

CANNING BASICS

Objectives

After completing this unit, you should be able to:

1. Understand the proper methods of preparing canning jars for use
2. Explain how to fill canning jars, prepare lids and place them on jars
3. Describe procedures for removing jars from canners and proper cooling techniques
4. Understand the ways to check for a good seal
5. Describe procedures for storage of filled jars and rings

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Procedures before Canning

Getting ready to can:

- Gather all necessary equipment: canner, jars, lids and rings, jar lifter, tongs or magnetic wand, ladle, jar filler (funnel), plastic knife or bubble freer, shallow dish or pan, paper towels or wash cloth.
- Wash jars, lids, and rings in warm sudsy water and rinse.
- Check jar rims visually and with your finger to see if they have nicks. Turn jars upside-down on a flat surface, checking for those that rock. Discard jars with nicks and those that rock as they will not seal properly.
- Sterilize jars that will be processed less than 10 minutes in a boiling water bath canner. See sterilization method below.
- Keep jars hot before filling with food to reduce breakage. Jars may be kept in a hot boiling water bath canner, dishwasher set at drying cycle, or in an oven set at less than 200°F.
- Follow lid directions to soften compound in preparation for sealing the jars. Most jar lid directions call for holding the lids in simmering water. Rings may also be placed in this container. One method is to place the lid inside the ring.

Sterilizing jars, if necessary:

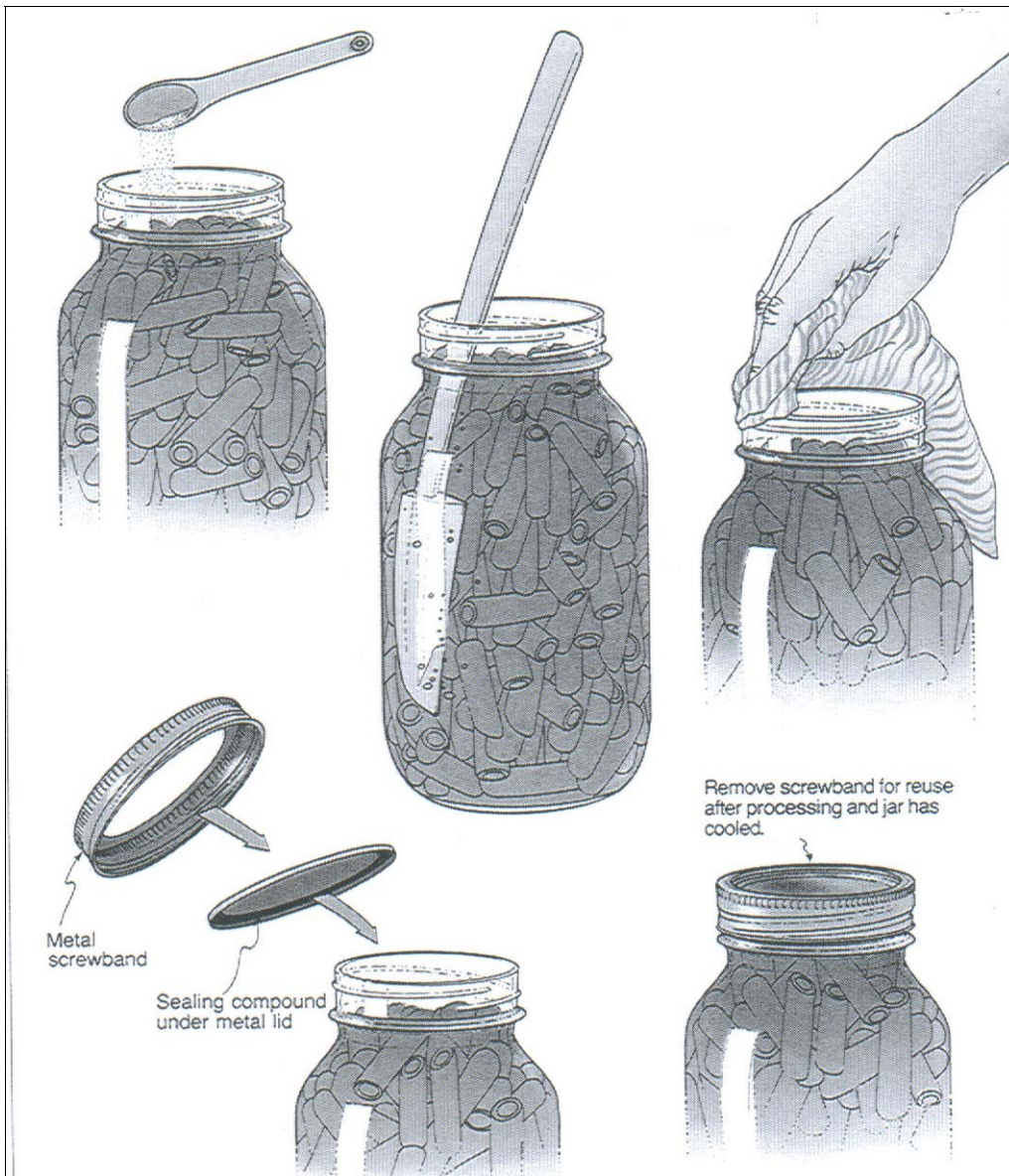
- Totally submerge canning jars in water. This may be done in the boiling water bath canner or another pot with a lid.
- Once water reaches a boil, boil gently for 10 minutes. Leave jars in water until ready to fill with food.
- A dishwasher or an oven will not sterilize jars.

Jar Filling Procedures

Filling jars:

- Pour an inch of hot or boiling water into shallow dish or pan as a place to put the canning jars as they are being filled. Place as close as possible to hot food to be canned.
- Remove hot canning jar using jar lifter and place in the water dish or pan.
- Place jar filler (funnel) in jar.
- Ladle food into the jar, leaving head space as directed in recipe.
- Gently run a bubble freer around the edges of the jar, gently shifting the food to remove air bubbles.
- Check for appropriate head space, adding or removing food as necessary.
- Wipe jar rim clean, using damp paper towel or cloth.
- Using tongs, remove a ring containing a lid and place on jar(s). If rings were not heated with lids, remove lids from simmering water using tongs or a magnetic wand. Then place ring over lid.
- Tighten rings fingertip tight. If rings are too loose they may not seal. If rings are too tight, the lids will buckle during processing.
- Use jar lifter to place filled jar(s) into canner.

- For boiling water canning directions, see the High Acid Canning unit.
- For pressure canning directions, see the Low Acid Canning unit.



Procedures after Canning

When jars have been processed for the recommended amount of time in a **boiling water bath canner**, the canner lid should be removed and the heat turned off. Jars should remain in the canner for an additional 5 minutes before removing, to prevent sealing failures.

When jars have been processed for the recommended amount of time in a **pressure canner**, the heat should be turned off. The canner may be left on a gas burner, but should be removed from an electric coil. Once the pressure has dropped to zero as indicated on the **dial gauge**, the pressure regulator can be removed. To prevent sealing failures, wait an additional 10 minutes before removing the lid. Lift the lid so the operator is protected from the steam.

In a **weighted gauge** canner, the pressure gauge should be jiggled with a fork to test whether pressurized steam is still in the pot. The weight may then be removed, and after 10 minutes, the lid may be removed, carefully facing away from the operator. Newer canners may have a safety lock that will disengage when the pressure reaches zero.

Never leave a filled **pressure canner** closed for a long period of time after the pressure has dropped to zero because a vacuum will form and the lid will be extremely hard to remove. Food in jars left in a canner overnight will be spoiled.

To remove jars from canners:

- Place dry towels or cake cooling racks in a place free from cold drafts and not needed for 12 to 24 hours.
- Using a jar lifter, remove the jars one at a time OR first lift all the jars in the rack and then remove them from the rack, one at a time, with a jar lifter. Be careful not to tilt the jars.
- Place the jars right side up on dry towels or a cake cooling rack. Do not place on a cold counter surface as jars may crack. Do not cover jars with towels as this will interfere with the cooling process. Do not tighten ring bands or push down on center of metal lids as this may break the seal.
- Leave at least 1-inch of space between the jars so that proper cooling can take place.
- Jars should be left to cool 12 to 24 hours.

To check jars for seals after the cooling down period:

- Visually check to see if the flat metal lids are curved downward (concave).
- Press the lid in the center with a finger. It should not move.
- Tap the lid with a metal spoon. A clear ringing sound, rather than a dull thud, should be heard. (A dull sound may also be caused by food touching the bottom of the lid. In this case, the jar is sealed.)
- If lids are buckled or creased but jar is sealed, use contents as soon as possible as seals may break. Causes of buckling or creasing are:
 - screw bands too tight
 - jars too full

- not following correct pre-heating process for brand of lids used
- using raw pack for vegetables high in starch
- steam leak from pressure canner lid
- cooling pressure canner with water or cool air
- using a jar with mouth too large for the lid

To prepare jars and rings for storage:

- Remove the ring band.
- Wash or wipe the outside of the jar and lid, removing any food particles.
- Dry jar and lid, and then label with the jar contents, date of processing, canner load number if doing more than one load, and any other information you wish to record (e.g., source of contents).
- Store jars in a cool (50° – 70°F.), dry, dark location to prevent lid corrosion and protect food quality. Quality will be highest if used within one year of canning.
- Wash rings in hot, sudsy water, rinse and dry thoroughly. If desired, put the rings in a warm oven on a cookie sheet to dry.
- Store rings in a location and manner that will prevent rusting.

For best quality, use all canned foods within one year of the processing date.

Canning Basics Study Questions

1. Why should jar rims be checked for nicks?
2. Why should jars be kept hot before filling and placing in a canner?
3. What are two inappropriate methods for sterilizing canning jars?
4. How tightly should jar rings be screwed onto the jars?
5. What are two ways to determine if a weighted gauge pressure canner has depressurized completely?
6. What are two ways to determine if a dial gauge pressure canner has depressurized completely?
7. Describe three ways to tell if a jar has sealed.
8. Describe how to remove jars from a canner after processing and where to place them.
9. How long will jars of home processed food remain at highest quality?
10. Why should jar rings (bands) be washed and dried before seasonal storage?

SPOILED HOME CANNED FOOD: HOW TO IDENTIFY AND HANDLE

Food spoilage can occur even to experienced home food preservers. To minimize or avoid spoiled home canned food:

- select top quality fresh produce and process immediately
- maintain a scrupulously clean operation
- use recommended up-to-date procedures and timetables
- check canner pressure gauges for accuracy each year
- prevent poor seals by checking jars and lids for defects, wiping jar rim before closing, and using correct headspace.

Do not taste or use canned food that shows any sign of spoilage!
Dispose of spoiled canned food in a safe manner.

STORING CANNED FOODS

Properly canned food stored in a cool, dry place will retain optimum eating quality for at least one year.

Canned food stored in a warm place near hot pipes, a range, a furnace or in indirect sunlight may lose some of its eating quality in a few weeks or months, depending on the temperature. Dampness may corrode metal lids and cause leakage so the food will spoil.

Accidental freezing of canned food does not cause food spoilage unless the seal is damaged or the jar is broken. However, frozen foods may be less palatable than properly stored canned food. In an unheated storage place, protect canned foods by wrapping the jars in paper or covering them with a blanket.

ON GUARD AGAINST SPOILAGE

Do not taste food from a jar with an unsealed lid or food that shows signs of spoilage. You can more easily detect some types of spoilage when jars are stored without screw bands. Growth of spoilage bacteria and yeast produces gas, which pressurizes the food, swells lids, and breaks jar seals. As each stored jar is selected for use, examine its lid for tightness and vacuum. Lids with concave centers have good seals.

Next, while holding the jar upright at eye level, rotate the jar and examine its outside surface for streaks of dried food originating at the top of the jar. Look at the contents for rising air bubbles and unnatural color.

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

Spoiled low-acid foods, as well as tomatoes, may exhibit different kinds of spoilage evidence or very little evidence. Therefore, all suspect containers of spoiled low-acid foods, including tomatoes, should be treated as having produced botulinum toxin and handled carefully in one of two ways:

- If the suspect glass jars are still sealed, place them in a heavy garbage bag. Close and place the bag in a regular trash container or bury it in a nearby landfill. If you wish to re-use the jars, carefully open them and follow the detoxification process.
- If the suspect jars are unsealed, open, or leaking, jars and contents should be detoxified before disposing of the food.

DETOXIFICATION PROCESS

Carefully place the opened suspect jars containing the food on their sides in large stock pot, or boiling water bath canner. Place lids and rings in the pot also. Wash your hands thoroughly. Carefully add water to the pot. The water should completely cover the containers with a minimum of 1-inch above the containers. Avoid splashing the water. Place a lid on the pot and heat the water to boiling. Boil 30 minutes to ensure detoxifying the food and all container components. Cool and discard the lids and food in the trash or bury in soil.

Jars and rings may be washed in hot sudsy water, rinsed and sanitized in a solution of 1 teaspoon of chlorine bleach in 1 gallon of water. Leave in water for 30 seconds, then let air dry.

Thoroughly scrub all counters, containers, equipment, clothing, and hands that may have contacted the contaminated food. To sanitize all surfaces that come in contact with spoiled or questionable food, clean with a solution of 1 part chlorine bleach to 5 parts water. Wet the surface with this solution and let stand 5 minutes before rinsing.

Discard any paper towels, sponges or wash cloths that were used in the cleanup. Place them in a plastic bag and discard in the trash.

Protect clothing while using chlorine bleach solutions.

Prepared by Janet Cox Hickman, 5/89. Revised 2001 and 2004 by Judy L. Price

Resources:

[Complete Guide to Home Canning](#). USDA Extension Service Agriculture Information. Bulletin No. 539
[So Easy to Preserve](#), Cooperative Extension Service, The University of Georgia, 2nd edition, 4th edition.