



CANNING FOODS

YOUR GUIDE TO SUCCESSFUL CANNING



First Nations Health Authority
Health through wellness

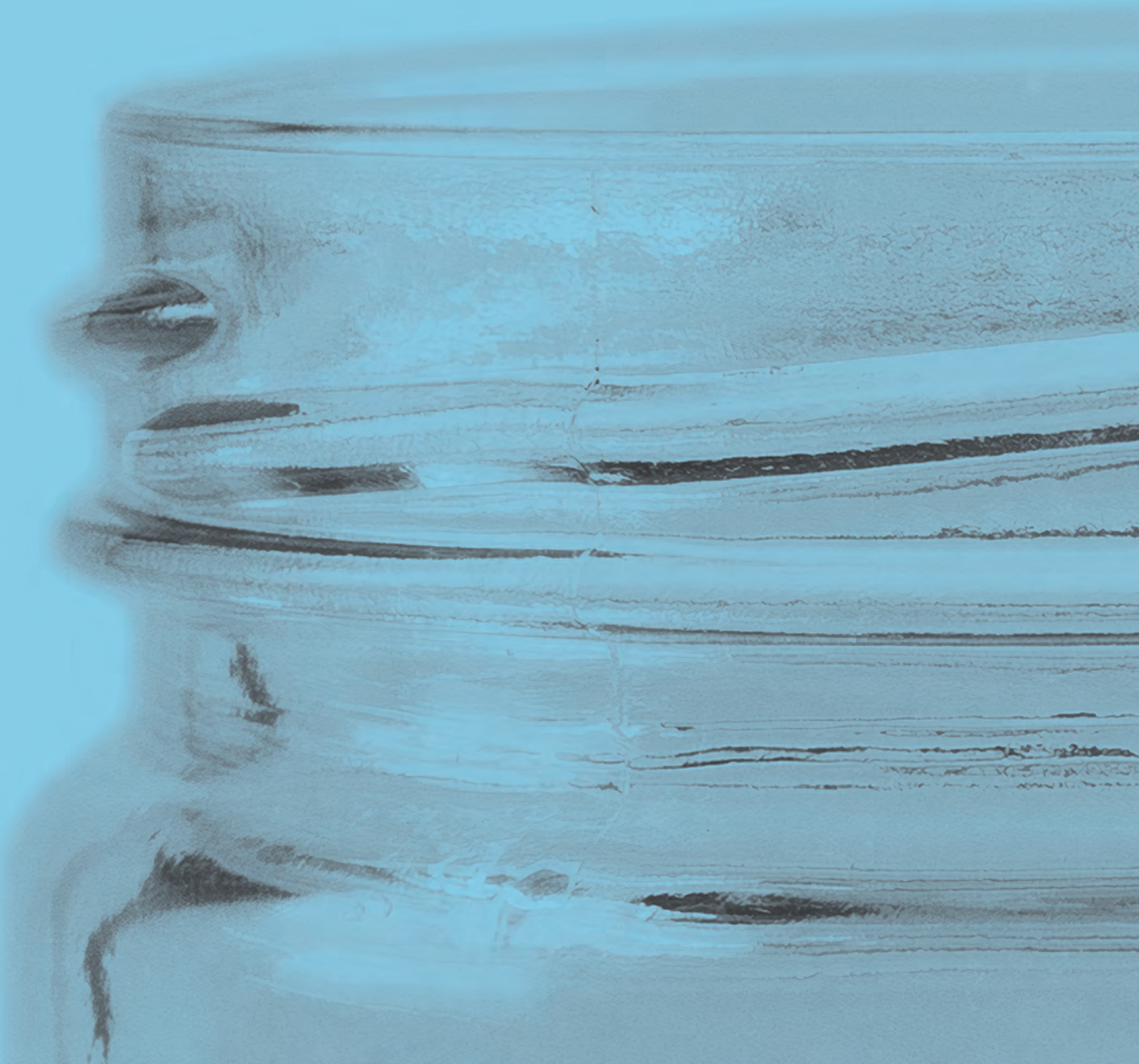


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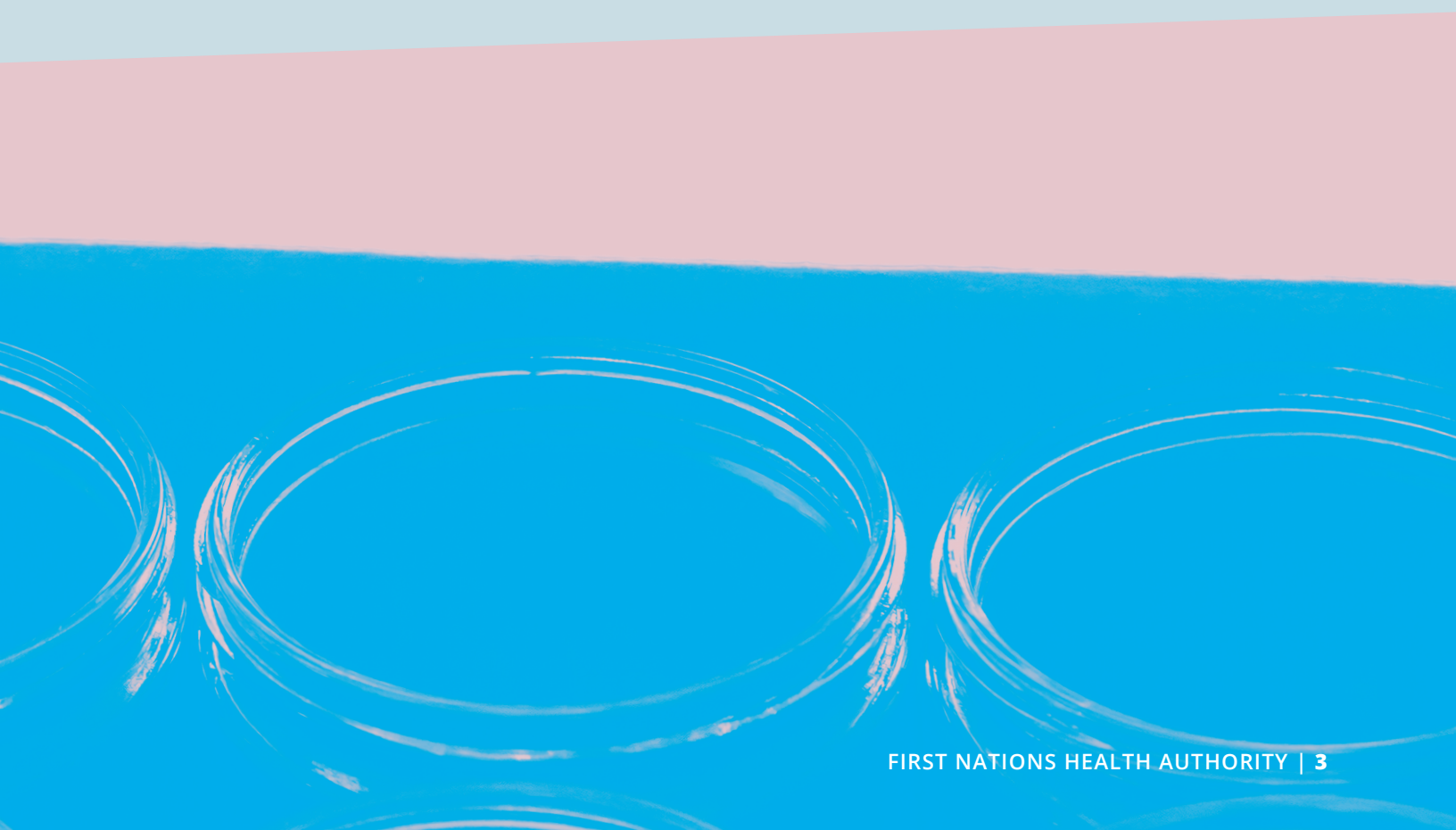
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Canning:

A tradition for many families and communities

Maybe there was a bumper crop in your garden or you got a great deal on some produce at your local store. Or maybe you want to preserve meat or seafood to enjoy months from now. Canning is a wonderful way to preserve food at the peak of its freshness so you can eat and share it with others throughout the year.



First Nations have preserved many different foods since time immemorial. Drying is a common method of preserving foods such as herbs, berries, plants, fish and meat. Other preservation methods used by BC First Nations communities include smoking, salt-curing, freezing and canning.

No matter what the technique, food preservation has allowed First Nations communities to store traditional foods through the winter months and is a core part of food sustainability and wellness. It's a way to share highly nutritious seasonal and traditional foods year-round with others. This can be a fulfilling experience and a source of pride for many people.

Canning at home is not difficult, but as with all aspects of food preparation, you need to take steps to make sure you're following food safety guidelines. For canning, that means carefully following tested recipes and their processing times. This prevents harmful bacteria from growing and ensures that your canned food is safe.

Canning is also cost-effective. Canning homegrown and traditional foods may save you half the cost of buying commercially canned food.

"My mother was my inspiration for food preservation. We did a lot of canning and she had me help her in the kitchen. We shared our food with those less fortunate and at that time there were many on the reserve that struggled. As we canned she would share the importance of planning ahead and jokes and laughter rang through the kitchen. I miss her but I share this knowledge with my children and grandbabies."

- Pat Raphael Derickson, Tsinstikeptum - Westbank First Nation

About this guide

Canning is a way to preserve food by heating it and sealing it in an airtight container. This guide focuses on how to can food by heating it in glass jars, which forms a vacuum to create an airtight seal. This process allows you to store the jars at room temperature and to enjoy the food for months to come.

This guide is an introduction to the joys of canning. It describes best practices in canning and can be used as a reference for safe canning techniques and tested recipes.

The first part of this guide talks about:

- How canning preserves food
- Choosing the canning method according to what kind of food you want to preserve
- Canning safety
- The equipment you'll need

We then describe everything you need to do for successful canning, from preparing your jars and lids to processing the jars and cooling them. You'll find detailed instructions on how to process your jars, where we provide step-by-step instructions for using a boiling-water canner (which you'll use if you are preserving fruit or other high-acid foods) and a pressure canner (which you'll use if you are preserving meat, seafood, vegetables or other low-acid foods).

The last section of this guide is what it's all about: the recipes!



Happy canning!

Note:

When canning, you must always follow a tested recipe. This is one area of cooking where you must follow recipes and cooking times exactly. A tested home canning recipe:

- *includes the appropriate heat processing method and time for the food and Mason jar size,*
- *tells you how much head space to leave for the food and jar size and*
- *is from a reputable source that specifies the size of jar to use.*

How canning preserves food

How does canning work? Why is it that you can open a jar of canned salmon months after you prepared it and it is delicious and safe to eat? Why do foods that usually need to be kept cold or frozen not go bad when canned and kept at room temperature?

Think about what happens if you leave some strawberries on the counter. They will likely get mushy or start to mould. In a day or two, they will no longer be recognizable as fruit and you won't want to eat them. That's because of the actions of naturally occurring bacteria, mould, yeast and other microorganisms that cause food to spoil and decompose.

Canning is a method of preserving food by destroying microorganisms through:

- heat,
- the removal of air, and
- the creation of a vacuum seal.

When preparing foods during canning (by boiling filled jars or heating them in a pressure canner), the **heat** kills dangerous enzymes and microorganisms that could cause life-threatening human illness as well as food spoilage.

Heat also **removes excess** air from the jars, which may prevent the growth of some microorganisms. However, some bacteria actually grow better in the absence of air, such as *Clostridium botulinum*, which causes botulism poisoning. You can read more about this in the **Canning and food safety section** (see pg. 8).

When the hot jars cool, a vacuum is formed inside, causing the lid to be pulled downward against the rim of the jar and sealing it. This airtight seal is the final important factor that prevents dangerous microorganisms from re-entering the jars.



This guide describes simple and easy-to-follow canning instructions that will help you safely prepare and preserve food.

What do you want to can?

Whether you have an abundance of blackberries and want to make jam, or you'd like to make large batches of spaghetti sauce to have on hand, the type of food you want to preserve will determine which canning method you need to choose.

Foods for canning are classified into **two types: high-acid foods** and **low-acid foods**. Each type needs to be prepared differently to prevent the growth of harmful bacteria. Before you start canning, you need to know the acid level of the food.

Sound complicated? It's not.

HIGH-ACID FOODS: Use a boiling-water canner

Fruit is naturally high in acid, so it is a high-acid food. If you are adding acid (such as adding vinegar or lemon juice), you are also preserving a high-acid food.

When you're preserving high-acid foods, you can use a boiling-water canner, which heats food to 100°C (212°F) at sea level. The natural acid in the food will prevent the growth of botulism bacteria and the heat will kill most yeasts, moulds and bacteria that could be present.

LOW-ACID FOODS: Use a pressure canner

Low-acid foods are foods like vegetables, meat, wild game and seafood. Low-acid food intended for canning requires special care. That's because for low-acid foods, the temperature needed to kill botulism bacteria (which can cause severe illness) can only be reached by using a pressure canner.

COMBINATION FOODS: Add an acid or prepare in a pressure canner

Tomatoes are a borderline high-acid food. That means you need to add an acid, such as lemon juice or vinegar, to tomatoes for safer canning. Foods that are a mix of low-acid and high-acid foods, like spaghetti sauce with meat, vegetables and tomatoes, are a low-acid food. That means you'll need to prepare them in a pressure canner.

The recipes in this guide will tell you whether you need to use a boiling-water canner or a pressure canner, as well as how long you need to process (heat) the jars of food.

BOILING-WATER CANNER



For high-acid foods:

- Tomatoes with added acid
- Salsas
- Jellies
- Jams
- Sauces
- Pickles

VS

PRESSURE CANNER



For low-acid foods:

- Raw meats
- Poultry
- Fish
- Vegetables
- Stocks
- Stews

Canning and food safety

Canning can be a safe way to preserve foods. Following the method and time indicated in up-to-date, tested home canning recipes allows food to be home canned safely with little concern for spoilage. That will ensure that the heating process has killed potentially dangerous microorganisms and that your food will be healthy and delicious.

Microorganisms surround us in the air we breathe and in the food we eat. When we can foods to preserve them, we want to eliminate these microorganisms, as they can cause food spoilage and sometimes lead to serious illness.

Most moulds, yeasts and bacteria are difficult to remove from food surfaces. Washing fresh food reduces their numbers only slightly. Peeling root crops, underground stem crops and tomatoes reduces their numbers greatly. Blanching also helps, but the best way to eliminate these microorganisms is by choosing the appropriate method of canning your food and following the recommended and tested process times.



Moulds and yeast grow as silken threads and appear as fuzz on food. Moulds thrive on the acids that are naturally present in foods that are a protection against bacteria. Yeast causes food to ferment, making it unfit to eat. Moulds and yeast are easily destroyed at temperatures between 60°C and 87°C (140°F and 190°F). That makes the boiling-water canner method of canning (which heats foods up 100°C/ 212°F) a safe way to destroy moulds and yeast.

Enzymes are present in all living things. They help food to grow and mature. However, they can cause food to change flavour, texture and colour, making it unappetizing. Enzymes are easily inactivated by heat at temperatures beginning at 60°C/140°F. The boiling-water canner method inactivates enzymes so this method of canning will destroy the enzymes that might spoil your food.



Bacteria grow and multiply rapidly in food. Their ability to thrive varies with temperature and is specific to each individual type of bacteria. Some bacteria thrive at temperatures that are high enough to destroy mould and yeast and inactivate enzymes. Other bacteria thrive on low-acid foods.

Heating food to the temperature of boiling water destroys most bacteria. However, some bacteria form spores, which then produce toxins that can only be destroyed by heating food to 116°C (240°F) for the time specified by an up-to-date tested canning recipe.

For canned foods, the most dangerous microorganisms can **grow without air or where there is a vacuum** if they survive the heating process. That's why it is so important to follow the heat and time instructions for filled jars.

BOTULISM

Botulism is a serious and sometimes deadly illness you can get from eating improperly canned low-acid food. Botulism is caused by a toxin produced by the bacteria *Clostridium botulinum* (*C. botulinum*), which is the main reason low-acid food must be processed in a pressure canner to make it safe to eat.

Spores of the bacteria *C. Botulinum* are found everywhere in nature. Normally, the spores are harmless. However, in some environments, the spores produce active cells.

Many Indigenous ways of food preservation, such as drying, were done in the open air so botulism was not an issue. In some environments, botulism bacteria (the bacteria that grow out of botulism spores) can multiply and produce toxins quickly, particularly in the type of environment found in a jar of canned low-acid food. These bacteria thrive in low-acid and moist environments where there is little air (like what you find in a sealed Mason jar).

So how do we get rid of botulism bacteria? Botulism spores can be destroyed when the jarred food is heated to temperatures of 116°C (240°F) or above. This high temperature cannot be achieved using boiling-water canners and can only be achieved by using a pressure canner for the prescribed time and pressure in a tested recipe. Using boiling water canners for these foods poses a real risk of botulism poisoning.

If botulism bacteria survive and grow inside a sealed jar of food, they can produce a poisonous toxin. Very small amounts of this toxin are dangerous to people and even a taste of food containing this toxin can be fatal.

BOTULISM BACTERIA CANNOT BE IDENTIFIED BY TASTING, SMELLING, OR LOOKING AT THE FOOD!

Symptoms of botulism usually appear within 12 to 36 hours after eating the contaminated food. There are serious health risks associated with botulism, including respiratory failure, paralysis or death. Symptoms of botulism may include:

- nausea/vomiting,
- fatigue,
- dizziness,
- headache,
- double vision and
- dryness in the throat and nose.

These symptoms will usually last two hours to 14 days but they can last longer. Some individuals are at a higher risk for serious health effects, including pregnant women, children under the age of five, adults over the age of 60 and people with weakened immune systems.

INCREASE PROCESSING TIMES AT HIGHER ALTITUDE

Did you know that elevation plays a role in safe canning? That's because water boils at different temperatures, depending on elevation. When you're at sea level, like in Duncan or Bella Coola, water boils at 100°C, but in Cranbrook, which is almost a kilometre above sea level, water boils at 97°C.

This means that at higher elevations, you need to boil your prepared jars for longer if you are using a boiling-water canner or use a higher pressure if you are using a pressure canner.



Note:

You should contact and see a health care professional and contact your local public health unit as soon as possible if you think you have botulism or food poisoning.



Depending on the elevation, you may need to **increase** the processing **time** in your boiling-water canner to make sure the food is safe.

Boiling-water canner (for high-acid foods) – Altitude adjustments

| Altitude | | |
|------------------|--------------------|--------------------------|
| Elevation (feet) | Elevation (metres) | INCREASE processing time |
| 0 – 1,000 | 0 – 305 | No adjustment needed |
| 1,001 - 3,000 | 306 - 915 | 5 minutes |
| 3,001 - 6,000 | 916 - 1,830 | 10 minutes |

At elevations higher than 1,000 feet / 305 metres, you may need to **increase** the **pressure** in your pressure canner to make sure the food is safe. The processing time does not change.

Pressure canner (for low-acid foods) – Altitude adjustments

| Altitude | | Weighted gauge canner (10 lbs/68kPa) | | Dial gauge | |
|------------------|--------------------|---|---------|------------|--------|
| Elevation (feet) | Elevation (metres) | | | | |
| 1 - 1,000 | 0 - 305 | 10 lb | 69 kPa | 11 lb | 76 kPa |
| 1,001 - 2,000 | 306 - 609 | 15 lb | 103 kPa | 11 lb | 76 kPa |
| 2,001 - 4,000 | 610 - 1,219 | 15 lb | 103 kPa | 12 lb | 83 kPa |

For example, if your recipe calls for processing at 10 PSI (pounds of pressure per square inch) and you're using a pressure canner with a weighted gauge (the kind that shows 5-10-15 PSI), increase the pressure to the 15 PSI setting if you are at an elevation more than 305 metres above sea level.

The chart below shows some towns in BC, their elevation, and the adjustments you'll need to make to the processing time if you are using the boiling-water canner method or the pressure if you are using a pressure canner.

FIND OUT IF YOU NEED TO ADJUST PROCESSING TIMES FOR WHERE YOU LIVE

| TOWN/CITY | ELEVATION | BOILING-WATER CANNER | PRESSURE CANNER | |
|--------------------|-------------------|-------------------------|-----------------|----------------|
| | | | WEIGHTED GAUGE | DIAL GAUGE |
| Cranbrook | 921m / 3,021 ft | Add 10 minutes | 15 lb / 103 kPA | 12 lb / 83 kPA |
| Penticton | 385m / 1,263 ft | Add 5 minutes | 15 lb / 103 kPA | 11 lb / 76 kPA |
| Kelowna / Kamloops | 344m / 1,129 ft | Add 5 minutes | 15 lb / 103 kPA | 11 lb / 76 kPA |
| Vancouver | 0-152m / 0-501 ft | No adjustment | 10 lb / 69 kPA | 11 lb / 76 kPA |
| Vancouver Island | 23m / 75 ft | No adjustment | 10 lb / 69 kPA | 11 lb / 76 kPA |
| Skidegate | 26m / 85 ft | No adjustment | 10 lb / 69 kPA | 11 lb / 76 kPA |
| Takla Landing | 736m / 2,415 ft | Add 5 minutes | 15 lb / 103 kPA | 12 lb / 83 kPA |
| Tsay Keh Dene | 702m / 2,303 ft | Add 5 minutes | 15 lb / 103 kPA | 12 lb / 83 kPA |
| Whistler | 670m / 2,214 ft | Add 5 minutes | 15 lb / 103 kPA | 12 lb / 83 kPA |
| Lillooet | 250m / 8,20 ft | No adjustment | 10 lb / 69 kPA | 11 lb / 76 kPA |
| Williams Lake | 586m / 1,854 ft | Add 5 minutes | 15 lb / 103 kPA | 11 lb / 76 kPA |
| Bella Coola | 26m / 86 ft | No adjustment | 10 lb / 69 kPA | 11 lb / 76 kPA |
| Prince George | 575m / 1,886 ft | Add 5 minutes | 15 lb / 103 kPA | 11 lb / 76 kPA |
| Fort St. John | 690m / 2,260 ft | Add 5 minutes | 15 lb / 103 kPA | 12 lb / 83 kPA |
| Terrace | 67m / 219 ft | No adjustment | 10 lb / 69 kPA | 11 lb / 76 kPA |
| Fort Nelson | 410m / 1,350 ft | Add 5 minutes | 15 lb / 103 kPA | 11 lb / 76 kPA |
| Iskut | 849m / 2,785 ft | Add 5 minutes | 15 lb / 103 kPA | 12 lb / 83 kPA |
| Cassiar | 958m / 3,144 ft | Add 10 minutes | 15 lb / 103 kPA | 12 lb / 83 kPA |

If your community isn't listed in the chart above, find out your elevation (you can look this up online) and use the charts at the start of this section to determine whether you need to increase the processing time in a boiling-water canner or adjust the pressure in a pressure canner.

Canning equipment

This section describes the equipment you'll need to start canning. You might already have some of these items at home or be able to borrow them from family and friends. There will likely be a few items you need to buy—such as new lids, which can only be used once. The good news is that once you have this equipment, canning is very economical and can save you considerable money compared to buying commercially canned or preserved food.

What do you need to start canning? You'll need:

- a canner—either a boiling-water canner or a pressure canner, depending on the type of food you are preserving,
- Mason jars, seals and lids, and
- Food!

CANNERS

BOILING WATER CANNERS



Boiling-water canners are made of aluminum or porcelain-covered steel. They have removable perforated racks and fitted lids. Boiling-water canners are safe to use when preserving high-acid foods like fruit and pickled vegetables.

You can buy boiling-water canners, but you can also use a large deep saucepot that is tall enough to hold a rack and the jars, so long as there is enough extra space for at least one inch of boiling water to cover your jars during processing.

Some boiling-water canners do not have flat bottoms. You'll need a flat bottom boiler if you are cooking on an electric range. Either a flat or ridged bottom can be used on a gas burner. To ensure uniform processing of all jars with an electric range, the canner should be no more than four inches wider in diameter than the element on which it is heated.

CANNERS

PRESSURE CANNERS



Pressure canners use very high pressure to raise the temperature of the water to 116°C. This is critical to make sure the food is safe and dangerous bacteria are killed. Pressure canners must be used when preserving low-acid foods like meat, seafood and vegetables.

There are two types of pressure canners: weighted gauge or dial gauge. The gauges tell you what the pressure is. With a dial gauge, you'll adjust the heat up and down to get to the required pressure. With a weighted gauge, you set the top pressure you want and the pressure canner will increase the pressure to that value.

Safety comes first!

Check and follow the safety instructions for your manufacturer's pressure canner.

MASON JARS

Food may be canned in metal and glass containers. This guide focuses on glass containers. Metal containers are commonly used for fish, and they require special equipment to seal them (see www.wellscan.ca), can only be used once and are more expensive than glass.

Glass jars:

- can be used for both boiling-water canners and pressure canners,
- come in many sizes (125 mL, 250 mL, 500 mL, 1 litre),
- can be re-used many times (although you need to purchase new lids each time),
- are fairly low cost and
- come with two sizes of opening—standard and wide-mouth:
 - standard-size jars have a smaller opening and are good for jams, jellies, juices and other foods that aren't too chunky.
 - wide-mouth jars are good for fish, meats, stews and larger pieces of vegetables and fruits.



You must use special jars made for canning (Mason jars) as these jars are specifically designed to withstand repeated use and the high temperatures required when preserving food at home. Do not use jars that once contained store-bought foods.

METAL LIDS AND SCREW BANDS

You will need metal lids and screw bands. The sealing disc portion of two-piece SNAP LID® closures cannot be reused. Once an airtight seal forms onto a jar, the indentation into the sealing compound solidifies. This means it may not reform tightly onto another jar. The sealing discs can be bought separately at a low cost.

Although you cannot reuse the sealing discs, you can reuse screw bands.

Historically, paraffin wax was used to seal jars, but this is no longer recommended. Pinholes that form in the wax as it hardens allow air to reach the food, and this exposure to air could lead to mould growth. Also, when wax cools, it may shrink away from the sides of the jar so microorganisms can get into the food.



RACKS

Your boiling-water canner or pressure canner should come with a rack. If it doesn't—or if you are using a large stockpot as your boiling-water canner—you will need to buy a canning rack.

Always place jars on a rack when you are processing them. They might break if you put them on the bottom of the canner in contact with direct heat.



REUSING EQUIPMENT?

You can reuse some of your jars and screw bands year after year so long as they are in good shape:

- Check your jars and make sure they don't have cracks or chips.
- Make sure screw bands are rust free.
- Unused lids work well for at least five years from date of manufacture. The gasket compound in older unused lids may fail to seal on jars. Examine all lids to make sure there aren't any dents.



METAL SCREW BAND



METAL LID

FOOD

Most importantly, you will need food! The best results start with the best ingredients:

- Choose fresh food at the peak of quality.
- Prepare food for canning as soon as possible to when it was picked or harvested.
- Cut off any blemishes.

Step by step to successful canning

Before you start canning, get organized:

- Read over your recipe: we've included some fabulous tested recipes in this guide.
- Assemble and prepare your equipment.
- Prepare your food.

This section describes the main steps you need to follow when canning:

- Clean and heat your jars.
- Select and prepare your lids.
- Fill your jars, using either the raw pack or hot pack method.
- Process (heat) the jars.
- Cool the jars.
- Test the jar seals.
- Store your jars.



CLEAN AND HEAT YOUR JARS

If you are using a boiling-water canner or pressure canner, you do not need to sterilize jars before you fill them, as the food content and the closures (e.g., screw bands and lids and seals) are sterilized when the filled jars are heat processed in the boiling-water or pressure canner. However, you do need to start with clean, washed jars, and many recipes require that the jars are hot before you fill them with food.

Before every use, wash empty jars in hot water with detergent and rinse well by hand, or wash in a dishwasher.

Some used jars may have a white film on the exterior surface caused by mineral deposits. This scale or hard-water film on jars can be easily removed by soaking jars for several hours in a solution containing 1 cup of vinegar (5 per cent acidity) per gallon (~ 4 litres) of water before washing and preheating the jars.

Some recipes may ask you to heat your jars before you fill them with food. This is to prevent jars from cracking, which can happen when hot food comes into contact with a cool jar. Read the recipe to see if you need to heat your jars before filling (see section, **Fill your jars**, below).

How do you heat jars?

- Place jars on a rack in a large pot, add water and heat to a simmer. Keep jars in the simmering water until it is time to fill them with food.
- Heat jars in a dishwasher. Simply run a normal dishwasher load and be ready to use the jars at the end of the cycle when they are still hot. Keep the jars in the closed dishwasher until needed for filling.
- **Do not heat jars in an oven.** Glass heats unevenly in an oven and makes it more likely to weaken and break.

SELECT AND PREPARE YOUR LIDS

Buy only the quantity of lids you will use in a year. To ensure a good seal, carefully follow the manufacturer's directions to prepare lids for use. Examine all metal lids carefully. Do not use old, dented or deformed lids, or lids with gaps or other defects in the sealing gasket.

Prepare your lids by soaking them in hot water. Keep them in the hot water until you are ready to use them.

PREPARE YOUR FOOD

Follow your tested recipe's instructions when preparing food for canning.

FILL YOUR JARS

There are two different procedures for canning depending if the food that is going into the jar is cold or hot. These procedures are called **RAW (COLD) PACK** or **HOT PACK**. The main difference is how you prepare your jars before processing them.



RAW-PACKING

With the raw-packing method, you fill jars tightly with freshly prepared, but unheated, food. Raw-packing is usually used for canning vegetables in a pressure canner. You won't need to heat your jars before adding food, unless you are also adding hot broth or hot juice to the food. Your recipe will tell you what to do.

With this method, the food, especially fruit, will float in the jars. The entrapped air in and around the food may cause discoloration within two to three months of storage.

HOT-PACKING

With hot-packing, you:

- heat freshly prepared food to boiling,
- simmer it for two to five minutes, and
- promptly fill warmed jars loosely with the boiled food.

Hot-packing is the best way to remove air and is the preferred pack style for foods that you are preparing in a **boiling-water canner**. At first, the colour of hot-packed foods may appear similar to that of raw-packed foods, but within a short time, both colour and flavor of hot-packed foods will be superior.

ADDING LIQUID TO JARS

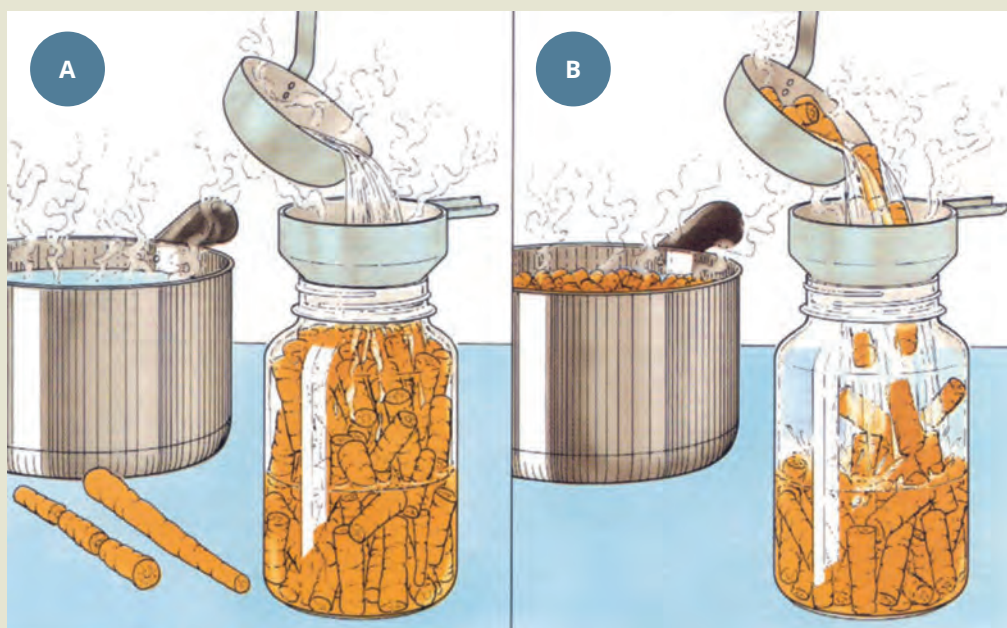
Many recipes call for you to add juice, syrup or water to the food once you have filled the jar. Whether food has been hot-packed or raw-packed, the juice, syrup or water to be added to the foods should also be heated to boiling before adding it to the jars. This helps remove air from food tissues, shrinks food, helps keep the food from floating in the jars, increases the vacuum in sealed jars, and improves shelf life. Preshrinking food also makes it easier to add more food into each jar.

A. RAW PACK

Add very hot canning liquid or water to cover raw food, but leave head space

B. HOT PACK

Raw foods are boiled 3 to 5 minutes in a sauce pan or blancher, then poured into jars.



U.S. Department of Agriculture.

CONTROL THE HEADSPACE

The unfilled space above the food in a jar and below its lid is called **headspace**. This space is needed for two reasons: to accommodate any food expansion that occurs when the jar is being heated and to form a vacuum seal in cooled jars. The amount of expansion depends on the air content in the food and the processing temperature. Air expands greatly when heated to high temperatures, and the higher the temperature, the greater the expansion.



Fill jars to the recommended level stated by tested recipes and do not overfill or underfill the jars. If you overfill a jar, it might not seal properly due to liquid or food siphoning out during processing. If you underfill a jar and there is too much headspace, air might remain in the jar after processing and result in a weak seal or seal failure.

Your recipe might tell you to fill jars and adjust lids. This is what you need to do:

- Fill jars with food and add the covering liquid.
- **Release air bubbles** by inserting a flat plastic (not metal) spatula between the food and the jar. Slowly turn the jar and move the spatula up and down to allow air bubbles to escape. (It is not necessary to release air bubbles when filling jams, jellies or all liquid foods such as juices.)
- Adjust the headspace (adding or removing food so the headspace matches the amount called for in the recipe).
- Clean the rim of the jar with a dampened paper towel or cloth. Uncleaned jar-sealing surfaces may cause seal failures.
- Place the preheated lid, gasket down, onto the jar rim.
- Fit the metal screw band over the flat lid.
- Follow the manufacturer's guidelines enclosed with or on the box for tightening the jar lids properly.

PROCESS THE JARS

Once you have the food in the jars, you are ready to process them. "Processing" means placing the jars in the canner for the required time, temperature and/or pressure. How you process the jars depends on the type of food you are preserving.

USING A BOILING-WATER CANNER FOR HIGH-ACID FOODS

You use boiling-water canners when preparing high-acid foods like jams, jellies, pickles, relishes, chutneys and condiments, fruit and fruit juice, and tomatoes with added acid.



Follow these steps for successful boiling-water canning:

1. Read the recipe and assemble the required equipment and ingredients. Wash and heat your jars and get your lids ready. Place snap lids in a bowl of hot water and keep them warm until they are ready to be used.
2. Before you start preparing your food, fill the canner halfway with clean water. This is approximately the level needed for a canner-load of pint (500 mL) jars. For other sizes and numbers of jars, adjust the amount of water in the canner so it will be one to two inches over the top of the filled jars.
3. Start preparing your food while the water is heating up.
4. Fill your jars with food using either the raw-pack or hot-pack method.
5. Wipe around the rim of the jar with a clean damp cloth or paper towel to remove any food or stickiness that may compromise the sealing process.
6. Place the warm snap lid on jar. Apply the screw band and tighten it until it is “finger-tip” tight. Do not overtighten.
7. Load the filled jars into the canner rack and use the handles to lower the rack into the water. You can also use a jar lifter to carefully lower each jar onto the rack. When using a jar lifter, make sure it is securely positioned below the neck of the jar (below the screw band of the lid). Keep the jar upright at all times. Tilting the jar could cause food to spill into the sealing area of the lid.
8. Add more boiling water, if needed, so the water level is at least one inch above jar tops. For process times over 30 minutes, the water level should be at least two inches above the tops of the jars.
9. Turn heat to its highest position, cover the canner with its lid, and heat until the water in the canner boils vigorously.
10. Set a timer for the total minutes required for processing the food. Remember to adjust for your elevation if needed.
11. Keep the canner covered and maintain a boil throughout the processing time. You can lower the heat a little as long as a complete boil is maintained for the entire processing time. If the water stops boiling at any time during the process, bring the water back to a vigorous boil and begin timing the process over, from the beginning.
12. Add more boiling water, if needed, to keep the water level above the jars at all times.
13. When jars have boiled for the recommended time, turn off the heat and remove the canner lid. Wait five minutes before removing jars.
14. Using a jar lifter, remove the jars one at a time and place them on a towel or a rack, leaving at least one inch of space between the jars while they are cooling. Let jars sit undisturbed to cool at room temperature for 24 hours.

USING A PRESSURE CANNER FOR LOW-ACID FOODS

Always follow a current, reliable, tested recipe and use the processing time given in the recipe. These time and temperature specifications have been established to destroy all bacteria, their spores and the toxins they can produce. It is important that you follow the specified processing time and maintain the pressure level at this high temperature to make sure that the low-acid food you are preparing is safe to eat.



Follow these steps for successful pressure canning:

1. Read the recipe and assemble the required equipment and ingredients. If you are pressure canning fish or seafood, use 250 mL or 500 mL jars only because larger jars may not allow adequate heat penetration to destroy bacteria. However, if you are processing in 1L jars, follow a tested recipe (e.g., the one provided in this guide by USDA) and the required processing time in a pressure canner.
2. Inspect the clean jars and lids to ensure there are no scratches or nicks.
3. Heat the jars. However, if you are pressure canning chilled or room temperature fish, you do not need to heat the jars and you can use the jars at room temperature.
4. Prepare the food to be canned.
5. Place snap lids in a bowl of hot water and keep them warm until they are ready to be used.
6. Pack food into the jars, leaving the recommended head space.
7. Wipe around the rim of the jar with a clean damp cloth or paper towel to remove any food or stickiness that may compromise the sealing process.
8. Place the hot snap lid on jar. Apply the screw band and tighten it until it is “finger-tip” tight. Do not overtighten.
9. Place the filled jars into pressure canner. If you are stacking jars, place a rack between the layers of jars to ensure proper heat circulation.
10. Add water to the pressure canner according to the manufacturer’s instructions.
11. Secure the lid on the pressure canner. For a vent canner, allow steam to escape for 10 minutes and then close the vent. When the pressure canner reaches the recipe’s recommended pressure, begin timing for the recommended amount of time. Do not leave pressure canner unmonitored as you will need to ensure that the pressure level is maintained throughout the processing time.
12. **IMPORTANT:** Check pressure in the canner regularly to ensure it remains at a constant level throughout the processing time.
13. When the processing is complete, turn the heat off. Let the canner stand undisturbed.
14. When the pressure in the canner drops to zero and no steam escapes when the weighted gauge is nudged (careful—use a cloth or oven mitt as it will be hot!), follow your pressure canner instructions to remove the cover.
15. Remove jars without tilting them. Place them on a tray to cool.
16. Do not tighten screw bands or otherwise disturb the jars for 24 hours.

COOL THE JARS

When you remove hot jars from a canner, do not retighten the screw bands. Even though screw bands may appear to be loose, do not retighten them. Doing so could damage the sealing compound on the sealing discs and prevent the formation of an airtight seal.

Cool the jars at room temperature for 24 hours. They're going to be hot—so it's a good idea to cool them on racks or towels so you don't damage your counters. Cool jars upright and don't turn them upside down as this may interfere with the seal formation.

You might notice that the food level and liquid volume of raw-packed jars is noticeably lower after cooling. This is because the air in the food is removed by the processing and food shrinks. If a jar loses excessive liquid during processing, do not open it to add more liquid.

Check for sealed lids as described below.



TEST JAR SEALS

After cooling jars for 24 hours, remove the screw bands and test seals in one of the three ways:

Option 1.

Press the middle of the lid with a finger or thumb. If the lid springs up when you release your finger, the lid is unsealed.

Option 2.

Tap the lid with the bottom of a teaspoon. If it makes a dull sound, the lid is not sealed. If food is in contact with the underside of the lid, you will also hear a dull sound. If the jar is sealed correctly, it will make a ringing, high-pitched sound.

Option 3.

Hold the jar at eye level and look across the lid. The lid should be concave (curved down slightly in the centre). If the centre of the lid is either flat or bulging, it may not be sealed.



WHAT TO DO WITH UNSEALED JARS

What do you do if a lid didn't seal? If a lid fails to seal on a jar, remove the lid and check the jar-sealing surface for tiny nicks. If necessary, change the jar, add a new, properly prepared lid, and reprocess within 24 hours using the same processing time called for in your recipe. Make sure to allow for the same level of headspace as called for in your original recipe.

Another option is to freeze the jar and its food. Or you can store the food in a single unsealed jar in the refrigerator and consume it within several days.

STORE YOUR JARS

Date and label all foods and store home canned products in a cool dark place (e.g., your pantry). For best quality, use home canned foods within one year.

Follow these steps for storage:

1. If lids are tightly vacuum sealed on cooled jars, remove the screw bands, wash the lids and jars to remove any food residue, and then rinse and dry jars. Screw bands are not needed on stored jars. When removed, washed, dried and stored in a dry area, screw bands may be used many times. If left on stored jars, they sometimes become difficult to remove, rust and may not work properly again.
2. Label and date the jars and store them in a clean, cool, dark, dry place. Do not store jars above 35°C (95°F) or near hot pipes, a range, a furnace, under a sink, in an uninsulated attic or in direct sunlight. Under these conditions, food will lose its quality in a few weeks or months and may spoil. Dampness may corrode metal lids, break seals and allow recontamination and spoilage.

Accidental freezing of canned foods will not cause spoilage unless jars become unsealed and contaminated. However, if the jars freeze and then thaw, this may change the food's texture, flavour, nutritional value and colour. If jars must be stored where there is the potential for freezing, wrap them in newspapers, place them in heavy cartons, and cover with more newspapers and blankets.



Note:

Best practice for storage:

Label jars with the contents and date and store jars in a cool, dry, dark place. This will help prevent lids from rusting or any colour or texture changes. A dry basement or cellar is ideal. Avoid areas of direct heat or sunlight and areas where the jars may freeze and break. The best temperatures range for home canned food storage is 10°C to 21°C. Food stored at temperatures higher than 21°C may lose some of its nourishing qualities.

HOW LONG WILL YOUR FOOD KEEP?

Jars of food that have been properly heat processed and have intact vacuum seals will keep indefinitely. However, changes do occur during shelf storage. These changes may affect the flavour, colour, texture and nutritional value of the food. Therefore, for best results, we recommend consuming your home canned food within one year. However, there are no food safety concerns with keeping properly preserved food for longer than one year.

SIGNS OF SPOILAGE

Check each jar carefully before opening. The following are signs that foods have not been canned properly and could be spoiled:

- Broken seal before opening,
- Bulging lid,
- Leakage or liquid spurting out,
- Gas bubbles,
- Unnatural or “off” smells,
- Food is soft, mushy or slimy,
- Food has mould on it,
- Cloudy liquid,
- Sediment (sandy texture) in the liquid,
- Unnatural colour, or
- Foaming or a bad odour during cooking.

If you think a food may be spoiled but you are not sure, never taste it to find out. It is better to lose some food by throwing it away than to take the chance of getting food poisoning.

Spoiled or questionable foods should be thrown out in the regular garbage or can be buried deep in the ground, so that other people or animals do not eat them. Sealed jars with swollen lids may explode, so they should be placed in heavy-duty, leak-proof plastic bags or similar containers and then disposed of in heavy-duty garbage bags.

A buckled lid is a permanently distorted metal lid on top of a jar. The jar should be treated as unsealed, even if it has sealed.

“When I was 12 years old, I remember we had two boxes of peaches to do. As I got older, I would watch my mom or I would give her a hand canning, and she would always remind 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 jams and jellies. Back then, when you made homemade jams, you cooked the fruit all day until it was thick, then you would jar it ... But when I was on my own, after my mom passed, I really didn’t get a chance to make jelly jam, then one day I tried apple jelly, wow I did it, turned out! I know in my heart, my mom was right beside me—watching me (with happy tears). My first time making the jams and jelly jams, mom always told me, ‘You give it away and make another batch for yourself.’ I am so happy my mom taught me her knowledge before she passed away. Now today, my family members—my siblings, my daughter and nieces—phone me and ask me how to can this and for how long. It gives me a good feeling to be their teacher. So I have been teaching or I would explain on the phone. Couple years ago I was teaching my granddaughter how to can peaches; she sure enjoyed it and asked what else I could teach her. I forgot to mention about our Indian spinach and mushrooms from the hill. We would pick lots of Indian spinach and mushrooms and clean it, then can it. Another one I forgot was mustard pickles and beets—‘Oh wow those are so delicious.’ Back then, when all the canning was done my mom would trade with other neighbours. I sure miss those trading days.”

- Karen Hance, Kanaka Bar

SAFETY CHECKLIST FOR LOW-ACID FOODS

Use the following checklist to help ensure that your low-acid food is safe to eat:

- Food was processed in a pressure canner.
- Gauge of the pressure canner was accurate.
- Up-to-date recipes were used with appropriate process times and pressures for the size of jar, style of pack, and kind of food being canned.
- You followed the process time and pressure recommended for sterilizing the food at your altitude.
- Jar lid is firmly sealed and concave.
- Nothing has leaked from the jar.
- No liquid spurts out when jar is opened.
- No unnatural or “off” odours can be detected when you open the jar to consume the food.

LOW-ACID FOOD EXAMPLES



CANNED STEWED MEAT



CANNING SALMON



CANNED GREEN BEANS

“Canning is a good staple that’s always available. It’s like, what are we having for lunch? And the salmon is already there, and I don’t have to go and buy anything. You can make so many different things out of canned salmon. It’s not just for sandwiches. You can make salmon paté, which I love. And salmon patties that you fry, like salmon burgers. And it’s cost efficient. It’s already paid for. No money out of my pocket when I go to the pantry and grab a can or a jar of salmon or preserve.”

- Roberta Latimer, Wei Wai Kum First Nation

Canning equipment and methods to avoid

As we learn more about food and food safety, some of the ways that food was canned in the past are no longer recommended.

Open-kettle canning and processing freshly filled jars in conventional ovens, microwave ovens and dishwashers are not recommended, because these practices do not prevent all risks of spoilage.

Steam canners are not recommended because processing times for use with current models have not been adequately researched. Because steam canners do not heat foods in the same way as boiling-water canners, their use with boiling-water process times may result in spoilage.

It is not recommended that pressure processes greater than 15 PSI be applied when using new pressure canning equipment. So-called canning powders are useless as preservatives and do not replace the need for proper heat processing.

Electric pressure cookers are not recommended for home canning.

Jars with wire bails and glass caps make attractive antiques or storage containers for dry food ingredients but are not recommended for use in canning. One-piece zinc porcelain-lined caps are also no longer recommended. Both glass and zinc caps use flat rubber rings for sealing jars, but too often fail to seal properly.



OPEN KETTLE CANNING



STEAM CANNER



ELECTRIC PRESSURE COOKER

Recipes

The recipes included in this canning guide have been tested to meet safety requirements. Please do not adjust the recipes as any changes may compromise the safety of the canned food.



Safety Tip:

Use only current, tested canning recipes that:

- *Use the appropriate heat-processing method for the type of food being canned.*
- *Tell you what size jar to use and how much headspace to leave.*
- *Provide a specific processing time for the food or recipe and Mason jar size you are using.*
- *Come from a reputable source that uses the jars and lids you are using today.*

Recipes for jams, jellies and pickles

The following recipes for jams, jellies and pickles don't call for a boiling water canner or pressure canner.

We've included some tips and guidelines below for these popular foods:

- Always use the quantity of fruit, sugar and lemon juice specified in jam and jelly recipes, especially those that include added pectin. Do not reduce sugar. The jam or jelly will not set properly. For reduced-sugar fruit spreads, select a pectin specifically formulated to gel fruit with little or no sugar.
- Do not double recipes. Accurate measures are more difficult and it is often hard to get the mixture to a full rolling boil. Instead, make two separate batches to get twice the amount of jam or jelly. Doubled or large batches of relishes and sauces, etc., require longer cooking to evaporate moisture to achieve desired textures. Smaller batches cook off excess moisture faster, which enhances the flavour.
- Some sugar substitutes (such as aspartame found in Nutrasweet®, Equal®, and saccharin) may not retain their sweetness after prolonged heating and/or storage. **Always use a tested, reliable recipe from a reputable source** for special diet food preservation.
- When making jams and jellies, skim the foam off the top before putting it into the jars. The foam has a lot of air in it that can cause seal failure or a weaker seal. Plus the jam or jelly will also look better without the foam on top.



REDUCING SUGAR OR USING SUGAR ALTERNATIVES IN JAMS AND JELLIES

You can find many tested recipes for jams and jellies, and these are a tasty treat to enjoy throughout the year and share with others. These recipes usually call for a fair amount of sugar and the addition of pectin, which helps the fruit “gel” into a jam-like consistency.



If you reduce the quantity of sugar from that recommended in the recipe, this can cause gel failure. If you have special dietary needs, you may wish to use a special product, BERNARDIN® No Sugar Needed Fruit Pectin, which gels fruit mixtures with no added sugar. These fruit spreads are sweetened exclusively from the fruit’s natural sweetness. You can enhance the sweetness of fruit spreads made with this No Sugar Needed pectin using artificial sweeteners or a small quantity of corn syrup, honey or up to three cups of granulated sugar.

You can often reduce the quantity of sugar called for in a long boil jam recipe, although the product will need to be cooked longer to reduce liquids and concentrate the fruit’s natural sugars. In many cases, this lengthened cooking will result in a product with a caramelized flavour

and considerably lower yield than similar quantities of fruit prepared with added pectin. Although long boil fruit spread recipes appear to use less sugar, by the time they are cooked down, the sugar concentration is likely to be very close to added-pectin recipes that start with a greater quantity of added sugar.

Common sugar substitutes include:

- **Honey:**
If you want to use this sugar substitute, use No Sugar Needed Pectin. As all are very sweet, add in small quantities until desired sweetness is achieved.
- **Agave:**
If you want to use this sugar substitute, use No Sugar Needed Pectin. As all are very sweet, add in small quantities until desired sweetness is achieved.
- **Stevia:**
If you want to use this sugar substitute, use No Sugar Needed Pectin. As all are very sweet, add in small quantities until desired sweetness is achieved.
- **Equal:**
Contains aspartame, composed of two amino acids: Aspartic acid and phenylalanine. It is 200 times sweeter than sugar and contains 4kcal/g. Equal is unstable at high temperatures, and is not recommended for canning.
- **Nutrasweet:**
Same as Equal—do not recommend for canning.
- **SPLENDA™:**
Contains sucralose, a derivative of sucrose. It is 800 times sweeter than sugar and has no nutritive value. SPLENDA is stable at high temperatures and can be used as a substitute for sugar in canning, though may have a different taste or texture.

MAKING JAM WITHOUT ADDED PECTIN

The following guidelines can be used to make jam without added pectin.

- For best flavour, use fully ripe fruit.
- Wash and rinse all fruits thoroughly before cooking.
- Remove stems, skins, and pits from fruit; cut into pieces and crush.
- For berries, remove stems and blossoms and crush. Seedy berries may be put through a sieve or food mill.
- Measure crushed fruit into large saucepan using the ingredient quantities specified in the table below.
- Add sugar and bring to a boil while stirring rapidly and constantly.
- Continue to boil until mixture thickens. Use one of the following tests to determine when jams and jellies are ready to fill. Remember to allow for thickening during cooling.

Ingredient Quantities

| Fruit | Cups Crushed Fruit | Cups Sugar | Tbsp Lemon Juice | Yield (Half Pints) |
|----------|--------------------|------------|------------------|--------------------|
| Apricots | 4 to 4.5 | 4 | 2 | 5 to 6 |
| Berries | 4 | 4 | 0 | 3 to 4 |
| Peaches | 5.5 to 6 | 4 to 5 | 2 | 6 to 7 |

*Includes blackberries, boysenberries, dewberries, gooseberries, loganberries, raspberries and strawberries

Temperature Test

Use a jelly or candy thermometer and boil until mixture reaches the following temperature at altitudes of:

| Sea Level | 1,000 ft | 2,000 ft | 3,000 ft | 4,000 ft | 5,000 ft | 6,000 ft | 7,000 ft | 8,000 ft |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 220F | 218F | 216F | 214F | 212F | 211F | 209F | 207F | 205F |

Refrigerator test

Remove the jam mixture from the heat. Pour a small amount of boiling jam on a cold plate and put it in the freezing compartment of a refrigerator for a few minutes. If the mixture gels, you are ready to fill your jars with jam.

- Remove from heat and skim off foam quickly.
- Fill warm jars with jam (some people like to use a measuring cup or ladle to pour the jam through a wide-mouthed funnel), leaving ¼-inch headspace.
- Wipe rims of jars with a dampened clean paper towel.
- Adjust lids and process.

Recommended process time for jam without added pectin in a boiling-water canner

| | | Process time at altitudes of: | | |
|---------------|---------------------|-------------------------------|------------------|----------------|
| Style of Pack | Jar Size | 0 - 1,000 ft | 1,001 - 6,000 ft | Above 6,000 ft |
| Hot | Half-pints or Pints | 5 min | 10 | 15 |

MAKING JAMS AND JELLIES WITH ADDED PECTIN

Fresh fruits and juices as well as commercially canned or frozen fruit juice can be used with commercially prepared powdered or liquid pectins. The order of combining ingredients depends on the type of pectin used. Complete directions for a variety of fruits are provided with packaged pectin. Jelly or jam made with added pectin requires less cooking and generally gives a larger yield. These products have more natural fruit flavours, too. In addition, using added pectin eliminates the need to test hot jellies and jams for proper gelling. Adding a 1/2 teaspoon of butter or margarine with the juice and pectin will reduce foaming. However, these may cause off-flavour in long-term storage of jellies and jams.

Be sure to use Mason canning jars, self-sealing two-piece lids, and a five-minute process (corrected for elevation, as necessary) in boiling water.

Purchase fresh pectin each year. Old pectin may result in poor gels. Follow the instructions with each package and process as below:



Recommended process time for jellies and jams with added pectin in a boiling-water canner

| | | Process time at altitudes of: | | |
|---------------|---------------------|-------------------------------|------------------|----------------|
| Style of Pack | Jar Size | 0 - 1,000 ft | 1,001 - 6,000 ft | Above 6,000 ft |
| Hot | Half-pints or Pints | 5 min | 10 | 15 |

Pear-Apple Jam



YIELD: 7 to 8 - 250mL jars.

INGREDIENTS

- 2 cups peeled, cored, and finely chopped pears (about 2 lbs)
- 1 cup peeled, cored and finely chopped apples
- 6-1/2 cups sugar
- 1/4 tsp ground cinnamon
- 1/3 cup bottled lemon juice
- 6 oz liquid pectin

INSTRUCTIONS

1. Crush apples and pears in a large saucepan and stir in cinnamon.
2. Thoroughly mix sugar and lemon juice with fruits and bring to a boil over high heat, stirring constantly. Immediately stir in pectin.
3. Bring to a full rolling boil and boil hard for 1 minute, stirring constantly.
4. Remove from heat, quickly skim off foam, and fill warm jars leaving 1/4-inch headspace.
5. Wipe rims of jars with a dampened clean paper towel.
6. Adjust lids and process.

Recommended process time for Pear-Apple Jam in a boiling-water canner

| | | Process time at altitudes of: | | |
|---------------|---------------------|-------------------------------|------------------|----------------|
| Style of Pack | Jar Size | 0 - 1,000 ft | 1,001 - 6,000 ft | Above 6,000 ft |
| Hot | Half-pints or Pints | 5 min | 10 | 15 |

Strawberry-Rhubarb Jelly



YIELD: About 7 half-pints.

INGREDIENTS

- 1-1/2 lbs red stalks of rhubarb
- 1-1/2 qts ripe strawberries
- 1/2 tsp butter or margarine to reduce foaming (optional)
- 6 cups sugar
- 6 oz liquid pectin

INSTRUCTIONS

1. Wash and cut rhubarb into 1-inch pieces and blend or grind.
2. Wash, stem and crush strawberries, one layer at a time, in a saucepan.
3. Place both fruits in a jelly bag or double layer of cheesecloth and gently squeeze out juice.
4. Measure 3-1/2 cups of juice into a large saucepan. Add butter and sugar, thoroughly mixing into juice.
5. Bring to a boil over high heat, stirring constantly. Immediately stir in pectin.
6. Bring to a full rolling boil and boil hard 1 minute, stirring constantly.
7. Remove from heat, quickly skim off foam, and fill warm jars, leaving 1/4-inch headspace.
8. Wipe rims of jars with a dampened clean paper towel.
9. Adjust lids and process.

Recommended process time for Strawberry-Rhubarb Jelly in a boiling-water canner

| | | Process time at altitudes of: | | |
|---------------|---------------------|-------------------------------|------------------|----------------|
| Style of Pack | Jar Size | 0 - 1,000 ft | 1,001 - 6,000 ft | Above 6,000 ft |
| Hot | Half-pints or Pints | 5 min | 10 | 15 |

PICKLING

Pickling fruits and vegetables is made safe by the amount of vinegar used and processing the jars in a boiling water canner for the recommended time. Always use a tested recipe for pickles and relishes.

If pickles and relishes are too sour, you can add sugar but you can't add water or other liquids that will dilute the concentration of vinegar.

You can use a variety of vinegars as long as the vinegar is 5 per cent acid by volume. There's no need to buy special pickling vinegar—just read the label to confirm the 5 per cent acid content.



Cucumber Pickles: Bread and Butter Pickles



YIELD: About 8 pints

INGREDIENTS

- 6 lbs of 4- to 5-inch pickling cucumbers
- 8 cups thinly sliced onions (about 3 pounds)
- 1/2 cup canning or pickling salt
- 4 cups vinegar (5%)
- 4-1/2 cups sugar
- 2 tbsp mustard seed
- 1-1/2 tbsp celery seed
- 1 tbsp ground turmeric
- 1 cup pickling lime (optional) for use in variation below for making firmer pickles

INSTRUCTIONS

1. Wash cucumbers.
2. Cut 1/16-inch off blossom end and discard.
3. Cut the cucumbers into 3/16-inch slices.
4. Combine cucumbers and onions in a large bowl. Add salt. Cover with 2 inches of crushed or cubed ice. Refrigerate 3 to 4 hours, adding more ice as needed.
5. Combine remaining ingredients in a large pot and boil for 10 minutes.
6. Layer cucumbers and onions with ice in a large deep glad or stainless steel container.
7. Add pickling salt. Cover with 2 inches of crushed or cubed ice. Add cold water to just cover the cucumbers.
8. Drain cucumbers and onions, discarding soaking solution; adding cucumbers and onions with the remaining ingredients in large pot and slowly reheat to boiling.
9. Fill hot pint jars with slices and cooking syrup, leaving 1/2-inch headspace. Remove air bubbles and adjust headspace if needed.
10. Wipe rims of jars with a dampened clean paper towel. Adjust lids and process as below.

VARIATION FOR FIRMER PICKLES:

- Wash cucumbers.
- Cut 1/16-inch off blossom end and discard.
- Cut the cucumbers into 3/16-inch slices.
- Mix 1 cup pickling lime and 1/2 cup salt with 1 gallon water in a 2- to 3-gallon crock or enamelware container.

CAUTION: Avoid inhaling lime dust while mixing the lime-water solution.

- Soak cucumber slices in lime water for 12 to 24 hours, stirring occasionally. Remove from lime solution, rinse, and resoak for 1 hour in fresh cold water.
- Repeat the rinsing and soaking steps two more times. Handle carefully, as slices will be brittle. Drain well.

STORAGE: After processing and cooling, jars should be stored at 4 to 5 weeks to develop ideal flavour.

Recommended process time for Bread and Butter Pickles in a boiling-water canner

| | | Process time at altitudes of: | | |
|---------------|-----------------|-------------------------------|------------------|----------------|
| Style of Pack | Jar Size | 0 - 1,000 ft | 1,001 - 6,000 ft | Above 6,000 ft |
| Hot | Pints or Quarts | 10 min | 15 | 20 |

Recipes for fruit, syrups and sauces



ADDING SYRUPS TO FRUIT

Some of the recipes that follow ask you to add syrup to the fruit you are preserving—this helps the fruit retain its flavour, colour and shape. The following guidelines for preparing and using syrups offer a new “very light” syrup, which approximates the natural sugar content of many fruits. The sugar content for each of the five syrups increases by about 10 per cent per syrup. Quantities of water and sugar to make enough syrup for a canner load of pints or quarts are provided for each syrup type.

Procedure: For cold pack, heat water and sugar together. Bring to a boil and pour over raw fruits in jars.

For the hot-pack method, bring water and sugar to boil, add fruit, reheat to boil, and fill into jars immediately.

Preparing and using syrups

| Syrup Type | Approx. % Sugar | Measures of water and sugar | | | | Fruits commonly packed in syrup** |
|-------------------|-----------------|-----------------------------|------------|------------------|------------|---|
| | | For 9-pint Load* | | For 7-quart Load | | |
| | | Cups Water | Cups Sugar | Cups Water | Cups Sugar | |
| Very Light | 10 | 6.5 | 0.75 | 10.5 | 1.25 | Approximates natural sugar level in most fruits and adds the fewest calories. |
| Light | 20 | 5.75 | 1.5 | 9 | 2.25 | Very sweet fruit. Try a small amount the first time to see if your family likes it. |
| Medium | 30 | 5.25 | 2.25 | 8.25 | 3.75 | Sweet apples, sweet cherries, berries and grapes. |
| Heavy | 40 | 5 | 3.25 | 7.75 | 5.25 | Tart apples, apricots, sour cherries, gooseberries, nectarines, peaches, pears and plums. |
| Very Heavy | 50 | 4.25 | 4.25 | 6.5 | 6.75 | Very sour fruit. Try a small amount the first time to see if your family likes it. |

* This amount is also adequate for a 4-quart load.

** Many fruits that are typically packed in heavy syrup are excellent and flavourful products when packed in lighter syrups. It is recommended that lighter syrups be tried, since they contain fewer calories from added syrup.

Apple Sauce



INGREDIENTS

You will need approximately:

- 9.5 kg (21 pounds) of apples
= 7 x 1 litre jars;
- 6 kg (13-1/2 pounds) of apples
= 9 x 500 mL jars

QUALITY

Select apples that are sweet, juicy and crisp. For a tart flavour, choose tart apples for about one-third of the total weight.

INSTRUCTIONS

1. Wash, peel and core apples.
2. If desired, slice apples into water containing ascorbic acid (see bottom of page) to prevent browning.
3. Place drained slices in a large pot. Add 1/2 cup water.
4. Stirring occasionally to prevent burning, heat quickly until tender (5 to 20 minutes, depending on maturity and variety).
5. Press through a sieve or food mill, or skip the pressing step if you prefer chunk-style sauce.
6. If desired, add a bit of sugar to the sauce. Start with a small quantity, taste, and add more if you think you need it.
7. Reheat sauce to a rolling boil.
8. Fill hot jars with hot sauce, leaving 1/2-inch headspace.
9. Remove air bubbles and adjust headspace if needed.
10. Wipe rims of jars with a dampened, clean paper towel.
11. Adjust lids and process.

Recommended process time for Apple Sauce in a boiling-water canner

| | | Process time at altitudes of: | | | |
|---------------|----------|-------------------------------|------------------|------------------|----------------|
| Style of Pack | Jar Size | 0 - 1,000 ft | 1,001 - 3,000 ft | 3,000 - 6,000 ft | Above 6,000 ft |
| Hot | Pints | 15 min | 20 | 20 | 25 |
| | Quarts | 20 | 25 | 30 | 35 |

NOTE: You can get ascorbic acid in three ways:

- *Pure powdered form: usually found seasonally in the canner supply section of supermarkets. Use one level teaspoon of pure powder per gallon of water as a treatment solution.*
- *Vitamin C tablets: available in pharmacies. Buy 500-milligram tablets; crush and dissolve six tablets per gallon of water as a treatment solution.*
- *Commercially prepared mixes of ascorbic and citric acid: available seasonally in the canner supply section in supermarkets. Sometimes citric acid powder is sold in supermarkets, but it is not as good at controlling discoloration. If you choose to use these products, follow the manufacturer's directions.*

Berries *Whole*



INGREDIENTS

You will need approximately:

- 5 ½ kg (12 pounds) of berries = 7 x 1 litre jars;
- 3 ½ kg (8 pounds) of berries = 9 x 500 mL jars

QUALITY

Choose ripe, sweet berries with uniform colour such as blackberries, blueberries, currants, dewberries, elderberries, gooseberries, huckleberries, loganberries, mulberries or raspberries.

INSTRUCTIONS

1. Wash about 4 cups of berries at a time.
2. Drain, cap and stem if necessary. (For gooseberries, snip off heads and tails with scissors.)
3. Prepare and boil preferred syrup if desired.
4. **Hot pack:** For blueberries, currants, elderberries, gooseberries and huckleberries.
 - a. Heat berries in boiling water for 30 seconds and drain.
 - b. Fill hot jars and cover with hot syrup, juice or water, leaving 1/2-inch headspace.
- Raw pack:**
 - a. Fill hot jars with any of the raw berries, shaking down gently while filling.
 - b. Cover with hot syrup, juice or water, leaving 1/2-inch headspace.
5. Remove air bubbles and adjust headspace if needed.
6. Wipe rims of jars with a dampened clean paper towel.
7. Adjust lids and process.

Recommended process time for Berries - whole in a boiling-water canner

| | | Process time at altitudes of: | | | |
|---------------|-----------------|-------------------------------|------------------|------------------|----------------|
| Style of Pack | Jar Size | 0 - 1,000 ft | 1,001 - 3,000 ft | 3,001 - 6,000 ft | Above 6,000 ft |
| Hot | Pints or Quarts | 15 min | 20 | 20 | 25 |
| Raw | Pints | 15 | 20 | 20 | 25 |
| | Quarts | 20 | 25 | 30 | 35 |

Peaches *Halved or Sliced*



INGREDIENTS

You will need approximately:

- 8 kg (17-1/2 pounds) of peaches = 7 x 1 litre jars;
- 5 kg (11 pounds) of peaches = 9 x 500 mL jars

QUALITY

Choose ripe, mature fruit of ideal quality for eating fresh or cooking.



INSTRUCTIONS

1. Dip fruit in boiling water for 30 to 60 seconds until skins loosen.
2. Dip quickly in cold water and slip off skins.
3. Cut in half, remove pits and slice if desired.
4. To prevent darkening, keep peeled fruit in ascorbic acid solution (see page 39).
5. Prepare and boil a very light, light or medium syrup or pack peaches in water, apple juice or white grape juice.
6. **Hot pack:**
 - a. In a large saucepan place drained fruit in syrup, water or juice and bring to boil.
 - b. Fill hot jars with hot fruit, placing the halves in layers, cut side down.
 - c. Add the cooking liquid, leaving 1/2-inch headspace.
- Raw pack:**
 - a. Fill hot jars with raw fruit, cut side down.
 - b. Add hot water, juice or syrup, leaving 1/2-inch headspace.
7. Remove air bubbles and adjust headspace if needed.
8. Wipe rims of jars with a dampened clean paper towel.
9. Adjust lids and process.

Recommended process time for Peaches, halved or sliced in a boiling-water canner

| | | Process time at altitudes of: | | | |
|---------------|----------|-------------------------------|------------------|------------------|----------------|
| Style of Pack | Jar Size | 0 - 1,000 ft | 1,001 - 3,000 ft | 3,001 - 6,000 ft | Above 6,000 ft |
| Hot | Pints | 20 min | 25 | 30 | 35 |
| | Quarts | 25 | 30 | 35 | 40 |
| Raw | Pints | 25 | 30 | 35 | 40 |
| | Quarts | 30 | 35 | 40 | 45 |

Crushed Tomatoes *With no added liquid*



This is a high-quality product, ideally suited for use in soups, stews and casseroles. You won't ever want to buy store-bought canned tomatoes again.

Tomatoes are a borderline high-acid food. To ensure food safety, you need to add some acid to the tomatoes before you process the jars of tomato sauce. This applies to both the boiling-water canner and pressure canner methods described in the recipe below.

INGREDIENTS

You will need approximately:

- 10 kg (22 pounds) of tomatoes
= 7 x 1 litre jars;
- 6 kg (14 pounds) of tomatoes
= 9 x 500 mL jars.

INSTRUCTIONS

1. Wash tomatoes and dip in boiling water for 30 to 60 seconds or until skins split.
2. Dip tomatoes in cold water, slip off skins and remove cores. Trim off any bruised or discoloured portions and quarter the tomatoes.
3. Heat one-sixth of the quarters quickly in a large pot, crushing them with a wooden mallet or spoon as they are added to the pot. This will release the juice.
4. Continue heating the tomatoes, stirring to prevent burning.
5. Once the tomatoes are boiling, gradually add remaining quartered tomatoes, stirring constantly. These remaining tomatoes do not need to be crushed. They will soften with heating and stirring. Continue until all tomatoes are added.
6. Boil gently for 5 minutes.
7. Add 1 teaspoon of salt for each litre of sauce, if desired. You can also add a small bit of sugar.
8. Add bottled lemon juice or citric acid to each jar:
 - For 1 litre jars: Add 2 tablespoons of bottled lemon juice or 1/2 teaspoon of citric acid.
 - For a 500 mL jar: Add 1 tablespoon bottled lemon juice or 1/4 teaspoon citric acid. Acid can be added directly to the jars before filling with product. *Four tablespoons of a 5% acidity vinegar per 1 litre jar can be used instead of lemon juice or citric acid. However, vinegar may cause undesirable flavour changes.*
9. Fill hot jars immediately with hot tomatoes, leaving 1/2-inch headspace.
10. Remove air bubbles and adjust headspace if needed.
11. Wipe rims of jars with a dampened clean paper towel.
12. Adjust lids and process.

Recommended process time for Crushed Tomatoes in a boiling-water canner

| | | Process time at altitudes of: | | | |
|---------------|----------|-------------------------------|------------------|------------------|----------------|
| Style of Pack | Jar Size | 0 - 1,000 ft | 1,001 - 3,000 ft | 3,001 - 6,000 ft | Above 6,000 ft |
| Hot | Pints | 35 min | 40 | 45 | 50 |
| | Quarts | 45 | 50 | 55 | 60 |

Recommended process time for Crushed Tomatoes in a dial-gauge pressure canner

| | | | Canner Pressure (PSI) at altitudes of: | | | |
|---------------|----------|--------------|--|------------------|------------------|------------------|
| Style of Pack | Jar Size | Process Time | 0 - 2,000 ft | 2,001 - 4,000 ft | 4,000 - 6,000 ft | 6,001 - 8,000 ft |
| Hot | Pints or | 20 min | 6 lb | 7 lb | 8 lb | 9 lb |
| | Quarts | 15 | 11 | 12 | 13 | 14 |

Recommended process time for Crushed Tomatoes in a weighted-gauge pressure canner

| | | | Canner Pressure (PSI) at altitudes of: | |
|---------------|----------|--------------|--|-----------------|
| Style of Pack | Jar Size | Process Time | 0 - 1,000 ft | Above 1,000 ft |
| Hot | Pints or | 20 min | 5 lb | 10 lb |
| | | 25 | 10 | 15 |
| | Quarts | 10 | 15 | Not recommended |

Spaghetti Sauce *Without Meat*



YIELD: About 9 X 500 mL

INGREDIENTS

- 30 lbs tomatoes
- 1 cup chopped onions
- 5 cloves garlic, minced
- 1 cup chopped celery or green peppers
- 1 lb fresh mushrooms, sliced (optional)
- 4-1/2 tsp salt
- 2 tbsp oregano
- 4 tbsp minced parsley
- 2 tsp black pepper
- 1/4 cup brown sugar
- 1/4 cup vegetable oil

CAUTION:

Do not increase the proportion of onions, peppers or mushrooms.

INSTRUCTIONS

1. Wash tomatoes and dip in boiling water for 30 to 60 seconds or until skins split.
2. Dip in cold water and slip off skins, then remove cores and quarter tomatoes.
3. Boil 20 minutes, uncovered, in large saucepan. Put through food mill or sieve.
4. Saute onions, garlic, celery or peppers and mushrooms (if desired) in vegetable oil until tender.
5. Combine vegetables and tomatoes and add remainder of spices, salt and sugar. Bring to a boil.
6. Simmer, uncovered, until thick enough for serving. (At this time the volume will have been halved.)
7. Fill hot jars, leaving 1-inch headspace. Remove air bubbles and adjust headspace if needed.
8. Wipe rims of jars with a dampened clean paper towel. Adjust lids and process.

Recommended process time for Spaghetti Sauce Without Meat in a dial-gauge pressure canner

| Style of Pack | Jar Size | Process Time | Canner Pressure (PSI) at altitudes of: | | | |
|---------------|----------|--------------|--|------------------|------------------|------------------|
| | | | 0 - 2,000 ft | 2,001 - 4,000 ft | 4,000 - 6,000 ft | 6,001 - 8,000 ft |
| Hot | Pints | 20 min | 11 lb | 12 lb | 13 lb | 14 lb |
| | Quarts | 25 | 11 | 12 | 13 | 14 |

Recommended process time for Spaghetti Sauce Without Meat in a weighted-gauge pressure canner

| Style of Pack | Jar Size | Process Time | Canner Pressure (PSI) at altitudes of: | |
|---------------|----------|--------------|--|----------------|
| | | | 0 - 1,000 ft | Above 1,000 ft |
| Hot | Pints | 20 min | 10 lb | 15 lb |
| | Quarts | 25 | 10 | 15 |

Spaghetti Sauce *With Meat*



YIELD: About 9 X 500 mL

INGREDIENTS

- 30 lbs tomatoes
- 2-1/2 lbs ground beef or sausage
- 5 cloves garlic, minced
- 1 cup chopped onions
- 1 cup chopped celery or green peppers
- 1 lb fresh mushrooms, sliced (optional)
- 4-1/2 tsp salt
- 2 tbsp oregano
- 4 tbsp minced parsley
- 2 tsp black pepper
- 1/4 cup brown sugar

INSTRUCTIONS

1. To prepare tomatoes, follow directions for Spaghetti Sauce Without Meat.
2. Saute beef or sausage until brown. Add garlic, onion, celery or green pepper, and mushrooms, if desired.
3. Cook until vegetables are tender.
4. Combine with tomato pulp in large saucepan. Add spices, salt, and sugar.
5. Bring to a boil.
6. Simmer, uncovered, until thick enough for serving. (At this time initial volume will have been reduced by nearly one-half.)
7. Stir frequently to avoid burning.
8. Fill hot jars, leaving 1-inch head-space.
9. Remove air bubbles and adjust headspace if needed.
10. Wipe rims of jars with a dampened clean paper towel.
11. Adjust lids and process.

Recommended process time for Spaghetti Sauce With Meat in a dial-gauge pressure canner

| Style of Pack | Jar Size | Process Time | Canner Pressure (PSI) at altitudes of: | | | |
|---------------|----------|--------------|--|------------------|------------------|------------------|
| | | | 0 - 2,000 ft | 2,001 - 4,000 ft | 4,000 - 6,000 ft | 6,001 - 8,000 ft |
| Hot | Pints | 60 min | 11 lb | 12 lb | 13 lb | 14 lb |
| | Quarts | 70 | 11 | 12 | 13 | 14 |

Recommended process time for Spaghetti Sauce With Meat in a weighted-gauge pressure canner

| Style of Pack | Jar Size | Process Time | Canner Pressure (PSI) at altitudes of: | |
|---------------|----------|--------------|--|----------------|
| | | | 0 - 1,000 ft | Above 1,000 ft |
| Hot | Pints | 60 min | 10 lb | 15 lb |
| | Quarts | 70 | 10 | 15 |

Tomato Salsa *Using sliced tomatoes*



YIELD: About 4 X 500 mL

INGREDIENTS

- 4 cups peeled, cored, chopped tomatoes
- 2 cups seeded, chopped long green chiles
- 1/2 cup seeded, chopped jalapeño peppers
- 3/4 cup chopped onion
- 4 cloves garlic, finely chopped
- 2 cups vinegar (5%)
- 1 tsp ground cumin (optional)
- 1 tbsp oregano leaves (optional)
- 1 tbsp fresh cilantro (optional)
- 1-1/2 tsp salt

CAUTION:

Wear plastic or rubber gloves and do not touch your face while handling or cutting hot peppers. If you do not wear gloves, wash hands thoroughly with soap and water before touching your face or eyes.

INSTRUCTIONS

1. Peel and prepare peppers if desired.
2. Wash tomatoes and dip in boiling water for 30 to 60 seconds or until skins split.
3. Dip in cold water, slip off skins, and remove cores.
4. Combine all ingredients in a large pot and bring to a boil, stirring frequently.
5. Reduce heat and simmer 20 minutes, stirring occasionally.
6. Fill hot salsa into hot pint jars, leaving 1/2-inch headspace.
7. Remove air bubbles and adjust headspace if needed.
8. Wipe rims of jars with a dampened clean paper towel.
9. Adjust lids and process.

Recommended process time for Tomato Salsa Using Sliced Tomatoes in a boiling-water canner

| | | Process Time at altitudes of: | | |
|---------------|----------|-------------------------------|------------------|----------------|
| Style of Pack | Jar Size | 0 - 1,000 ft | 1,001 - 6,000 ft | Above 6,000 ft |
| Hot | Pints | 15 min | 20 | 25 |

Carrots *Sliced or Diced (Pressure Canner)*



INGREDIENTS

- 8 kg (17-1/2 pounds) of carrots, without tops = 7 x 1 litre jars;
- 5 kg (11 pounds) of carrots, without tops = 9 x 500 mL jars.

QUALITY

Select small carrots, preferably 1 to 1-1/4 inches in diameter. Larger carrots are often too fibrous.



INSTRUCTIONS

1. Wash, peel and rewash carrots.
2. Slice or dice.
3. **Hot pack:**
 - a. Cover carrots with boiling water; bring to boil and simmer for 5 minutes.
 - b. Fill hot jars with carrots, leaving 1 inch of headspace.

Raw pack:

- a. Fill hot jars tightly with raw carrots, leaving 1-inch headspace.
4. Add 1 teaspoon of salt per litre of hot cooking liquid or hot water, if desired.
 5. Add hot cooking liquid or water to each filled jar, leaving 1-inch headspace.
 6. Remove air bubbles and adjust headspace if needed.
 7. Wipe rims of jars with a dampened clean paper towel.
 8. Adjust lids and process.

Recommended process time for Carrots in a dial-gauge pressure canner

| Style of Pack | Jar Size | Process Time | Canner Pressure (PSI) at altitudes of: | | | |
|---------------|----------|--------------|--|------------------|------------------|------------------|
| | | | 0 - 2,000 ft | 2,001 - 4,000 ft | 4,000 - 6,000 ft | 6,001 - 8,000 ft |
| Hot and Raw | Pints | 25 min | 11 lb | 12 lb | 13 lb | 14 lb |
| | Quarts | 30 | 11 | 12 | 13 | 14 |

Recommended process time for Carrots in a weighted-gauge pressure canner

| Style of Pack | Jar Size | Process Time | Canner Pressure (PSI) at altitudes of: | |
|---------------|----------|--------------|--|----------------|
| | | | 0 - 1,000 ft | Above 1,000 ft |
| Hot and Raw | Pints | 25 min | 10 lb | 15 lb |
| | Quarts | 30 | 10 | 15 |

Recipes for meat and seafood



Chicken or Rabbit *Pressure Canner*



QUALITY

- Choose freshly killed and dressed, healthy animals. Large chickens are more flavourful than fryers. Dressed chicken should be chilled for 6 to 12 hours before canning.
- Dressed rabbits should be soaked for 1 hour in water containing 1 tablespoon of salt per litre, and then rinsed. Remove excess fat.
- Cut the chicken or rabbit into suitable sizes for canning.
- Can with or without bones.



INSTRUCTIONS

1. Hot pack:

- Boil, steam or bake meat until about two-thirds done.
- Prepare your hot broth and add 1 teaspoon of salt per 1 litre of liquid, if desired.
- Fill hot jars with pieces and hot broth, leaving 1-1/4 inch headspace.
- Remove air bubbles and adjust headspace if needed.

Raw pack:

- Add 1 teaspoon salt per 1 litre jar to the raw meat pieces, if desired.
- Fill hot jars loosely with raw meat pieces, leaving 1-1/4-inch headspace. Do not add liquid.

- Wipe rims of jars with a dampened clean paper towel.
- Adjust lids and process.

Recommended process time for Chicken or Rabbit in a dial-gauge pressure canner

| Style of Pack | Jar Size | Process Time | Canner Pressure (PSI) at altitudes of: | | | |
|----------------------|----------|--------------|--|------------------|------------------|------------------|
| | | | 0 - 2,000 ft | 2,001 - 4,000 ft | 4,000 - 6,000 ft | 6,001 - 8,000 ft |
| <i>Without Bones</i> | | | | | | |
| Hot and Raw | Pints | 75 min | 11 lb | 12 lb | 13 lb | 14 lb |
| | Quarts | 90 | 11 | 12 | 13 | 14 |
| <i>With Bones</i> | | | | | | |
| Hot and Raw | Pints | 65 min | 11 lb | 12 lb | 13 lb | 14 lb |
| | Quarts | 75 | 11 | 12 | 13 | 14 |

Recommended process time for Chicken or Rabbit in a weighted-gauge pressure canner

| | | | Canner Pressure (PSI) at altitudes of: | |
|----------------------|----------|--------------|--|----------------|
| Style of Pack | Jar Size | Process Time | 0 - 1,000 ft | Above 1,000 ft |
| <i>Without Bones</i> | | | | |
| Hot and Raw | Pints | 75 min | 10 lb | 15 lb |
| | Quarts | 90 | 10 | 15 |
| <i>With Bones</i> | | | | |
| Hot and Raw | Pints | 65 min | 10 lb | 15 lb |
| | Quarts | 75 | 10 | 15 |

“What do I love about canning? Well, just knowing that I did it myself. And the preparation—sometimes I have to go out and berry pick. That’s just a fun thing to do. And especially when somebody says, oh, this is good! Did you make it? Yeah! I like that. It’s something I want to pass on to my children, my grandchildren, and they’re all learning that now.”

- Roberta Latimer, Wei Wai Kum First Nation

Strips, Cubes or Chunks of Meat

Pressure Canner



BEAR, BEEF, LAMB, PORK, VEAL, VENISON

QUALITY

- Choose quality chilled meat.
- Remove excess fat.
- Soak strong-flavoured wild meats for 1 hour in brine water containing 1 tablespoon of salt per litre.
- Rinse.
- Remove large bones.



INSTRUCTIONS

1. Hot pack:

- Precook meat until rare by roasting, stewing or browning in a small amount of fat.
- Add 1 teaspoon of salt per 1 litre to the jar, if desired.
- Fill hot jars with pieces and add boiling broth, meat drippings, water, or tomato juice (especially with wild game), leaving 1-inch headspace.
- Remove air bubbles and adjust headspace if needed.

Raw pack:

- Add 1 teaspoon of salt per 1 litre to the jar, if desired.
- Fill hot jars with raw meat pieces, leaving 1-inch headspace. Do not add liquid.

- Wipe rims of jars with a dampened clean paper towel.
- Adjust lids and process.

Recommended process time for Strips, Cubes or Chunks of Meat in a dial-gauge pressure canner

| Style of Pack | Jar Size | Process Time | Canner Pressure (PSI) at altitudes of: | | | |
|---------------|----------|--------------|--|------------------|------------------|------------------|
| | | | 0 - 2,000 ft | 2,001 - 4,000 ft | 4,000 - 6,000 ft | 6,001 - 8,000 ft |
| Hot and Raw | Pints | 75 min | 11 lb | 12 lb | 13 lb | 14 lb |
| | Quarts | 90 | 11 | 12 | 13 | 14 |

Recommended process time for Strips, Cubes or Chunks of Meat in a weighted-gauge pressure canner

| Style of Pack | Jar Size | Process Time | Canner Pressure (PSI) at altitudes of: | |
|---------------|----------|--------------|--|----------------|
| | | | 0 - 1,000 ft | Above 1,000 ft |
| Hot and Raw | Pints | 75 min | 10 lb | 15 lb |
| | Quarts | 90 | 10 | 15 |

Fish *in 500 mL (pint) jars (pressure canner)*



QUALITY

- Blue, mackerel, salmon, steelhead, trout, and other fatty fish (except tuna).
- Caution: Bleed and eviscerate fish immediately after catching, and never more than two hours after they are caught.
- Keep cleaned fish on ice until ready to can.

NOTE: Glass-like crystals of struvite, or magnesium ammonium phosphate, sometimes form in canned salmon. These crystals usually dissolve when heated and are safe to eat.

IMPORTANT SAFETY TIP: If you are using fish that has been frozen, follow these safe-thawing practices:

- thaw in a refrigerator at 4°C (40 F) or less,
- thaw completely submerged in cold running water or thaw by microwaving.

Do not thaw foods on the counter or in the sink at room temperature, as potentially harmful bacteria may be able to grow and spoil the food.

INSTRUCTIONS

Rinse fish in cold water. You can add vinegar to the water (2 tablespoons per quart) to help remove slime.

1. Remove head, tail, fins and scales; it is not necessary to remove the skin. You can leave the bones in most fish because the bones become very soft and are a good source of calcium.
2. For halibut, remove the head, tail, fins, skin and the bones. Then wash and remove all blood.
3. Refrigerate all fish until you are ready to pack in jars.
4. Split fish lengthwise, if desired. Cut cleaned fish into 3-1/2-inch lengths.
5. Fill hot 500 mL jars, leaving 1-inch headspace.
6. Add 1 teaspoon of salt per 500 mL, if desired. Do not add liquids.
7. Carefully clean the jar rims with a clean, damp paper towel; wipe with a dry paper towel to remove any fish oil. Adjust lids and process.
8. Fish in 250 mL jars would be processed for the same amount of time as 500 mL jars.

Recommended process time for Fish in Pint Jars in a dial-gauge pressure canner

| Style of Pack | Jar Size | Process Time | Canner Pressure (PSI) at altitudes of: | | | |
|---------------|----------|--------------|--|------------------|------------------|------------------|
| | | | 0 - 2,000 ft | 2,001 - 4,000 ft | 4,000 - 6,000 ft | 6,001 - 8,000 ft |
| Raw | Pints | 100 min | 11 lb | 12 lb | 13 lb | 14 lb |

Recommended process time for Fish in Pint Jars in a weighted-gauge pressure canner

| Style of Pack | Jar Size | Process Time | Canner Pressure (PSI) at altitudes of: | |
|---------------|----------|--------------|--|----------------|
| | | | 0 - 1,000 ft | Above 1,000 ft |
| Raw | Pints | 100 min | 10 lb | 15 lb |

Fish *in 1 litre (quart) jars*



QUALITY

Blue, mackerel, salmon, steelhead, trout, and other fatty fish except tuna.

NOTE

Glass-like crystals of struvite, or magnesium ammonium phosphate, sometimes form in canned salmon. There is no way for the home canner to prevent these crystals from forming, but they usually dissolve when heated and are safe to eat.

CAUTION

Bleed and eviscerate fish immediately after catching, and never more than 2 hours after they are caught. Keep cleaned fish on ice until ready to can.

INSTRUCTIONS

1. If the fish is frozen, thaw it before canning.
2. Rinse the fish in cold water. You can add vinegar to the water (2 tablespoons per 1 litre) to help remove slime.
3. Remove head, tail, fins and scales; it is not necessary to remove the skin. You can leave the bones in most fish because the bones become very soft and are a good source of calcium.
4. For halibut, remove the head, tail, fins, skin and the bones.
5. Wash and remove all blood.
6. Refrigerate all fish until you are ready to pack in jars.
7. Cut the fish into jar-length filets or chunks of any size. The one-litre straight-sided Mason type jar is recommended.
8. If the skin has been left on the fish, pack the fish skin out, for a nicer appearance or skin in, for easier jar cleaning.
9. Pack solidly into hot jars, leaving 1-inch headspace.
10. If desired, run a plastic knife around the inside of the jar to align the product; this allows firm packing of fish.
11. For most fish, no liquid, salt, or spices need to be added, although seasonings or salt may be added for flavor (1 to 2 teaspoons salt per 1 litre, or amount desired).
12. For halibut, add up to 4 tablespoons of vegetable or olive oil per 1 litre jar if you wish. The canned product will seem moister. However, the oil will increase the caloric value of the fish.
13. Carefully clean the jar rims with a clean, damp paper towel; wipe with a dry paper towel to remove any fish oil.
14. Adjust lids and process.

PROCESSING CHANGE FOR 1 LITRE (QUART JARS):

The directions for operating the pressure canner during processing of 1 litre (quart) jars are different from those for processing 500 mL (pint) jars, so please read the following carefully. To ensure food safety, it is extremely important that you follow these processing directions exactly.

1. When you are ready to process your jars of fish, add 3 litres of water to the pressure canner. Put the rack in the bottom of canner and place closed jars on the rack.
2. Fasten the canner cover securely, but do not close the lid vent.
3. Heat the canner on high for 20 minutes. If steam comes through the open vent in a steady stream at the end of 20 minutes, allow it to escape for an additional 10 minutes. If steam does not come through the open vent in a steady stream at the end of 20 minutes, keep heating the canner until it does. Then allow the steam to escape for an additional 10 minutes to vent the canner. This step removes air from inside the canner so the temperature is the same throughout the canner.
4. The total time it takes to heat and vent the canner should never be less than 30 minutes. The total time may be more than 30 minutes if you have tightly packed jars, cold fish, or larger sized canners. For safety's sake, you must have a complete, uninterrupted 160 minutes (2 hours and 40 minutes) at a minimum pressure required for your altitude. Write down the time at the beginning of the process and the time when the process will be finished.

Recommended process time for Fish in Quart Jars in a dial-gauge pressure canner

| | | | Canner Pressure (PSI) at altitudes of: | | | |
|---------------|----------|--------------|--|------------------|------------------|------------------|
| Style of Pack | Jar Size | Process Time | 0 - 2,000 ft | 2,001 - 4,000 ft | 4,000 - 6,000 ft | 6,001 - 8,000 ft |
| Raw | Quarts | 160 min | 11 lb | 12 lb | 13 lb | 14 lb |

Recommended process time for Fish in Quart Jars in a weighted-gauge pressure canner

| | | | Canner Pressure (PSI) at altitudes of: | |
|---------------|----------|--------------|--|----------------|
| Style of Pack | Jar Size | Process Time | 0 - 1,000 ft | Above 1,000 ft |
| Raw | Quarts | 160 min | 10 lb | 15 lb |

Clams *Pressure Canner | Whole or Minced*



INSTRUCTIONS

- Keep clams live on ice until ready to can.
- Scrub shells thoroughly and rinse, steam 5 minutes and open.
- Remove clam meat. Collect and save clam juice.
- Wash clam meat in water containing 1 teaspoon of salt per quart.
- Rinse and cover clam meat with boiling water containing 2 tablespoons of lemon juice or 1/2 teaspoon of citric acid per gallon.
- Boil 2 minutes and drain.
- To make minced clams, grind clams with a meat grinder or food processor.
- Fill hot jars loosely with pieces and add hot clam juice and boiling water if needed, leaving 1-inch headspace.
- Remove air bubbles and adjust headspace if needed.
- Wipe rims of jars with a dampened clean paper towel.
- Adjust lids and process.

Recommended process time for Clams in a dial-gauge pressure canner

| Style of Pack | Jar Size | Process Time | Canner Pressure (PSI) at altitudes of: | | | |
|---------------|------------|--------------|--|------------------|------------------|------------------|
| | | | 0 - 2,000 ft | 2,001 - 4,000 ft | 4,000 - 6,000 ft | 6,001 - 8,000 ft |
| Hot | Half-pints | 60 min | 11 lb | 12 lb | 13 lb | 14 lb |
| | Pints | 70 | 11 | 12 | 13 | 14 |

Recommended process time for Clams in a weighted-gauge pressure canner

| Style of Pack | Jar Size | Process Time | Canner Pressure (PSI) at altitudes of: | |
|---------------|------------|--------------|--|----------------|
| | | | 0 - 1,000 ft | Above 1,000 ft |
| Hot | Half-pints | 60 min | 10 lb | 15 lb |
| | Pints | 70 | 10 | 15 |

Oysters *Pressure Canner*



QUALITY

Keep live oysters on ice until ready to can.

INSTRUCTIONS

1. Wash shells. Heat oysters 5 to 7 minutes in preheated oven at 400°F.
2. Cool briefly in ice water. Drain, open shell and remove meat.
3. Wash meat in water containing 1/2 cup salt per 4 litres (1 gallon). Drain.
4. Add 1/2 teaspoon salt to each 500 mL, if desired.
5. Fill hot 250 mL (half-pint) or 500 mL (pint) jars with drained oysters and cover with fresh boiling water, leaving 1-inch headspace.
6. Remove air bubbles and adjust headspace if needed.
7. Wipe rims of jars with a dampened clean paper towel.
8. Adjust lids and process.

Recommended process time for Oysters in a dial-gauge pressure canner

| Style of Pack | Jar Size | Process Time | Canner Pressure (PSI) at altitudes of: | | | |
|---------------|------------|--------------|--|------------------|------------------|------------------|
| | | | 0 - 2,000 ft | 2,001 - 4,000 ft | 4,000 - 6,000 ft | 6,001 - 8,000 ft |
| See | Half-pints | 75 min | 11 lb | 12 lb | 13 lb | 14 lb |
| Above | or Pints | | | | | |

Recommended process time for Oysters in a weighted-gauge pressure canner

| Style of Pack | Jar Size | Process Time | Canner Pressure (PSI) at altitudes of: | |
|---------------|------------|--------------|--|----------------|
| | | | 0 - 1,000 ft | Above 1,000 ft |
| See | Half-pints | 75 min | 10 lb | 15 lb |
| Above | or Pints | | | |

Additional canning resources

Bernardin

www.bernardin.ca/

Bernardin manufactures home canning equipment like mason jars and lids. Their website includes tested recipes, canning instructions and FAQs, as well as an online store for food processing products.

National Center for Food Preservation, University of Georgia (US)

<http://nchfp.uga.edu/>

The National Center for Home Food Preservation is a source for current research-based recommendations for most methods of home food preservation. Their site includes recipes, tips and links to other websites on food preservation.

Appendix A: Measurement Conversions

1 GALLON:

- 4 Quarts
- 8 Pints
- 16 Cups
- 128 Ounces
- 3.8 Litres

1 QUART:

- 2 Pints
- 4 Cups
- 32 Ounces
- 0.95 Litres

1 PINT:

- 2 Cups
- 16 Ounces
- 480 mL

1 CUP:

- 8 Ounces
- 240 mL

1/4 CUP

- 4 Tbsp
- 12 Tsp
- 2 Ounces
- 60 mL

1 Tbsp:

- 3 Tsp
- 0.5 Ounce
- 15 mL



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