Canning in Glass by the Cold Pack Method

By Bab Bell and Addie D. Root

There are two household methods of canning—the open kettle method and the cold pack method. In the former, the material to be canned is completely cooked and fully sterilized before it is put into the jar. In the latter, or cold pack method, the cooking and sterilizing are mainly done after the material has been packed in the jar.

The advantages of the cold pack method over the open kettle method are: (1) it is adapted to all fruits and vegetables; (2) it is more certain and saves time and labor; and (3) it produces a more uniform product with a better color, better flavor, and better shape.
In order to can intelligently it is well to know why fruits and vegetables spoil and how best to prevent this. There are present everywhere very tiny plants known as bacteria, yeasts, and molds which are called micro-organisms because they can be seen only with a microscope. Food spoils because of the presence of these micro-organisms. If they are killed by heat food will keep indefinitely, provided it is sealed so tightly that no more can enter. In order to can successfully by the cold pack method the jar and its contents are heated to a high enough temperature for sufficient length of time to kill all the micro-organisms present, after which the jar is sealed tightly. This method of killing such organisms by heat is called sterilization.

**WHY FRUITS AND VEGETABLES SPOIL**

**TYPES OF CANNERS WHICH MAY BE USED**

**Water-bath outfit.**—The simplest type of canner is what is known as the water-bath outfit. This may be made by using a wash boiler, tin pail, lard can, or any kind of utensil with a well-fitting lid. A rack is necessary to keep the jars from touching the bottom of the container. The rack may be made of narrow strips of board, wire, or tin. It should raise the jar at least three-fourths of an inch from the bottom of the container and allow the water to circulate freely beneath. Wire handles placed upon the ends of the rack aid in lifting to and from the hot water. Hay, straw, paper, towels, or loose boards should not be used to take the place of racks.

**Steam cooker.**—The steam cooker shown in Figure 3 may be used instead of the hot water bath in the cold pack method. This type of canner is more expensive if purchased for this purpose alone, but where one is already in use in the home it may be adapted to canning with excellent results.
Steam pressure outfit.—A third type of home canner is the steam pressure outfit. Under pressure the temperature of water may be raised several degrees above the boiling point. This higher temperature destroys micro-organisms more quickly than boiling at the usual temperature. The steam pressure outfit is, therefore, a saver of time and fuel, but costs more at first.

All of the four representative types of jars shown in Figure 4 are satisfactory. Jars should be of good quality of glass, smooth and well finished. More important than the jar itself is the method by which it is sealed. The top is, therefore, the important consideration.

Screw tops should never be used the second year if they are discolored or corroded. To test the screw tops, adjust them on the jars without the rubber, screw down tight, and run the thumb nail around between the top and the glass. If the thumb nail slips under the edge, it shows that the top does not fit the jar. Both old and new tops should be tested carefully before the jars are filled. An old top which has been removed from the jar by prying up with a knife should be discarded, as the edge cannot be pounded into shape successfully. Jar tops may be removed without injury by inverting the jar a few moments in hot water or by pulling the rubber out from under the top.

When using jars with glass tops and metal clasps be certain that the springs and clasps are tight and strong. The wire bail placed over the top of the cover should go in with a snap, even when the tightening lever or clamp spring is up. If it does not, remove bail from tightening lever and bend to make tight. This tightening of bail should be done every year.
Always examine jars with lacquered tops such as that shown in Figure 4D to see if the composition in the groove is cut. If it is, do not use the top. If this type of jar does not seal when heated, remove, scrape the composition off the jar and use a new top. For some types of jars new tops are a necessity each year.

**RUBBERS**

Always buy good, thick heavy rubbers that will stand several hours in boiling water without being injured. It is better not to use the rubbers that come with the jars and not to use the same ones more than one year. It is cheaper to buy new rubbers and tops both than to take the risk of losing an occasional jar of fruit or vegetables.

**GENERAL**

The method of canning the various fruits and vegetables is practically the same for all. There are, however, slight but important variations which make necessary the specific directions which appear on the following pages.

**Promptness.**—Can all fruits and vegetables as soon as possible after they are gathered. Special care should be taken in canning peas, beans, corn, and asparagus, as they are likely to acquire a disagreeable flavor known as "flat sour" in a very short time. This condition does not cause the food to spoil but destroys its palatability.
Scalding.—Scalding is a term used for the dipping of fruits and vegetables into boiling water and plunging them immediately into cold water. It loosens the skins of fruits and vegetables.

Blanching and cold dipping.—Blanching is the same as scalding except that the fruit or vegetables are left in the boiling water for several minutes. Different materials require different lengths of time,

as will be noted later. It is absolutely essential that the water be boiling hard and that it be kept boiling for the required time. Blanching is followed by cold dipping. In this process the fruits or vegetables are lifted quickly from the boiling water and plunged into cold water. Blanching and cold dipping are advised in the case of fruits and vegetables except the very soft fruits, because it (a) shrinks the product, enabling more to be packed into the jar and (b) aids in preserving the color and shape.

Filling.—In filling jars with boiling water or syrup the use of a small funnel will help to prevent breaking the jars.

Syrup for canned fruit.—There is no set rule for making syrup. It is not necessary to use syrup in canned fruits unless desired. The amount of sugar used in the syrup will depend upon the individual taste. However, the ideal product should have enough to improve the flavor and not enough to cover up the natural flavor of the fruit. Too thick a syrup destroys the value of the canned products as a partial substitute for fresh fruit in the diet.

Water.—The water in the canner must cover the tops of the jars at least one inch. This insures more perfect sterilization and helps to prevent the liquid from boiling out of the jars.

Time.—The time given in the directions is for quart jars. Add ten per cent for half-gallon jars and deduct ten per cent for pint jars.
In all cases, the water must be boiling during the entire time given for sterilization. The time specified here and throughout this circular is that required if the water-bath method of canning is followed.

**Adjusting tops.**—When using a screw-top such as those shown in Figure 4, B and C, place the top in position and screw tight, then make a half turn back to loosen.

If glass tops fastened with wire bails are used, the bail is put in place, but not clamped until after sterilization.

If a jar with lacquered top is used, place the wire clamp in position. This holds the top in place until it is sealed in the process of sterilization.

**CANNING FRUITS**

**Apples.**—Select firm, ripe apples. Remove all blemishes and can the fruit whole, sliced, or quartered. Remove the cores if it is to be canned whole but if it is sliced or quartered, keep it from turning brown by putting it at once into water to which salt has been added at the rate of a tablespoonful per gallon. Put the rubbers on and pack the apples in jars as tightly as possible without crushing. Make a syrup of four cups of water and one to two cups of sugar, depending upon the sourness of the fruit. When the sugar is completely dissolved and the syrup begins to boil, fill the jar with the boiling syrup. Adjust the tops and tighten partly. Place the jars upon rack and lower them on it into canner containing hot water. Place the lid on the canner. Heat whole apples twenty minutes; sliced and quartered twelve minutes. Remove the jars, tighten the tops, and cool away from draught.

**Apricots.**—Select apricots of uniform ripeness; scald, and plunge them into cold water and the skin can be easily removed. The fruit may be canned with the skin on if preferred. If the pits are left in they give a flavor to the fruit which is desired by many. Place the rubber on and pack the fruit into the jar.

Make a syrup of one cup of sugar and four cups of water. When the sugar is dissolved and the syrup begins to boil, fill the jars with the boiling syrup. Adjust tops and partially tighten, place jars on rack and lower into canner containing hot water. Place the lid on the canner, heat for 16 minutes, remove the jars, tighten the tops and cool away from draught.

**Berries.**—Pick over, wash, and stem the berries. Use a colander or sieve in washing them in order to prevent handling or bruising. Place the rubbers in position and fill the jars with the berries, packing them as tightly as possible without crushing.

Make a syrup using the proportions given below. When the sugar is completely dissolved and the syrup begins to boil, fill the jar with
the boiling syrup. Adjust the top and partially tighten. Place jars upon rack and lower at once into canner containing hot water. Place the lid on the canner and sterilize for 16 minutes. Remove the jars, tighten the tops and set to cool away from draught.

Proportions for syrup.—(1) Blackberries, blueberries, dewberries, logan berries, mulberries, raspberries—One cup of sugar to four cups of water.

(2) Strawberries—One cup of sugar to one cup of water. This proportion of sugar gives a good color.

(3) Cranberries, currents, and gooseberries—One cup of sugar to three cups of water.

Cherries.—Wash and remove the stems of cherries and can with or without removing the stones. If stoned, care should be taken to save all the juice. Place the rubbers in position and fill the jars with cherries, packing as tightly as possible without crushing. For sour cherries, make a syrup using one cup of sugar and three cups of cherry juice. For sweet cherries make a syrup using one cup of sugar and four cups of cherry juice. If there is not enough cherry juice to complete the measure add water. When sugar is completely dissolved and the syrup begins to boil fill the jars with the boiling syrup, adjust the tops, and partially tighten. Place the jars upon the rack and lower them on it at once into a canner containing hot water. Place the lid on the canner and sterilize for 16 minutes. Remove jars, tighten tops, and do not let a draught strike them while cooling or they may break.

Grapes.—The same method as for canning cherries.

Peaches.—The same method as for canning apricots.

Pears.—Select pears of uniform ripeness, wash, and pare. They may be canned whole, quartered or sliced as desired. Pack into jars as tightly as possible. Place rubbers in position. Make a syrup using one cup of sugar and four cups of water. When sugar is completely dissolved and syrup begins to boil, fill the jars with the boiling syrup. Adjust the tops and partially tighten. Place jars upon rack and lower at once into canner containing hot water. Place the lid on canner. Sterilize 30 minutes. Remove jars, tighten tops, and cool away from draught.

Plums.—The same method as for canning apricots.

Quinces.—The same method as for pears.

Rhubarb.—Wash and cut pieplant into lengths to fit the jars or into pieces of uniform size. Blanch for one minute, then plunge into cold water. Place rubbers in position and fill the jars with rhubarb, packing as tightly as possible. Make a syrup using one cup of sugar and three cups of water. When the sugar is completely dis-
solved and the syrup begins to boil, fill the jar with the boiling syrup. Adjust the tops and partially tighten. Place jars upon rack and lower at once into canner containing hot water. Place the lid on canner. Sterilize for 15 minutes. Remove jars, tighten tops, and set away from draught to cool. Use only the stems; the leaves are poisonous.

**CANNING VEGETABLES**

**Asparagus.**—Select asparagus stalks of uniform age, size, and color. Prepare them by washing well with a vegetable brush. Cut off the woody part of stalks. Cut the stalks into long or short pieces of uniform length. Blanch from three to five minutes according to the age of the vegetable and then plunge quickly into cold water. Place the rubbers in position and fill the jar with the asparagus, packing as closely as possible—with the tips up if whole stalks are used. Add a teaspoonful of salt to each quart of the vegetable and fill the jar with boiling water. Adjust the tops and partially tighten them. Place jars upon rack and lower into the canner containing hot water. Sterilize young, tender asparagus an hour and a half; mature asparagus two hours. Remove, tighten tops and set out of draught to cool.

**Beans (lima and string).**—Select beans of the same age and color. Shell or string and wash thoroughly. String beans may be canned whole or cut into uniform pieces. Blanch these vegetables by placing in boiling water from five to eight minutes, depending upon age and plunge quickly into cold water. Place rubbers in position and fill the jars, packing as closely as possible. Add one teaspoonful of salt to each quart of vegetable. Fill the jars with boiling water. Adjust the tops and partially tighten. Place the jars on the rack and lower at once into canner. Place the lid on the canner. Sterilize for two hours, remove, tighten tops, and set out of draught to cool.

**Beets.**—Select beets of uniform size and age. The older the beets the more chance there is for loss of color. Small beets are the most desirable for canning. Prepare by washing thoroughly, with a vegetable brush. Leave one inch of the tops and all of the root while blanching as this will aid in preventing the loss of color. Blanch for six minutes then plunge quickly into cold water and remove the skins by scraping the beets, not peeling them. Place rubbers in position and pack beets into the jars as closely as possible. Add a teaspoonful of salt to each quart and fill the jar with boiling water. Adjust the tops and partially tighten. Place jars upon rack and lower at once into canner. Place the lid on the canner. Sterilize for two hours. Remove jars, tighten tops and set away from draught to cool.

**Carrots or sweet potatoes.**—Wash carrots or sweet potatoes thoroughly with a vegetable brush. Blanch from six to eight minutes, de-
pending upon the age of the vegetable, then plunge quickly into cold water. Scrape. Place rubber in position and fill the jar. Add one teaspoonful of salt for each quart of vegetables. Fill the jars with boiling water. Adjust the tops and partially tighten. Place jars on rack and lower at once into canner. Place the lid on the canner. Sterilize for an hour and a half. Remove jars, tighten tops, and set away from draught to cool.

Corn.—Select ears of same variety and degree of ripeness. Prepare by removing the husks and silks. Blanch from eight to fifteen minutes, depending upon the ripeness of the corn, then plunge quickly into cold water. Place rubber in position, and if the corn is canned on the cob fill the jars with ears, alternating the tips and butts. If the corn is to be cut from the cob, after blanching use a thin, sharp knife and fill the jars loosely, leaving a space of one inch at the top for expansion. Add a teaspoonful of salt to each quart and fill the jars with boiling water. Adjust tops and partially tighten. Place jars upon rack and lower at once into canner. Put the lid on the canner and sterilize for three hours and a half if cut from the cob or four hours if still on the cob. Remove jars, tighten tops, and set away from draught to cool.

Eggplant.—Pare the eggplant or leave the skin on, cut into slices and blanch eight to ten minutes. Then plunge quickly into cold water. Place rubber in position and pack the slices in the jar as closely as possible. Do not add salt, as it causes eggplant to turn dark. Fill the jars with boiling water. Adjust tops and partially tighten. Place jars upon rack and lower into the canner. Sterilize two hours. Remove, tighten tops, and set out of draught to cool.

Greens.—Cultivated greens include swiss chard, beet tops, spinach, New Zealand spinach, Chinese cabbage leaves, kale, cabbage sprouts, turnip tops, Russian mustard, collards, rape; while wild greens include lambs quarter, pepper cress, sour dock, smartweed sprouts, purslane or "pursley," marsh marigold, wild mustard, dandelion.

Greens should be picked over carefully and washed in cold water until all traces of sand are removed. Shrink by steaming or boiling in an open kettle. Plunge into cold water before packing into jars. Place rubber in position and pack greens into jars as tightly as possible. Add one teaspoonful of salt to each quart of greens. Fill the jars with boiling water or with the liquid in which the greens have been shrunk. Adjust tops and partially tighten. Place jars upon rack and lower at once into canner. Sterilize for an hour and a half. Remove jars, tighten tops, and set away from draught to cool.

Okra.—The same method as for beans.
Parsnips.—The same method as for carrots.
Peas.—The same method as for beans.

Pepper, green and red.—Wash, cut a slice from stem end of each pepper, and remove seeds. Blanch, then plunge into cold water. Place the rubbers in position and fill the jars with whole or sliced peppers, packing as closely as possible. Add one teaspoonful of salt to each quart of peppers, and fill the jars with boiling water. Adjust tops and partially tighten. Place jars upon rack and lower into a canner containing hot water. Sterilize 15 minutes. Remove, tighten tops, and set out of draught to cool.

Pumpkin or squash.—Remove seeds, pare, and cut into small blocks of uniform size. Blanch ten minutes. Plunge quickly into cold water. Place the rubbers in position, fill the jars, packing as closely as possible. Add one teaspoonful of salt to each quart of vegetables and fill the jars with boiling water. Adjust tops and partially tighten. Place jars upon rack and lower into the canner containing hot water. Sterilize for an hour. Remove, tighten tops and set out of draught to cool.

Sweet potatoes.—The same method as for carrots.

Tomatoes.—Select tomatoes of the same size, ripeness, and color. Scald to loosen skins. Plunge quickly into cold water. Remove the stem and skin and cut into pieces if desired. Place rubber in position and fill the jar with the whole or cut tomatoes, packing as tightly as possible. Add one teaspoonful of salt to each quart of tomatoes and fill the jars with boiling strained tomato juice. Adjust tops and partially tighten. Place jars on rack and lower quickly into canner. Place lid on canner. Sterilize 22 minutes. Remove jars, tighten tops, and set out of draught to cool.
### BLANCHING, SCALDING, AND STERILIZATION TABLE

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<th>Product</th>
<th>Blanch or Scald</th>
<th>Sterilize</th>
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<tr>
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<tr>
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<td>Greens</td>
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<tr>
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<td>Parsnips</td>
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<tr>
<td>Peas</td>
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<tr>
<td>Quinces*</td>
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*The time given as in the directions distributed through the circular is for quart jars. Add ten per cent for half-gallon jars and deduct ten per cent for pint jars. In all cases, the water must be boiling during the entire time given for sterilization. The time specified here and throughout this circular is that required if the water-bath method of canning is followed.

*Apples, apricots, peaches, pears, plums, and quinces may be blanched if desired. The average time required is from one to two minutes, depending on the firmness of the fruit.
FIG. 5.—NECESSARY CANNING UTENSILS
A. Measuring cup
B. Tablespoon
C. Fork
D. Paring knife
E. Teaspoon
F. Cloth for blanching and cold dipping

FIG. 6.—DESIRABLE CANNING UTENSILS
A. Jar filler
B. Funnel
C. Wire basket
D. Measuring cup
E. Apple-corner
F. Measuring spoons
G. Peach seeder
H. Apple-corner
I. Hot-pan-lifter
J. Peeler
K. Spatula
L. Jar-lifter
M. Wooden spoon