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HOW TO USE AN ATMOSPHERIC STEAM CANNER FOR ACID AND ACIDIFIED FOODS

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Home canning is a great way to preserve local foods at their peak of freshness and reduce food waste. When preserved correctly, home canned foods can provide culinary appeal to meals at home like a sweet, soft and creamy yellow peach or the vibrant green crunch of a dill pickle. To safely home can foods and prevent food-borne illness, research-based canning methods must be followed. Botulism is the most commonly associated food-borne illness with home-canned foods. The Centers for Disease Control and Prevention reported that there were 210 outbreaks of botulism from 1996 to 2014, of which 145 were linked to home-canned foods. Food-borne illnesses related to the consumption of home-canned foods are often linked to the person canning the foods not following research-based canning instructions, not using pressure canners for low-acid foods, and ignoring signs of spoilage, or lack of knowledge about botulism in home-canned foods.

It is important for those that can foods at home to follow the most up-to-date research-based canning methods. In the past there was not enough research about atmospheric steam canners (i.e. steam canners) to recommend them to produce safe home-canned foods. However, in 2015, Dr. Barbara Ingham with the University of Wisconsin, in collaboration with the National Center for Home Food Preservation, published a peer-reviewed research study on the use of steam canners. The results of the study provided critical information and practices that must be followed for the production of safe foods canned in a steam canner in place of a boiling water bath canner. In steam canners, the prepared jars are set in a rack above a reservoir of water. The steam created from boiling the water provides the thermal treatment to the jars. There are several advantages to using a steam canner. A steam canner uses less water than a boiling water bath canner, reaches processing temperatures quicker, and requires less energy.




Atmospheric steam canning is an effective and safe method of food preservation when done properly by following research-based instructions. Kimberly Baker, ©2019, Clemson Extension

Choosing a Recipe

The steam canner must be used with naturally acidic or properly acidified foods that have a pH less than or equal to 4.6. This includes most fruits, preserves, and pickled vegetables. The steam canner is NOT for low-acid foods such as vegetables and meats. Recipes must be developed for a water bath canner and should only come from research-based sources such as the USDA, the National Center for Home Food Preservation, and Extension resources. The recipes provided by the manufacturer of the steam canner are

not considered to be research-tested, and therefore should not be used. Steam canners may be used with approved recipes using ½ pint, pint, or quart jars. Recipe instructions must include the ingredients, preparation of ingredients, and processing times for acidic and properly acidified foods.

High Altitude Adjustments

If you are canning at an altitude over 1,000 feet, then check for any adjustments for each type of food. Canning recipes are usually designed for altitudes of 0-1,000 feet. So, if you are at a higher altitude, then the processing time will need to be adjusted (usually an addition of 5 minutes processing time for 1,001 to 3,000 feet). While this does not apply to most of South Carolina, there are areas in the upstate such as northern Oconee and Pickens county near the Sassafras Mountain that are between 1,001-3,000 feet. Ask your county extension agent to help you determine your altitude or check with your local airport. The total processing time, including any adjustments for altitude, must be less than 45 minutes. The processing time is restricted because there must be enough water to emit pure steam for the full processing time and the canner cannot be opened during processing to add more water.

Steam Canning

The following are the steps that must be taken to safely can foods at home in a steam canner.

1. The steam canner must have the air vented out with pure steam before the processing time can begin. Use caution when working near steam as the hot steam and water can cause serious burns. The pure steam must remain at the temperature of boiling water (212°F at sea level) at the beginning of processing time and throughout the full processing time. The temperature of the steam can be monitored with a thermometer carefully placed in the vent hole. Ensure that the thermometer probe does not touch a jar, which can cause an inaccurate temperature reading. **Note:** Do not boil the water too vigorously. This can cause the canner to boil dry in as short as 20 minutes, which may be before the processing time is complete.
2. Preheat the jars before filling and fill with hot liquid for raw or hot-pack foods. Minimize cooling before the processing begins.
3. The steam canner does not require pre-heating. However, pre-heating can help keep the jars hot after filling.
4. Allow the jars to be canned for the full processing time.
5. After completing the processing time, turn off the heat and carefully remove the lid away from you so that the steam does not burn you. Wait 5 minutes before removing the jars with a jar lifter.
6. Cool the jars on a rack or towel at room temperature and away from any drafts. Keep the jars at least 1-inch apart from each other. Allow the jars to cool at room temperature for 12-24 hours. **Note:** Do not force cool jars. The slow cooling process lends to the greatest destruction of any pathogens that may be present in the jar.

Sources:

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