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DOMINION OF CANADA—DEPARTMENT OF AGRICULTURE

VEGETABLES

WARTIME CANNING

JAMS AND JELLIES



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STEPS IN CANNING

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

Successful canning depends on strict attention to every step.

HOME CANNING OF FRUITS AND VEGETABLES

HOME canning takes on new importance in wartime, for as much as possible of Canada's perishable fruits and vegetables should be canned for use throughout the winter. In order to avoid any waste of sugar or fruit, extra care should be taken to follow directions and recipes given in this bulletin prepared especially for wartime canning. If this is done, even the beginner may feel confident of successful results.

If food products are left in their natural state, most of them spoil in a few days—some in a few hours, owing to the growth on their surface or in their tissues of bacteria, mould or yeasts. If such organisms can be destroyed and the entrance of other organisms prevented, the food can be kept in good condition indefinitely. Therefore successful canning depends on destroying all microscopic life by using sufficient heat for the proper length of time and by using air-tight containers which protect from reinfection. The aim in canning fruits and vegetables is to assure this result while preserving natural shape, colour and fresh flavour. Safe canning depends on strict attention to every step in the process.

CAN FRESH VEGETABLES AND FRUIT.—The fresher they are the better will be the finished product, and the smaller the chance of failure. For best results vegetables should be canned within a few hours of gathering.

SPOILAGE OF CANNED FOODS

Improper sterilization and sealing of canned fruits and vegetables may result in the following types of spoilage—mould, fermentation and bacterial spoilage (flat souring).

In the case of mould, if it is detected soon enough the growth may be removed from the surface, the contents of the sealer brought to boiling point and the fruit used immediately.

When slight yeast fermentation occurs, boiling the fruit with a small amount of additional sugar generally makes it palatable.

With bacterial spoilage which usually takes the form of what is known as "flat souring" no gas is formed but the contents of the sealer or can develop a sour or rancid odour, and the liquid is generally cloudy.

If any sign of bacterial spoilage is detected, the entire sealer should be discarded without tasting as toxins may be present which are extremely poisonous.

Containers for canned goods should be of a size to suit the needs of the household so that the contents may be consumed shortly after opening, otherwise deterioration and spoilage may occur.

It is a wise precaution to boil canned vegetables gently for at least ten minutes after they are removed from the sealer or can. This does not imply that they must be eaten hot. When the vegetables are required for salads, etc., they may be set aside after boiling and chilled before use.

STEPS IN CANNING

Checking Equipment

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

Containers

There are two types of container which may be used, glass sealers and tin cans.

Several makes of glass sealers are available, screw top, spring top and vacuum type. All are equally satisfactory if they can be made completely airtight.

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

Rubber Rings

Rubbers are an important part of canning equipment. To be effective the ring must be pliant. For a good seal it is necessary to have the proper sized ring for the sealer used. The boxes are plainly marked and the types of rings are not interchangeable. Wide rings fit spring top sealers; narrow rings fit screw top sealers.

It is preferable that new rings should be used each year; however, some retain their elasticity and are thus suitable for re-use. Rubber is valuable, therefore great care should be taken in storing usable rings. On removal from the sealer they should be washed and dried immediately, then laid flat, so they will not lose their shape. Keep rubber rings in a dry place, away from light.

Old type rings are tested by bending double; an unsatisfactory ring will crack. A second test is stretching—a good ring will spring back. The wargrade rubber ring being manufactured is not so elastic as the old type but makes a satisfactory seal. These rings will not return to shape and may break if stretched and so should not be tested in this way.

Some types of sealer have a sealing composition on the metal disk top. For these sealers use new caps each year.

PREPARATION

Sterilize Sealers, Tops and Rings

This may be done while fruits and vegetables are being prepared. Wash sealers thoroughly.

For water sterilization half fill each sealer with cold water, place glass tops in position and stand the sealers on the rack in the boiler. Surround with cold water, bring to boiling point and boil 15 minutes. Keep the sealers hot until ready to fill.

For oven sterilization place empty sealers and glass tops on a tray in the oven. Sterilize 30 minutes at 275° F. Remove from the oven one at a time for filling.

Rubber rings and metal caps which have a sealing compound on them are sterilized by pouring boiling water over them and allowing to stand 5 minutes.

Grading or Sorting

Uniformity of size and maturity makes a more attractive product. Unripe fruit should be allowed to ripen before canning. Bruised or spotted fruit should not be canned but if bruises are cut out the good portion of the fruit may be used for jam.

Washing

Fruits and vegetables should be thoroughly washed until all soil is removed. Care should be taken not to bruise the fruits. Lift from the water instead of draining it off. If available use a wire basket. A spray is excellent for washing fruits and vegetables. Do not wash too much at one time. A small brush is useful for cleaning vegetables.

Pre-cooking

Pre-cooking is necessary to shrink vegetables, allow a better pack and to ensure a quick and thorough heat penetration. The vegetables are prepared for serving, covered with boiling water and brought to boiling point over the fire, then boiled for several minutes (see chart, page 11), packed hot into sealers and covered with the boiling water in which they were cooked. Peaches, pears and cherries can be pre-cooked before packing. This is recommended when oven sterilization is used.

Blanching

This process is used to remove skins from peaches and tomatoes. It consists of placing in steam or boiling water for 15 to 30 seconds to loosen skins and then dipping in cold water.

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.

Syrup

Figure the amount of syrup required for fruit to be canned and have syrup ready before preparing fruit.

Thin syrup . . . 1 cup sugar to 2 cups water . . . makes approximately $2\frac{1}{4}$ cups syrup. This syrup is recommended for apricots, blueberries, sweet cherries, raspberries, peaches and pears.

Medium syrup . . . 1 cup sugar to 1 cup water . . . makes approximately $1\frac{1}{2}$ cups syrup. This syrup is recommended for sour cherries, plums, blackberries and strawberries.

A syrup between these two using 1 cup of sugar to $1\frac{1}{2}$ cups of water . . . makes approximately 2 cups syrup. This syrup is recommended for sweet plums, cherries and apricots if desired.

To make syrup add water to sugar, boil 5 minutes, skim, keep hot but not boiling.

For each pint sealer allow:—

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

$\frac{3}{4}$ to 1 cup syrup for large fruits.

Sugar.—Beet and cane sugar are chemically the same and therefore can be used interchangeably with identical results in canning, jam or jelly 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 (page 10).

Strawberries, raspberries, blueberries, cherries, currants, plums and rhubarb can be packed in sealers—crushed until the juice overflows and sterilized allowing 5 minutes longer than time required when syrup is used.

Fruit canned without sugar is excellent for pies and desserts and may be sweetened as used with a little sugar from the weekly ration.

Chemical compounds and "canning powders" are not recommended since heat sterilization is sufficient for preservation.

METHODS OF PACKING

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

2. **HOT PACK METHOD.**—Food is subjected to a pre-cooking and packed while hot. This requires shorter time for heat penetration and in most cases allows more food to be packed in the sealers. This method is used for vegetables except tomatoes and sometimes used for fruits, particularly when oven canning.

3. **OPEN KETTLE METHOD** is not recommended for canning fruit with the present sugar allowance and should NEVER be used for vegetables.

FILLING SEALERS

GLASS SEALERS.—When packing, work as quickly as possible. Remove sealers one at a time from the sterilizer. Pack sealer full, then fill with boiling liquid. Corn, beans and spinach should be packed fairly loosely to allow for expansion and perfect penetration of heat to the centre of the sealer and thus ensure even sterilization. To prevent sealer from cracking, place on cloth and pour liquid directly on the product. After filling, dip the blade of a knife in boiling water and run it down and around the inside of the sealer to remove air bubbles. Adjust sterilized rubber ring making sure that it is flat, then place sterilized top in position. Then partially seal, this allows for expansion during sterilization. There is danger of breakage if sealers are completely sealed. With wire clamp sealers, adjust the top clamp but do not spring down the lower one. With screw top sealers screw tight—then unscrew half turn. On vacuum sealers adjust metal clamps.

CANS should be filled to within $\frac{1}{4}$ inch of the top of the can. Since cans are sealed before sterilizing sufficient head space must be allowed for expansion.

PROCESSING OR STERILIZING

Pressure Cooker.—The pressure canner is a strongly built container fitted with a clamped-on cover. The 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.

If using a pressure cooker carefully follow directions in the book supplied by the manufacturer.

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. Leave for 2 minutes. Then open pet cock SLOWLY. Remove sealers at once.

Main points to watch:

1. Amount of water.
2. Keep pressure constant by regulating heat. Liquid will be drawn out of sealers if pressure fluctuates.
3. Let stand sufficient time before opening pet cock.
4. Tilt cover away to avoid steam coming into face.

Boiling Water Bath.—A boiling water bath outfit may be any container of sufficient depth to allow the sealers to be covered with water while standing on a rack which allows circulation of water under the sealers. 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 sealers on rack. Do not allow them to touch each other.

Add water to cover sealers 2 inches over tops. This depth is necessary for pressure to keep seepage from the unsealed sealers. Have water near the temperature of the filled sealers. Put cover on kettle. *Count time of sterilization from the time water boils. Keep water boiling.* Add boiling water to keep sealers covered.

Oven.—The oven is excellent for processing small fruits or tomatoes or for large fruits pre-cooked in the open kettle. Pre-cook peaches, pears and cherries in syrup and pack hot. This aids in preventing discoloration. An oven with thermostatic control is most satisfactory. Preheat the oven to required temperature. Oven temperatures are given in table for fruits. Tin cans cannot be sterilized in the oven as the seams may burst.

Place sealers 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 sealers in it.

Steamer.—This may be the same kettle as is used for water bath. Water is used in sufficient amount to reach the rack on which the sealers are placed. Steam is generated and circulates around the sealers giving an even temperature. Be sure that water is boiling and steam rising before placing sealers. Count time of sterilization from 3 minutes after putting cover on cooker. This method requires longer sterilization period and should be used only with fruits. (See time table, page 10.)

Raw Canning.—Raspberries or rhubarb may be canned successfully by what is known as the raw canning method. Pack in sealers. Cover with boiling syrup. Adjust top and seal tightly. Place on several layers of newspaper in a tub and pour in enough boiling water to cover the sealers 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 sealers.

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

When water bath method is used it is preferable to can vegetables in pint sealers.

SEALING

Remove sealers as soon as time is up to avoid over-processing.

Screw tops and spring tops should be tightened as soon as removed from the sterilizer and sealers inverted a few minutes to test for leakage.

Do not tighten or invert vacuum type or self-sealing top sealers. Such sealers can be tested after they are cold, by tapping the lids gently with a metal spoon. If properly sealed there is a clear ring and metal tops will curve inward slightly.

NEVER OPEN A SEALER AFTER STERILIZING.—Sometimes the contents of a sealer will shrink in processing leaving space at the top of the sealer. This is due to air spaces left in packing the sealers, 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.

STORING

Before storing wipe sealers dry and be sure there are no leaks. If a leak is found, remove the cover, see that there are no chips in sealer or lid, put on a new rubber seal, and invert to test for leakage. If seal is satisfactory, sterilize $\frac{1}{4}$ time allowed for the particular product.

Label and date each sealer. Store in a cool, dry, dark place or wrap each sealer in paper. The cartons in which new sealers are packed make a very satisfactory storage container for filled sealers.

Examine fruit one week after canning to see if every sealer is keeping.

Rhubarb Juice

Wash and cut rhubarb in small pieces. Do not peel. Put in preserving kettle. Add 1 cup water for each quart of rhubarb. Cover tightly. Bring slowly to boiling point on top of stove and simmer 5 minutes. Strain. Pour into hot sterilized bottles, leaving 1 inch head space. Partially seal. Process 10 minutes in hot water bath at simmering temperature, 180° F. Seal tightly.

The rhubarb may be steamed without the addition of any water in covered kettle and finished as above.

Grape Juice

Allow 1 pint water and $2\frac{1}{2}$ cups sugar to one six-quart basket of grapes. Wash, stem and crush grapes. Add water and bring to boiling point. Simmer 15 minutes. Strain through a moist jelly bag. Add sugar, heat to boiling point and pour into hot sterilized bottles. Finish as for rhubarb juice.

Grape juice may be made without sugar and sweetened before using.

Tomato Juice

Use thoroughly vine-ripened fruit, green portions impart a bitter undesirable flavour. 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 one-half hour in a tightly covered kettle. Press through a coarse sieve, extracting all pulp, then through a fine sieve to remove seeds. Allow 1 teaspoon of salt and $\frac{1}{8}$ teaspoon pepper (optional) to 1 quart juice. Pour into hot sterilized bottles or sealers, partially seal and process 10 minutes in boiling water bath or 20 minutes in 250° F. oven.

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 mild flavoured fat

Wash vegetables, cut in small pieces. Cook for $\frac{1}{2}$ hour. Press through a sieve. Melt fat, add flour, sugar, salt and pepper. When blended slowly mix with strained tomato. Heat to boiling and let cook until thickened. Pour into sterilized sealers. Seal and sterilize 10 minutes in pressure cooker at 5-lb. pressure or 30 minutes in boiling water bath.

APPROXIMATE YIELD OF CANNED FRUIT—JAM—JELLY

Kind of Fruit	Type of Standard Container (Box, basket, etc.)	Weight of Fruit	Approximate Number of Quarts from Fruit	
			Canned Fruit	Jam or Jelly
		Lb.	Quarts	Quarts
Berries, including Currants....	12 quart boxes.....	15	12	7 $\frac{1}{2}$
	*24 pint baskets (crate).....	12	12	7 $\frac{1}{2}$
Apricots.....	* Box (crate).....	18	11	9
Crabapples.....	6 quart basket (flat).....	6 $\frac{3}{4}$	4	3
	11 quart basket (flat).....	14 $\frac{1}{2}$	9	6 $\frac{1}{2}$
	* Box.....	38	23	17
Cherries.....	6 quart basket (flat).....	6 $\frac{3}{4}$	5	Not advised for jam or jelly
	* 4 basket crate.....	20	15	
	* Small box.....	15	11	
	* Large box.....	25	18	
Grapes.....	6 quart basket (flat).....	6 $\frac{3}{4}$	—	3
	11 quart basket (flat).....	14 $\frac{1}{2}$	—	6 $\frac{1}{2}$
Peaches.....	6 quart basket (heaped).....	9 $\frac{3}{4}$	5	3 $\frac{1}{2}$
	* Box (crate).....	20	10	7
Pears.....	6 quart basket (heaped).....	9 $\frac{3}{4}$	5	3 $\frac{1}{2}$
	11 quart basket (flat).....	14 $\frac{1}{2}$	7	4 $\frac{1}{2}$
	* Box.....	42	23	15
Plums.....	6 quart basket (flat).....	6 $\frac{3}{4}$	4	3 $\frac{1}{2}$
	6 quart basket (heaped).....	9 $\frac{3}{4}$	6	4 $\frac{1}{2}$
	* Box (crate).....	15	9	7 $\frac{1}{2}$
	* 4 basket crate.....	20	12	10
Prunes.....	6 quart basket (flat).....	6 $\frac{3}{4}$	4	3 $\frac{1}{2}$
	6 quart basket (heaped).....	9 $\frac{3}{4}$	6	4 $\frac{1}{2}$
	* Small box.....	15	9	7 $\frac{1}{2}$

* British Columbia fruit containers.

TIME TABLE FOR FRUITS

The time given is for pint containers. For quart containers add 5 minutes to time sterilization in boiling water bath and steam cooker; 10 minutes for oven sterilization.

Fruits	Preparation	STERILIZATION			
		Boiling Water Bath 212° F.	Steam Pressure 5-lb.	Oven for Glass Sealers	Steam Cooker
		Minutes	Minutes	Minutes	Minutes
Apples, sliced or quartered.....	Simmer 5 minutes in syrup—pack hot.....	30	10	50 at 275° F.	35
Applesauce.....	Pack hot.....	10	5	15 at 275	15
Apricots.....	Peel—halve and pit—pack—cover with boiling syrup.....	20	10	55 at 275	30
Blackberries or blueberries.....	Wash—pack, fill with boiling syrup.....	20	10	35 at 275	30
Cherries.....	1. Wash, stem, pit and pack, cover with boiling syrup..... 2. Wash, stem, pit, pre-cook 5 minutes in boiling syrup—pack hot, fill with syrup.....	20 —	10 —	35 at 275 20 at 250	30 —
Currants.....	Wash, stem, pack, fill with boiling syrup.....	20	10	35 at 275	30
Fruit juices.....	Crush fruit, heat slowly, strain, pour into sealers.....	30	(180° F.)	—	—
Gooseberries.....	Wash, pack in sealers, fill with boiling syrup.....	16	10	30 at 275	25
Peaches.....	1. Immerse in boiling water 3 minutes—cold dip, peel, remove pit, pack in sealers, add boiling syrup..... 2. Peel, remove pit, simmer in syrup in open kettle 5 minutes, pack hot—fill with syrup.....	20 —	10 —	— 20 at 275	30 —
Pears.....	1. Pare, half, remove core, pack, fill sealers with boiling syrup. If pears are firm, steam 15 minutes before packing..... 2. Pare, halve, remove core, cook in syrup in open kettle 10 minutes. Pack hot, fill with syrup.....	20 —	20 —	— 25 at 275	30 —
Plums.....	Wash, prick skin, pack cold, cover with boiling syrup.....	20	10	45 at 275	30
Raspberries.....	Wash if necessary, pack in sealers, cover with boiling syrup.....	16	10	30 at 275	25
Rhubarb.....	Wash, cut in small pieces, blanch 1 minute, cold dip, pack, cover with boiling syrup.....	16	10	20 at 250	25
Strawberries.....	Wash, stem, fill sealers, cover with boiling syrup.....	16	10	—	25

TIME TABLE FOR VEGETABLES

Pressure sterilization is recommended for non-acid vegetables. When vegetables are sterilized in the boiling water bath, it is preferable to use pint containers.

Vegetables	Preparation	TIME OF STERILIZATION		
		Boiling Water Bath	Steam Pressure	
		Hours	Minutes	Pounds
Asparagus.....	Wash, tie in uniform bundles, stand upright in 2 inches of water. Boil 4 minutes. Pack hot, add $\frac{1}{2}$ tsp. salt to each pint sealer, fill with boiling water.....	2	40	10
Beans, string or wax.	Wash, string, cut in desired lengths. Cover with water, bring to boiling point, boil 4 minutes. Pack hot, add $\frac{1}{2}$ tsp. salt to each pint sealer. Fill with boiling water.....	3	40	15
Beets.....	Wash and cut off tops 2 inches above beet. Boil 15 minutes. Cold dip, remove skins, pack, add $\frac{1}{2}$ tsp. salt to a pint sealer. Fill with boiling water.....	1 $\frac{1}{2}$	40	15
Carrots.....	Use only very young carrots. Wash and boil 5 minutes. Cold dip—slip off skins, pack, add $\frac{1}{2}$ tsp. salt to pint sealer, fill with boiling water.....	2	40	15
Cauliflower.....	Wash, break into florets. Drop into salty water. Let stand $\frac{1}{2}$ hour, cover with water, bring to boiling, drain, pack sealers, add $\frac{1}{2}$ tsp. salt to a pint sealer. Fill with boiling water.....	1	30	10
Corn, whole kernel..	Cut corn from cobs. Cover with boiling water and bring to boiling point, fill sealers, covering corn with boiling liquid, add $\frac{1}{2}$ tsp. salt to a pint sealer.....	3	60	15
Chard, Spinach or other greens.....	Wash carefully, steam 5 minutes, pack in sealers, add $\frac{1}{2}$ tsp. salt to a pint sealer, fill with boiling water.....	3	60	15
Mushrooms.....	Wash and trim, large ones may be cut in pieces. Blanch 5 minutes. Cold dip very quickly. Pack, allow $\frac{1}{2}$ tsp. salt to a pint sealer, fill with boiling water.....	3	60	15
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 sealer, fill with boiling water. Intermittent sterilization may be used for peas allowing 1 hour on each of 3 successive days if water bath is used....	3	60	15
Sweet Green or Red Pepper (pimientos)	Wash, remove seeds, boil 3 minutes, cold dip. Remove skins, pack, allow 1 tsp. salt to a pint sealer, cover with boiling water.....	$\frac{3}{4}$	30	15
Pumpkin.....	Cut in pieces, remove seed and membrane, peel, steam until tender, mash, pack.....	3	60	15
Tomatoes.....	Scald and peel, pack in sealers, cover with tomato juice made from irregular very large or broken tomatoes cut in small pieces, cooked over slow fire for 5 minutes. Strain. Allow $\frac{1}{2}$ tsp. salt to a pint sealer.....	$\frac{1}{2}$	15	05
	Tomatoes may be processed in the oven (275° F.).....	Pints.....	35 minutes	
		Quarts.....	45 minutes	

GENERAL DIRECTIONS FOR MAKING JAM

1. Fruits for jam should be firm, ripe but never over-ripe.
2. Measurements should be accurate.
3. Wash, peel if necessary, cut or mash, so that some juice will escape. To prevent sticking, a little water may be added but as this must later be boiled away care should be taken not to use too much.
4. Less acid fruits such as peaches and pears, are improved by adding a little cider vinegar, rhubarb juice or lemon juice.
5. Heat fruit very slowly to extract juice. Stir frequently using a wooden spoon.
6. Fruits with tough skins make better jam if pre-cooked before adding sugar. Wild fruits have tougher skin and larger proportion of seeds than garden varieties, therefore it is advisable to pre-cook the fruit.
7. Time is saved by heating sugar before adding.
8. Peeled fruits are usually mixed with sugar before cooking.
9. Boil the required length of time—to 220° F. or until the jam remains heaped up or sheets from the spoon.
10. Satisfactory jams can be made with the wartime allowance of sugar as used in the following recipes. Longer boiling time has to be allowed than if a larger proportion of sugar were used.
11. Pour hot jam into hot, sterilized jars. When cool, seal with paraffin wax. Cover with paper or metal lid to prevent contamination from dust.

RECIPES

Rhubarb and Strawberry Jam

4 cups rhubarb 4 cups strawberries 3 cups sugar

Wash and cut rhubarb in half-inch pieces. Add cleaned berries. Cook 20 minutes. Add sugar. Cook 15 minutes or until thick and clear. Pour into hot sterilized jars, cool and seal. Yield: about 2 pints.

Blueberry and Rhubarb Jam

2 quarts blueberries 2 cups rhubarb juice 4 cups sugar

To make juice, use 1 quart rhubarb, washed and cut in 1-inch pieces. Add 1 cup water. Cook 10 minutes—press through a sieve. Add the cleaned blueberries and cook 10 minutes. Add sugar and cook 10 minutes. Pour into hot sterilized jars, cool and seal. Yield: about 2½ pints.

Jellied Blueberries

3 quarts blueberries 2 cups sugar 1 cup water

Make a syrup of the sugar and water and boil for 5 minutes. Add the cleaned berries and cook for 20 minutes. Pour into sterilized jars and seal. Yield: about 3 pints.

Jewel Jam

1 quart pitted cherries (6 cups unpitted) 1 quart gooseberries
1 quart red currants 1 quart raspberries 8 cups sugar

Wash and pit cherries and put in kettle with 2 cups of the sugar. Bring to the boil and boil for 5 minutes. Then add the quart of cleaned gooseberries and 2 more cups of sugar. Bring to the boil and boil 5 minutes. Then add the quart of cleaned red currants and quart of cleaned raspberries and 4 cups of sugar. Bring to boil and boil 5 minutes. Pour into hot sterilized jars, cool and seal. Yield: about 4 pints.

Raspberry Jam

2 quarts raspberries 3 cups sugar

Crush fruit and simmer 10 minutes. Then add sugar and cook until thick—about 25 minutes. Pour into hot sterilized jars, cool and seal. Yield: about 2½ pints.

A delicious jelly-like jam may be made by adding 2 teaspoons cider vinegar with the sugar in the above recipe.

Gooseberry Jam

2 quarts gooseberries 1½ cups water 4½ cups sugar

Top, tail and wash the gooseberries. Simmer the fruit and water for 10 minutes. Add sugar and cook for about ½ hour. Pour into hot sterilized jars and seal. This jam is quite thin when hot but it thickens considerably when it cools.

If desired, ½ cup honey may be added to the recipe if it is too tart for your taste. Yield: about 3½ pints.

Black Currant Jam

2 quarts black currants 4½ cups sugar
1½ cups of water ¾ cup honey

Top, tail and wash the black currants. Simmer the fruit and water for 10 minutes. Add sugar and honey and cook about 15 minutes or until thick. Pour into hot sterilized jars, cool and seal. Yield: about 3 pints.

Ground Cherries (Cape Gooseberries or Strawberry Tomatoes)

8 cups prepared fruit 4 cups sugar

Remove hulls. Wash and pick over fruit. Add sugar. Let stand overnight. Boil 30 minutes. Pour into sterilized jars, cool and seal. Yield: about 2½ pints.

Peach Jam

6 cups peeled, sliced peaches 3 cups sugar 1 tablespoon cider
vinegar

Mix all ingredients. Let stand 1 hour. Cook slowly until thick. Pour into sterilized jars, cool and seal. Yield: about 2 pints.

Cantaloupe and Peach Conserve

3 cups peeled, diced peaches 3 cups sugar 3 cups peeled, diced
Juice and grated rind of 2 cantaloupe
oranges

Mix all ingredients. Cook slowly until thick. Pour into hot sterilized jars, cool and seal. Yield: about 2 pints.

Pear Marmalade

4 pounds peeled, cored sliced pears 3 lemons
2 oz. green ginger root or 3 lb. sugar
1 oz. dry ginger root (optional)

Place pears in preserving kettle in layers, sprinkling each layer with sugar, lemon juice and grated green ginger. (If dried root is used, break in pieces and tie in bag). Let stand 2 to 3 hours. Cook slowly until thick and clear. Pour into hot sterilized jars, cool and seal.

Plum Gumbo

2 quarts plums 3 cups sugar 1 orange

Wash and cut plums and remove pits. Slice orange very thinly. Cook together slowly for 15 minutes. Add sugar. Cook rapidly 5 minutes. Pour into hot sterilized jars, cool and seal. Yield: about 2½ pints.

Damson Plum Jam

Weigh and wash the fruit. Add a little water to the plums and heat slowly to boiling point. Cook gently for one-half hour. Add $\frac{3}{4}$ pound sugar for every pound fruit and simmer one hour. (Skim off pits that rise to surface). Pour into hot sterilized jars, cool and seal.

Grape Marmalade

Wash the grapes, remove from the stem and press the pulp from the skins. Cook the pulp 10 minutes and put it through a sieve to remove seeds. Add skins to the pulp and measure the mixture. To 1 cup of pulp allow $\frac{2}{3}$ cup of sugar. Cook about 20 minutes or until skins are tender. Pour into hot sterilized jars, cool and seal.

Grape and Apple Butter

2 cups grape pulp 2 cups apple pulp 2 cups sugar

Prepare fruit pulp by cooking cleaned fruit with a little water (to prevent burning) and passing it through a coarse sieve. Add sugar and cook 20 minutes. Pour into hot sterilized jars, cool and seal.

Citron Preserves

Cut citron in $\frac{1}{2}$ -inch slices—peel, remove seeds and cut in cubes. Cover with weak brine, allowing 1 teaspoon of salt to 1 quart of water and stand overnight. In the morning, drain thoroughly, place over a very low heat and cook until tender. Allow 2 cups sugar and juice and rind of 1 lemon to 6 cups of citron. Bring to a boil slowly. Cook until clear and pour into hot sterilized sealers. Seal at once.

Medley Fruit Conserve

2 pounds peaches 2 pounds quinces $1\frac{1}{2}$ pounds pears
1 lemon $4\frac{1}{2}$ pounds sugar $\frac{1}{2}$ pound tar apples

Wash and prepare fruit. Pass through food chopper. Put fruit and sugar in alternate layers in a large bowl and let stand overnight. Next morning place in a preserving kettle and add grated rind and lemon juice. Boil until mixture becomes thick. Pour into hot sterilized jars, cool and seal.

Saskatoon Jam

4 cups saskatoons 1 cup water
 $1\frac{1}{4}$ cups sugar 1 teaspoon vinegar

Pick over and wash berries. Add water and vinegar. Cook 5 minutes. Add sugar. Stir until dissolved. Boil 1 minute. Pour into hot sterilized jars, cool and seal.

GENERAL DIRECTIONS FOR MAKING JELLY

1. This method can be used for apples, crabapples, gooseberries, loganberries, grapes, currants and sour plums or such combinations as grape and apple, plum and apple, quince and apple, or red currant and raspberry.

2. Select clean, sound but slightly under-ripe fruit. Over-ripe fruit does not make good jelly.

3. Cut or crush, do not core or peel fruit. Add water to come just below top of fruit. Cook slowly until fruit is soft and mushy and juice is drawn out.

4. Drain thoroughly through a moist jelly bag. Do not squeeze bag if you wish a clear jelly.

5. Measure juice and sugar. Allow $\frac{3}{4}$ cup sugar to each cup juice.

6. Boil juice gently for 10 to 20 minutes, testing frequently for pectin.
7. Add heated sugar. Boil 3 to 8 minutes or until jelly sheets from spoon (220° F.)
8. Pour into hot sterilized jars. Let stand until set. Seal.

ROSE HIP JUICE

4 cups rose hips

2 cups boiling water

Wash hips, remove ends, chop coarsely. Add boiling water. Cook 5 minutes and strain through a jelly bag. Add 1 cup of this juice to 3 cups of prepared apple juice and proceed as for apple jelly.

PECTIN TEST

To test for pectin with alcohol, measure 1 tablespoon fruit juice into a dish and add 1 tablespoon alcohol. If a jelly-like mass forms, a large amount of pectin is present and the sugar can be added. If the mixture remains unchanged in consistency, boil the juice a few minutes longer—until the test gives a jelly-like mass (do not taste mixture). Then add sugar.

BEANS IN BRINE

Use 1 pound of coarse salt to 4 pounds of beans.

Wash beans, string, cut in desired lengths or leave whole. Place a layer of beans in a crock; sprinkle generously with salt. Repeat until all beans are used. Place plate or board (cut in shape of crock) over beans and put weight on top.

To use the beans, remove them from the brine, wash thoroughly in several waters then soak for 2 hours in warm water. They get tough if soaked overnight. Cook in boiling water without salt until they are tender—25 to 35 minutes. Drain and serve as fresh beans.

SAUERKRAUT

Discard bruised or decayed outer leaves and core of the cabbage. Weigh and allow 1 pound of salt to 40 pounds of cabbage. Shred cabbage and place a four- to six-inch layer in a water-tight receptacle. Sprinkle lightly with salt; repeat until all the cabbage is packed. Press down firmly, cover with a cloth, a clean board and a heavy weight so the brine, when formed, will completely cover the cabbage. Let stand at room temperature, 70° F., or lower while fermentation is taking place—2 to 6 weeks. When bubbles cease to rise fermentation is complete. Remove all scum. Cover crock with a clean cloth and lid. Store in a cool place. Kraut may be sealed in sterilized, air-tight sealers, using enough of the brine to fill jars completely. If made late in the fall, kraut may be frozen when fermentation ceases.

STORING, HOME DRYING AND FREEZING

Other methods of food preservation such as drying, storing or freezing may be used in order to save fruits and vegetables for use out of season. If facilities are available, storing is recommended, for beets, carrots, cabbage, cauliflower, onions, parsnips, potatoes, turnips, pumpkin, squash and apples. Information may be obtained from the Dominion Department of Agriculture, Ottawa, on storage in the home cellar, on the preparation of fruits and vegetables for preservation in cold storage freezing lockers and on the construction and operation of a home dehydrator.

6. Boil juice gently for 10 to 20 minutes, testing frequently for pectin content.
7. Add heated sugar. Boil 3 to 5 minutes or until jelly sheets from spoon.
8. Pour into hot sterilized jars. Let stand until set. Seal bottles and cork.

ROSE HIP JUICE

Wash hips, remove ends, chop coarsely. Add boiling water. Cook 2 hours. Strain through jelly bag. Add 1 cup of the juice to 3 cups of prepared apple juice and proceed as for apple jelly.

PECTIN TEST

To test for pectin, with alcohol, measure 1 tablespoon fruit juice into a dish and add 1 tablespoon alcohol. If a jelly-like mass forms, a large amount of pectin is present and the sugar can be added. If the mixture remains unclumped in consistency, boil the juice a few minutes longer until the test gives a jelly-like mass (do not taste mixture). Then add sugar.

BEANS IN BRINE

Use 1 pound of coarsely salt to 4 pounds of beans. Wash beans, string, cut in desired lengths or leave whole. Place a layer of beans in a crock; sprinkle liberally with salt. Repeat until all beans are used. Place plate or board (cut in shape of crock) over beans and put weight on top.

To use the beans remove them from the brine, wash thoroughly in several waters then soak for 2 hours in warm water. They are ready to be cooked over a fire. Cook in boiling water without salt until they are tender—25 to 35 minutes. Drain and serve as fresh beans.

SAUERKRAUT

Discard bruised or decayed outer leaves and core of the cabbage. Weigh and allow 1 pound of salt to 10 pounds of cabbage. Shred cabbage and pack in a water-tight receptacle. Sprinkle lightly with salt. Press down firmly, cover with a cloth. Repeat until all the cabbage is packed. Place a heavy weight on top. Let stand at room temperature 70° F. or lower while fermentation is taking place—2 to 6 weeks. When bubbles cease to rise fermentation is complete. Remove all scum. Cover crock with a clean cloth and fill. Store in a cool place. Kraut may be sealed in sterilized air-tight vessels using enough of the brine to fill jars completely. It may also be used in the fall, kraut may be frozen when fermentation is complete.

STORING HOME LIVING AND FREEZING

Other methods of food preservation such as drying, salting or pickling may be used in order to save fruits and vegetables for use out of season. If facilities are available, storing is recommended for peaches, carrots, eggplants, onions, pumpkins, potatoes, turnips, pumpkins, radishes and apples. Information may be obtained from the Dominion Department of Agriculture, Ottawa, on storage in the home cellar, on the preparation of fruits and vegetables for preservation in cold storage freezing lockers and on the construction and operation of a home dehydrator.