

PRESERVE IT FRESH, PRESERVE IT SAFE

10 Tips for Safe Home-Canned Food

Home-canned foods are a year-round treat. But if those foods are not canned safely, foodborne illness can turn a treat into tragedy. Use current canning methods and follow these tips to can foods safely.

- 1. Elevation Adjustment** — Kansas elevation can range from below 1,000 feet to just over 4,000 feet. Failure to adjust for elevation will lead to under-processed food, which encourages the growth of *Clostridium botulinum*. Recipes in the *USDA Complete Guide to Home Canning* give elevation information with each recipe. Recipes in books such as *So Easy to Preserve*, *Ball Blue Book*, and *Ball Complete Book to Home Preserving* are written with processing instructions for elevations below 1,000 feet. Always read the general instructions in these resources for more information.
- 2. Headspace** — Proper headspace helps ensure a good vacuum seal on jars. Too little headspace can compromise the seal. Food and liquid expand during processing and may seep underneath the sealing compound. Too much headspace leaves excess air inside the jar, causing discoloration, seal failure, and spoilage.
Recommended headspace:
Jams and jellies – ¼ inch
Fruits, pickles, tomato products – ½ inch
Vegetables – 1 inch
Meats and poultry – at least 1 inch
For best results, always follow headspace measurements in the recipe.
- 3. Processing Equipment** — Processing methods recommended for home canning are water bath canners for high-acid foods and pressure canners for low-acid foods. Atmospheric steam canners can be used for high-acid foods with a total processing time of 45 minutes or less. The following old methods are **not** recommended and may cause spoiled food and foodborne illness:

Open Kettle Canning — In this method, hot food is poured into jars and the lid and ring are applied with no further heat processing. This allows bacteria, yeast, and mold to grow and spoil food. Examples include inverting hot jars and sun canning.

Oven — Oven temperatures vary with the accuracy of oven regulators and air movement. Dry heat moves slowly through jars, allowing bacteria to grow. Jars may crack due to temperature shock.

Dishwasher — Use the dishwasher to wash empty jars and keep them hot. Do not use it for processing filled jars. The water temperature is not high enough to kill bacteria for safe canning.

- 4. Untested or Homemade Recipes** — Canning your favorite recipe is risky, and may cause spoilage and foodborne illness. It is difficult to determine the safety of a homemade recipe without having detailed knowledge of the recipe, preparation procedures, total acid content, and consistency of the final product. Use tested recipes from trusted resources such as USDA, K-State Research and Extension publications, or others found at <https://www.rrc.k-state.edu/preservation/recipes.html>. Commercially canned foods are rigorously tested for safety. It is dangerous to try to recreate them to can at home.
- 5. Acidifying Tomatoes** — Tomatoes are on the borderline between a low-acid and high-acid food. Most tomato processing recommendations include **both** boiling water and pressure canning methods. **IMPORTANT:** Pressure processing instructions are equivalent in heat treatment to water bath processing. **Both methods require acidification.** There are no recommendations to process tomatoes without acidification. This applies to all varieties and colors of tomatoes.

Acidification Options for Tomatoes (Choose One)			
	Bottled Lemon Juice	Citric Acid	Vinegar (5% acidity)
Pints	1 tablespoon	¼ teaspoon	2 tablespoons
Quarts	2 tablespoons	½ teaspoon	4 tablespoons

For more information see *Preserving Tomatoes* (<https://bookstore.ksre.ksu.edu/pubs/MF1185.PDF>).

- 6. Improper Processing Time** — Use trusted resources for safe processing instructions. Guessing can lead to under-processing and foodborne illness or to over-processing and poor quality food.
- 7. Lids and Jars** — Recipes specify what size of jar to use. **Never use a jar larger than the size specified in the recipe.** This can lead to under-processing. Regular and wide-mouth Mason-type, threaded, home-canning jars, with the 2-piece lid and ring, are the best choice. They are available in 4-ounce, ½-pint, 12-ounce, pint, 1½-pint, quart, and ½-gallon sizes. Half-gallon jars are only used for canning apple and grape juice. With careful use and handling, Mason jars may be reused many times. When using 12-ounce jars, follow pint jar processing recommendations. When using 1½-pint jars, follow quart jar processing recommendations. Colored jars are available and are safe for canning. Colored jars are not recommended for fair exhibits, which are judged visually, because it is difficult to see through the colored glass. Reusing commercial jars for canning may not accommodate two-piece canning lids and are not recommended for home canning. The common canning lid consists of a flat metal lid and a metal screw band. These lids are used **one-time only**. Reusing metal lids can lead to seal failure and spoilage. Lids manufactured since 2014 do not require heat treatment before use. All lids, however, must be washed with soap and warm water before use. Boiling or heating lids softens the gasket compound too much and can lead to seal failure. Metal screw bands can be reused. There are reusable plastic lids available for use. No university research has been done to test the safety of these lids to date. Follow the manufacturer's instructions for best results.
- 8. Modifying Tested Recipes** — Adding thickeners, pasta, rice, or any other ingredient to tested recipes can result in spoilage and foodborne illness. These changes alter the acidity and consistency, which slows heat penetration. Instead, make the recipe as stated, then add extra ingredients before serving.
- 9. Fancy Pack** — In general, fancy packs are not practical and produce potentially unsafe products because of the tightly packed vertical or horizontal pieces of food. Processing times depend on specific preparation procedures. For example, preparation instructions specify cutting carrots into pieces, instead of packing them whole. Fancy packs can slow heat penetration through the jar of dense food. The slow process of fancy packing hot food will cool the food too much, resulting in under-processing. Exceptions include packing asparagus spears, whole green beans, and whole okra vertically into jars.
- 10. New Appliances for Home Canning** — Food preservation equipment manufacturers are selling new appliances to help consumers preserve food without a lot of expertise or in smaller batches. These appliances **must** be used according to their instructions. For some appliances, using recipes not developed for these appliances can lead to seal failure, food spoilage, and other potential health risks.

Resources:

K-State Research and Extension Food Preservation — <https://www.rrc.k-state.edu/preservation/index.html>

The National Center for Home Food Preservation — <https://nchfp.uga.edu/>

Ball FreshTech Appliances — <https://www.ballmasonjars.com/products/essentials-accessories/appliances/>

Presto Precise® Digital Pressure Canner — https://www.gopresto.com/downloads/canning/Digital_Canner_Facts_and_FAQs_v22d.pdf

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