounds and yields 12 to 20 quarts.

### Procedure

*Salt:* If desired, add canning or pickling salt:  $\frac{1}{2}$  teaspoon per pint and 1 teaspoon per quart. Salt is for flavor only and can be omitted.

*Raw pack:* Fill jars tightly with prepared beans, leaving 1-inch headspace. Add boiling water to cover beans, leaving 1-inch headspace.

*Hot pack:* Cover the prepared beans in a large pot with

boiling water and boil 5 minutes. Fill the jars with the beans and cooking liquid, leaving 1-inch headspace. Remove air bubbles and adjust headspace if needed.

Wipe sealing surface of the jars with a clean, damp paper towel. Apply lids and rings fingertip-tight. Process in a pressure canner according to the instructions in Table 1. Turn off heat and let the canner depressurize naturally. Remove canner lid. Let jars cool 5 minutes. Remove jars from canner; do not retighten bands. Cool completely, check seals, label, date, and store.

*Nutrition:* Canned Green Beans, no salt added

Serving size: ½ cup — 18 calories, 0 g fat, 4 g carbohydrate, 1 g protein, 2 g fiber, 17 mg sodium, 0 g sugar

## Pickled Three-Bean Salad

*Yield:* about 3 pints or 6 half-pints

- 1½ cups cut and blanched green or yellow beans (prepared as below)
- 1½ cups canned, drained, red kidney beans
- 1 cup canned, drained garbanzo beans
- ½ cup peeled and thinly sliced onion (about 1 medium onion)
- ½ cup trimmed and thinly sliced celery (1½ medium stalks)
- ½ cup sliced green peppers (½ medium pepper)
- ½ cup white vinegar (5 percent)
- ¼ cup bottled lemon juice
- ¾ cup sugar
- ¼ cup oil
- ½ teaspoon canning or pickling salt
- 1¼ cups water

Wash and remove ends from fresh beans. Snap or cut into 1- to 2-inch pieces. Blanch 3 minutes and cool immediately. Rinse kidney beans with tap water and drain again. Prepare and measure other vegetables. Combine vinegar, lemon juice, sugar, and water and bring to a boil. Remove from heat. Add oil and salt, and mix well. Add beans, onions, celery, and green pepper to solution and bring to a simmer. Marinate 12 to 14 hours in refrigerator, then bring the entire mixture to a boil. Fill clean jars with solids. Add hot liquid, leaving ½-inch headspace. Remove air bubbles and adjust headspace if needed. Wipe sealing surface of the jars with a clean, damp paper towel. Apply lids and rings fingertip-tight. Process in a water bath or steam canner for 15 minutes at elevation 0 to 1,000 feet; or 20 minutes at elevation 1,001 to 6,000 feet. Turn off heat. Remove canner lid. Let jars cool 5 minutes. Remove jars from canner; do not retighten bands. Cool completely, check seals, label, date, and store.

*Nutrition:* Pickled Three-Bean Salad

Serving size: about ½ cup — 120 calories, 4.5 g fat, 18 g carbohydrate, 2 g protein, 2 g fiber, 150 mg sodium, 12 g sugar

## Beans, Shelled and Dried, All Varieties

(This recipe can also be used for mature, dry peas.)

### Quantity

An average of 5 pounds is needed for a 7-quart canner load, 3¼ pounds for a 9-pint load — ¾ pound per quart.

### Quality

Select mature, dry seeds. Sort and discard discolored beans. Rinse with water.

### Procedure

Place dried beans in a large pot and cover with water. Soak 12 to 18 hours in a cool place. Drain water. To hydrate beans quickly, cover sorted and washed beans with boiling water in a saucepan. Boil 2 minutes, remove from heat, soak 1 hour, and drain. Cover with fresh water and boil 30 minutes. Add ½ teaspoon of salt per pint or 1 teaspoon per quart to the jar, if desired. Fill jars with beans and cooking water, leaving 1-inch headspace. Remove air bubbles and adjust headspace if needed. Wipe sealing surface of the jars with a clean, damp paper towel. Apply lids and rings fingertip-tight. Process in a pressure canner following recommendations in Table 1. Turn off heat and let the canner depressurize naturally. Remove canner lid. Let jars cool 5 minutes. Remove jars from canner; do not retighten bands. Cool completely, check seals, label, date, and store.

*Nutrition:* Pinto Beans, with salt added

Serving size: ½ cup — 110 calories, 0 g fat, 20 g carbohydrate, 7 g protein, 5 g fiber, 410 mg sodium, 1 g sugar

## Beans, Baked

### Quantity

An average of 5 pounds of beans is needed for a 7-quart canner load and 3¼ pounds for a 9-pint load — about ¾-pound per quart.

### Quality

Select mature, dry beans. Sort and discard discolored and damaged beans. Rinse with water.

### Procedure

In a large saucepan, add 3 cups water for each cup of dried beans. Boil 2 minutes. Remove from heat, soak for 1 hour, and drain. Heat to boiling in fresh water and save liquid for making sauce.

*Molasses sauce* – Mix 4 cups water or cooking liquid from beans, 3 tablespoons dark molasses, 1 tablespoon vinegar, 2 teaspoons salt, and ¾ teaspoon powdered dry mustard. Heat to boiling.

Place seven ¾-inch pieces of pork, ham, or bacon in an earthenware crock, a large casserole, or pan. Add beans and enough molasses sauce to cover beans. Cover and bake 4 to 5 hours at 350°F. Add water as needed — about every hour.

Fill jars, leaving 1-inch headspace. Apply lids and rings fingertip-tight. Remove air bubbles and adjust headspace if needed. Wipe sealing surface of the jars with a clean, damp paper towel. Process in a pressure canner as recommended in Table 1. Turn heat off and let the canner depressurize naturally. Remove the canner lid. Cool jars for 5 minutes, and then remove from canner. Do not retighten bands. Cool completely, check seals, label, date, and store.

*Nutrition:* Baked Beans

Serving size: about ½ cup — 120 calories, 0.5 g fat, 23 g carbohydrate, 7 g protein, 7 g fiber, 250 mg sodium, 2 g sugar

## Dry Beans with Tomato or Molasses Sauce

### Quantity

An average of 5 pounds of beans is needed for a 7-quart canner load and 3¼ pounds for a 9-pint load — about ¾-pound per quart.

### Quality

Select mature, dry beans. Discard any that are discolored or damaged. Rinse with water.

### Procedure

In a large saucepan, add 3 cups of water for each cup of dried beans. Boil 2 minutes and remove from heat. Soak 1 hour, and then drain. Heat to boiling in fresh water. Save liquid for making one of the following sauces:

*Tomato sauce* – Mix 1 quart tomato juice, 3 tablespoons sugar, 2 teaspoons salt, 1 tablespoon chopped onion, and ¼ teaspoon each of ground cloves, allspice, mace, and cayenne pepper. Heat to boiling.

*Ketchup sauce* – Mix 1 cup tomato ketchup with 3 cups cooking liquid from beans. Heat to boiling.

*Molasses sauce* – Mix 4 cups water or cooking liquid from beans, 3 tablespoons dark molasses, 1 tablespoon vinegar, 2 teaspoons salt, and ¾ teaspoon powdered dry mustard. Heat to boiling.

Fill jars three-fourths full with hot beans. Add a ¾-inch cube of pork, ham, or bacon to each jar, if desired. Fill jars with heated sauce, leaving 1-inch headspace. Remove air bubbles and adjust headspace if needed. Wipe sealing surface of the jars with a clean, damp paper towel.

Apply lids and rings fingertip-tight. Process in a pressure canner as recommended in Table 1. Turn off heat and let the canner depressurize naturally. Remove canner lid. Cool jars 5 minutes. Remove from canner. Do not retighten bands. Cool completely, check seals, label, date, and store.

*Nutrition:* Dry Beans in Molasses Sauce

Serving size: about ½ cup – 120 calories, 0.5 g fat, 23 g carbohydrate, 7 g protein, 7 g fiber, 250 mg sodium, 2 g sugar

## Soup

Vegetable, dried bean or pea, meat, poultry, or seafood soups can be canned. These directions are intended for use with ingredients that already have separate canning recommendations for those foods.

**Caution:** Do not add noodles or other pasta, rice, flour, cream, milk, or other thickening agents to home canned soups. If dried beans or peas are used, they must be fully rehydrated first.

Select and prepare vegetables, meat, and seafoods as described for the specific foods in their own canning instructions (<https://nchfp.uga.edu>). Cover meat with water and cook until tender. Cool meat and remove bones. Cook vegetables as described for a hot pack. For each cup of dried beans or peas, add 3 cups of water, boil 2 minutes, remove from heat, soak 1 hour, and heat to boil; drain.

Combine solid ingredients with meat broth, tomatoes, or water to cover. Boil 5 minutes.

**Caution:** Do not thicken. Salt to taste, if desired. Fill jars halfway with solid mixture. Add remaining liquid, leaving 1-inch headspace. Remove air bubbles and adjust headspace if needed. Wipe sealing surface of the jars with a clean, damp paper towel.

Apply lids and rings fingertip-tight. Process in a pressure canner as recommended in Table 1. Turn off heat and let the canner depressurize naturally. Remove canner lid. Cool jars 5 minutes. Remove from canner. Do not retighten bands. Cool completely, check seals, label, date, and store.

*Nutrition:* Varies based on ingredients used.

## Chili Con Carne

*Yield:* 9 pints

- 3 cups dried pinto or red kidney beans
- 5½ cups water
- 5 teaspoons salt (separated)
- 3 pounds ground beef
- 1½ cups chopped onion
- 1 cup chopped peppers of your choice (optional)
- 1 teaspoon black pepper
- 3 to 6 tablespoons chili powder
- 2 quarts crushed or whole tomatoes

Rinse beans thoroughly with water and place in a 2-quart saucepan. Add cold water to cover by 2 to 3 inches. Soak 12 to 18 hours. Drain and discard water. Combine beans with 5½ cups of fresh water and 2 teaspoons salt. Bring to a boil. Reduce heat; simmer 30 minutes. Drain and discard water.

In a skillet, brown ground beef, chopped onions, and peppers if desired. Drain fat and add 3 teaspoons salt, pepper, chili powder, tomatoes, and drained, cooked beans. Simmer 5 minutes. *Do not thicken.*

Fill jars, leaving 1-inch headspace. Remove air bubbles and adjust headspace if needed. Wipe rims with a damp, clean paper towel. Apply lids and rings fingertip-tight. Process in a pressure canner according to the recommendations in Table 1. Turn off heat and let the canner depressurize naturally. Remove canner lid. Let jars cool 5 minutes. Remove jars from canner. Do not retighten bands. Cool completely, check seals, label, date, and store.

*Nutrition:* Chili con Carne (with 90% lean ground beef)  
Serving Size: 1 cup — 200 calories, 3.5 g fat, 24 g carbohydrate, 19 g protein, 6 g fiber, 760 mg sodium, 5 g sugar

## Problems and Solutions

### 1. Can plain green beans be processed in a water-bath canner?

No. Beans are a low-acid vegetable and must be processed in a pressure canner. Improper processing of beans or other low-acid vegetables can result in growth of *Clostridium botulinum*, which causes the foodborne

illness botulism. Pickled beans are the only beans that can be processed safely in a water-bath canner.

### 2. Can salt be left out when canning beans?

Yes. Salt is for flavor and can be left out to reduce sodium content.

### 3. Can beans be added to home canned salsa before canning?

No. Adding beans changes the acid content of the salsa and makes it unsafe when canned. Add beans when ready to serve the salsa.

### 4. What causes cut ends and seeds inside of green beans to turn reddish-brown?

Faint red pigments (anthocyanins) are present in small amounts in some varieties of green beans. Pigments may appear brown when canned but are safe to eat when processed properly. Another possible cause is overly mature beans.

**Table 1. Recommended processing times using a pressure canner**

	Style of Pack	Jar Size	Process Time (min.)	Canner gauge pressure for different elevations (in feet)			
				Dial gauge (lbs.)		Weighted gauge (lbs.)	
				0-2,001	2,001-4,000	0-1,000	Above 1,000
Snap and Italian Beans, Wax and Green	Hot and Raw	Pints	20	11	12	10	15
		Quarts	25	11	12	10	15
Beans – Shelled, Dried: All Varieties	Hot	Pints	75	11	12	10	15
		Quarts	90	11	12	10	15
Beans, Baked	Hot	Pints	65	11	12	10	15
		Quarts	75	11	12	10	15
Beans, Dry, with Tomato or Molasses Sauce	Hot	Pints	65	11	12	10	15
		Quarts	75	11	12	10	15
Soup *Caution: Process 100 minutes if soup contains seafoods.	Hot	Pints	60*	11	12	10	15
		Quarts	75*	11	12	10	15
Chile Con Carne	Hot	Pints	75	11	12	10	15

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*Complete Guide to Home Canning*, USDA AIB No. 539, 2015, and *So Easy to Preserve*, 6th ed., The University of Georgia Cooperative Extension Service.

*How-to Guide to Water Bath Canning and Steam Canning* (MF3241), <https://bookstore.ksre.ksu.edu/pubs/mf3241.pdf>

*How-to Guide to Pressure Canning* (MF3242), <https://bookstore.ksre.ksu.edu/pubs/mf3242.pdf>

Nutrition data provided by USDA FoodData Central, <https://fdc.nal.usda.gov/index.html> and ESHA Genesis R&D Food Formulation & Labeling Software, version 11.13

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