

## Soup

Because the convenience of canned soup makes cooking and meal preparation easier, many food preservers would like to reproduce soups found in the deli or supermarket. There are some commercially prepared foods that just cannot be reproduced safely by the home canner. For instance, creamed soups are not suitable because their ingredients interfere with the proper transfer of heat during the processing step and could result in foodborne illness. Freezing is a safer option.

**CAUTION:** Soups contain low-acid ingredients and cannot be safely canned in a boiling water bath or an atmospheric steam canner. Soups must be processed in a pressure canner.

### Problem Ingredients in Canned Soup

Never add thickening agents to a home-canned soup. Adding flour or other thickening agents to a product for home canning prevents the heat from penetrating to the center of the jar, interfering with a safe process to destroy the bacterial spores that cause botulism. Wait until you are ready to prepare the food for serving and then add the flour, cornstarch, or other thickening agent.

Butter, milk, cream, cheese, and other dairy products are low-acid foods that should never be included in home-canned soups before processing. Add these ingredients to the soup just before serving. Products high in starch also interfere with heat processing. Add noodles or any type of pasta, rice, or dumplings to home-canned soups or stews at serving time. Do **not** add noodles, alphabet noodles, spaghetti, or other pasta, rice, barley, etc., to canned soups before processing.

Do not can pumpkin, winter squash, broccoli, or cauliflower soup. These pack together and contain ingredients that interfere with safe processing. There are no scientific-research-tested recipes for home canning these soups.



BIGSTOCK.COM

### Canning Procedure

Read “Let’s Preserve: Basics of Home Canning” before starting. Place jar rack, 2 to 3 inches of hot water, and sealed jars in the canner. Fasten the lid and heat the canner on the high setting. After exhausting steam for 10 minutes, add the weighted gauge or pressure regulator or close the petcock to pressurize the canner. Start timing the recommended process when the desired pressure is reached.

Regulate heat to maintain a uniform pressure. When processing is complete, remove the canner from heat. Let the canner cool down naturally until it is fully depressurized. Then slowly remove the weighted gauge or open the petcock, wait 10 more minutes, and unfasten and carefully remove the canner lid.

After removing the lid, remove the jars from the canner with a jar lifter, being careful not to tilt the jars; place the jars on



dry towels or a wooden board. Leave at least 1 inch of space between the jars. Do not retighten the screw bands. Air-cool the jars for 12 to 24 hours. Remove the screw bands and check the lid seals. If the center of the lid is indented, then wash, dry, label, and store the jars in a clean, cool, dark place. If the lid is unsealed, examine and replace the jar if defective, use a new lid, and reprocess as before or refrigerate and consume within 3 days. Wash the bands and store them separately. Soup is best if used within one year.

### Additional Information

Never can soup in half-gallon containers. Use caution to avoid packing ingredients too solidly in the jars. For vegetable soup, fill the jars half full of solids; add broth, allowing 1 inch of headspace; and process in a pressure canner.

The processing times and pressures given in the following recipes are for altitudes of 1,000 feet or below. When canning at a higher altitude, increase the pressure as shown in Table 1, below.

## Recipes for Canned Soups and Broth

### Beef Stock (Broth)

**HOT PACK:** Saw or crack fresh trimmed beef bones (with meat removed) to enhance extraction of flavor. Rinse bones and place them in a large stockpot. Cover the bones with water. **Optional:** A small amount of celery, onion, carrots, or herbs may be added to the broth. These ingredients **must** be strained out before canning. Place a cover on pot and simmer for 3 to 4 hours. Remove bones and discard. Or, if desired, remove any tiny amount of meat tidbits still clinging to the bones and add that little bit of meat back to the broth. Cool broth, and skim off and discard fat. Add salt to taste, if desired. Be sure to use canning salt. Read “Let’s Preserve: Ingredients Used in Home Food Preservation” for more information. Reheat broth to boiling. Fill hot jars, leaving 1 inch of headspace. Wipe jar rims. Adjust lids and process. **Caution:** Do not add additional meat to this product. Process in a dial gauge pressure canner at 11 pounds of pressure or in a weighted gauge pressure canner at 10 pounds of pressure. Make adjustments for altitudes above 1,000 feet (see Table 1).

Pints: 20 minutes

Quarts: 25 minutes

### Chicken or Turkey Stock (Broth)

**HOT PACK:** Place large carcass bones (with meat removed) in a large stockpot. Add enough water to cover the bones. **Optional:** A small amount of celery, onion, carrots, or herbs may be added to the broth. These ingredients **must** be strained out before canning. Cover the stockpot and simmer until any remaining tidbits of meat on the bones easily fall off, about 30 to 45 minutes. Remove the bones and discard. Or, if desired, remove any tiny amount of meat tidbits still clinging to bones and add that little bit of meat back into the broth. Cool broth, and skim off and discard fat. Add salt to taste, if desired. Be sure to use canning salt. Read “Let’s Preserve: Ingredients Used in Home Food Preservation” for more information. Reheat broth to boiling. Fill hot jars, leaving 1 inch of headspace. Wipe jar rims. Adjust lids and process. **Caution:** Do not add additional meat to this product. Process in a dial gauge pressure canner at 11 pounds of pressure or in a weighted gauge pressure canner at 10 pounds of pressure. Make adjustments for altitudes above 1,000 feet (see Table 1).

Pints: 20 minutes

Quarts: 25 minutes

### Vegetable Soups

**HOT PACK:** Choose your favorite soup ingredients of vegetables, meat, or poultry. Prepare each vegetable as you would for a hot pack as described in the canning instructions for the specific foods (typically by boiling small pieces for 3 to 5 minutes). Cooked meat or poultry with the fat removed can also be added, if desired. If dried beans or peas are used, they must be rehydrated first. Combine ingredients with enough hot water, meat broth, canned crushed tomatoes, and/or tomato juice to cover. Boil 5 minutes. **Caution:** Do not thicken or add milk, cream, flour, rice, noodles, or other pasta. Add salt to taste, if desired. Fill hot jars halfway with solid mixture. Continue filling with hot liquid, leaving 1 inch of headspace. Remove air bubbles. Wipe jar rims. Adjust lids and process in a dial gauge pressure canner at 11 pounds of pressure or in a weighted gauge pressure canner at 10 pounds of pressure. Make adjustments for altitudes above 1,000 feet (see Table 1).

Pints: 60 minutes

Quarts: 75 minutes

**Note:** Cooked seafood can also be added as part of the solid mixture, but the jars must be processed as follows:

Pints or quarts: 100 minutes

**Table 1.** Pressure adjustments for elevation.

Dial Gauge Canner	0 to 2,000 feet	2,001 to 4,000 feet	4,001 to 6,000 feet	6,001 to 8,000 feet
	11 psi	12 psi	13 psi	14 psi
Weighted Gauge Canner	0 to 1,000 feet	1,001 feet and above		
	10 psi	15 psi		

## Sample Recipe Using Vegetable Soup Guidelines

Here is an example of amounts that could be used to can 10 pints of vegetable soup following the directions for vegetable soup on the previous page. Include 2 cups each of green beans, sliced carrots, and sliced celery; 1¼ cups each of peas, corn, and lima beans; ½ cup of diced red bell peppers; and 2 tablespoons of fresh parsley, chopped. Add the cooked vegetables and 1 quart of diced cooked chicken to 2 quarts of chicken broth and 1 quart of tomato juice that has been heated. Season with salt and pepper as desired. If commercially canned broth or tomato juice is used, you will not need to add any salt. Gently boil mixture for 5 minutes before putting in jars and processing as directed above. You may need to add additional hot broth or juice to cover the vegetables so that the jar is not more than half full of solids. You could include onion for the red peppers, or substitute cooked or canned kidney beans for the corn or lima beans. When fresh vegetables are not available, use frozen ones to make the soup.

### Chili Con Carne

(Makes about 9 pint jars)

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

**HOT PACK:** Wash beans thoroughly and place them in a 2-quart saucepan. Add cold water to a level of 2 to 3 inches above the beans. Cover and place in refrigerator to soak for 12 to 18 hours. Drain and discard water. Combine beans with 5½ cups of fresh water and 2 teaspoons of salt. Bring to a boil. Reduce heat and simmer for 30 minutes. Drain and discard water. Brown ground beef, chopped onions, and peppers (if desired) in a skillet. Drain off fat and add 3 teaspoons of salt, black pepper, chili powder, tomatoes, and drained cooked beans. Bring to a simmer and simmer for 5 minutes. Caution: Do not thicken. Fill hot chili into clean, hot jars, leaving 1 inch of headspace. Remove air bubbles and adjust headspace if needed. Wipe jar rims with a clean, dampened paper towel. Adjust lids and process in a dial gauge pressure canner at 11 pounds of pressure or in a weighted gauge pressure canner at 10 pounds of pressure. Make adjustments for altitudes above 1,000 feet (see Table 1).

Pints: 75 minutes

## Frozen Soups

Ingredients that do not freeze well:

- Starchy ingredients such as pasta, noodles, and rice become mushy when frozen.
- Potatoes crumble and become mushy. Waxy potatoes freeze better than cobbler or baking-type potatoes.
- Egg whites become tough.
- Frozen gravy or creamed sauces made with regular flour or cornstarch may separate when first thawed. They generally re-

turn to an acceptable texture when heated and stirred. Modified starches such as ThermFlo® or Instant ClearJel® or arrowroot may be used to prepare soups for freezing. They have greater stability to freezer temperatures than regular starches.

- Concentrate soup by using less water or other liquid. Add more liquid, tomatoes, or tomato juice when you prepare the soup for serving.
- Use less salt, spices, and herbs to prepare the soup. More can be added to taste when reheating soup.

### Preparation

Prepare soup to be frozen as usual. Chill prepared soup quickly to room temperature using one of the following methods or a combination of both:

- Place soup pot in a pan of ice water. Replace surrounding water as heat is absorbed from the soup pot. Stir occasionally to move the cooler outside area to the center.
- Divide large kettle of soup into smaller containers so there is not as much volume to cool at one time. Do not leave soup at room temperature over two hours.

### Freezing Procedure

Once soup has cooled, ladle into freezer containers (wide-mouth freezer jars or plastic freezer containers). Thicker soups can be frozen in zipper-type freezer bags. Label and freeze immediately. Do not freeze in containers larger than 2 quarts. Do not freeze more than 2 pounds of food per cubic foot of freezer space at one time.

### Options for Serving Frozen Soup

1. Frozen soup may be heated without thawing. Heat soup in a pan until it reaches a rolling boil or at least 165°F. Heat creamed soups over boiling water or in a double boiler and stir to keep it smooth. Reheat to a temperature of at least 165°F.
2. Thaw soup in the refrigerator. Reheat to a rolling boil or at least to a temperature of 165°F.
3. Defrost in the microwave oven. Break it up as it begins to thaw in the microwave oven. Heat to at least 165°F stirring occasionally.

#### FOOD SAFETY

Do not thaw soup at room temperature.  
Refrigerate leftovers and use within 3 days.

## Frozen Chicken Noodle Soup

3 to 5 pounds whole chicken or skin-on, bone-in breast, legs, or thighs

3 teaspoons salt (optional)

1 teaspoon whole peppercorns (optional)

1 onion, diced, approximately 1 cup

3 stalks of celery, diced, approximately 1½ cups

3 carrots, peeled and chopped, approximately 1½ cups

1 bag of frozen corn, 11 ounces (3 cups fresh or canned corn may also be substituted)

1 tablespoon dried parsley or 3 tablespoons fresh parsley, minced

Dried, thin egg noodles

Additional salt and pepper to taste

**PROCEDURE:** Place chicken (or pieces) in a large stockpot. Add 3 quarts of water to cover the chicken. Season with 3 teaspoons of salt and 1 teaspoon of peppercorns (optional). Celery, carrots, and onion or herbs may be added to flavor the broth. Cover the pot and bring to a gentle simmer. Simmer chicken for 45 to 60 minutes. Remove chicken and allow to cool for 5 to 10 minutes on a large plate. Strain broth and return to cooking pot. Add chopped vegetables and corn. Simmer for 20 to 30 minutes until vegetables are tender. Meanwhile, remove and discard skin and bones from the chicken. Cut or shred the meat into small pieces. Return to broth. Add dried parsley. Cool soup as described above and freeze in four 1-quart portions.

**TO SERVE:** For each 1 quart portion, add 1½ cups of water. Bring the soup to a boil. Be careful not to scorch the soup if heating the soup directly from the freezer. Add 3 ounces (approximately 2 cups) of dried pasta and cook for 7 to 8 minutes. Season with additional salt and pepper, if desired.

Each 1 quart portion makes 3 servings of prepared soup.

## Sources

All recipes except Chicken Noodle Soup are from *So Easy to Preserve*, 6th ed. University of Georgia, 2014.

Chicken Noodle Soup Recipe developed by Andy Hirneisen, Penn State Extension.

For additional information about food preservation, visit the Penn State Extension Home Food Preservation website at [extension.psu.edu/food/preservation](http://extension.psu.edu/food/preservation), or contact Penn State Extension in your county.

Prepared by Martha Zepp, extension project assistant; Andy Hirneisen, senior extension educator; and Luke LaBorde, professor of food science.

## extension.psu.edu

Penn State College of Agricultural Sciences research and extension programs are funded in part by Pennsylvania counties, the Commonwealth of Pennsylvania, and the U.S. Department of Agriculture.

Where trade names appear, no discrimination is intended, and no endorsement by Penn State Extension is implied.

**This publication is available in alternative media on request.**

Penn State is an equal opportunity, affirmative action employer, and is committed to providing employment opportunities to all qualified applicants without regard to race, color, religion, age, sex, sexual orientation, gender identity, national origin, disability, or protected veteran status.

Produced by Ag Communications and Marketing

© The Pennsylvania State University 2018

Code EE0207 01/18pod