



First Nations Health Authority
Health through wellness

Canning Foods Safely: How to Avoid Botulism

“When I was the age of 12 years old, we had two boxes of peaches to do—from watching my mom canning peaches, I remembered. I would look at her canning book where she keeps track of the time... on each canning fruits, veggies and fish. As I was getting older, I would watch my mom or I would give her a hand canning. She always reminds me what to do and not to do, it was always in my head. I love canning season, keeps me busy. My mom also taught me how to make homemade jam and jellies.”

– Karen Hance, Kanaka Bar



The First Nations Health Authority (FNHA) recognizes there is already a wealth of knowledge on canning and other food preservation methods within BC First Nations. We would like to build on existing community strengths and enhance community confidence in sharing and serving canned traditional and seasonal foods safely in community.

WHAT IS BOTULISM AND HOW IS IT CAUSED?

Botulism is a serious form of food poisoning that can cause death. Botulism is caused by eating a toxin produced by *Clostridium botulinum*, a bacterium that is commonly found in soil, on raw fruits and vegetables, on meat and fish, and on many other foods and surfaces. Botulism spores are tough, and cannot be killed with boiling water or heat and can only be killed using a pressure canner. Botulism bacteria (the bacteria that grow out of botulism spores) can multiply and produce toxin quickly in: a low-acid environment (meats and vegetables), the absence of air (i.e., a sealed mason jar) and a moist environment. This environment is identical to a jar of canned low-acid food. One teaspoonful of the toxin is enough to kill 100,000 people. Improperly canned food contaminated by botulism bacteria may look and smell normal.

WHAT STEPS CAN I TAKE TO AVOID BOTULISM?

To avoid botulism, you need to take extreme care in any canning activities. There are different methods of canning for high-acid and low-acid foods.

HIGH-ACID FOODS

High-acid foods such as jams, jellies, fruits, pickles, relishes, salsas, and tomatoes with added acid (i.e., one teaspoon of vinegar), only need the “boiling water bath” method of canning because the acid prevents botulism bacteria from growing. The “boiling water bath” is a food preservation method commonly used in making jams. It involves a large pot of rapidly boiling water. Boiling water temperatures will kill most yeasts, moulds and bacteria.

LOW-ACID FOODS

Low-acid foods such as most vegetables, meats and seafood **must be canned at a higher temperature using a pressure canner.**

WHAT DO I NEED TO KNOW ABOUT 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 increase the temperature of boiling water from 100°C (212°F) 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 points in mind:

- » Check seals. Ensure the rubber seal on the canner lid is not broken or cracked. Replace if necessary.
- » To ensure a tight seal, wipe the jar opening with clean wet cloth prior to placing lid on the filled jar.
- » Foods can be processed at five, 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 or change the pressure recommended in the instructions, otherwise botulism bacteria could remain in the final canned food.
- » If you live more than 300 metres (1,000 feet) above sea level, the pressure and cooking time will have to be adjusted because water boils at a lower temperature as altitude increases. Consult a chart: www.healthycanning.com/altitude-adjustments-forpressure-canning/
- » 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 and frequency procedures, to make sure your canner is being operated safely and correctly.
- » Never open a canner when it is under pressure—this can cause injury.
- » Do not cool jars in water; instead allow jars to cool slowly at room temperature.
- » Do not retighten lids.

WHAT JARS ARE BEST FOR CANNING?

It is important that you use heavy-duty jars made specifically for home canning.

“Mason”-type jars—which screw shut with a threaded neck—are the most common choice. Do not re-use the lids (they are designed to be used only once). A perfect fit can no longer be guaranteed after a lid has been pried off once. The jars can be used many times, as long as the rims are perfectly smooth and there are no scratches or cracks that would prevent a perfect seal.

It is very important to sterilize the jars and seals before use. To sterilize jars, boil them for 10 minutes. To sterilize tops, follow the manufacturer's instructions.

Do not use commercial jars, such as empty peanut butter jars for home canning. Commercial jars are not strong enough to be safely used.

WHAT SHOULD YOU DO IF THE HOME-CANNED FOOD DOES NOT SEEM RIGHT?

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

- » appears to be spoiled;
- » foams;
- » develops a bad smell during cooking;
- » has a bulging container lid or is leaking; or
- » you are not sure if the food was properly canned.

Place any questionable containers and food in a water-proof 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, container, or your hands may have touched.

IMPORTANT STEPS TO TAKE WHEN CANNING?

Never substitute the jar size or the amounts of ingredients that are recommended in the recipe. Fill the jar leaving the recommended space at the top. Use tested recipes when canning, for safety.

Wash hands with soapy water for at least 20 seconds during all stages of canning. Use only good quality produce (fruits, vegetables) that do not have any cuts, bruises or moulds. The food being preserved must be rinsed clean using cold drinking water before canning. Use separate cutting boards for produce, and raw meat, poultry, fish and seafood. Sanitize all work surfaces before and after preparing food.