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MACDONALD COLLEGE

BULLETIN

Home Canning OF Fruits and Vegetables

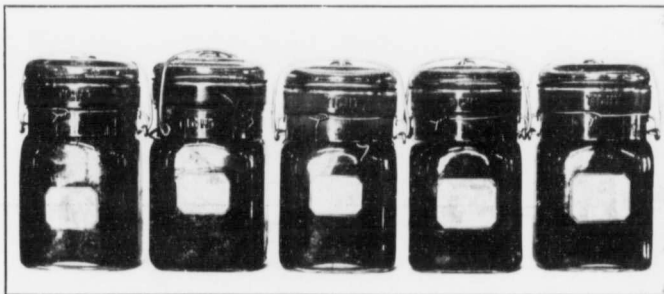


Fig. 3. Uniform jars, clearly labelled, make an attractive-looking food cupboard

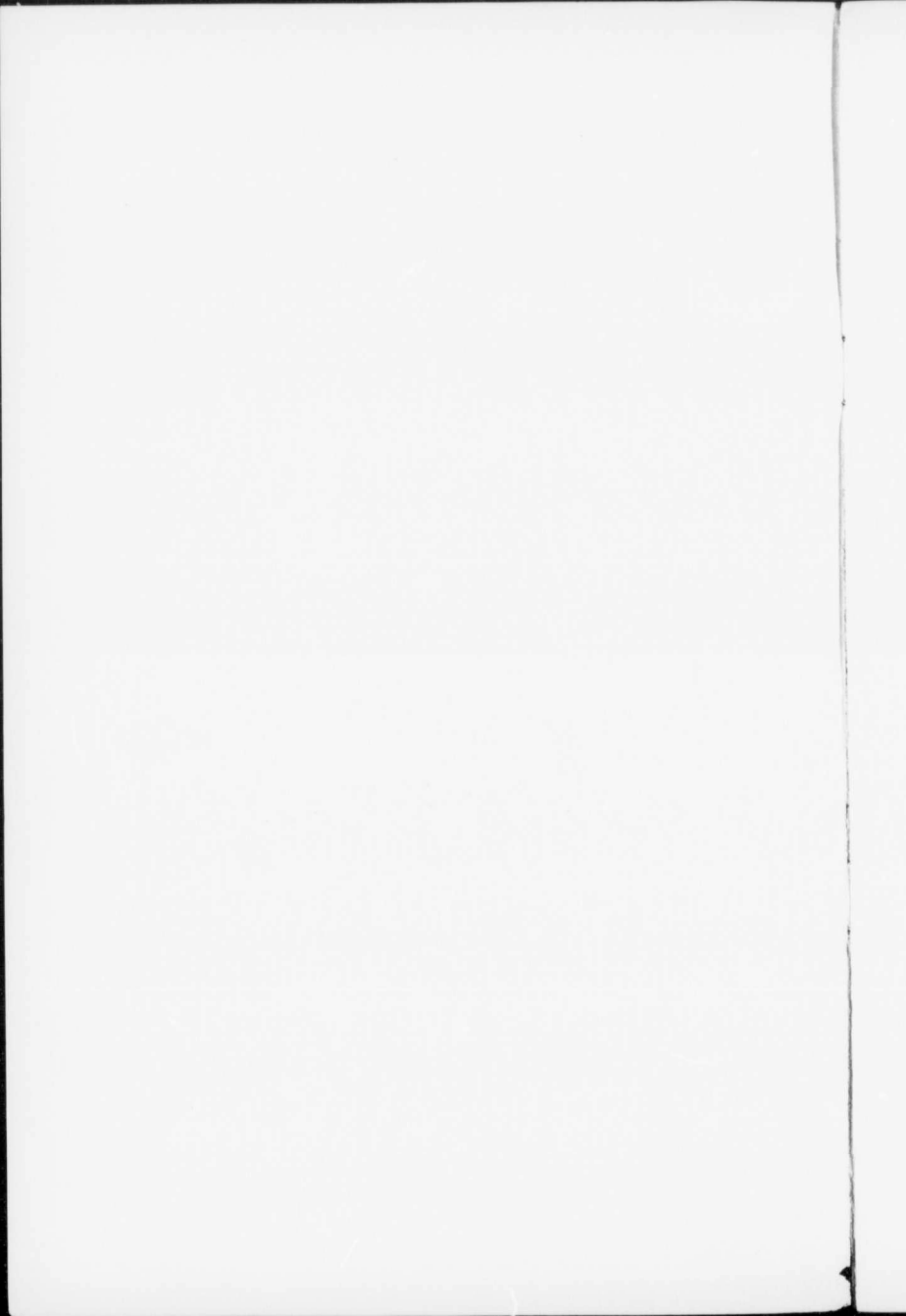
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THE CANNING OF FRUIT AND VEGETABLES

IN planning the daily meals one of the difficulties which the housewife faces is the lack of a variety of fresh fruits and vegetables during the winter months. Although a healthful diet must include these foods, yet, with only a few kinds from which to choose, it is next to impossible to avoid monotony. For this reason, there has been a rapid increase in the use of canned fruits and vegetables during recent years, and owing to this demand the canning industry has developed. The commercial cannery does not, however, always provide us with canned goods of the best quality, as producing an article at a low cost is too often the main consideration. Vegetables are frequently too mature when canned—green peas, for example, and both fruits and vegetables are sometimes allowed to lie too long after harvesting before they are put into cans.

In our home gardens some of our most delicious fruits and vegetables have very short seasons. It is usually impossible to make direct use of the entire supply during the season, and, as a result of this, there is often much waste of not only wholesome but very valuable food. Home canning is a most excellent way of conserving this surplus for use during the winter months and it is quite a simple matter to establish a small canning industry on our own kitchen stove. It is particularly important, just at the present time, that every Canadian who is fortunate enough to have a garden should make the best possible use of its products, as in doing so, the work of production throughout the country is being very materially aided. At the same time the home table is provided with an abundant variety of fruits and vegetables throughout the year. It is possible also to find a market for a surplus supply of home canned goods when it might sometimes be a difficult task to market these fruits and vegetables as they are harvested during the season.

PRINCIPLES OF CANNING

Our object in canning fruits and vegetables is to destroy the very minute forms of life called bacteria, yeasts and moulds which cause fermentation and decay, and in doing so to preserve the original fresh flavour as much as possible. Not only must the bacteria, present at the time of canning, be killed, but the bacteria floating in the air must be entirely excluded from the cans and jars. *If these two principles are kept constantly in mind, many failures may be avoided.* The bacteria on the food and in the jars are destroyed by boiling, this process being called *sterilization*. The jars are then sealed *at once* to prevent the entrance of more bacteria. As these minute forms of life are present everywhere in great numbers, it is most important that *cleanliness be strictly observed* throughout the canning process—hands, utensils, jars and food, in fact everything used in canning.

SOME TERMS EXPLAINED

- (1) *Scalding.* This is done to remove skins. Boiling water is poured over the fruit or vegetable and allowed to stand a few seconds, then drained.
- (2) *Blanching.* This is done to modify or remove objectionable flavours in vegetables and to aid in sterilization. The vegetables are covered with boiling water and boiled about five minutes, then drained.
- (3) *Cold dip.* This is done to cool the fruit or vegetable after scalding or blanching so that it may be handled, and to make the softer vegetables firm after scalding or blanching. Use cold boiled water.

METHODS OF HOME CANNING

There are two principal methods of canning which can be conveniently carried out in the home kitchen. One is known as *intermittent or fractional sterilization*, the other as the *single boiling* or "*cold pack*" method. In both these methods the preparation of the food for canning is the same.

INTERMITTENT STERILIZATION

In the intermittent sterilization method the food is given two or three boilings on successive days. This is no doubt the surest method, for vegetables particularly, as far as killing some resistant kinds of bacteria is concerned, but there is great danger of over-cooking the food. The jars are kept in a warm place *about twenty-four hours between each boiling* and therefore take up room in the kitchen, often making it inconvenient for carrying on the other kitchen work. They also demand attention for two or three days and therefore take more time to finish.

THE SINGLE BOILING METHOD

In the single boiling method the food is given only one boiling, but for a longer period than any one boiling in the intermittent sterilization method. It is sometimes called the "cold pack" method as the uncooked fruit and vegetables are packed cold into the jars. This, of course, is also done in the intermittent sterilization method. If properly done this method is likely to prove sufficiently satisfactory and is much simpler. A certain small percentage of failure must be expected. This method will no doubt continue to gain favour with those canning at home.

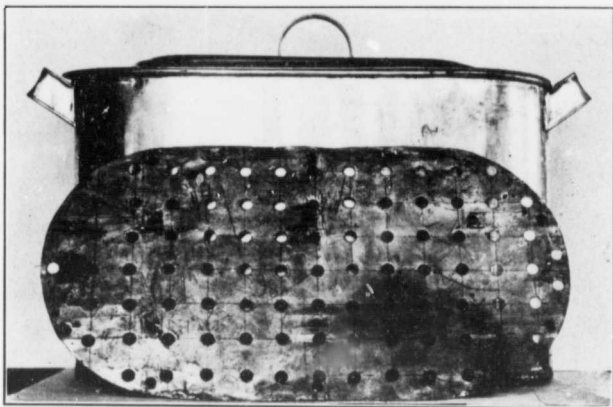


Fig. 1. Tin wash boiler, with false bottom, for sterilizing

EQUIPMENT FOR CANNING

The equipment for either method is simple. An ordinary wash boiler may be used for the work, but *it must be fitted with a false bottom to prevent the jars coming too near the direct heat*. This bottom may be a perforated tin plate (galvanized iron is preferable) underneath which is attached a rim or any device for raising the plate an inch or so from the bottom of the boiler. Handles on this plate make it convenient to lift out.

Good jars which can be made air tight, new rubbers (it does not pay to use old ones), a pint or quart measure, sharp paring knives, a saucepan, a colander, a long-handled wooden spoon and some clean towels complete the equipment. The jars with the wire top fasteners are more convenient than the screw top kind and it is important that they have a wide mouth. After using a jar of fruit or vegetables it should be thoroughly washed and dried, and the label removed. If the jar is put away damp, mould is liable to collect in it and give trouble when the canning season comes again.

PREPARATION OF JARS

1. *Test each jar* before using it by filling it with water and fitting it with a rubber ring. Seal jar tightly, wipe outside of jar dry, and invert it on a dry table. If no traces of moisture can be seen on the table the jar may be used.
2. *Sterilize jars and covers* by putting them in the boiler fitted with the false bottom and covering them with cold water. Cover the boiler, bring the water to a boil and boil for 15 minutes. Put rubbers in a shallow vessel and pour boiling water over them a few seconds before using them.
3. *Remove the jars* from the water (the handle of the spoon will be found convenient for doing this), and pack with the prepared fruit or vegetable at once.

PREPARATION OF FRUIT

1. Select when it is at its best—*thoroughly sound, ripe but firm, and free from bruises.*
2. Better results are obtained by grading the fruit or vegetables with reference to size and quality, so that the contents of each jar will be uniform.
3. *Can all fruit as soon as possible after it is picked.*
4. *Berries and other small fruit.*—Rinse thoroughly with cold water, in a colander, then hull or stem.
5. *Peaches.*—Rinse thoroughly, *scald and "cold dip,"* then remove skins. Keep whole or cut in halves and stone. Drop into cold water until ready to pack into jars.
6. *Plums and large cherries.*—Rinse thoroughly and prick skins well with a needle to prevent them bursting when cooked. Scald and "cold dip."
7. *Apples, pears and quinces.*—Rinse thoroughly, pare, core, cut into quarters or eighths, and drop into cold water until ready to pack into jars.
8. When packing the fruit in the hot sterilized jars consider the appearance of finished jar and arrange fruit carefully.

MAKING SYRUPS FOR FRUITS

1. Prepare the sugar and water and boil gently five minutes.
2. *Strain the syrup* through a cheesecloth or very fine strainer.
3. Re-heat to boiling point, put rubbers on jars and fill with the hot syrup. For quart jars of large fruit about one pint of syrup is required; for quart jars of small fruit about one-half pint.

NOTE.—*Canning strawberries.* Many prefer to cook strawberries in an open kettle, using no water. Three measures of fruit to one measure of sugar are used. The sugar stands on the fruit overnight and the whole is brought to the boil, very slowly, the following day. The fruit is then boiled gently ten minutes and put into sterilized jars.

4. *Proportions of sugar and water for syrups:*

- (1) Two pints of water to one pint sugar—for sweet, slightly acid fruits, e.g., raspberries, blueberries, sweet apples, etc.
 - (2) Three pints of water to two of sugar for more acid fruits, e.g., cherries, etc.
 - (3) Two pints of water to two of sugar for tart fruits, e.g., sour plums, quince, tart apples, strawberries, peaches, etc.
 - (4) One pint of water to two of sugar if fruit is required very sweet or if it is unusually tart, e.g., gooseberries, currants, etc.
5. *Judgment must be used in choosing the richness of syrup* for the particular fruit to be canned. Use as thin a syrup as possible, considering the sourness or acidity of the fruit, as flavour is lost in some fruits with the increase in the proportion of sugar. Remember that *canned fruit*, not “preserves” or jam, is being made, and only enough sugar to make the fruit palatable is necessary.

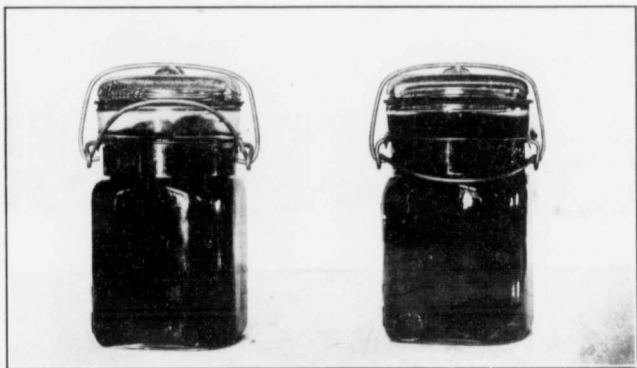


Fig. 2. Showing jar on left ready for boiling and not tightly sealed. Jar on right sealed tightly after boiling and before being taken from boiler

COOKING OR STERILIZING THE FRUIT

1. *Immediately after filling the jars with hot syrup* put on the covers, but do not screw down or clamp tightly. If using the type of jar shown in Fig. 2, have cover arranged as in jar to left.
2. Have water in boiler about the same heat as the jars.
3. Put jars in boiler leaving a space between them, and having the water come up two or three inches around jars. Strips of folded newspaper are often used to separate jars in boiler.
4. Cover boiler, bring water to boil and *boil gently* until fruit is cooked.

Berries and soft fruits require from ten to fifteen minutes, very hard fruits such as hard pears and quince from thirty minutes to one hour.

Remove boiler from heat and *let stand* for about *five minutes*, keeping it tightly covered.

5. Uncover boiler, allow steam to escape, and seal jars tightly by screwing down or fastening clamp at side as in Fig. 2, jar to the right.

6. Remove from boiler and turn upside down on table until cold. If a screw top is used cover must be screwed down tightly as jar cools.
7. Wash outside of jars and label with neatly written gummed labels.

PREPARATION OF VEGETABLES

1. Pick the vegetables while they are still tender and before they become very mature. *This is very important*, especially with peas, string beans and corn. Tomatoes should be ripe and coloured to the stem, but firm. Carrots and beets while still small and tender provide a delicacy in canned vegetables. *All vegetables must be thoroughly sound.* Vegetable greens, such as spinach and asparagus, are also easily canned.
2. *Scrub* very thoroughly all vegetables in contact with soil and rinse well. Rinse all others well.
3. *String Beans*.—String and blanch for five minutes. Pack carefully in jars.
4. *Corn*.—Husk, clean off silk and blanch for ten minutes; cold dip and cut off grains with a sharp knife. Pack in jars.
5. *Peas*.—*Be sure to wash them thoroughly before shelling.* Shell and scald. Cold dip and pick out those that have turned yellow. Pack in jars.
6. *Tomatoes*.—Scald and cold dip. Peel and cut in pieces. Tomatoes may be brought to a boil and boiled for five minutes before packing in cans or they may be packed at once. Small tomatoes may be packed whole. In this case cook some extra tomatoes in a pan until soft and press through a strainer, using this juice for filling jars.
7. *Small Young Beets*.—Blanch until skin comes off easily, cold dip and peel. Pack whole.
8. *Asparagus*.—Cut stalks a proper length to stand in jars. Blanch five minutes, then cold dip. Arrange uniformly with tips up. Force stalks gently into the centre of jar to fill it.
9. *Small Young Carrots*.—Blanch five minutes, cold dip and scrape off any discoloured skin. Pack whole in jars.
10. *Vegetable Greens*.—Pick over, remove stems, and blanch five minutes, cold dip and pack tightly in jars.

COOKING OR STERILIZING VEGETABLES

1. Remove the sterilized jars from hot water and pack with vegetables.
2. Add to each quart jar one level teaspoon salt and fill with boiling water.
3. Cover, but do not screw or clamp down (see Fig. 2, left-hand jar).
4. Put into the boiler in water about the same heat as jars.
5. Bring water to boiling point and boil gently for that period of time given in time-tables below.

6. *Time-table of boiling for cold pack method.*

String beans	90 minutes.
Asparagus and other greens.....	60 “
Corn.....	180 “
Green peas	40 “
Beets and carrots.....	60 “
Tomatoes.....	20 “

7. *Time-table of boiling for intermittent method.*

String beans.....	30 minutes on three successive days.
Asparagus and other greens.....	as beans.
Corn.....	as beans.
Peas.....	30 minutes on two successive days.
Tomatoes.....	20 minutes on two successive days.

8. Allow the jars to stand in the covered boiler for ten minutes, then screw or clamp down covers.
9. Finish the same as fruit.

THE TWO METHODS OF CANNING VEGETABLES COMPARED

Some vegetables are harder to sterilize than others. Those in contact with the soil have on them bacteria that offer much resistance to heat, and owing to this fact they form "spores" which are difficult to destroy. These spores are softened by boiling and grow into bacteria in a warm room. *This is why the intermittent sterilization method is often recommended for vegetables.* The spores remaining after the first boiling develop into bacteria during the twenty-four hours between the first and second boiling and are killed during this second period. If a few spores still remain they grow into bacteria and are killed by a third boiling.

The "cold pack" or single boiling method provides for only one boiling; *however, it is claimed by many who have used the single boiling method that good work may be done with it, even in canning vegetables.*

In *intermittent sterilization* the jars are screwed or clamped down tightly *after* each boiling, and loosened again *before* each boiling. The jars are, of course, removed from boiler after each boiling.

FAILURES

Beginners must expect some failures, and should not be discouraged if a small percentage of food spoils. *Remember that on no account must the jars be opened after boiling. This makes failure certain.*

SUGGESTIONS FOR THOSE PREPARING AN EXHIBIT

1. Use uniform jars. Different makes and shapes detract from the appearance of the exhibit.
2. Grade the fruit and vegetables as to size and quality in canning, so that the contents of each jar may be uniform.
3. Have each jar neatly and clearly labelled in ink, using gummed labels of uniform size.
4. Label might also give the date on which the food was canned.