

Hot Water Bath Canning

Store your garden's abundance to savor in the winter months! In this factsheet you will learn about Hot Bath Canning, how it works, what you can make, and how to do it safely. Canning means you won't waste any of your harvest, you'll get the tastes of summer throughout the fall and winter, your food is shelf stable, and you can share delicious gifts with your friends and family! Note: The Compost and Conservation Education Society in no way retains responsibility for unsafely home canned foods. To supplement this factsheet, we encourage you to take a workshop or course from a trained professional like those workshops offered in person at the Compost Education Centre.

Why Hot Bath Can?

- Preserve your harvest and reduce food waste
- Delicious
- More nutritious than store-bought
- Makes a great gift!
- Have shelf stable food in the middle of winter- no freezer or fridge required for storage

Fun Foods to Hot Water Bath Can

- Berry jam
- Compote
- Apple/pear chutney, applesauce, pearsauce
- Green or Red tomato Salsa (with lemon or vinegar)
- Pickled beets, cucumbers, beans

What is Hot Water Bath Canning?

Hot Water Bath Canning preserves higher acid foods by controlling the growth of food spoilage organisms thereby slowing natural decomposition of foods.

High acid foods themselves inhibit the growth of food spoilage organisms, but acidity alone isn't enough to preserve food—applying heat in the hot water bath canner deactivates enzymes (that break down food), kills yeasts, destroys microorganisms and prevents oxidization, things that can still happen in high-acid environments. Through high temperatures and the exclusion of air, a stable food is created.

What foods can I preserve using this method?

Foods preserved with Hot Water Bath Canning must be HIGH acid foods (with pH values of 4.6 or lower). This means we are able to safely can most fruits, and if we add acid (lemon juice, vinegar) we are also able to make pickled vegetables, salsas and chutneys.

Botulism spores thrive in LOW acid environments, in the absence of air (e.g. a sealed jar!). Foods with pH values of 4.7 or higher are considered LOW acid foods and they should be pressure canned at high temperatures for specific amounts of time to avoid the growth of Botulism spores, which give off a deadly toxin and can make you very sick. Hot Water Bath Canning does not reach temperatures appropriate to safely can LOW acid foods; they must be processed using a Pressure Canner. Botulism spores do not grow in a high-acid environment so we can safely can HIGH acid/low pH foods with the Hot Water Bath Canning method!



HIGH Acid Foods (pH 4.6 or lower) - safe for Hot Water Bath Canning	LOW Acid Foods (pH 4.7 or higher) - must be Pressure Canned
Fruits	Vegetables
Fruit Juices	Meat and Game
Jams, jellies	Poultry
Veggie Pickles (with the addition of vinegar or lemon)	Seafood
Salsa (with the addition of vinegar or lemon)	Soups, stews
Chutneys (with the addition of vinegar or lemon)	Tomato meat sauce
Tomatoes (with the addition of vinegar or lemon)	Tomato veggie sauce

Supplies needed for Hot Water Bath Canning

- Measuring cups/spoons
- Glass canning jars (Bernardin or Ball jars, which can be reused)
- Sealing lids (always use new) and screw bands (can re-use indefinitely)
- Pot for cooking your food/recipe
- Large tall pot for hot water bath
- Lid magnet
- Canning funnel
- Jar lifter
- Jar rack for the pot
- Clean towel/cloth for wiping rim
- Recipe and all the ingredients



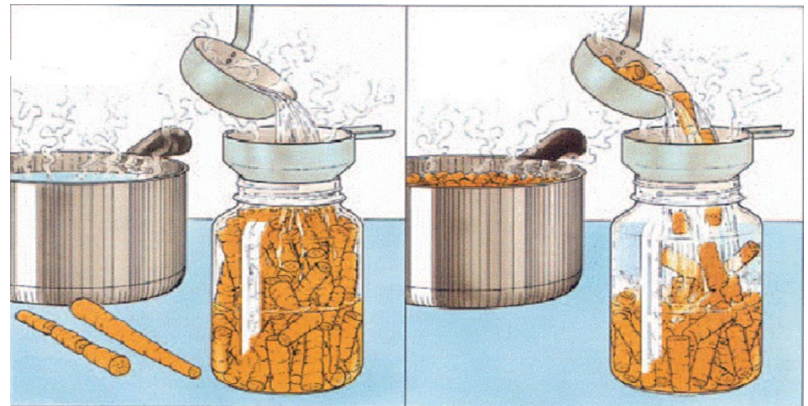
Above left: A two part sealing canning lid. Above right clockwise: A lid magnet, a canning funnel, and a jar lifter.

Cold Packing vs. Hot Packing

A cold pack involves packing raw foods into sterilized jars, and pouring a hot liquid over top before canning. This is commonly used with pickled vegetables, where you are packing raw or steamed vegetables in the jar, and pouring a hot vinegar solution over top.

A hot pack involves pouring cooked hot foods into a sterilized jar. Both of these jar filling methods are pictured to the right.

In both instances, the full jar is then Hot Water Bath Canned, as outlined in the steps below!



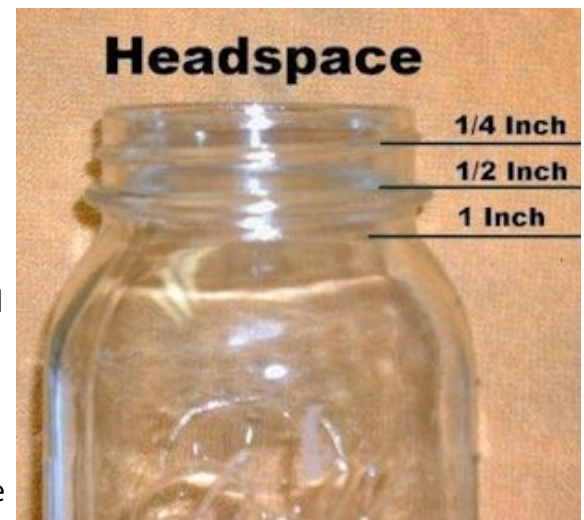
Above Left: Cold Pack Recipe Above Right: Hot Pack Recipe (Image credit: National Agricultural Library USDA)

What about Headspace?

Headspace is the amount of space between the top of your food and the top of your jar rim. Most Hot Water Bath Canning recipes will specify a headspace distance that generally ranges between 0.5cm (for jams, jellies) to 1cm (for pickled vegetables, salsas, chutneys). Follow these recommendations!

Some foods might trap air space lower in the jar, e.g. cucumber pickles. Release air bubbles by poking a clean chopstick or butter knife down into the jar to release the bubble. Not releasing the bubbles will mean that after your food is processed you will have a jar with too much headspace, and thereby an unsafely canned food. This may require you to add more liquid to achieve the correct headspace.

If too little headspace is left, food will bubble into your lid during Hot Water Bath Canning and ruin the vacuum seal. If too much headspace is left, the Hot Water Bath processing time will be insufficient to remove food destroying oxygen from the jar.



Before you Begin

- Review your recipe so you understand the steps to making the food ensuring you have enough time to make the food recipe and can the foods
- Make sure you have a clean start: ensure your supplies, hands and working surfaces are clean
- Have all necessary supplies set up so you can easily transfer your food into jars, and the jars into and out of the water
- Follow trusted current recipes—Ball or Bernardin are good sources, as are current cookbooks. Older recipes may not make use of the most accurate science, and so the canning methods or the recipe might not make for a safely canned food.



Step-by-Step Hot Water Bath Canning Instructions

1. Fill your canning pot with enough water to cover your jars, bring to a simmer
2. Wash jars in hot soapy water, and sterilize in the hot water bath at a simmer (82C)
3. Prepare bands and lids by placing them in a separate bowl of hot water (82C), keep them hot until they are ready to use (Figure 1)
4. Prepare your recipe
5. Remove empty jars from the hot water bath with the jar lifter, empty them of water
6. Ladle hot food into the hot jar using your funnel leaving the appropriate headspace (Figure 2)
7. Remove air bubbles if necessary (by poking around with a clean butter knife) and clean rim with clean damp cloth
8. Apply lid using lid magnet tool (Figure 3) and screw band securely and firmly until 'fingertip tight', don't over-tighten. Meet resistance, don't crank it tight.
9. Using your jar lifter, and ensuring you do not tip your jars, place jars in hot water bath/canner, ensuring that they are covered by 2.5cm of hot water (Figure 4)
10. Cover canner with lid, bring water back to boil, process (i.e. hot water bath) your jars for the length of time recommended in your recipe (Figure 5)
11. Turn off the heat and remove the pot lid, letting jars rest in the hot water for 5 minutes



Figure 1



Figure 3



Figure 2

12. Remove jars without tilting, don't worry about water on the lids (Figure 6)
13. Let cool for 24 hours, don't retighten screw bands
14. The next day check if the lid sealed; they should not move when you push downward. Remove band and check for any food debris over the seal area, this is a sign of an inadequate seal. You can reprocess jars that didn't seal or eat them up!
15. Remove screw band if desired, label with date and contents, store in a cool dark place
16. Enjoy within 1 year!



Figure 4



Figure 5



Figure 6



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