



## Canning Terms: Packing and Processing

Canning terms can be confusing. Words that meant one thing many years ago may mean something totally different in today's canning directions. Let's take a look at some basic canning terms and procedures.

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One of the most common mistakes is confusing how the food is put into the jar and the method of processing. This centers around the word “cold pack,” a term that is no longer used in modern canning books. To some people cold pack means to put the food into the jar raw without first cooking it—in other words, the food is cold. To other people, cold pack means that the jars are processed in a boiling water bath. Instead of “cold pack”

modern research based directions give instructions for putting food into the jars raw or cooked.

### Canning Terms Defined

#### Hot pack

- Jars are filled with precooked or partially precooked hot food and liquid prior to processing. It is the preferred method when the food is firm because the method allows food to be packed into the jars more tightly and requires fewer jars.
- Partially cooking the food before packing drives some of the air out of the food and reduces floating food and siphoning. This is especially helpful when canning tomatoes and firm fruits such as pears and peaches.

- **Hot packed jars must be processed in a boiling water bath, atmospheric steam canner or a pressure canner using the method and time given in a research based recipe.**
- Although a lid may make a “popping” sound and seal when hot food is put into a jar, it is not safe to hot pack food without processing because spoilage organisms can survive. Pouring hot foods in the jar without processing is the open kettle method of canning and is no longer considered safe, not even for pickles or jellies.

## Raw pack

- Jars are filled with raw, unheated food prior to processing. Raw meat will form its own liquid as it is processed. Raw fruits and vegetables need to be covered with hot liquid.
- **Raw packed food must be processed in a boiling water bath, atmospheric steam canner, or pressure canner using the method and time given in a research based recipe.**

## Processing

- Processing is heating filled jars for a specified time at a specified temperature either in a boiling water bath, atmospheric steam canner or a pressure canner for the purpose of destroying microorganisms.
- It also inactivates naturally occurring enzymes that lead to deterioration in food as in the ripening process.
- During processing air is vented from the jars to create a strong vacuum seal.

## A strong vacuum seal

- A vacuum seal is needed to prevent air and microorganisms from entering a closed jar. Here is how a vacuum seal is created. When the lid is applied to the jar at room temperature, the atmospheric pressure is the same inside and outside the jar. When the jar is heated, the air and the food inside the jar expand leading to a build-up of pressure inside the jar. Throughout the heating process this pressure is released as air from the headspace escapes under the lid. This occurs repeatedly throughout the processing time and is called **venting**. Be aware that there is air in the tissue of the food (especially raw packed food) that creates more air than was originally seen in the headspace.
- Venting occurs in small amounts throughout the processing time. As the jar cools after processing, the contents shrink and a partial vacuum forms. There is actually a state of negative pressure in the jar. The sealing compound on the underside of the canning lid forms around the top of the jar and prevents air from re-entering the jar.

When the vacuum seal forms, the lid will curve towards the jar. When you open a sealed jar, there should be a rush of air into the jar to equalize the pressure.

### Steam canner vs. pressure canner

- Both canners surround the jars with steam, but the temperature of that steam varies greatly.
- Because a steam canner is not a sealed unit, the surrounding atmosphere determines the temperature of the heated water inside. At sea level, the steam created by that water turning to vapor can only reach 212°F which is why process times for an atmospheric steam canner are the same as for boiling water processing.
- In contrast, a pressure canner is a sealed unit; and when water is heated to create steam, pressure builds up raising the temperature inside the canner. At 10 pounds pressure in a weighted gauge canner and 11 pounds pressure in a dial gauge canner the temperature inside the pressure canner is 240°F. The higher temperature is needed to inactivate *Clostridium botulinum* spores in low acid foods such as corn, green beans, and meats.