



Safe Food Handling Tips For Preserving Your Harvest

Food Preservation

- You can extend the availability of fruits and vegetables by preserving them using any of the following methods:
- Freezing
- Drying
- Canning
- Each method may be better suited to certain types of foods



Preserving Food

- When you preserve food you remove conditions that allow food to spoil
- There are food spoilage organisms and there are disease causing organisms.
- We want to destroy both.
- We do this by altering the conditions bacteria need to grow.

Conditions Bacteria Need For Growth

- **Food**
- **Acidity levels**
(pathogens grow well between pH 4.6-7.5)
- **Temperature**
(bacteria grow well between 4C and 60C) heat kills, freezing does not
- **Time**
- **Oxygen**
- **Moisture**

Making Life Miserable for Bacteria

- When we understand the conditions that certain organisms need we can change them so they do not grow well
- When we *dry* foods we remove the moisture they need and we slow down the action of enzymes
- When we *freeze* foods we remove the temperatures they need to multiply, and remove the oxygen they need
- When we *can* foods we alter the acidity levels they require, we kill them with heat and we remove their oxygen

Four Golden Rules Of Food Safety

- **Separate:**
Keep raw foods away from ready to eat, clean utensils away from dirty, don't cross-contaminate
- **Clean:**
Wash your hands, surfaces, utensils, equipment and foods before preparation
- **Cook:**
Ensure you reach proper cooking temperatures and check with a probe thermometer
- **Chill:**
Cool quickly and store in the refrigerator at 4C or lower

Tips for Freezing Vegetables

- Start with good quality freshly picked vegetables
- Wash to remove soil and contamination
- Remove stems and unwanted inedible parts
- Cut to size
- Blanch (place in boiling water) to slow or stop enzymes that cause loss of flavour, texture, colour
- Blanching time begins as soon as water returns to a boil (time according to chart for specific vegetable)
- Remove from boiling water and place in ice bath to stop the cooking process
- Cool, drain completely and place in air tight containers
- Place in freezer and store at -18C

Tips for Drying Produce

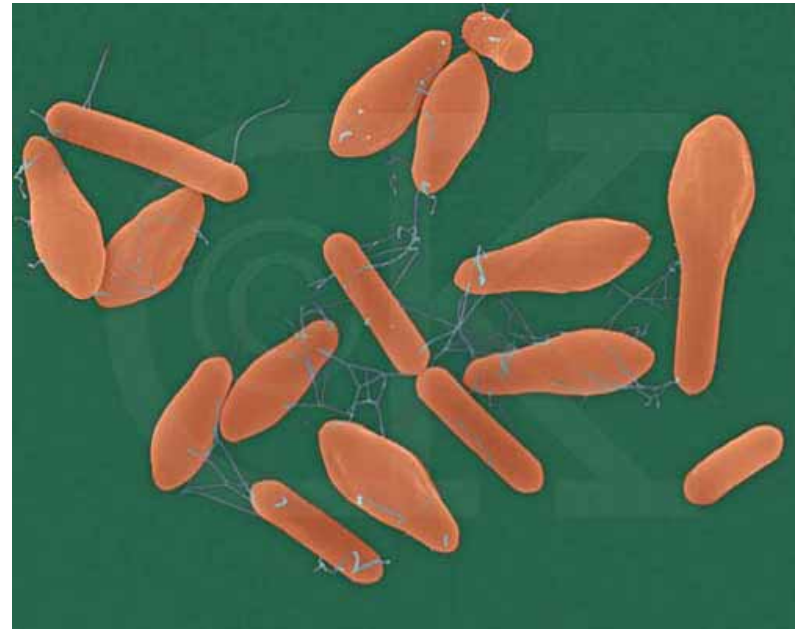
- Wash to remove dirt and contamination
- Choose drying method ie dehydrator, oven drying, air drying
- Some produce ie veggies may require blanching prior to drying. Fruits may need to be pretreated with ascorbic acid etc to prevent browning
- Place product in thin layers on drying trays (pieces should not touch or overlap)
- Once dried, ensure food is cool and then packaged
- Label and date

Canning

- Canning is a process that preserves food by stopping the natural spoilage process
- Prepared and cooked foods are placed in glass jars, sealed, heat treated to remove the air from the jar and create a seal
- There are two separate methods used in canning depending on the product being canned
- Waterbath canning is used for high acid foods
- Pressure Canning is used for low acid foods

Risk of Home Canning

- Not taking proper precautions while home canning can lead to botulism.
- Deadly form of food poisoning caused by the bacteria *Clostridium botulinum* (C. Botulinum).
- Exists as a spore or vegetative cell and produces a toxin - it's the toxin that causes food poisoning.
- The toxins are invisible, and will not change the colour, odour or taste of the canned food.



Risk of Home Canning

- Everyone is at risk for botulism. Symptoms include nausea, vomiting, fatigue, dizziness, headache, double vision and dryness in the throat and nose, respiratory failure, paralysis and in some cases death.
- Symptoms appear 13-36 hours after ingesting the toxin.
- *C. botulinum* and its toxin are heat-resistant and can grow in a moist, oxygen free environment
- **improperly** canned foods will provide perfect conditions for the bacteria to grow and for the toxin to be produced.

High Acid vs Low Acid Foods

- Different foods require different processes.
- High Acid foods require a boiling water canner
- Low Acid foods require a pressure canner

High Acid Foods	Low Acid Foods
Fruit	Most Fresh Vegetables except tomatoes
Jams, jellies, marmalades and fruit butters	Meat, seafood, poultry and milk
Pickles and sauerkraut	Soup
Tomatoes with added lemon juice or vinegar	Spaghetti sauce with meat, vegetables and tomatoes

Canning High Acid Foods

- High acid foods have an acidity level of less than 4.6 on the pH scale (7 is neutral)
- *C. botulinum* bacteria will **not** grow in a high acid environment.
- A boiling water canner heats food to 100°C and the temperature kills other yeasts, moulds and bacteria that may be present.
- Botulism is not a concern with high acid foods.

Canning Tip

- Headspace is the space between the food and the top of jar
- It is important to leave the right amount to ensure success
- Headspace allows for food expansion
- Check your recipe for this information



Canning High Acid Foods

- A boiling water canner and a boiling water bath are the same thing.
- A large pot with a fitted lid usually made of aluminum or porcelain covered steel.
- They have a removable rack to insert and remove jars.



Canning Low Acid Foods

- Low acid foods have a pH of more than 4.6.
- Low-acid foods require extremely high temperatures to destroy the bacteria that causes botulism.
- Only a pressure canner can achieve these high temperatures.
- Pressure canners use steam under high pressure to reach the high temperatures required to kill the botulism bacteria.

Canning Low Acid Foods

- Pressure canners and pressure cookers are not the same.
- Pressure canners have locking lids with a pressure gauge and a steam vent.
- Follow the instruction manual exactly and ensure that the canner is being properly maintained.
- For example the pressure gauge must be checked.



Cleaning and Sanitizing

- Start off clean
- Wash hands for 20 seconds with warm water and soap.
- Wash raw fruits and vegetables before cutting under running water to remove contaminants containing bacteria viruses and parasites.
- Clean and sanitize work surfaces, utensils and equipment and keep them clean during all stages of canning.



Equipment

- Use proper canning jars.
- Only use self sealing lids and ensure that the seals are not damaged.
- Check jars for chips/cracks
- Never reuse old lids - the seals become inadequate after use.



Recipes

- Only use tested home canning recipes.
- Never substitute jar size, amount of ingredients. Substitution can affect the time the canned or bottled food requires in the boiling water canner or pressure canner and can cause botulism.
- Never change recommended processing times or pressure levels.
- Fill jars leaving the recommended space at the top according to the recipe.
- Use the appropriate heat-processing method according to the acidity of the food.

Quick Tips For Successful Canning

- Before you begin ensure you have all your equipment and supplies in good condition and in sufficient amounts
- Prepare food using current tested recipes
- Fill sterilized jars with food to appropriate level, remove air bubbles, wipe food from rim
- Tighten lids, but do not over tighten to allow air to escape
- Place filled jars in canner and cover with 1-2 inches of water
- Boil according to altitude (adjust) 1000-3000 boil 5 minutes
- Turn off heat and let the jars stand in boiled water for 5 minutes
- Cool jars on counter for 24 hours- press center of cooled lid to check seal (a proper seal is achieved when the lid does NOT flex)
- Jars with improper seals should be refrigerated for immediate use

Safety Tips

- Check from time to time that adequate cooking or heating temperatures are maintained.
- Make sure the steam pressure is being maintained.
- Label and date all home canned foods before storing them.
- Store them in a cool, dry place.
- Use within one year from the date product was made.
- Wipe tops before opening.
- Remember First in First Out



Safety Tips

- Never eat canned or bottled foods that are dented, leaking or bulging.
- **When in doubt, throw it out!**
- If you think you got food poisoning from something you have eaten, seek medical attention right away and let the doctor know you consumed canned products
- Botulism is treatable however, the recovery may take a long time.

Now It's Time To Enjoy

- Careful preparation and handling of your freshly harvested fruits and vegetables combined with proper preservation techniques can allow you to enjoy the fruits of your labour all year long!



For More Food Safety Information

- Check the Health Unit website at:
- www.healthunit.org
- Visit one of our health unit offices and pick up food safety pamphlets
- Sign up for one of our free food handler certification courses
- Speak to a Public Health Inspector