

GOVERNMENT OF THE PROVINCE OF SASKATCHEWAN

DEPARTMENT OF AGRICULTURE

# PRESERVATION OF FOOD

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The preservation of all food-stuffs depends upon two principles:

1. The destruction of germ life.
2. The prevention of further growth of germ life.

The common methods used for the destruction of germ life are:

1. Employing temperatures unfavorable to germ life, viz. (1) cooking—in which the destruction of germ life is accomplished by heat; (2) cold storage—in which the growth of germ life is retarded or destroyed by cold.
2. Use of antiseptics, viz. (1) sugar—antiseptic in large proportionate quantities; (2) spices; (3) acid (vinegar); (4) salt; (5) alcohol; (6) chemical preservatives, which may be looked upon as adulterants, such as borax (used to preserve milk and meat), salicylic acid, benzoate of sodium, etc. (used to preserve meat).

The common methods used for the prevention of further growth are:

1. Sealing—to exclude air and hence germ life.
2. Drying—to get rid of moisture, one of the conditions favorable to germ life.

## HOUSEHOLD METHODS OF PRESERVING FRUIT AND VEGETABLES

1. **Canning**—In this process little or no sugar or any other preservative is used—preservation depends on perfect sterilization and exclusion of air by sealing.
2. **Preserving**—(applied to fruits). Large proportionate quantities of sugar are used. Fruit is sealed to prevent formation of moulds. The products come under the names of jam, jelly, marmalade, tutti-frutti. **Note**—Alcohol is used in tutti-frutti.
3. **Pickling**—Vinegar and salt are used as preservatives, with or without sugar or spice.
4. **Drying**—Used to preserve fruits, as apples, quinces, berries, etc., also vegetables, as herbs, peas, beans and lentils, cereals

## CANNING

General directions where sugar is used:

- (1) Select fresh, firm fruit of good quality, not over-ripe.
- (2) Make a syrup of 1 lb. (2 cups) of granulated sugar to from two to three cups of water, according to the fruit. Boil sugar and water together for 10 minutes. Use only pure sugar. If the syrup looks discolored or dirty it is better not to use it. If necessary, skim the syrup but with a pure, clean sugar it should be unnecessary.
- (3) Use 1 quart of fruit to 1 quart of water used.
- (4) Large solid fruits like pears, plums, peaches and apples are best cooked in a kettle in the syrup, to ensure thorough cooking. It is best to cook a few at a time to prevent breaking. If fruit is very solid it may be necessary to cook in water or steam until soft, then cook in the syrup.

Where sugar or other preservative is not used, as is the case sometimes with fruit, oftener with vegetables, long and thorough cooking generally at a high temperature, is necessary for perfect sterilization, then followed by perfect sealing.

When fruit or vegetables are prepared, fill sterilized jars to overflowing (to exclude air), press fruit with a spoon to break air bubbles and press out air; screw down the tops and, when cool, screw tightly again.

If fruit is placed in cans before it is cooked fill the jar, which has been thoroughly cleaned and scalded, with fruit, shaking fruit down as jar is being filled, pour cold prepared syrup over the fruit, filling the jar two-thirds of its depth, put on the lid and screw very loosely. Set the jars on a rack in a boiler or large pan so that they do not touch one another, fill the boiler to one-half the height of the glass with cold water. Let the water come gradually to a boil and then cook the fruit for from 25 minutes to an hour, according to the size and solidity of the fruit. Remove the boiler from the range and when the water in it is sufficiently cooled, remove the jars, have ready some syrup and fill the jars to overflowing with it. Put on rubbers and screw down the lid tightly. A rack for the boiler can be made by boring holes in a piece of board cut to fit into the bottom of the boiler.

It may be necessary to use cloths to keep the jars apart during cooking. The method of cooking fruit in jars is to be preferred for small fruits which easily break, like raspberries.

A similar method of long, slow cooking of fruit in jars is also accomplished in the following way: Place the fruit in jars as in the former method. Set the filled jars on cloths wrung out of hot water and fill them to overflowing with the boiling syrup. Screw on lids as for final putting on, making them as tight as possible. Place the jars as quickly as possible in a tub or clothes-boiler. Have ready large quantities of boiling water. Pour it in around the jars, being careful to pour it around the sides of the boiler and not upon the jars, so as not to break them. Fill to a depth of four or five inches over the tops of the jars, or as full as the boiler will hold; put on the cover, if a boiler, and adjust closely over and around a heavy blanket or blankets so as to exclude as much outside air as possible and thus retain the heat. Let stand thus for twenty-four hours and the fruit is cooked. See that covers are tightly screwed before putting away.

To sterilize jars:

- (1) Wash thoroughly and fill with cold water.
- (2) Set on a rack of some description, in a pan or kettle and surround with cold water.
- (3) Heat gradually to boiling point, remove from the water as needed, empty and fill while hot. Dip rubbers in hot water. (Do not allow them to stand in it, as they will slacken). Place them on the can, screw on covers which have been sterilized by letting them stand in boiling water for at least five minutes. **Note**—Be careful not to touch the inside of jar or cover after it has been sterilized with cloth or fingers, also do not rest the cover on the table or elsewhere with the under side down. Be sure that jars are air-tight before using. Test by putting water in them, sealing and turning upside down.

Use a wooden spoon for working with fruit rather than a metal one. Procure new rubbers every year. It is too risky to use the old ones.

#### PRESERVING

General directions:

- (1) Use from three-fourths to the whole weight of the fruit in sugar.
- (2) Sugar for jelly, jams, etc., should be heated slowly in the oven before adding to the fruit to prevent too long cooking together of sugar and fruit, which renders it sticky and robs the fruit of its fruity flavor.
- (3) Juice should not be squeezed from fruit for jelly but allowed to drip. Squeezing makes it cloudy, owing to the presence of some of the pulp of the fruit.
- (4) Glasses, jars, etc., should be sterilized as for canned fruits.
- (5) Jams, jellies and marmalades should be allowed to stand in a sunny window for twenty-four hours before sealing. Dust can be prevented from settling upon it by covering loosely with a paper. Thus standing, evaporates any surplus water that may be left from cooking and also forms a skin on the top which serves as a protection.
- (6) Exclude air by melting paraffin and pouring over the top of the fruit in the glass, or cut white thick paper to fit the top of glass, dip in brandy and cover. Finally place on covers, or if there are none, paste paper over the edge of the glass. In the latter case, preserves must be stored where there is no danger from mice.
- (7) For jelly, use under-ripe rather than over-ripe fruit. Over-ripe fruit may fail to form in a jelly or at best will form a jelly lacking firmness.
- (8) For a jelly-bag, use cotton and wool flannel or two thicknesses of good quality cheese-cloth. Shape it so as to form a point at the bottom such as is formed by folding a square of cloth diagonally. It is convenient to have it finished with loops at the top for hanging.

#### PICKLING

General directions—Use the same precautions for destruction of germ life and for preventing further growth as in the case of fruit canning, that is, careful sterilization and perfect sealing. There is less danger of spoiling them in canning owing to the greater amount of preservative used, viz., vinegar and salt, generally spices and sugar also.

#### DRYING

Accomplished by exposure to air and sun or the heat of a fire. Care must be taken in the drying process in the case of fruits and herbs, to protect them from dust and insects.

#### CANNED FRUITS

**Strawberries**—Wash, preferably by putting fruit in a sieve and pouring water over it. Do not let fruit stand for any length of time in water, as it extracts color and flavor. Cook below boiling point in syrup for one hour either in jars or in the kettle. A syrup of one pound of sugar to two and a half cups of water is sufficiently strong, though a stronger solution is often used on account of the difficulty of keeping strawberries. The long cooking ensures their keeping and cooking below boiling point preserves shape and color.

**Raspberries**—Are best cooked in the cans according to general directions. The lightest syrup is sufficiently strong for the taste of most people. Stronger may be used if desired.

**Cherries**—Cooked as raspberries. If of a very sour quality and very firm they are best cooked directly in a kettle and filled into jars.

**Peaches**—Wipe the fruit, place in boiling water long enough to loosen the skins, remove the skins and cook at once, as they so soon discolor. Cook in syrup in a kettle, a few at a time, lift from the kettle and place in jars as they become cooked enough, which will be when they are soft and clear. When the jar is filled with fruit, pour in the boiling syrup and seal. A syrup made of three cups of water to one pound of sugar will be found strong enough. Cut in halves or quarters may sometimes be desirable.

**Pears**—Wipe and pare. Cook whole, leaving the stems on, or, if desired, quarter and core them. Cook same as peaches.

**Plums**—Cook same as peaches. They will probably require a stronger syrup. Many people like the addition of a few whole cloves. Prick the skins if anxious to keep them from bursting. If very hard it may be best to steam them till they are fairly soft before putting them to cook in the syrup.

**Pineapple**—Remove skins and eyes, then cut in cubes, shred or put through a grinder. For serving as fruit it is nicer to cut the pineapple in cubes; for use in ices, puddings, etc., it is better to put through a grinder or to shred it. Discard the tough centres. Cook in a kettle in syrup till tender.

**Tomatoes**—Wipe and let stand in boiling water until skins are easily removed. Cut in pieces and cook from 25 to 30 minutes at boiling point. Skim well and put into thoroughly sterilized jars while hot. Perfect sealing is absolutely necessary.

#### JAMS, JELLIES, ETC.

**Black Currant Preserves**—For 4 quarts black currants, scald 2 quarts red currants with 1 pint of water and let drip through a jelly bag. Weigh juice and black currants and use pound for pound of granulated sugar. Let sugar and juice come to boiling point, put in currants and boil for five minutes or until soft. The red currant juice lessens the strong taste of the black currants.

**Raspberry Jam**—Pick over the raspberries. Mash well in a preserving kettle, heat fruit gradually to boiling point, measure the fruit and add little by little an equal quantity, by measurement, of heated sugar. Cook slowly for about forty-five minutes or until quite thick.

**Bitter Orange Marmalade**—Use 9 Seville oranges, 5 sweet oranges, 4 lemons. Cut across the grain as finely as possible. Place in a kettle with 4 quarts of cold water and let stand for 36 hours. Then boil water and all for 2 hours. Add 8 pounds granulated sugar and let boil 1 hour longer, or until it will jelly.

**Amber Marmalade**—Shave 1 orange, 1 lemon, 1 grape-fruit, rejecting nothing but seeds and cores. Measure the fruit and add to it 3 times the quantity of water. Let it stand in an earthen dish over night and next morning boil for 10 minutes only. Stand another night and the second morning add pint for pint of sugar and boil steadily till it jellies. This will make from 12 to 15 jelly-glasses of marmalade.

**English Marmalade**—To each 5 oranges and 1 grape-fruit, allow 1 lemon, 5 pints water and 5 pounds sugar. Cut the fruit into quarters and remove pips, putting them to soak in a little of the water. Slice the fruit (rind and pulp) very thinly and soak 24 hours in the rest of the water. Strain the pips and add water from them to the rind. Boil the whole briskly about 1½ hours, or until the rind is tender, then add sugar and boil for another ½ hour.

**Grape Marmalade**—1 pint fruit—¾ pound sugar. Wash and drain the grapes, remove the stems, heat to boiling point; mash and cook until seeds come out. Strain out seeds and skins, cook 10 minutes, measure, add sugar and boil until liquid thickens.

**Cranberry Marmalade**—Use one-half as much water as cranberry. Pick over and wash cranberries. Cook with water until soft, strain out skin and seeds and to each cup of pulp add ¾ of a cup of sugar. Cook until it jellies.

**Red Currant Jelly**—Be sure that fruit is not over-ripe. Pick over currants without removing the stems. Wash and drain. Mash thoroughly in a preserving kettle, using a wooden masher. Cook slowly until fruit begins to look white. Put in a jelly-bag and allow to drip for 24 hours. The juice will be more completely extracted if currants are put through a strainer before putting to drip. Measure the juice, bring to boiling point and boil five minutes. Add measure for measure of heated sugar, boil three minutes longer, skim carefully, pour into glasses and let stand in a sunny window for 24 hours. Then seal and cover.

**Grape Jelly**—Pick over, wash and remove stems. Heat to boiling point, mash and boil 30 minutes. Continue the process the same as for currant jelly. To make jelly from most other fruits, follow directions as for currant jelly.

**Apple Ginger**—Use 4 pounds apples, 4 pounds sugar, 1 pint water, 1 ounce ginger root, green preferred, white will do; grated rind of 4 lemons. Pare apples and chop

not smaller than  $\frac{1}{4}$  inch cubes. Chop ginger very fine, make a syrup of sugar and water, add apple, ginger root and grated lemon rind; boil all slowly two hours or until it looks clear.

**Orange Conserve**—Use 5 pounds red currants,  $1\frac{1}{2}$  pounds raisins, 5 lbs. granulated sugar, 4 large or 5 small oranges. Stone raisins and cut in two; seed oranges and chop in small bits both skin and pulp; wash and pick over currants. Boil all together 20 minutes.

**Rhubarb and Orange Conserve**—Use 2 cups rhubarb cut finely,  $1\frac{1}{2}$  cups sugar, 1 cup orange pulp and juice,  $\frac{1}{4}$  cup almonds, blanched and shredded. Boil all together for  $\frac{3}{4}$  of an hour.

**Pear Chips**—Use 8 pounds pear, 4 pounds sugar,  $\frac{1}{4}$  pound Canton ginger, 4 lemons. Cut pears into small pieces, add sugar and ginger and let stand over night. In the morning add lemons cut in small pieces discarding seeds only. Cook all together slowly for two hours.

## PICKLES

**Sweet Pickled Peaches or Pears**— $\frac{1}{2}$  peck peaches or pears, 2 pounds brown sugar, 1 pint vinegar, 1 ounce stick cinnamon. **Method**—Boil sugar, vinegar and cinnamon 20 minutes. If peaches dip quickly in hot water and rub off the fur with a towel. If pears, remove the skins. Stick each fruit with three or four cloves. Cook in syrup until soft, cooking a few at a time.

**Sweet Pickles**—Use watermelon, cucumber or green tomato. 8 pounds fruit, 4 lbs. brown sugar, 1 quart vinegar, 1 cup mixed whole spices (allspice, cassia, stick cinnamon, cloves). **Method**—Cut watermelon in  $\frac{1}{4}$  inch slices, cucumber in  $\frac{1}{2}$  inch slices, tomatoes in eighths, if small. Cook watermelon or cucumber until tender; in boiling water to which salt has been added in the proportion of 1 teaspoonful salt to 1 quart of water. If tomatoes, turn boiling salted water over them and set at the back of the stove until tender. Make syrup of vinegar and sugar and cook the fruit in it until it is clear. Spices may be put in a muslin bag or allowed to mix in with the fruit. Cook down the syrup if necessary and pour over the pickles.

**Bordeaux Sauce**—1 gallon cabbage,  $\frac{1}{2}$  gallon green tomatoes,  $\frac{1}{2}$  dozen large onions,  $\frac{1}{4}$  pint salt, 6 ounces sugar,  $\frac{1}{4}$  pound white mustard seed,  $\frac{1}{2}$  gallon cider vinegar,  $\frac{1}{2}$  ounce ground celery seed,  $\frac{1}{2}$  ounce black pepper,  $\frac{1}{2}$  ounce cloves, ginger and tumeric. **Method**—Chop finely the vegetables, then boil all together for 20 minutes.

**Celery Sauce**—Thirty ripe or green tomatoes, 3 peppers (red or green), 3 or 4 heads celery, 4 onions, 7 cups vinegar, 1 cup sugar, 4 tablespoonfuls salt. **Method**—Chop all fine, boil  $1\frac{1}{2}$  hours or until thick.

**Mustard Pickle**—6 heads cauliflower, 2 quarts small cucumbers, 4 quarts green tomatoes, 2 quarts green beans, 2 quarts silver onions, 1 gallon cider vinegar,  $\frac{1}{2}$  pound ground mustard,  $1\frac{1}{2}$  cups flour, 4 cups brown sugar, 1 ounce tumeric. **Method**—Clean vegetables, put in bowls, sprinkle well with salt and let stand over night. Wash each separately in clear water. Cut cauliflower into suitable sized pieces and cut peppers fine. The tomatoes may be sliced but are preferable if small enough to leave whole. Boil the vinegar, put in the cauliflower and cook 15 minutes; then drain it out. Cook the onions 10 minutes and drain, the tomatoes and others require scalding only before draining. Thicken the vinegar with the flour and mustard mixed smoothly with cold water or vinegar. Add the sugar and tumeric, put the vegetables into a crock and pour the sauce over them. They may be stored in fruit jars or in a stone crock.

**Chili Sauce**—12 tomatoes (medium size), 4 onions, 1 teaspoon pepper, 1 teaspoon cinnamon, 2 tablespoons salt, 2 tablespoons sugar, 2 cups vinegar. Boil all together until quite thick.

**Chopped Pickle**—1 large head cabbage, 15 large ripe cucumbers,  $\frac{1}{2}$  pint horse-radish, 4 heads celery,  $\frac{1}{2}$  ounce celery seed,  $\frac{1}{4}$  cup ground pepper, 1 teaspoonful ground cinnamon, 1 teaspoonful tumeric. **Method**—Cut vegetables very fine, pack over night in salt, all except celery. Run off water, then put to soak in 1 pint of vinegar and water enough to cover for a day or two. Boil together  $\frac{3}{4}$  of a gallon of vinegar, 3 pounds sugar and spices. Pour over vegetables while hot. Repeat for three mornings.

**Sweet Tomato Pickle**—7 pounds green tomatoes, 5 pounds brown sugar, 1 pint vinegar, 1 teaspoonful each of cloves and cinnamon. **Method**—Slice tomatoes and let stand over night in salt and water. Next morning drain and cook 10 minutes in vinegar, then drain again. Make a syrup of the sugar, vinegar, cloves and cinnamon. Boil until a little thick and pour over the tomatoes.

**Oil Pickles**—5 dozen cucumbers, 4 inches long, 5 small onions, 1 cup celery salt, 3 cups olive oil, vinegar. **Method**—Slice cucumbers with onion, sprinkle with salt and let it stand 24 hours. Drain off the liquor, mix with the cucumber and onion, the celery salt, mustard seed and olive oil. Cover with vinegar and bottle after a few days. **Note**—Store fruit and pickles in a cool, dark, dry place. It is convenient to label each with name and date.

