Preserving the Harvest: Canning Fruit Jam

TEXAS A&M AGRILIFE EXTENSION

Today we will learn

1. Proper canning practices preserving jams at home.
2. When, why, and how to sterilize jars.
3. How lids seal. Why it is important to get a good seal to assure a safe product.
4. What to do if you think that a canned product is not safe (and what to do with it).

Canning Basics

How does canning (processing) preserve food?

1. The heat kills any bacteria that can cause illness or spoilage.

2. Creates an airtight seal of the lids

Photo courtesy of the National Center for Home Food Preservation.

Two Methods of Canning

1. Boiling water bath
2. Pressure

- Method depends on the acidity of the food.
  - High acid foods (≤ pH 4.6)→ boiling water bath
  - Low acid foods (> pH 4.6) → pressure canner

Photo courtesy of National Center for Home Food Preservation

The pH of food decides which canning method to use

pH = ≤ 4.6
High Acid Foods

Pickles	Apricots
Apples	Raspberries
Apricots	Strawberries
Oranges	Blueberries
Grapefruit	Blackberries
Peaches	Pineapple
Grapefruit	Kraut
Plums	Pears
Figs	Tomatoes

WATER BATH CANNER

pH >4.6
Low Acid Foods

Okra	Beans	Hominy
Squash	Potatoes	Olives
Pumpkins	Spinach	Shrimp
Carrots	Peas	Clams
Turnips	Corn	Meat
Cabbage	Poultry	Asparagus
Onions	Tomatoes	

PRESSURE CANNER

Source: *So Easy to Preserve*, 5th edition, University of Georgia,

Boiling Water Bath Canner

- Large covered cooking pot with a rack
- Deep enough so at least 1 inch of water covers the top of the jars during processing
- Diameter should be no more than 4 inches wider than the diameter of the burner
- Used for canning high-acid foods (tomatoes, most fruits, jellies, jams, and pickles

Boiling water bath canners and cooktops (the stove)

- If the cooktop is electric, the canner should have a flat bottom.
- A flat, ridged, or concave bottom canner may be used on a gas range.
- If the cooktop is solid surface, check the manufacturer's instructions **before** doing any canning.

Unsafe Methods of Canning

- Open kettle
- Steam canning
- Microwave oven canning
- Oven canning
- Dishwasher canning

Recipes

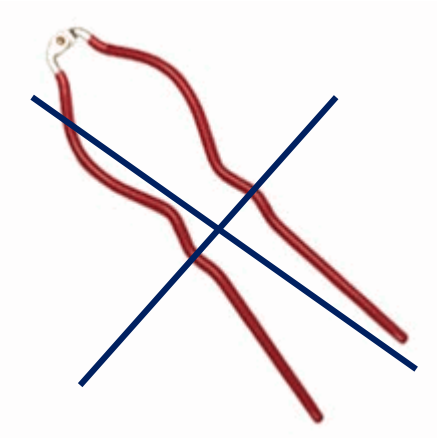
- Use **only** recipes that have been tested using research-based methods.
  - Current Extension publications
  - USDA
  - National Center for Home Food Preservation
  - Manufacturers of canning equipment & ingredients
- Recipes from cookbooks, family, and some internet sites may not be safe to use.
- **Do not** alter or make up your own recipes – it is not safe!

Equipment for Canning

Jars

Jar lifter

Jar wrench – *NOT RECOMMENDED*



Lid lifter

Funnel

Canning Jars

- Mason-type jar that is made for home canning use.
- Sizes of jars vary; pint and quart sizes are most common. Half-pint jars are used most often for jellies and jams.
- Regular and wide-mouth jars are available
- Most canning jars have a life span of about 13 years.

Lids

- 2-piece lid is recommended
  - Self-sealing lid + a screw band (ring)
- Buy the amount of lids that will be used in a year; old lids may not seal well
- Bands can be reused; Lids are used **only once**.
- Most lids need to be treated before they can be placed on the jar. Check the manufacturer's instructions.

Photo courtesy of National Center for Home Food Preservation

Yes!

No!

Prepare jars before use

- Check for cracks and chips.
- Wash in hot, soapy water and rinse. Keep them hot until they are ready to be filled.
- If the jars are processed for **less than** 10 minutes they **must** be sterilized.
  - **Boil for 10 minutes; keep hot until filled.**

- If processing time is **10 minutes or longer**, the jars do not have to be sterilized.

Headspace

- The space in the jar between the underside of the lid and the top of the food or its liquid.
- Amount of headspace depends on the type of food and the method of canning.
  - This will be stated in the recipe.
- Too little headspace → food may boil over onto the rim of the jar and prevent it from sealing.
- Too much headspace → the processing time may not be enough to get all the air out of the jar, resulting in a poor seal. May also result in discolored food.

Filling and Sealing jars

- Once jars are filled, release air bubbles
  - Place a flat plastic spatula between the food and the jar.
- Adjust the headspace.
- Wipe the jar rim with a damp paper towel.
- Place lid on the jar; add screw band and slightly tighten (not too loose or too tight)

Wiping the rims of jars. Photo courtesy of National Center for Home Food Preservation

The wrong way

A metal knife can scratch the inside of the jar, causing it to become weak and breaking later during processing.

The right way

Using a bubble freer, plastic or rubber knife or spatula will get the air out without causing damage to the jars.

Processing Times

- Amount of time jars are in the canner.
- This is a **critical step** in food preservation and based on research.
  - **Only adjust the time if in a high altitude**
- Processing times vary:
  - Food (type, thickness, how it is packed)
  - Size of jar
  - Type of canner

Under processing can lead to food that spoils or is unsafe; over processing can lead to overcooked food.

My jars are "done" – now what?

- **Boiling water bath canner**: turn off heat and remove the canner lid; **wait 5 minutes** before removing the jars.
- Remove jars with a jar lifter. **Don't** tilt the jars.
- Place hot jars on dry towels or cake cooling rack to keep jars from touching a cold surface.
- Do not disturb while jars cool (12-24 hours).

Photo courtesy of National Center for Home Food Preservation

Make sure your jars are sealed

Press the middle of the lid with your finger. If the lid springs up when you lift your finger, the seal is not good.

While cooling, you may hear a “pop” noise coming from the jars. This is a sign that the lids have sealed but it is a good idea to check them again 12 to 24 hours later.

Storing Fruit Jam

- Remove screw bands; wipe jars to remove any food residues.
- Label and date the jars.
- Store in clean, cool, dark, dry place. Use within 1 year for best quality.

9-28-08 = date jars were processed
B-2 = second batch of jars processed
Label with the food processed (Pears)

What if the jars didn't seal?

- If a jar does not seal within 24 hours of processing, you have 3 options:
  - Refrigerate the contents and eat in a few days
  - Freeze
  - Reprocess using a **new lid** and the **full processing time**

- If a jar did not seal and it has been longer than 24 hours, those jars **should be thrown away**.

When to throw out jam prepared at home

- Jars not processed correctly.
- Strange odor
- Mold growth
- Jar did not seal and it has been longer than 24 hours.
- Bulging lid

Jam that is thrown away should be thrown in a garbage disposal if possible. Wash and sterilize jars.

Making Jams and Preserves

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Ingredients needed

- Fruit
- Pectin
- Acid
- Sugar

Pectin

- Makes fruit or juice gel
- Naturally found in fruit
  - Some fruits need extra pectin to gel
- Available in powdered or liquid form
  - Form of pectin cannot be interchanged!
  - Store pectin in a cool, dry place; use by date stamped on package
  - Special pectins are available for making jams with less or no added sugar (follow instructions and recipes carefully)

Acid

- Helps with gel formation and adds flavor
- Fruit is naturally acidic but some fruits need more
  - Lemon juice is often used
  - Use commercially prepared lemon juice

Sugar

- Needed for several reasons:
  - Works with pectin to make a good gel
  - Preservative – prevents germs from growing
  - Adds to the taste of the jam/jelly
- Cannot alter the amount of sugar in a recipe
- Cannot substitute with artificial sweeteners
  - Special recipes for artificial sweeteners
- Granulated (white sugar is recommended)
  - Brown sugar has a strong flavor

Before you start…..

- Gather your supplies; make sure you food preparation area is clean
- Wash jars, sterilize in boiling water for 10 minutes then keep hot until used
  - **Adjust for high altitudes following recipe instructions**.
- Wash and rinse lids and bands; follow package instructions for treating lids

Making Jams and Preserves

- Only use reliable recipes
- Measure the amounts ingredients noted in the recipe carefully
- Prepare jams, preserves, and other fruit spreads in small batches – do not double the recipe

Making Jams and Preserves

- Select fruit; prepare according to the recipe.
- Cook fruit in a large saucepot.
- Heat fruit and sugar over low heat until the sugar is dissolved; then boil rapidly for the amount of time noted in the recipe.
- If not using pectin, check for doneness
  - temperature = 220°
  - freezer test

Making Jams and Preserves

- Skim off foam
- Fill hot, sterilized jars; use ¼-inch headspace
- Wipe rims, add lids and bands
- Process as directed in boiling water bath.
  - **Adjust for altitude as needed**
- Remove lid from canner; wait 5 minutes.
- Remove jars from canner; let cool and do not disturb for 12 to 24 hours
- Check seals.
- Store in cool, dark, dry place.
  Use within 1 year for best quality.

Why is my jam/jelly runny?

- Fruit was overcooked or undercooked
- Not enough acid in the fruit
- Wrong amounts of sugar or juice were used
- The batch that was made was too large

What can I do?

- If properly sealed, the product is safe.
- Can try to remake (follow recipe instructions)
- Use as a topping for ice cream, cake, etc.

Acknowledgements

- National Center for Home Food Preservation.
- Georgia Cooperative Extension, *So Easy to Preserve,* 5th edition.

Let's Jam!

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