



## Home Canning – How to Avoid Botulism

### What is botulism?

Botulism is a serious, often fatal, form of food poisoning. The poison is produced by *Clostridium botulinum*, a bacterium that is found everywhere – in soil, on raw fruits and vegetables and on meat and fish. Over the years, a number of Canadians have died from botulism as a direct result of improper home canning.

### What causes botulism?

Botulism spores are resistant to heat – even from boiling water – and thrive in a moist, oxygen-free environment. As botulism spores reproduce, they generate one of the most extraordinarily powerful poisons on earth. One teaspoon-worth is sufficient to kill 100,000 people. Improper home canning creates the perfect environment in which to grow the botulism toxin. Because food contaminated by botulism may look and smell normal, there is often no warning.

That is why home canning must be done properly with extreme care. Any short cuts could be deadly.

### What are the requirements for safe home canning?

Heat and acid level are the two keys to canning safety. High-acid foods such as plums or rhubarb are quite resistant to bacteria, and only require the “boiling water bath” method of canning. Low-acid foods – including most vegetables, meats and seafood – must be canned at higher temperatures that only a pressure canner can attain.

### What is the “Boiling Water Bath” method?

The “boiling water bath” is a food preservation method commonly used in making jams. It involves dropping a basket of sealed jars into a large pot of rapidly boiling water.

### What is pressure canning?

A pressure canner is a large, cast-aluminum pot with a locking lid and a pressure gauge. By cooking under pressure, you can bring the temperature of boiling water up to 116°C (240° F). This is the minimum temperature necessary to destroy botulism spores, and the only way to guarantee safe canning for food items such as vegetables, meats and seafood.

Your pressure canner should come with complete instructions. Always follow them carefully. Keep these pointers in mind:

- Foods can be processed at 5, 10 and 15 pounds pressure. Consult a chart provided in the instructions to determine what pressure is safe for the food you are canning.
- Processing time will vary depending on the type of food being preserved and the size of the jar. Never shorten the cooking time that is recommended in the instructions.
- If you live more than 1,000 feet above sea level, then both the pressure and cooking time will have to be adjusted. Consult a chart.
- Once the right pressure level is reached during cooking, it must be kept constant throughout the cooking step.

- Both "weighted" gauges and "dial" gauges should be checked for accuracy. Read the manufacturer's directions carefully for recommended testing/frequency procedures, to make sure your canner is being operated safely and correctly.

### What jars are best for canning?

Manufacturers make heavy-duty jars specifically for home canning. It is important that you do not use, for example, empty peanut butter jars because commercial jars are not strong enough to be safely used for repeated home cannings.

"Mason" jars – which screw shut with a threaded neck – are the most common choice. Do not re-use the lids: after a lid has been pried off once, a perfect fit can no longer be guaranteed. The jars themselves can be used many times, as long as the sealing rims are perfectly smooth and there are no scratches or cracks.

### What should you do if the home-canned food doesn't "look right"?

Never eat, or even taste any home-canned food that:

- Appears to be spoiled;
- Foams;
- Develops a bad smell during cooking;
- The container has a bulging lid or is leaching;
- You are not sure whether the food was properly canned or not.

Place any questionable containers and food in a waterproof container and throw it in the garbage. Do not feed the questionable food to your pets or any other animals. After throwing it away, wash your hands well with warm soapy water. Also wash any utensils or surfaces the food or container may have touched.

### The importance of cleanliness

The other safety factor to keep in mind is cleanliness. All work surfaces should be kept clean during all stages of the canning process. The food being preserved must itself be rinsed clean. It is particularly important to sterilize the jars and seals before use. To sterilize jars, boil them for 10 minutes. If you live at higher elevations (over 1,000 feet) allow one more minute of boiling for each extra 1,000 feet of elevation. To sterilize tops follow the manufacturer's instructions.

### For more information

Home canning is perfectly safe but it needs to be done correctly. We recommend that you read up on home canning before you try it. Good books are available on the subject, either at the library or in the stores. Pressure canners almost always come with comprehensive instructions. If you have an older pressure canner and cannot find the instructions, contact the manufacturer to ask for a copy.

An excellent source of information on home canning is the Utah State Canning Guide [http://extension.usu.edu/utah/htm/fcs/food-preservation-canning/usda\\_home\\_canning](http://extension.usu.edu/utah/htm/fcs/food-preservation-canning/usda_home_canning)

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