

Safe canning

for food vendors and operators



Region of Waterloo
PUBLIC HEALTH AND
EMERGENCY SERVICES



The following is provided as guidance for food vendors and operators to ensure canning and preserving is conducted safely and to ensure compliance with food safety legislation.

Farmers Markets and food premises which are not exempt from the Ontario Food Premises Regulation 493 are required to make/prepare canned foods in an inspected facility. All facilities are expected to produce canned food in a manner to prevent potential health hazards.

*Failure to take proper precautions in the preparation of canned foods can cause botulism (a deadly form of food poisoning caused by the *Clostridium botulinum* (*C.botulinum*) bacteria) or other food borne illnesses.*

What are the risks?

Botulism outbreaks have been associated with canned food products, especially low-acid foods like vegetables and meat. Improper processing methods or unsanitary conditions during food preparation, can allow *C. botulinum* bacteria to germinate after the canning process is complete.

Methods of canning

High-acid

High-acid foods with a pH of less than 4.6 are resistant to the growth of bacteria. A boiling water canner that heats food to 100°C (212°F) for a period of time as indicated in a validated recipe is sufficient to use for processing high-acid foods.

Acidified

Acidified foods are low-acid foods to which acid or naturally acidic foods are added; they have a pH of 4.6 or less and a water activity greater than 0.85. To reduce the risk of acidified canned food, the product must be heat treated at 100°C for a period of time as indicated in the validated recipe. Acidity of the final product must be verified by accredited laboratories. Fermented foods are not considered acidified.

Low-acid

Low-acid foods have a pH greater than 4.6 and a water activity greater than 0.85. Low-acid foods such as most vegetables, meats, and seafood must use a validated recipe and a pressure canner capable of reaching 116° to 121°C/ 240° to 250°F for 20-100 minutes. The safety of low-acid food items must be verified by submitting a representative product sample to an accredited laboratory.

Producing safe canned food

✓ Start with a validated recipe

A validated recipe is a process that has been scientifically determined to be adequate in ensuring a shelf-stable product that is free from pathogens and controls the risk of spoilage.

The use of a validated canning recipe assists in production of a safe product by identifying the temperature, processing time, and acidification requirements to effectively inactivate the *C.botulinum* spores.

A validated recipe includes:

1. container type and size
2. ingredients
3. acidity (pH) and
4. time and temperature requirements

CAUTION:

The preparation of canned products using recipes that have not been validated or deviating from a validated recipe, such as reducing sugar content, salt, or vinegar can change the acid levels and water activity allowing bacteria to grow in the product.

✓ **Create a Hazard Analysis Critical Control Points (HACCP) plan and documentation**

Utilize a HACCP-based process that includes documenting all critical control points (temperature, water activity and acidity) in order to control or eliminate the growth of microorganisms of concern. An adequate implementation and documentation of the HACCP system reduces the probability of error during the canning process.

✓ **Verify food safety using accredited laboratory testing**

Safety of all acidified and low-acid canned food items must be proven by the operator by accredited laboratory testing. Examples of accredited laboratories can be found through the Standards Council of Canada website www.scc.ca/en/search/laboratories

	HACCP and documentation	Validated recipe	Accredited laboratory	Pressure canner
High-acid	✓	✓		
Acidified	✓	✓	*	
Low-acid	✓	✓	✓	✓

* A risk assessment of the product will be conducted by a Public Health Inspector and accredited laboratory documentation may be requested at any time.

Complying with the Food Premises Regulation 493

All canned products offered for sale or served in a restaurant must meet the following criteria:

1. Low-acid foods prepared in a pressure canner, with the time and temperature monitored and recorded.
2. Canned foods prepared using a written validated recipe.
3. Canned foods prepared with a HACCP plan and documented Critical Control Points (CCPs).
4. Clearly labelled with lot numbers and labels indicating source.
5. New lids and gaskets in order to prevent post-processing contamination.
6. Accredited laboratory documentation on-site for the pH and water activity of all acidified and low-acid foods that the Public Health Inspector deems necessary.

Your Public Health Inspector may conduct any of the following actions when finding canned products for sale:

1. Under the Health Protection and Promotion Act, seize and destroy the product if it is believed to be a health hazard.
2. Request the removal of a product from sale until accredited laboratory documentation is provided by the operator with adequate pH and water activity of the product.
3. Seize samples of canned product for laboratory testing by Public Health Laboratories.
4. Request any of the following documentation: canning date, validated recipes, quantity of canned product produced.

Resources

pH value of food <https://www.nifa.usda.gov/about-nifa/blogs/usdas-complete-guide-home-canning>

Accredited laboratories in Ontario may be located through the Standards Council of Canada website, <https://www.scc.ca/en/search/laboratories>

Sources for Validated Recipes

USDA Complete Guide to Home Canning from the United States Department of Agriculture <http://goo.gl/G8NOV>

The Blue Book from the Ball Corporation <http://www.bernardin.ca/pages/recipes/3.php>

References

Public Health Ontario. (2014). Home Canning Literature Review 2014. Toronto: Public Health Ontario.

Questions?

If you have any further questions, talk to your Public Health Inspector or contact Public Health at 519-575-4400.

Alternate formats of this document are available upon request.

Region of Waterloo Public Health and Emergency Services

Health Protection and Investigation

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