



Ministry of  
Agriculture  
and Food

Ontario

## Putting the lid on . . .

# CANNING QUERIES

### 1. WHAT IS CANNING?

It is *one* method of extending the shelf life of some foods. By using this method of food preservation, peaches can be enjoyed in February. Canning consists of sealing food in a glass jar or a metal can, then sufficiently heat processing to prevent food spoilage. By virtue of this definition, jams, jellies and pickles are not under discussion here.

### 2. WHAT FOODS SHOULD I CAN?

That depends on what food you want to preserve and what equipment you have or are willing to purchase.

Not all foods are canned successfully. Mushrooms for example are a definite hazard so are not recommended partly because of their very low acidity, and also, because a safe processing time has not been determined.

Foods suitable for canning are divided into two categories (high-acid foods and low-acid foods) each with it's own recommended method of processing (hot water bath and pressure canning).

Fruits as well as tomatoes with added citric acid are high acid foods, and are processed using the hot water bath.

### 3. WHAT CAUSES FOOD SPOILAGE?

ENZYMES, naturally present in food can cause deterioration of flavor, color and texture.

MOLDS AND YEASTS are likely to grow in high-acid foods. Because they must have air to grow, their presence is an indication of a faulty seal or improper processing in canned fruits. Molds show up as fuzzy patches. Rising bubbles are usually the result of fermentation of yeasts.

Enzymes, yeast and molds are destroyed by heat (100°C or 212°F the boiling point of water).

BACTERIA require a higher temperature for their destruction and occur more frequently in low-acid foods. There are many types of spoilage bacteria. Any change in texture (mushy, slimy), in odor ("off", putrid) or in color (discoloration) should be considered a potential hazard. **DO NOT TASTE! DISCARD!**

There is another hazard which may not physically affect the food in any way. This is botulism. For this reason, all low-acid home canned foods must be boiled rapidly for ten minutes, stirring occasionally, even though they have been pressure canned.

### 4. WHAT IS BOTULISM?

**Deadly.** It can kill in a matter of hours. Botulism is the term used to describe the illness resulting from food which contains the toxin from bacteria called CLOSTRIDIUM BOTULINUM. This Clostridium Botulinum, sometimes present in vegetables, is not de-

stroyed even after processing in a boiling water bath for several hours. Vegetables must be processed at 10 pounds pressure for the required length of time in order to destroy this bacterium. If the Clostridium Botulinum toxin is present in a jar of canned vegetables, just a taste of the contents can lead to death.

Even when processed in a pressure canner, all home-canned vegetables must be boiled for 10 minutes before tasting to ensure safety. Stir occasionally.

These points considered, it must be recognized that home canning of vegetables can be impractical and unsafe. It is far better to preserve vegetables in a home freezer.

A freezer can be used to preserve vegetables in shorter time with much less effort, and with no fear of deadly toxins being present. Although a freezer is initially more expensive than a pressure canner, it is considerably more useful.

### 5. WHEN IS THE BEST TIME TO CAN FOOD?

When the food is ready and when you are ready. In fact, the shorter the time between picking and canning the better, as the flavor and nutrient content will be at their peak.

### 6. WHAT ARE THE RECOMMENDED METHODS OF CANNING?

There are two: the hot water bath and pressure canning.

Filled, closed containers are completely submerged in hot water for a specific length of time. The timing starts when the water in the covered processor reaches boiling point 100°C (212°F) and continues to boil throughout the processing period. If, for some reason the water stops boiling, the timing must be started again and continued the full length of time, uninterrupted. That way the food will be safe. *The hot water bath method is recommended for high-acid foods only.*

Vegetables on the other hand are low-acid foods. The *only* recommended method of heat processing these foods is in a *pressure canner* where the temperature can be raised to 115°C (240°F) at 10 pounds pressure for a specific period of time.

Like the hot water bath processor, the timing of the pressure canner must continue uninterrupted. Jars or cans must never be put directly on the bottom of any processor as this will impede circulation of the water and inadequate processing will result. Always put jars or cans on a rack.

Be sure to read and understand the manufacturer's instructions before you begin pressure canning. These instructions must be followed explicitly.

NOTE: Canning meat, poultry or fish is not recommended in Ontario.