

## How-to Guide to Pressure Canning

Canning food at home is a great way to preserve fresh food for later use. The key is canning food properly and safely to prevent foodborne illness.

A pressure canner must be used to safely can low-acid foods. These foods include:

- Vegetables
- Vegetable mixtures
- Red meats and wild game meats
- Poultry
- Seafood and Fish

A pressure canner may be used to can some high-acid or acidified foods. These foods include:

- Tomatoes
- Some tomato products
- Apples
- Berries
- Cherries
- Fruit purees
- Grapefruit or oranges
- Peaches, apricots, or nectarines
- Pears
- Plums
- Rhubarb

### Why Use a Pressure Canner?

Growth of the bacterium *Clostridium botulinum* in canned food may cause botulism — a deadly form of food poisoning. Botulinum spores are very hard to destroy at boiling-water temperatures; the higher the canner temperature, the more easily they are destroyed. Therefore, all low-acid foods must be processed at temperatures of 240° to 250°F, attainable with pressure canners operated at 10 to 15 pounds per square inch of pressure as measured by gauge (PSIG). The exact time depends on the kind of food being canned, the way it is packed into jars, and the size of jars.

Three serious errors in temperatures obtained in pressure canners occur because:

1. **Internal canner temperatures are lower at higher altitudes.** To correct this error, increase pressure for your altitude of residence.
2. **Air trapped in a canner lowers the temperature obtained at 5, 10, or 15 pounds of pressure and results in under processing.** All pressure canners must be vented 10 minutes before adding the weight to pressurize the canner.
3. **An inaccurate dial gauge is used.** Check dial gauges yearly for accuracy. If the gauge reads high or low by more than two pounds at 5, 10 or 15 pounds pressure, replace it.

### Recommended Pressure Canners for Low-Acid Foods

Today's pressure canner may have a *weighted gauge* or *dial gauge*, for indicating and regulating the pressure. *Weighted gauges* are

designed to “jiggle” several times a minute or to rock gently to maintain proper pressure. Read your manufacturer's directions to know how a particular weighted gauge should function. *Dial gauge* canners will usually have a counterweight or pressure regulator for sealing off the open vent pipe to pressurize the canner. This weight will not jiggle or rock. The dial gauge measures the pressure. One manufacturer makes a dual-gauge canner; read the manufacturer's user manual for complete instructions.

### Types of Pressure Canners NOT Recommended

USDA does not recommend canning in a small pressure cooker or pressure saucepan. The research for processing vegetable and meat products was conducted in pressure canners similar to today's 16-quart or larger pressure canners.

Canning in electric multi-cookers with pressure canning or steam canning functions is not supported by the USDA. Pressure process directions have not been developed for these appliances, and the canner being used does matter. This statement does not include the Ball® FreshTECH Automatic Home Canning System, which is for canning high-acid foods only according to the instructions for this appliance.

### Know Your Cooktop

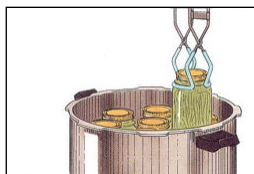
With the advancement of kitchen technology, the smooth cooktop has brought some challenges for canning. Follow the manufacturer's recommendations and consider these issues:

1. Some brands of pressure canners are **NOT** recommended to use on smooth cooktops. Always follow the manufacturer recommendations.
2. Excessive heat reflecting down on the surface can damage the cooktop. Examples are discoloration, burner damage, cracked glass tops, or metal fused to the glass top.
3. Many of these cooktops have automatic cut-offs on their burners when heat gets excessive. If burner shuts off during processing, food can be under-processed.

### Steps for Successful Pressure Canning

Always read the instruction manual for your canner. Make sure the pressure canner is working properly before preparing food. Clean lid gaskets and other parts according to the manufacturer's directions; make sure all vent pipes are open. Center the canner over the burner. Your pressure canner can be damaged if the burner puts out too much heat. In general, do not use on an outdoor LP gas burner or gas range burner over 12,000 BTUs. Check your manufacturer's directions for more information about appropriate burners.

1. Put the rack and hot water into the canner. Use enough water so it is 2 to 3 inches deep in the canner. Longer processes require more water.



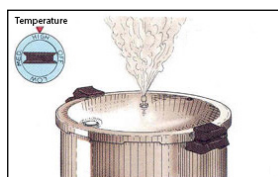
2. Preheat water to 140°F for raw-packed foods and to 180°F for hot-packed foods.

3. Prepare food to be canned. Fill jars as directed for the type of food being canned. Apply lids and screw rings. Tighten rings fingertip tight.

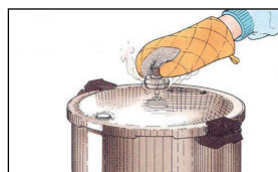
4. Load filled jars onto the canner rack one jar at a time, using a jar lifter.

5. Fasten the canner lid securely. Leave the weight off the vent pipe or open the petcock.

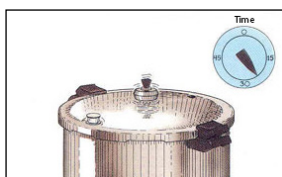
6. Turn the heat setting to its highest position. Heat until the water boils and steam flows freely in a funnel-shape from the open vent pipe or petcock. Let steam flow (exhaust) continuously for 10 minutes.



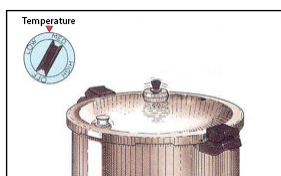
7. Place the counterweight or weighted gauge on the vent pipe, or close the petcock to pressurize the canner.



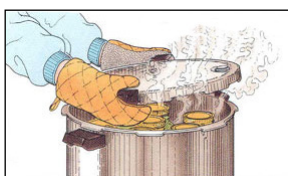
8. When the dial gauge reaches the recommended pressure, or when the weighted gauge begins to jiggle or rock as the manufacturer describes, start timing the process. Use the recommended pressure for your altitude of residence. More information about adjusting processing for higher altitudes is in *What's Your Elevation?*, <http://www.bookstore.ksre.ksu.edu/pubs/MF3172.pdf>.



9. Regulate heat to maintain a steady pressure at, or slightly above, the correct gauge pressure. **IMPORTANT:** If the pressure goes below the recommended amount, bring the canner back to pressure and restart the processing time.

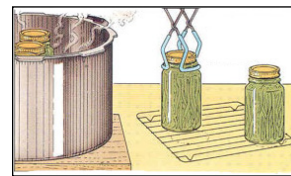


10. When processing is complete, turn off the heat, let the canner cool down naturally, and depressurize. **Do not force cool the canner.**



11. Once depressurized, remove the weight or open the petcock. Wait 10 minutes; unfasten the lid and remove it carefully, pointing away from your face.

12. Remove jars with a jar lifter and place them on a towel or cooling rack, leaving at least 1-inch spaces between the jars during cooling. Let jars sit undisturbed at room temperature for 12 to 24 hours.



### Storing Your Canner

After canning season is done, clean and maintain your canner. Clean the vent and safety valve. To clean the vent, draw a clean string or narrow strip of cloth through the opening. Make sure the safety valve is free of debris and operates freely. Clean the valve by removing, if possible, or following the manufacturer's instructions.

Check the rubber gasket for cracks or damage. If needed, new gaskets can be ordered from the canner manufacturer or found at stores where canning supplies are sold.

Before next canning season, have your dial gauge tested for accuracy by contacting your county or district extension agent. Do not immerse the gauge in water when cleaning.

The darkened surface on the inside of an aluminum canner can be cleaned by filling it above the darkened line with a mixture of 1 tablespoon cream of tartar or vinegar to each quart of water. Place the canner on the stove, heat water to a boil, and boil covered until the dark deposits disappear. Stubborn deposits may require the addition of more cream of tartar. Empty the canner and wash it with hot soapy water, rinse, and dry. (Hint: reduce hard water stains by adding ¼ cup of white vinegar to the water in the canner while processing jars.)

Store the canner in a clean, dry location with crumpled clean paper towels inside the canner. This will help absorb moisture and odors. Place the lid upside down on the canner for ventilation. Never put the lid on the canner and seal it.

### Sources:

*National Center for Home Food Preservation*, <http://nchfp.uga.edu>

*USDA Complete Guide to Home Canning, 2009, Bulletin No. 539*

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Kansas State University Agricultural Experiment Station and Cooperative Extension Service

MF3242

August 2015

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