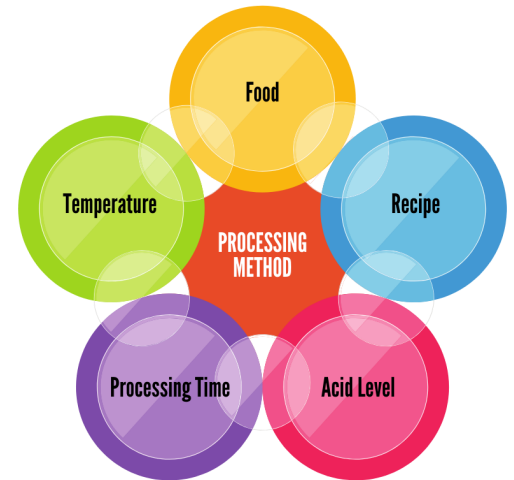


# YES, YOU CAN!

## Home Food Preservation

**Canning is a great way to enjoy foods from your garden all year long. It is important to understand and follow best practices when canning to ensure your garden harvest will not go to waste and is safe.**



### **THE SCIENCE: What is canning?**

Canning is the process in which food is placed in jars and heated to a high temperature for a prolonged period. During this process, air is driven from the jar, and as it cools a vacuum seal is formed.

High temperatures must be reached during the canning process to destroy harmful microorganisms and inactivate enzymes that can lead to food spoilage. The boiling-water bath canning process will reach a temperature of 212 °F at sea level, which is high enough to destroy most molds, yeasts, and microorganisms. However, it will not reach a high enough temperature to destroy the dangerous toxins produced by the bacterium *Clostridium botulinum* (*C. botulinum*).

*C. botulinum* is commonly found in soil and exists either as vegetative cells or as spores. These spores can be found on many fresh food surfaces and are harmless on fresh foods. However, these spores become deadly during the canning process.

### **THE DANGERS: Why Do C. Botulinum Spores Become Deadly When Improperly Canned?**

During canning, air is vented out of the jar and a vacuum seal is formed. This process creates an anaerobic environment, which is the ideal growing condition for the spores to grow. These spores produce vegetative cells which then multiply rapidly and may produce a deadly toxin in a matter of days.

### **THE SOLUTION: Why Does Acid Level Matter?**

Foods containing high acid levels, those with a pH value of 4.6 or greater, inhibit the growth of *C. botulinum* spores. The term "pH" is a measure of acidity. The higher its value, the less acid is in the food.

### **THE PROCESS: How Do Pressure Canners Work?**

Pressure canners can reach a temperature of 240°F at sea level, making it the only safe method of processing vegetables, meats, poultry, seafood, and soups at home. It is the combination of **high temperature**, a **prolonged processing time** and **acid level** that will destroy the bacteria and toxic bacterial spores produced by *C. botulinum* spores.

### **LOW-ACID FOODS: Use a pressure canner for these low-acid foods.**

- Asparagus
- Beans all varieties
- Beets
- Carrots
- Corn
- Mixed vegetables
- Mushrooms
- Okra
- Peas
- Peppers
- Squash
- Potatoes
- Pumpkin
- Soups
- Spinach and greens
- Succotash
- Tomatillos
- Winter squash
- Red meats
- Poultry
- Fish
- Clams
- Shrimp
- Crabmeat
- Oysters

### **REFERENCES:**

**How Do I? ... Can Vegetables.** (n.d.). Retrieved May 21, 2020, from [https://nchfp.uga.edu/how/can4\\_vegetable.html](https://nchfp.uga.edu/how/can4_vegetable.html)

**General Canning Information.** (2017, February 2). Retrieved May 21, 2020, from [https://nchfp.uga.edu/how/general/ensuring\\_safe\\_canned\\_foods.html](https://nchfp.uga.edu/how/general/ensuring_safe_canned_foods.html)