



Understanding Processing Times for Home Canned Foods



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For information on
home canning visit:

www.homefoodpreservation.com

Canning is the process of heating food in a jar to attain shelf stability. In order for jars to be safely stored at room temperature, home-canned foods must receive sufficient heat processing to kill the microorganisms that can cause spoilage and illness. In addition, the canning process destroys enzymes and removes oxygen, forming a vacuum seal on the jar. During storage, the vacuum seals keep the food and liquid in, and air and microorganisms out. Canning is an exact science. Safety depends in using research based recipes, precise measurements of ingredients, clean work environments and exact timing when it comes to the processing procedures.

The development of a processing time for home canned foods is complex process that takes place in laboratory setting. It must take into account the number and thermal resistance of organisms present, the rate of heat transfer through the food, the size of container, and the rate of heat penetration.

The process times stated in research based home canning recipes have been developed to deliver the amount of heat necessary to destroy microorganisms of concern in home canned foods.

Common Questions and Answers

Where can I find safe canning instructions?

In order to produce a safe home canned product, you must use canning instructions that are current and research based. Reliable instructions for home canning can be found in recently published materials from the Cooperative Extension Service, the U.S. Department of Agriculture (USDA) and major manufacturers of home-canning equipment. Caution is needed for canning instructions from other sources, such as old cookbooks, gardening

publications, or older, out-of-date home-canning publications. Some dangerous instructions can be found in these publications.

Safety Tip: Extension will only recommend recipes and procedures known to be safe, use tested, science-based home-canning recipes from reliable sources for all home food preservation projects

Can't I look at a food close to the one I am canning and use that processing time? Because a processing time is specific to each food, any variation to a tested recipe, such as one that alters the acidity, consistency, texture, distribution of solids and liquids, or other factors results in a new product. The new product would need a new processing time, and there is no easy formula to work out a processing time for a food.

Safety Tip: Never guess at a processing time if you cannot find one. Freezing is always a safe alternative when a processing time is not available.

Why can't you tell me how to process my own recipes? I want to can my own recipes. For home canning, safety depends on use of standardized equipment, standardized recipes, approved methods, and to follow procedures carefully, without deviation. Any time you change the recipe, you change the processing demands and the original processing time is invalid. A new recipe requires testing in the laboratory to be safe. Also keep in mind that after canning and storage, your recipe will longer taste exactly the same. Special recipes are best enjoyed as freshly made dishes.

Safety Tip: Never experiment with canning your own recipe. Any original recipe puts you at risk for botulism, a potentially fatal food poisoning.

Why can't I process foods I see in the grocery store? Funding for research on home canning is limited, so the number and types of foods for which there is processing information is also limited. It's important to understand that even the commercial food manufacturing industry conducts research on its food products, including researching heat penetration data. There just isn't funding to develop and endless number of recipes for home canning.

Myths and Misconceptions about Home Canning:

A sealed jar is a safe jar. No. It takes considerably less heat to seal a lid than to properly process and pasteurize the contents of the jar. If you followed updated canning instructions, preparing and processing the foods as directed, you can be assured the food will keep and be safe to eat. That is why it is important to select the correct processing method, and follow directions carefully. The processing makes the food safe, the seal just keeps it safe by preventing recontamination.

I've done it for years and never had any problems, it must be safe. Past success is no guarantee of safety. It is possible that you have used unsafe canning practices before and never had an issue. It only takes one jar of food with destructive microorganisms to ruin your streak of luck, and the consequences could be devastating to you and your family.

The food looks fine. I would be able to tell if it wasn't safe. Foods contaminated with a foodborne pathogen will look, smell, and taste normal for the most part. Most bacteria, viruses, and parasites that cause foodborne illness are odorless, colorless, and tasteless. On the other hand, when conditions are right, molds can rapidly grow into colonies that are easily seen.

I know the person who canned the food, and they're really careful and clean. Mold, yeast and bacteria are everywhere in the environment. They are found on food, on kitchen surfaces and in the air. The conditions of food, moisture, acidity, oxygen levels and temperatures provide perfect environments for these pathogens to grow and possibly become toxic. Clean and careful is a good first step, but it is not sufficient to eliminate the risk created by improperly canned foods.

I've already used part of the batch and didn't get sick, so it must be fine. Because microorganisms are everywhere in the environment, it is possible for pathogens to be in one jar, but not all jars batch. Once again, past success is no guarantee of safety.

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