

The Essentialist

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Pressure Canning at Home

The information in this document is from the following sources:

- Presto pressure canner instruction book, published in 1971 (provided by Jean Helps). Because not all models are identical, verify this information for your canner;
- MSU Extension Service Canning Guide (msuextension.org/publications/HomeHealthandFamily/MT198329HR.pdf)
- Ohio State University Extension Fact Sheet: Canning Basics (<http://ohioline.osu.edu/hyg-fact/5000/pdf/5338.pdf>)
- Culinary Cafe Canning Guide: (www.culinarycafe.com/Canning.html)

How it Works

The process of canning is used to preserve food by killing and excluding microorganisms that would otherwise cause spoilage. During the canning process, the heat and pressure kills most of the bugs already in the food, and drives air from the jar. As the jar cools and seals, a vacuum is formed, preventing new microorganisms from entering and re-contaminating the food.

Because not all bugs are killed during canning, botulism being the most notable, other measures are included to kill them:

- ▶ Foods with adequate acid or sugar protects against the growth of many bugs; heating to the boiling point of water (212 F) is sufficient (hot water bath canning).
- ▶ Low acid foods, such as most vegetables and all meats, must be heated to higher temperatures that can only be reached under high pressure provided by a pressure canner. You can add acids to low-acid foods to avoid using a pressure canner; for example, adding vinegar to cucumbers.
- ▶ Tomatoes generally may be acidic, but for canning are considered low-acid and require either the addition of lemon juice or citric acid, or pressure canning.

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Basic Process for Pressure Canning

1. Food:

Keep plenty of boiling water handy.

Sort and clean food. Trim, slice or otherwise prepare for canning, then place in a bowl and cover with warm water to preheat, or pre-cook according to recipe.

2. Canner:

Use pipe cleaner or small brush to clean vent pipe.

Place rack or canning basket in canner, to keep jars from resting on bottom. Add 2 quarts boiling water to canner (or enough to fill about 3 inches) to prevent it from boiling dry. Add 1 teaspoon cream of tartar to canner (prevents mineral build-up on jars)

3. Jars:

Inspect jars and lids: Discard any jars that are chipped or damaged; discard any lids that are bent or have problems with the sealing ring.

Keep jars and lids warm in a water bath until ready to use (but not rings).

Fill jars, leaving required head space (see *Processing Time Tables*). Pack peas, corn, spinach and meats loosely, as they expand during processing and may break the jars. Add boiling water or cooking liquid to proper level. Work out bubbles with clean knife.

Wipe rim and threads of jar with damp cloth to remove all bits of food. Place warm lid on jar, then screw on the ring to finger-tight. Do not over-tighten.

Place jars in canner. Do not squeeze in more jars than the listed capacity.

4. Heating Canner:

Securely lock canner lid in place. If hard to close, lubricate sealing ring with salad oil.

Leave weight off vent port or open petcock. Use a large burner; turn heat on high. When steam begins to vent, adjust heat to allow steam to flow freely at moderate rate, for 7 - 10 minutes before placing pressure regulator (or weight gauge) on vent pipe.

After securing pressure regulator/weight gauge and the hissing stops, the pressure inside the canner will climb. When it reaches desired pressure (or when the weighted gauge begins to jiggle or rock), lower heat until pressure remains constant. Refer to *Processing Pressure Table* for correct pressure.

- Electric stove: turn to LOW just before desired pressure is reached (electric burners do not cool instantly).
- Gas stove: turn as low as possible when desired pressure is reached)

Begin monitoring processing time the moment the correct pressure is reached. Refer to *Processing Time Tables*. Avoid fluctuations in pressure during the canning period. Abrupt changes tends to draw liquid from jars.

5. Cooling Canner:

At end of the processing time, turn heat OFF. If using electric range, move canner from heat. For glass jars, do not remove pressure regulator/weight gauge until pressure has dropped to ZERO, and the automatic air vent has relaxed.

Allow canner to cool naturally, about 30 - 45 minutes.. Attempting to speed cooling is not recommended (for example, by laying wet cloths on the cover, placing canner in water, or setting canner in a draft or on a cold surface). This reduces pressure in the canner more rapidly than the jars, and may cause breakage.

Never remove cover until:

- steam gauge registers zero
- automatic air vent has relaxed
- metal plunger has dropped
- pressure regulator has been removed
- no steam remains in the cooker.

Safety Precaution:

When removing cover, lift top of cover toward you, so that steam will escape away from you.

Cover canner and containers with dish towel; let rest 1-2 minutes.

6. Cooling Jars:

Remove basket of jars to board or towel. Then remove jars, and set on towel or rack, away from draft, keeping jars slightly apart. If liquid is withdrawn from jars during processing, DO NOT OPEN to refill. Loss of liquid will not interfere with keeping qualities of the food; opening of the jar will cause food to spoil.

Let jars rest 24 hours. As jars cool, the lids may 'pop' as they seal. Inspect each lid to ensure it is slightly indented, indicating a good seal. Gently press on the center of the lid; if it springs when released, it is not properly sealed.

7. Unsealed Jars: What to Do?

Unsealed jars need to be reprocessed within 24 hours, or discarded. Generally, the quality of reprocessed food is poor.

If you want to reprocess: remove lid and check jar-sealing surface for tiny nicks or bits of food. If necessary, replace jar. Always use a fresh, properly prepared lid, and re-process for the same processing time.

8. Storage of Canned Food:

Once jars are tightly sealed and cooled, they are ready to be stored.

- Wash lid and jar to remove food residue; rinse and dry jars.
- Label and date jars.
- Store in cool dark, dry place (50 - 70 degrees F is ideal). Do not store above 95 degrees, or near hot pipes, a range, a furnace, in an uninsulated attic, or in direct sunlight. These are all conditions to induce spoilage.
- Plan to use within one year for optimum quality.

9. Cleanup:

Wash and sterilize any jars in which food spoilage has occurred.

Carefully wash canner. Inspect sealing ring and replace if damaged. Allow canner to dry thoroughly and store in a dry place. Occasionally draw a pipe cleaner or small brush through the vent pipe.

Do NOT immerse gauge, to avoid rusting or corrosion and damage to the mechanism.

10. Canner Storage:

Do not store with cover locked on. Place cover upside down on the body to save space, and to allow for air circulation and prevent odors from forming.

11. General Precautions:

Take care with rim of canner and sealing ring on lid, to ensure a good seal.

Do not pour cold water into a dry, over-heated canner as it may cause cracking. Never use a canner with the slightest sign of a crack -- very dangerous.

Never render lard under pressure. It may be rendered in an open canner.

Canner Canning Capacity

Refer to the canning guide/instruction manual for your canner. If you cannot find your guide, check out:

Presto manuals: www.gopresto.com/products/manuals.php

Mirro pressure cooker manual: www.cookingandcanning.net/domiprcoma.html

Required Pressure

The amount of pressure required differs with altitude, and the type of pressure gauge on your canner. Refer to *Processing Pressure Tables*.

Modification of pressure must be adjusted for altitudes greater than 2,000 feet (pressure-gauge canners) or 1,000 feet (weighted-gauge canners).

Processing Time

Processing times are dependent on type of food, and size of jars. Refer to *Processing Time Tables*.

How to Identify & Handle Spoiled Canned Food

NEVER TASTE food from a jar with an unsealed lid, or food that shows signs of spoilage. As you use jars of food, examine lid for tightness and seal; lids with concave centers have good seals.

Before opening jar, examine contents for rising gas bubbles and unnatural color.

While opening jar, smell for unnatural odors; look for spurting liquid and mold growth (white, blue or green) on the top food surface and underside of lid.

If food is spoiled:

Do not discard where it can be eaten by humans or pets.

Treat all jars of spoiled low-acid foods (including tomatoes) as though they contain botulinum toxin, and handle in one of two ways:

1. If jars are still sealed, place in heavy garbage bag. Close bag and place in regular trash container or bury in a landfill.
2. Unsealed, open, or leaking jars: detoxify (destroy the bacteria) before disposal. Place jars and lids on their sides in an 8-quart or larger pan. Wash hands thoroughly. Carefully add water to cover containers by at least 1 inch; avoid splashing water. Place lid on pan; heat water to boiling. Boil 30 minutes.

Cool and discard lids and food in the trash, or bury in soil. Sanitize all counters, containers, and equipment that may have touched the food or containers. Don't forget the can opener, your clothing, and hands. Place any sponges or washcloths used in the cleanup in a plastic bag and discard.

Recommended Tools for Canning

Canner, with rack or basket

Jar lifter

Canning funnel (glass or stainless steel)

Kitchen Tongs

Towels

Sources

Canners

Target

Montana Ace 755-9701: Mirro 12 quart and Presto 23 quart

CHS Farm Store 755-7427: All American 15.5 quart

Canners, part & tools: www.canningpantry.com, www.pressurecooker-outlet.com, and www.lehmans.com

Presto website (www.gopresto.com) for more information.

Internet Resources

- MSU Extension Service Canning Guide
(<http://msuextension.org/publications/HomeHealthandFamily/MT198329HR.pdf>)
- Ohio State University Extension Fact Sheet: Canning Basics
(<http://ohioline.osu.edu/hyg-fact/5000/pdf/5338.pdf>)
- Culinary Cafe Canning Guide: (www.culinarycafe.com/Canning.html)
- USDA Complete Guide to Home Canning
(http://www.uga.edu/nchfp/publications/publications_usda.html)
- Online Canning and Food Preservation Course from National Center for Home Food Preservation: https://www.uga.edu/nchfp/exception_account.html

Canning Books

You can write to the following for more canning information:

- *Ball Blue Book*, 1995. Home Canners Catalog, Alltrista Corp., P.O. Box 2005, Muncie, IN 47307. \$4.95 + \$1 S&H.
- *Kerr Home Canning and Freezing Guide* (1996). Published by Kerr Glass Manufacturing Corporation. P.O. Box 76961. Los Angeles, California 90076
- *So Easy to Preserve* (1993), University of Georgia Extension Service, Agriculture Business Department. Send \$15 to 203 Conner Hall, Athens, GA 30602.