



*There is nothing like the taste of fresh-from-the-garden vegetables and fruits.
But food begins to spoil quickly after harvesting unless it is preserved.*

About canning

Canning, the process of placing foods in jars or cans and heating properly to a specified temperature, is a way to preserve many different foods. The high heat destroys microorganisms and inactivates enzymes to preserve the safety and quality of the food.

Acid foods such as fruits can be processed or canned in boiling water, but low-acid vegetables and meats must be canned in a pressure canner at 240° F (10 pounds pressure at sea level). Tomatoes are on the borderline between low and high acid. They can be canned in boiling water, but acid must be added to them to increase the acidity. In pickling, low-acids foods such as vegetables are acidified by adding vinegar. Whatever method you use, the following guidelines will help you get started.

First step: Prepare equipment Preheat the canner

Assemble and wash equipment and containers before gathering fruit or vegetables.

Fill the boiling water bath or pressure canner with the appropriate amount of hot water and begin heating it on the range.

- Boiling water bath – 1 to 2 inches of water above the tops of the jars
- Pressure canner – 2 to 3 inches of water in the bottom of the canner

This can be difficult to determine before jars are placed in the canner. Have an extra pan of water heating in case you have too little water in the canner. If you heat too much, be prepared to remove some.

Examine jars and discard any that have nicks, cracks, or rough edges. These defects will prevent an airtight seal, allowing food to spoil.

Wash canning jars in soapy water, rinse well, and keep hot. This can be done by using a dishwasher or by placing the jars in the water that is heating in the canner. The jars need to be kept hot to prevent breakage when they are filled with a hot product and placed in the canner for processing.

Prepare the jars and lids so they are safe

You must sterilize jars that will be filled with food and processed for less than 10 minutes in a boiling water bath canner. This can be done by boiling them for 10 minutes (for 1,000 feet altitude). Add one additional minute for each additional 1,000 feet of altitude. Jars that will be processed in a boiling water bath for 10 minutes or more or in a pressure canner will be sterilized during processing. Always use new two-piece lids. Follow the manufacturer's instructions for treating them.

Prepare the food to be preserved

Wash the product carefully, a little at a time. Lift food out of the water, drain the water, and continue rinsing until the water is clear and free of dirt. Dirt contains some of the hardest-to-kill bacteria. Don't let the food soak; it will lose flavor and nutrients. The raw food should be as clean as possible to make the canning process as effective as possible.

Pack the food according to directions

Fruits and vegetables may be packed raw or preheated and then packed. Some foods can be packed by either method, but always follow the directions given in the recipe. Hot pack often gives better color and flavor, particularly when foods are processed in a boiling water bath.

A jar funnel is helpful when you fill jars with small foods. There should always be enough liquid to fill in around the solid food in the jar and to cover the food – usually ½ to 1½ cups liquid for a quart jar.

Leave the specified amount of headspace in the jar. The amount depends on the type of food, so follow the directions in the recipe.

Close the jars correctly

To release any air bubbles that may be trapped in the jar, run a bubble-freer or any plastic knife-like utensil around the edges of the jar, gently pushing the food from side to side so that any trapped air is released. Add more liquid, if needed, to ensure proper headspace.

Wipe off the rims of the jars with a clean, damp cloth. Place the treated lid on the jar, center it, and hold it in place with your fingers while you tighten the screw band to fingertip tight. Tightening the screw band too tight will prevent air from escaping as necessary during processing.

Use correct canning method

Boiling water bath procedure

Choose the correct canning method. Use boiling water bath for fruits or high-acid foods. Use pressure canners for all other foods.

1. Canner should be about half full of clean, hot water.
2. Load filled jars, one at a time, into the canner using a jar-lifter. Place them on a rack. Make sure the jar-lifter is securely positioned below the neck of the jar. Keep the jar upright at all times.
3. Add more boiling water, if needed, so that water level is 1 to 2 inches above the tops of the jars. Pour water around the jars, not on them to prevent breakage.
4. Turn the heat setting to the highest position, cover the canner with its lid, and heat until the water boils vigorously.
5. Set a timer after the water is boiling for the total minutes required to process the food.
6. Keep canner covered during the processing. The heat setting may be lowered as long as the water boils steadily for the entire time.



Pressure canner procedure

7. Add boiling water, if needed, to keep water above the jar tops.
8. If water stops boiling at any time during the process, turn the heat to its highest setting, bring the water back to a vigorous boil, and begin timing the process again, from the beginning (using original total processing time).
9. When the jars have been processed, turn off the heat and remove the canner lid. Wait 5 minutes before removing jars.
10. Using a jar-lifter, remove the jars one at a time. Do not tilt jars. Carefully place hot jars right-side up directly onto dry towels or a cake cooling rack to prevent jars from breaking on contact with a cold surface. Leave at least 1 inch between the jars during cooling. Avoid placing the jars in a cold draft. Do not cover with towels.
11. Let the jars sit undisturbed while they cool for 12 to 24 hours. Do not tighten ring bands on the lids or push down on the center of the flat metal lid until jar has completely cooled.

Read the canner manufacturer's instructions and follow them carefully. Be sure to vent or exhaust all pressure canners for 10 minutes before closing them up to pressurize.

1. Center canner over the burner. When the jars of food are ready for canning, put the rack and 2 to 3 inches of hot water into the canner. Begin heating the water, but not enough for the depth to decrease.
2. Use a jar-lifter to place filled jars, fitted with lids, on the jar rack in the canner. Leave space between the jars for steam to flow around each one during processing. Keep the jar upright at all times.
3. Fasten the canner lid securely. Leave the weight off the vent port or open the petcock.
4. 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 port or petcock. Let the steam flow continuously for 10 minutes (to vent the canner).
5. After venting the canner, place the counterweight or weighted gauge on the vent port or close the petcock, depending on the type of canner. If you have a weighted gauge, be sure to use the correct setting. The canner will begin to pressurize.
6. For a dial gauge canner, let the pressure rise quickly to 8 pounds of pressure. Lower the burner temperature slightly and let the pressure continue to rise to the correct setting.
7. For weighted gauge canners, let the canner heat quickly until steam begins to escape from the gauge or the gauge moves and makes noise. Adjust the heat down slightly until the weighted gauge begins to jiggle or rock as the manufacturer describes.
8. Start timing the process when the pressure reading on the dial gauge indicates that the recommended pressure has been reached or when the weighted gauge begins to jiggle or rock as described.



9. Adjust the heat under the canner to maintain a steady pressure at, or slightly above, the correct gauge pressure. If the pressure goes too high, do not lower it by opening the vent or lifting the weight. Instead, turn down the heat under the canner.
10. If at any time the pressure goes below the recommended amount, bring the canner back to pressure and begin timing the process again, from the beginning (using the total original process time).
11. When the time process is complete, turn off the heat, remove the canner from an electric burner if possible, and let the canner cool down naturally. If the canner is too heavy, simply turn off the heat.
12. Do not force-cool the canner or depressurize it. It will depressurize while it is cooling.
13. After the canner is depressurized, remove the weight from the vent port or open the petcock. After 10 minutes, unfasten the lid and remove it carefully. Lift the lid with the underside away from you so that the steam does not burn your face.
14. Do not leave the canner unopened to cool completely.
15. Using a jar-lifter, remove the jars, being careful not to tilt them. Carefully place the hot jars directly onto dry towels or a cooling rack. Leave at least 1 inch of space between jars.
16. Let the jars sit undisturbed while they cool for 12 to 24 hours. Do not tighten ring bands on the lids or push down on the center of the flat metal lid until the jar is completely cool.

**Important:
Test for sealed jars**

After 12 to 24 hours, make sure the jars are sealed. Most lids will seal with a pop sound while they are cooling. When it is completely cool, test the lid. It should be curved downward and should not move when pressed with a finger. If a jar is not sealed, refrigerate the food and use it within two or three days. You may also reprocess the food within 24 hours or freeze it.

Use proven recipes

It is important to use recipes from reliable sources because these recipes have been tested for safety and quality. A good place to find tested recipes is the National Center for Home Food Preservation (www.uga.edu.nchfp/index.html).

For more information

extension.wvu.edu or contact WVU Extension Service Families and Health Programs at 304-293-2796.

Sources

Adapted from the *U.S. Department of Agriculture's Complete Guide to Home Canning*, No. 539, revised June 2006.

Revised

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