

**FOOD PRESERVATION – A FAMILY AFFAIR
A FAMILY THAT CANS TOGETHER, STAYS TOGETHER.
YOU DO NOT HAVE TO "CAN" TO GET TO HEAVEN, BUT IT SURELY HELPS.**

- We will explore the basics of *boiling water*, *canning*, *steam pressure canning*, and *basic freezing*. We will learn how to make yummy *strawberry jam* in 20 minutes, (ideal for young married, single students, and all interested ages), *basic drying*, and also the *Victorial Juicer* for making Apple Sauce from the apples on your trees.
- Food Preservation is, indeed, a family affair. We will explore some ideas on how to *can* on a "shoe-string", and start the adventure of *food preservation*. When you learn to preserve food, you are making sure that "All Is Safely Gathered In."
- There is something definitely exciting about "canning time". This is a timeless, annual, "set-your-clock-by" time when the whole family "pitches in" to keep the traditions alive as well as preserving their favorite foods and capturing the tastes and memories.
- Remember, food preservation can be done at any time of the year, but the fall is a big time for the abundance of peaches, farm produce, gardens, etc.
- Here is a fun idea: **Today is the day to start your own traditions of canning and food preservation.** You and your family can enjoy the colorful rich flavors that can only come from one place – **YOU**. The preserving and canning, freezing, and drying of food will help us to become self-reliant and independent.

Nothing destroys the individuality of a man, a woman, or a child, as much as the failure to be self-reliant. President Heber J. Grant

THE KEYS TO LEARNING HOW TO HOME CAN

SOURCE: *Ball Blue Book of Preserving, Home Canning Products, Jarden Home Brands, Muncie IN. 2006*

- When followed EXACTLY, the up-to-date tested home-canning recipes adequately destroy normal levels of heat-resistant microorganisms. After Processing (boiling for the correct amount of time) and upon cooling, a vacuum is formed, and the lid seals onto the jar. This ensures that home canned foods will be free of spoilage when the jars are stored properly and remain vacuum sealed. This seal prevents other microorganisms from entering and recontaminating the food. (*Barbara Petty, University of Idaho Extension Office*).
- We must learn to understand *home canning principles* by learning how to prevent food spoilage and deterioration. Molds, yeasts, bacteria, and enzymes are the major causes of the spoiling of food. Bacteria are not easily destroyed. Some bacteria are alive and well at temperatures that kill molds and yeasts. Salmonella is destroyed when held at 140 degrees F. "Staph", Staphylococcus aureus produces a toxin that must be destroyed by heating the product to 240 degrees F. for the time specified. Botulism is a food poisoning caused by the *Clostridium botulinum bacteria*. This botulism-causing bacteria thrives on low acid foods (in the absence of air) – which is exactly the conditions inside a jar of canned vegetables, (for example, beets), meats, and other low acid foods. This spore forming organism must be destroyed by using super heated steam under pressure – a steam-pressure canner to process foods at 240 degrees F., which is hotter than the boiling point of water for the specified time.
 - **Personal example:** As a registered nurse, I took care of five people in the Idaho Falls Hospital who had eaten beets canned in the boiling water method at their grandmother's home. Four of the family died with central nervous system failure with Clostridium Botulinum poisoning from eating just a very few of the beets. Always follow the canning guides. **Source:** (*Barbara Petty, Bonneville County Home Educator, University of Idaho.*)

Canning Basics: Why Preserve Food?

- Taste of food is more appealing
- To increase variety of food available year round
- To save money
- To create a different form of a food.

How canning works:

BOILING WATER CANNER

Altitude (Feet)	Increase Processing Time 5 minutes
1,001 - 3000	5 minutes
3,001 - 6,000	10 minutes
6,001 - 8,000	15 minutes
8,001 -10,000	20 minutes

STEAM PRESSURE CANNER

Altitude (feet)	Weighted Gague	Dial Gague
0 - 1,000	10	11
1,001 - 2,000	15	11
2,001 - 4,000	15	12
4,001 - 6,000	15	13
6,0001 - 8,000	15	14
8,001 - 10,000	15	15

Canning Methods: Method addresses "heat" part of the canning equation, boiling water for high acid foods, pressure required for low acid foods.

Canning Methods: Boiling water; water temperature will reach 212 degrees F at sea level

Pressure: will reach 240-250degrees F at 10-15 lbs. pressure.

High Acid Foods: pH 2.0 high acid foods

pH 4.6 (lowest acidity for boiling water canning) Low acid Foods pH 7.0

High Acid Foods: pH 2.0 Hig acid foods – most fruits, tomatoes, pickled vegetables, jams, jellies, rhubarb

pH 4.6 – Low-acid foods – meats, seafood, poultry, vegetables pH 7.0

PROCESSING TIME ALSO DEPENDS ON:

- Style of food being canned
- Hot or cold pack
- Size of jar
- Type of Canner
- Altitude
- Thickness of food

PROPER CANNING PRACTICES:

- Start with quality fresh food.
- Fruits may need to ripen.
- Vegetables – within hours of harvest
- Meat and poultry – Chill and can without delay.
- Fish – Ice and can within 2 days of harvest.

PROPER CANNING PRACTICES:

- Wash and Peel.
- Rinse, don't soak.
- Peeling removes microorganisms.

APPROPRIATE JARS AND LIDS:

- Ball Brand, Mason type – threaded for home canning
- Use only size specified in reliable instructions.
- Use two-piece self-sealing lids.

PROPER CANNING PRACTICES:

- Prepare jars and lids.
- Jars should be clean.
- Sterilize if processing time less than 10 minutes.
- Heat lids as per manufacturer's instructions.

- Pack jars correctly.
- Pack hot or cold, according to instructions.
- Avoid overfilling.
- Release air bubbles with plastic spatula.

- Pack jars correctly.
- Clean off the edge of the jar.
- Leave proper head space.
 - Headspace is the space in the jar between the top of the food or liquid and the inside of the lid. As a general rule, leave 1 inch headspace for low acid foods, vegetables and meats; ½ inch head space for high-acid foods, fruits and tomatoes, ¼ headspace for juices, jams, jellies, pickles, and relishes. **CARE MUST BE TAKEN IN FILLING THE JARS TO THE CORRECT HEAD SPACE.** (*p. 11 Ball Blue Book of Preserving*)

ADJUST FOR ALTITUDE 3,000-6,000 feet:

- With *boiling water canner*, add 10 minutes to the time.
- When using pressure cooker, add 3 pounds pressure. If recipe states 10 pounds, you would process it at 13 pounds on your dial or 15 pounds on a weighted gauge.

PROPER CANNING PRACTICES:

- Process by up-to-date tested method.
- Cool before storing.
- Test seal before storing. Do not retighten lid after processing; remove rings, wash off the
- Jars – Store in cool dry, dark place.

TESTING FOR GOOD SEAL:

- Press middle of lid. It should not spring up. Tap lid with spoon. If it sounds dull, it may not be sealed.
 - Food stuck to the lid may cause a dull sound.

SEAL FAILURES:

- **Cause:**
 - old or reused lids, damage on rim, spoilage due to improper processing
 - food particles on rim.

- **Prevention:**
 - Buy new lids.
 - Check rim.

- Use correct time and method.
- Wipe rim before closing.
- Use correct torque.

USING BOILING WATER CANNERS: (*Ball Blue Book of Preserving; p. 12.*)

1.
 - a. Fill boiling-water canner half-full with water and bring to a simmer (180 degrees F).
 - b. Position canner rack over simmering water.
2. Prepare recipe. Fill jars and adjust caps.
3.
 - a. Place jars on canner rack immediately after each jar is filled.
 - b. Carefully lower the rack into simmering water.
 - c. Water level must cover jars and two-piece vacuum caps by 1 to 2 inches.
 - d. Add boiling water if needed.
4.
 - a. Put the canner lid in place.
 - b. Adjust heat to medium high, bringing water to a rolling boil.
 - c. Set times according to the recipe processing time.
 - d. Maintain water at a rolling boil for the entire processing period.
5.
 - a. After the processing period is complete, turn off heat and remove canner lid.
 - b. Let canner cool 5 minutes before removing the jars.
6.
 - a. Remove jars from canner, setting jars upright on a dry towel or cutting board to cool.
 - b. Leave 1 to 2 inches of space between jars.
 - c. Do not tighten bands if they loosen during processing.
 - d. Let jars cool naturally 12-to-24 hours before checking for a seal.

STEAM PRESSURE PROCESSING:

1.
 - a. Put canner rack inside canner base.
 - b. Add 2-to-3 inches of water.
 - c. Heat water to a simmer (180 degrees F).
2.
 - a. Prepare recipe.
 - b. Fill jars and adjust caps.
3.
 - a. Place jars on canner rack immediately after each jar is filled.
 - b. Lock canner lid securely in place.
 - c. Leave weight off vent pipe or open petcock.
 - d. Adjust heat to medium-high setting until steam flows evenly from the vent pipe or petcock.
 - e. Exhaust steam from the canner for 10 minutes.
4.
 - a. Place weight on vent pipe or close petcock.
 - b. The canner should pressurize in about 5 minutes.
 - c. After gauge indicates recommended pounds of pressure have been reached, adjust the heat to maintain pressure for the entire processing period.
 - d. Set timer according to the recipe processing time.
5.
 - a. After the processing period is complete, turn off heat.
 - b. Allow the canner to cool naturally.
 - c. Do not remove the weighted gauge or open the petcock until the canner has decompressurized and returned to zero pressure.

- d. Remove gauge or open petcock.
 - e. Unlock lid and lift it off the canner base, being careful that steam escapes away from you. Let canner cool 10 minutes before removing jars.
- 6.
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FREEZING FRUITS AND VEGETABLES

Source: *(Pacific Northwest Extension Publication)*

- Freezing is one of the simplest and least time consuming methods of food preservation.
 - For best quality, it is important to follow directions.
- Select fully ripe fruit that is not soft or mushy.
 - Most fruit has the best flavor, color, and food value when ripened on the tree or vine.
- Wash and sort fruit.
 - Trim and discard parts that are green or mushy.
- Prepare fruit for freezing by packing with or without sugar (syrup).
 - Use ascorbic acid to prevent darkening of light colored fruits.
- Pack prepared fruits in suitable containers for freezing.
- To serve, thaw fruit at room temperature or in the refrigerator.
 - Serve while few ice crystals remain.
 - Store at 0 degree F for top quality.

Apples:

- Select crisp, firm fruit.
 - To prevent browning during preparation, slice into salt water (2 tablespoons salt to a gallon of water).
- Drain and pack in syrup or pack without sugar.
 - Use ascorbic acid to retard browning during storage.
- Blueberries/also huckleberries.
 - Select ripe berries with tender skins.
 - Wash and drain.
 - If desired steam for 1 minute and cool immediately to tenderize skin.
 - Pack in syrup or without sugar.

Peaches:

- Select firm ripe fruit with no green color in skins.
 - Wash, peel, and pit.

Raspberries:

- Select fully ripe, juicy berries. (Seedy berries are best for purees or juice.)
 - Wash and drain.
 - Pack in syrup or pack in sugar or pack without sugar.

Rhubarb:

- Select firm well colored stalks.
 - Wash trim and cut into 1-2 inch pieces.
 - Pack in syrup or pack without sugar.

Strawberries:

- Select firm, ripe berries, wash drain, and remove hulls.

- Slice if desired.
- Pack in syrup or sugar, or pack without sugar.

Methods of Freezing:

- Without sugar – freeze in a single layer.

Syrups:

- Light has 4 cups water to 2 cups sugar
 - Medium syrup 4 cups water 3 cups sugar
 - Heavy syrup 4 cups water 4 cups sugar
- Dissolve sugar in hot or cold water.
 - If hot water is used, cool before using.

Sugar Pack:

- Juicy fruits and those that will be used for pies or other cooked products are often packed in sugar.
 - Use about 1 cup sugar for each 2 to 3 pounds of fruit.
 - Sugar and fruit should be gently but thoroughly mixed until the sugar is dissolved in the juice.
- Ascorbic Acid (Vitamin C)
 - When freezing light-colored fruit, add ascorbic acid to retard browning.
 - Ascorbic acid in powdered or crystal form is available to pharmacies.
- Add 1/2 teaspoon ascorbic acid to each 4 cups water and sprinkle over fruit before adding sugar.
 - When using a commercial anti-darkening mixture, follow the manufacturer's directions.

FREEZING VEGETABLES:

- Select top quality, wash, sort, blanch, put in suitable containers.

Green Beans:

- Select young string-less beans, Wash, and snip off tips. Cut or break into suitable pieces or slice length-wise into strips. Blanch 3 minutes. Let cool.

Corn:

- Select ears with plump kernels and thin sweet milk.
 - Husk ears, remove silk, and wash.
 - Blanch 4 to 5 minutes, cool thoroughly, cut off the cob.

Green Peas:

- Select bright green, plump and firm pods.
- Shell and blanch for 1 1/2 to 2 minutes. Let cool.

How to Blanche:

- Put water in a large kettle with a tight fitting lid and bring to a rolling boil.
 - Allow one gallon of water for each pound of vegetables except for leafy greens which require two gallons per pound.
 - Put a small amount of vegetables in wire basket, strainer or cheesecloth bag – immerse in water.
 - Blanche the corn right on the cob for 4-5 minutes.
 - Cover kettle and boil at top heat for the required length of time.
 - Begin counting time as soon as the vegetables are placed in the water.
 - Cool immediately in cold running water or ice water for about the same length of time used for blanching.
 - When thoroughly cooled, drain and pack for freezer.
 - You can add 1/2 teaspoon of sugar per pint of corn if desired after it is cut from the cob.
- Other methods of blanching are boiling water, in steam, in micro-wave.

ITS TRANSPARENT APPLE SAUCE MAKING TIME (FROM OUR OWN TREES). THIS IS A BIG TIME FAMILY AFFAIR. WE USUALLY MAKE 100 TO 125 QUARTS OF APPLE SAUCE.

- Cut the apples in two (stem and all) cut out the worms; however, fill up a big canning kettle with the cut up apples.
- Put in about ½ of the CANNER with water.
- Boil until the apples are soft then put them in the Victorian Grinder and grind
 - It separates the seeds, stems etc. out, and the apple sauce is beautifully GROUND out. Do this for all the apples that you want to do.
 - To sweeten – Sweeten to your taste maybe ¼ cup to a quart of apple sauce.
 - Stir in to taste.
- Put the applesauce into boiled clean quart bottles, leave ½ inch head space.
- Put on the hot lids and rings.
- Process for 30 minutes at a high boil with seven quarts in a boiling water canner.

Canning utensils needed:

- Victorian apple sauce grinder
- Jar lifter
- Jar funnel
- Plastic spatula
- Lid wand
- Measuring cups

DRYING:

- Micro-organisms and enzymes (that spoil food) need water to be active.
- Drying works as a preservation method simply by depriving them of water.
- Almost any food -safe packaging will do for dried foods.
- And, unlike canned foods, packages can be opened and closed again and again.

DRYING FOODS

(Marnie Spencer Extension Educator University of Idaho Extension)

METHODS OF DRYING:

- **Sun Drying**
 - Advantage – low cost, and sun's ability to slow the growth of some organisms
 - Disadvantage – depends on the weather, and it takes a considerable amount of time to dry in the sun.
- **Solar Drying**
 - Drying time is higher and shorter; it is also weather dependent.
- **Oven Drying:** Little or no investment in equipment. Disadvantage is cost of energy used. Food is more brittle and darker than in a dehydrator.
- **Dehydrator Drying:**
 - Advantage – Yield a better quality dried product and is not dependent on the weather.
 - Disadvantage is the cost of energy and equipment.

DRYING FRUITS:

- Select fruits of good quality, fresh fully ripe fruit.
- Prepare fruit soon after picking, wash fruit, peel slice, or cut fruit into similar sizes for even drying.
 - Pre-treat fruits are a personal preference.

DRYING VEGETABLES:

- Select vegetables in prime condition.
 - The time from the garden to the dryer should be as short as possible
 - Wash, peel, trim, core, cut, slice, shred, keeping pieces about the same size for uniform drying.

DRYING HERBS:

- Gather when leaves are young and tender, wash thoroughly, and remove excess water.
 - Dry leaves in a single layer on a dryer rack.
 - Small bundles of stems may be hung in a warm dry, airy place to dry.

MAJOR CANNING SINS:

- Do not make up own recipe untested.
- Do not add extra starch flour or other thickener.
- Do not make altitude adjustments.
- Do not vent pressure cooker canner under running water.
- Keep the water hot and boiling when processing.
- Process for the right amount of time.
- Do not use mayonnaise jars.
- Do not use paraffin on jams and preserves.
- Cool the jars carefully.
 - Do not put jars right next to each other when cooling or they can flat sour. (micro-organisms can grow-thermophiles).

(Lori Dye, Idaho Extension Home Educator, Jefferson County)

RECIPE FOR CREATING DELICIOUS FROZEN STRAWBERRY JAM FROM START TO FINISH IN 20 MINUTES. Husbands especially like to make this recipe and put it in the freezer.

STRAWBERRY JAM RECIPE:

4 cups crushed strawberries
1 pouch/ pkg. Bell freezer jam pectin
1 1/2 cups sugar

Combine strawberries and sugar in a medium bowl. Let stand for 3 minutes, gradually stir in the freezer jam pectin and stir for 3 minutes. Let stand for 5 minutes. Ladle jam into freezer container jars leaving 1/2 inch headspace. Adjust the caps or lids, label, and freeze.

The love of canning and food preservation will grow in your heart. Do not be afraid of it. Do the simple recipes, follow the guidelines, and start your own family traditions of food preservation. Involve the family--A family that cans together stays together.

Respectfully submitted,

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