

**CANNING FRUITS**  
and  
**VEGETABLES**

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**CONSUMER SECTION**  
**MARKETING SERVICE**



# ONLY FRESH FRUITS AND VEGETABLES SHOULD BE CANNED

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**S**UCCESSFUL canning depends on destroying all bacteria, yeasts and moulds and sealing the product in air tight containers so that no contamination can take place to cause spoilage; at the same time natural colour and flavour should be preserved.

The steps in canning are:—

1. Checking equipment
2. Washing and sterilization of jars
3. Testing jar rings
4. Selection of product
5. Grading or sorting product
6. Washing and peeling
7. Blanching when required
8. Preparation of syrup
9. Packing jars
10. Processing or sterilizing
11. Sealing and cooling
12. Storing

Safe canning depends on strict attention to every step in the process.

## Equipment

No equipment is needed other than that found in the ordinary kitchen. Sharp knives—preferably stainless steel, a colander, bowls, measuring cups, enamel pie plates, wooden spoons, a wide mouthed funnel for filling jars, and a jar lifter to save burned fingers in lifting jars from the sterilizer. The sterilizer may be the common wash boiler, the steam pressure cooker, or the oven.

## Jars

To furnish a perfect seal, a jar for use in canning should have a smooth rim and good fitting cover. Test each jar before you use it. See that it is not cracked. See that there are no chips in the rim of jar or cover. Fill the jars with water, adjust the rubber, seal and invert to test for leakage. Be sure that the wire spring of a spring top jar springs into position with a snap. New metal rings should replace those which have become cracked or corroded.

## Sterilize Jars

This may be done while the fruits or vegetables are being prepared. Wash in soapy water, rinse, half fill each jar with water and stand on the rack in the boiler. Surround with cold water, bring to boiling point, boil fifteen minutes. Keep them boiling hot until ready to fill. Never touch the inside of a sterilized jar with an unsterile object.

## Jar Rubbers

Jar rubbers are a very important part of canning equipment. To be effective the rubber must be elastic. To test, first bend double; an unsatisfactory ring will crack. Then stretch; a good rubber will spring back to its original size. Be sure to have the type of rubber which suits the type of jar you are using. Wide rubbers fit spring top jars. Narrow rubbers fit screw tops. New rubbers should always be used for fruits or vegetables canned without sugar.

## Grading or Sorting

Uniformity of size and maturity makes a more attractive product. It is well to spend the extra time.

## Washing

Fruits and vegetables should be thoroughly washed until all soil is removed. Lift them from the water instead of draining it off. A small brush is useful for cleaning vegetables.

## Pre-Cooking

To shrink vegetables and allow a better pack and to ensure a quick and thorough heat penetration, vegetables are prepared for serving, covered with boiling water and brought to boiling point over the fire, then packed hot into jars and covered with the boiling water in which they were heated. Beets are pre-cooked before peeling, then dipped in cold water to loosen skins.

## Blanching

This process is used to remove skins from peaches and tomatoes. It consists of heating in steam or boiling water, then dipping in cold water for a few seconds. The skins will then slip off easily.

Spinach may also be subjected to this process to shrink it and preserve colour.

A wire basket, large strainer or a square of cheese cloth may be used to simplify handling.

## To Prevent Discoloration

Such fruits as peaches, pears and apples should be dropped in a brine of 1 teaspoon of salt to 1 quart cold water as soon as peeled, to prevent discoloration.

## Syrups

For each pint jar allow:—

$\frac{1}{2}$  to  $\frac{3}{4}$  cup syrup for small fruits

1 cup syrup for large fruits

### SYRUP—

Thin syrup—1 cup sugar to 2 cups water

or

$\frac{1}{2}$  cup sugar;  $\frac{1}{2}$  cup corn syrup to 2 cups water

or

1 cup honey to 2 cups water.

Medium syrup—1 cup sugar to 1 cup water

or

$\frac{1}{2}$  cup sugar;  $\frac{1}{2}$  cup corn syrup to 1 cup water

or

$\frac{1}{4}$  cup sugar;  $\frac{3}{4}$  cup honey to 1 cup water.

This syrup is recommended for all sweet fruits.

Honey and corn syrup are not recommended for strawberries, raspberries or cherries as the flavours do not blend well.

Beet sugar and cane sugar are equally good for canning and jam making.

## Canning Fruit without Sugar

All fruits may be successfully canned without sugar. Use boiling water instead of syrup. Add 5 minutes to time of sterilization given in the time table.

Strawberries, raspberries, blueberries, cherries, currants, plums and rhubarb can be packed in jars—crushed until the juice overflows and sterilized allowing five minutes longer than time required when syrup is added. This fruit is excellent for pies and puddings.

### Brine for Vegetables

Allow  $\frac{1}{2}$  tsp. salt to each pint jar and fill to overflowing with boiling water. For tomatoes use strained tomato juice.

## METHODS

1. **COLD PACK METHOD.**—By this method the food is packed into sterilized jars while raw and cold, covered with liquid (syrup, water or its own juice) and partially sealed—then sterilized.

2. **HOT PACK METHOD.**—By this method the food is subjected to a short pre-cooking and packed hot—thus requiring shorter time for heat penetration and in some cases allowing more vegetables to be packed in the jar. With vegetables such as corn or greens the centre of the filled jar reaches sterilization temperature from 30 to 50 minutes sooner than when packed cold.

3. **OPEN KETTLE METHOD.**—While this method of cooking fruit with sugar in an open kettle is a common one it is not recommended. Open kettle method should never be used for vegetables. Jams, marmalades and preserves in heavy syrup are done in the open kettle.

When fruits are cooked in the open kettle, prepare them carefully and cook in sugar syrup until tender. Pack while boiling hot into clean hot sterilized jars, partially seal and process for five minutes. Then seal.

### Filling Jars

When packing, work as quickly as possible. Corn, beans and spinach should be packed fairly loosely to allow perfect penetration of heat to the centre of the jar and thus ensure even sterilization. Pack the jar full, then fill with boiling liquid. After filling dip the blade of a knife in boiling water and run it down and around the inside of the jar to remove air bubbles. Adjust rubbers (which have been dipped in boiling water) and tops. Then partially seal. With wire clamp jars adjust the top clamp but do not spring down the lower one. With screw top jars screw tight—then unscrew half turn. On vacuum jars adjust metal clamps.

### Processing or Sterilizing

**STEAM PRESSURE COOKER.**—The pressure canner is a strongly built container fitted with a clamped-on cover. A small amount of water placed in the canner boils forming a pressure of steam the temperature of which varies with the pressure

At 5 lb. pressure the temperature is 228° F.

At 10 lb. pressure the temperature is 240° F.

At 15 lb. pressure the temperature is 250° F.

For each 2,000 feet of altitude one pound of pressure must be added. Be sure that sufficient water is added. Allow steam to escape from the open pet cock.

Test the cooker before proceeding with sterilization of products. A faulty cooker does not give accurate pressure reading, making sterilization incomplete and results unsatisfactory.

Be sure that sufficient water is added to provide steam during time required for sterilization.

Allow steam to escape from the open pet cock at least 3 minutes. Then close, and allow pressure to rise until the gauge registers required pressure. Count time of sterilization from this time. When the product is sufficiently sterilized, cool until gauge registers zero. Then open pet cock *slowly*. When jars are removed, seal at once, and invert.

**HOT WATER BATH CANNER.**—A hot water bath outfit may be any container of sufficient depth to allow the jars to be covered with water while standing on a false bottom which allows circulation of water under the jars. It must also have a tight fitting cover. Special kettles may be bought for the purpose having a wire rack with handles for lifting in and out of the boiling water, but the wash boiler or other deep pot may be fitted with a wooden rack and will answer the purpose nicely. Set filled jars on rack.

Fill water over the jars 2 inches. Have water near the temperature of the filled jars. Put cover on kettle. Count time of sterilization from the time the water boils. Keep water boiling. As soon as time is up remove the jars and seal at once and invert.

**INTERMITTENT STERILIZATION.**—This method of sterilization is necessary when peas or beans are processed in a water bath. The product is sterilized one hour on each of three successive days. The jars may be removed from the boiler, the tops tightened and allowed to cool after each sterilization, or they may be allowed to remain in the boiler. It is not necessary to complete the seal if jars are kept submerged in the water between sterilization periods.

**OVEN.**—The oven is a method of sterilization and excellent for processing small fruits or tomatoes or for large fruits pre-cooked in the open kettle. An oven with thermostat control is most satisfactory. Preheat the oven to required temperature. Oven temperatures are given in table for fruits.

Place jars two inches apart on a tray or pan. Pour sufficient water in the pan to cover the bottom one inch deep (this prevents burning in case some syrup boils over). Time of sterilization is counted from the time at which the oven has returned to required temperature after placing jars.

**RAW CANNING.**—Raspberries, strawberries, or rhubarb may be canned successfully by what is known as the raw canning method. Pack in jars. Cover with boiling syrup. Adjust top and seal. Place on several layers of newspaper in a tub and pour in enough boiling water to cover the jars 3 inches over the top. Place a blanket or rug over the tub and leave until cold. In pouring in boiling water care should be taken not to pour directly on the jars.

**NEVER OPEN A JAR AFTER STERILIZING.**—Sometimes the contents of a jar will shrink in processing leaving space at the top of the jar. This is due to air spaces left in packing the jars, but the entire contents are sterile and will keep perfectly. Opening may allow bacteria to enter and contaminate the product.

Never attempt to tighten the screw top after it is cold. This will break the seal.

### Why Fruits Float in the Jar

1. Overprocessing.
2. Too heavy syrup.

### Storing

Before storing wipe jars dry. Be sure there are no leaks. If a leak is found, remove the cover, put on a new rubber, seal and sterilize  $\frac{1}{4}$  time allowed for the particular product. Store in a cool, dry, dark place or wrap each jar in paper. The cartons in which new jars are packed make a very satisfactory storage place for filled jars.

## SPECIAL RECIPES

**TOMATO JUICE.**—Choose thoroughly vine ripened fruit, green portions impart bitter undesirable flavours. Artificially ripened fruit is not so rich in vitamins as that ripened naturally. Wash and remove core and cut tomatoes but do not peel. Cook slowly  $\frac{1}{2}$  hour in a closely covered kettle. Press through a coarse sieve extracting all pulp; then through a fine sieve to remove seeds. Allow 1 tablespoon salt and  $\frac{1}{4}$  teaspoon pepper to 2 quarts juice. Pour into sterilized jars. Seal and sterilize 10 minutes.

**TOMATO SOUP**—

1 peck ripe tomatoes	1 head celery
6 large onions	$\frac{3}{4}$ cup flour
$\frac{1}{2}$ cup sugar	$\frac{1}{4}$ cup salt
$\frac{1}{2}$ teaspoon cayenne pepper	$\frac{1}{2}$ cup butter

Wash vegetables, cut in small pieces. Cook for  $\frac{1}{2}$  hour. Press through a sieve. Melt butter, add flour, sugar, salt and pepper. When blended slowly mix with strained tomato. Heat to boiling and let cook until thickened. Pour into sterilized jars. Seal and sterilize 10 minutes.

## TIME TABLE FOR FRUITS

Products	Preparation	Sterilization			
		Hot Water Bath 212° F.	Steam Pressure 5 lb.	Oven	Steam Cooker
		Minutes	Minutes	Minutes	Minutes
Apples, sliced or quartered.....	Cook 5 minutes in syrup—pack hot	30	10	50 at 275° F.	35
Applesauce.....	Pack hot.....	12	5	10 at 275° F.	15
Apricots.....	Peel—halve and pit—pack—cover with boiling syrup.....	20	10	55 at 275° F.	30
Blackberries or blueberries.....	Wash—pack, fill with boiling syrup.	20	10	35 at 275° F.	30
Cherries.....	Wash, stem, pit and pack, cover with boiling syrup.....	20	10	35 at 275° F.	30
Currants.....	Wash, stem, pack, fill with boiling syrup.....	20	10	35 at 275° F.	30
Fruit juices.....	Crush fruit, heat slowly, strain, pour into jars.....	30	10	50 at 250° F.	50
Gooseberries.....	Wash, pack in jars, fill with boiling syrup.....	16	10	30 at 275° F.	25
Peaches.....	(1) Immerse in boiling water 3 min.—cold dip, peel, remove pit, pack in jars, add boiling syrup.....	20	10	.....	30
	(2) Peel, remove pit, cook in syrup in open kettle 5 min., pack hot—fill with syrup.....			10 at 275° F.	.....
Pears.....	(1) Pare, half, remove core, pack, fill jars with boiling syrup. If pears are firm, steam 15 min. before packing.....	20	10	.....	30
	(2) Pare, halve, remove core, cook in syrup in open kettle 10 min. Pack hot, fill with syrup.....			10 at 275° F.	.....
Plums.....	Wash, prick skin, pack cold, cover with boiling syrup.....	20	10	45 at 275° F.	30
Raspberries.....	Wash if necessary, pack in jars, cover with boiling syrup.....	16	10	30 at 275° F.	25
Rhubarb.....	Wash, cut in small pieces, blanch 1 min. cold.....	16	10	20 at 250° F.	25
Strawberries.....	Wash, stem, fill jars, cover with boiling syrup.....	16	10	35 at 275° F.	25

When fruits are to be canned without sugar increase time of sterilization 5 minutes. Boiling water may be used to replace syrup or the fruit pressed down so its juice overflows the jar.

## TIME TABLE FOR VEGETABLES

Mixed vegetables for soup or salad may be canned if the sterilization period of that of the vegetable requiring the longest time.

It is recommended that the pressure cooker be used for sterilizing all vegetables except tomatoes. While instructions are given for the water bath method, greater care must be exercised on account of the ever present danger of spoilage through insufficient sterilization.

When water bath method is used it is not desirable to can vegetables in jars larger than 1 pint as the time taken for penetration of heat prolongs the time of sterilization and affects vitamins.

Products	Preparation	Time of Sterilization	
		Hot Water Bath 212° F.	Steam Pressure 10-15 lb.
		Minutes	Minutes
Asparagus.....	Wash, tie in uniform bundles, stand upright in 2 inches of water. Boil 4 min. Pack hot, add $\frac{1}{2}$ tsp. salt to each pint jar, fill with boiling water.....	120	40
Beans, string or wax....	Wash, string, cut in desired lengths. Cover with water, bring to boiling point, boil 4 min. Pack hot, add $\frac{1}{2}$ tsp. salt to each pint jar. Fill with boiling water.....	180	40
Beets.....	Wash and cut off tops 2 inches above beet. Boil 15 min. Cold dip, remove skins, pack, add $\frac{1}{2}$ tsp. salt to a pint jar. Fill with boiling water.....	90	40
Carrots.....	Use only very young carrots. Wash and boil 5 min. Cold dip—slip off skins, pack, add $\frac{1}{2}$ tsp. salt to pint jar, fill with boiling water.....	120	40
Cauliflower.....	Wash, separate the flower. Drop into salty water. Let stand $\frac{1}{2}$ hour, cover with water, bring to boiling, drain, pack jars, add $\frac{1}{2}$ tsp. salt to a pint jar. Fill with boiling water.....	60	30
Corn.....	Cut corn from cobs. Cover with boiling water and bring to boiling point, fill jars, covering corn with boiling liquid, add $\frac{1}{2}$ tsp. salt to a pint jar.....	180	60
Chard, Spinach or other greens.....	Wash carefully, steam 5 min., pack in jars, add $\frac{1}{2}$ tsp. salt to a pint jar, fill with boiling water.....	180	60
Mushrooms.....	Wash and trim, large ones may be cut in pieces. Blanch 5 min. Cold dip very quickly. Pack, allow $\frac{1}{2}$ tsp. salt to a pint jar, fill with boiling water.....	180	60
Peas.....	Use only young tender peas. Shell and wash. Cover with water and bring to boil, pack, add $\frac{1}{2}$ tsp. salt to a pint jar, fill with boiling water. Intermittent sterilization is recommended for peas. Sixty min. on each of 3 successive days if water bath is used.....	180	60
Sweet green or red peppers (pimientos).....	Wash, remove seeds, boil 3 min., cold dip. Remove skins, pack, allow 1 tsp. salt to a pint jar, cover with boiling water.....	45	30
Pumpkin.....	Cut in pieces, remove seed and membrane, peel, steam until tender, mash pack.....	180	60
Tomatoes.....	Scald and peel, pack in jars, cover with tomato juice made from irregular very large or broken tomatoes cut in small pices, cooked over slow fire for 5 min. Strain. Allow $\frac{1}{2}$ tsp. salt to a pint jar.....	22	15

### Other Publications on Food Preservation

Drying Fruits and Vegetables.

Home Canning in Tin Cans.

Jams, Jellies and Pickles.

Home Preservation of Meats, Poultry and Soup.