PROPER HEATING AND CORRECT SEALING are absolutely essential for successful canning. Food and containers must be held at high temperatures long enough to kill the bacteria that cause spoilage.

Foods high in acid, like fruits, tomatoes, and pickled beets, can be safely processed in a boiling-water bath. All vegetables other than tomatoes that are likely to be canned at home are so low in acid that special means must be taken to keep them from spoiling. Temperatures higher than the boiling point of water must be applied; the only way to do this is to use a steam-pressure cooker.

Use only fresh foods. Fruits and vegetables should be canned, if possible, on the day they are gathered. This is especially necessary for vegetables, since a few hours' delay means change in flavor and the growth of many resistant bacteria.

Fully ripened fruit has the best flavor, but be careful to select only that which is firm. Most vegetables are best before they are fully matured. Choose each food when it is at its best for canning.

Containers for canning. Most home canning is done in glass jars. For processing fruits and vegetables, use only jars made specially for the purpose. Be sure all jars are clean and in good condition. Before packing food to be processed in a boiling-water bath, sterilize all jars and covers by boiling them for 20 minutes.

Glass jars for canning may be purchased in many shapes and sizes of opening and with different sealing arrangements. With each type of top be sure to follow the sealing directions that come with it.

Filling and closing containers. Fill jars with fruits or vegetables up to 1½ inches from the top. Then add enough boiling liquid to bring the contents to 1 inch from the top if food is to be processed in pressure cooker, or to ½ inch if it is to be processed in boiling-water bath. Fill tin cans with food up to 1 inch from the top, then add enough boiling liquid to bring the contents to ¼ inch from the top.

If glass jars are being used, dip rubber rings in hot water and adjust on the jar. Be sure no grease, salt, seeds, or pulp is on the rubber ring or on the part of the jar where the ring or the cover rests.
Mason top (1). If porcelain lining is cracked, broken, or loose, or if there is even a slight dent in the seal edge, discard the cover. Opening these jars by thrusting a knife blade into the rubber seal edge ruins many good covers.

Three-piece cap (2). Fits a deep-thread jar with or without a shoulder. Metal band holds cap in place during processing and cooling. Remove metal band when contents of jar are cold, usually after 24 hours.

Two-piece cap (3). Use a new metal lid each time a jar is used. Metal band is needed during processing and cooling. Do not screw farther after taking jar from canner. Remove band when contents of jar are cold, usually after 24 hours.

Glass top with wire clamp (4). Wire clamp must be tight enough to make a click when the longer one is snapped into place on the can. Unless cracked or nicked, the glass cover may be used again and again.

Adjust cover and partly seal. After the filled jars are processed, tighten the seal immediately, so that no air can enter.

If tin cans are being used, put cover into place, be sure the can sealer is adjusted for the size of can being used, and seal.

Directions for removing cans and jars from the processing container and for cooling them are on page 6.

**Processing time.** The time needed for processing varies with different fruits and vegetables. Nearly all the times recommended in this folder are based on research with pint and quart jars and with No. 2 and No. 2 1/2 cans. If No. 3 cans must be used, they should be processed about 1/7 more time than that needed for No. 2 1/2 cans.

**Canning High-Acid Foods in Boiling-Water Bath**

It is safe to process high-acid foods like fruit, tomatoes, and pickled beets in a boiling water bath. A large kettle, lard can, wash boiler, or other utensil with a snug-fitting cover is needed, and also a rack for jars and cans of food to stand on while in boiling water.

**General directions.** When the water is boiling, place the jars or cans of food on the rack in such a way that the water will circulate freely around them. See that the water comes well up over the tops of the containers. (If the food is put in glass jars, heat the jars before placing them in the boiling water, in order to prevent breakage.) When the water is again boiling vigorously, start counting the processing time.

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Sirup or water. Fruits can be canned satisfactorily without sweetening, tho flavor, color, and texture are usually better when a sirup is used. Sirups made of sugar and water are generally preferable. When sugar is hard to get, use water or a sirup made of sugar and a substitute (see page 4).

Apples. Wash, pare, and cut apples into pieces the size desired. Prepare only as many as can be processed at one time. Boil in thin sirup 5 minutes. Pack hot into containers. Cover with boiling sirup. There is less shrinkage by this method and the jars are better filled. Process pint or quart jars or No. 2½ cans 15 minutes, No. 2 cans 10 minutes.

Apricots. Wash, cut into halves, and remove seeds. (If they are to be peeled, scald in boiling water to loosen skins before cutting.)


- Hot pack. Simmer 3 to 5 minutes in thin or medium sirup. Pack apricots hot into containers. Cover with boiling sirup. Process pint or quart jars or No. 2½ cans 20 minutes, No. 2 cans 15 minutes.

Beets, pickled. Select tender beets. Wash thoroly. Cook in boiling water or steam 10 minutes or until skins slip easily. Remove skins. Leave small beets whole; cut large beets into sections. Pack quickly into containers before beets cool. Add ½ tsp. salt, 1 tsp. or more of sugar and 3 to 6 whole cloves, if desired, to each pint. Cover with boiling vinegar (unless vinegar is very strong, use it full strength). Process pint or quart jars 30 minutes.

Cherries. Wash and pit cherries.


- Hot pack. Add ½ to 1 cup sugar to each quart of cherries. Bring slowly to boiling point. Boil 2 minutes. Pack hot into glass jars or sanitary R-enamel cans. Cover with boiling sirup. Process pint or quart jars or No. 2 or 2½ cans 15 minutes.

Gooseberries. Wash berries and remove stems.


- Hot pack. Cover with boiling medium sirup. Boil 1 or 2 minutes. Pack into jars or cans. Process pint or quart jars or No. 2½ cans 15 minutes, No. 2 cans 10 minutes.

Peaches. Select ripe, firm peaches. Plunge into boiling water to loosen skins. Remove and plunge into cold water. Peel. Prepare only as many as can be processed at one time.

Hot pack. Simmer 3 to 5 minutes in sirup. Pack peaches into containers. Cover with boiling sirup. Process pint or quart jars or No. 2 or 2½ cans 20 minutes.

Pears. Wash, peel, cut in half, and remove core. Prepare only as many as can be processed at one time. Drain. Boil in thin or medium sirup 4 to 8 minutes according to size and softness. Pack pears into containers. Cover with boiling sirup. Process pint or quart jars or No. 2 or 2½ cans 20 minutes.

Pimientos (ripe). Wash and dry. Place in hot oven about 375°F. for 5 to 10 minutes. Plunge into cold water quickly and slip off the skins. Remove stem, core, and all seeds. Pack pimientos flat or folded into ½ pint jars. Add ¼ tsp. salt to each jar. Do not add water. Process ½ pint jars 40 minutes.

Pineapple. Slice, peel, core, and remove all eyes. Cut slices into sections if desired. Boil pineapple in thin sirup 5 minutes. Pack into containers. Cover with boiling sirup. Process pint or quart jars or No. 2½ cans 30 minutes, No. 2 cans 25 minutes.

SIRUPS FOR CANNING FRUITS

To 1 pint of water use the following amounts of sugar, sugar and honey, or sugar and corn sirup:

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<th>Sugar only</th>
<th>Sugar—Honey</th>
<th>Sugar—Corn sirup</th>
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<tr>
<td>Thin</td>
<td>¼ c</td>
<td>½ c</td>
<td>⅛ c</td>
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<td></td>
<td>⅛ c</td>
<td>(scant)</td>
<td>(scant)</td>
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<tr>
<td>Medium</td>
<td>1 c</td>
<td>½ c</td>
<td>⅛ c</td>
</tr>
<tr>
<td>Thick</td>
<td>2 c</td>
<td>1 c</td>
<td>⅛ c</td>
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Stir water and sugar together while heating until thoroughly dissolved; bring to the boiling point, skim, and use.

Plums. Wash. Prick each plum to prevent bursting of skin.

Cold pack. Pack plums into glass jars. Cover with boiling sirup (medium or thick). Process pint jars 20 minutes, quart jars 25 minutes.

Hot pack. Simmer in medium sirup 5 minutes. Pack plums into containers. Cover with boiling sirup. Process pint or quart jars or No. 2 or 2½ cans 15 minutes.

Raspberries (black). Wash carefully, remove caps, and drain.

Cold pack. Put in glass jars, shaking or jarring against hand to make a more solid pack. Cover with boiling sirup (medium or thick). Process pint or quart jars 20 minutes.

Oven method not recommended. Altho the temperature of the oven may be high, they are completely sealed. If they are sealed they may explode, since the pressure on used only for such products as pickles, preserves, and marmalades.
Hot pack. Boil berries in medium sirup 2 minutes. Pack into containers. Cover with boiling sirup. Process pint or quart jars or No. 2½ cans 15 minutes, No. 2 cans 10 minutes.

Raspberries (red). Wash berries, being careful not to crush them. Drain. Pack into glass jars or sanitary R-enamel cans, alternating berries and boiling red sirup until containers are filled. Process the same as black raspberries.

To prepare red sirup, use over-ripe or soft berries not firm enough for canning. Heat slowly to boiling point using ½ cup of water to 1 cup of berries. Extract juice by straining thru fine sieve or cheesecloth. To each cup of juice add ½ cup sugar. Bring slowly to boiling point.

Rhubarb. Select young, tender rhubarb. Wash, cut into short lengths, but do not skin.

Boil rhubarb in water or sirup until soft. Pack boiling hot into glass jars. Process pint or quart jars 10 minutes.

Strawberries. Wash, cap, and drain fresh, firm berries.

Heat immediately. Add ½ to 1 cup of sugar to each quart of berries. Heat slowly to boiling point and let stand several hours or overnight. Reheat slowly to boiling point. Pack berries hot into containers. Process pint or quart jars or No. 2½ cans 15 minutes, No. 2 cans 10 minutes.

Heat later. Add ½ to 1 cup of sugar to each quart of berries, alternating layers of berries and sugar. Let stand several hours or overnight. Heat slowly to boiling point. Pack berries hot into containers. Process same as above.

Tomatoes. Select firm, well-ripened tomatoes. Wash. Plunge into boiling water to loosen skins, then into cold water so that they may be handled. Drain. Remove green spots and cores completely and slip off skins. Cut into pieces of the size desired.

Cold pack. Pack tomatoes solidly into containers. Add ½ tsp. salt to each pint. When packing tomatoes in glass jars, add juice to 1 inch from top; when using tin cans, add juice to ¼ inch from top. Set in boiling water and hold there until contents in center of container are at least 160° F. Partially seal glass jars; seal tin cans. Process pint jars 35 minutes, quart jars 45 minutes, No. 2 or No. 2½ cans 45 minutes.

Hot pack. Heat slowly to boiling point. Boil 2 minutes. Pack into containers. Process pint or quart jars or No. 2 or 2½ cans 10 minutes.

Tomato juice. Select firm, ripe tomatoes. Wash well, remove cores, and cut tomatoes into small pieces. Season, if desired. Simmer until soft. Rub thru a strainer. Bring to boiling point. Fill jars or tin cans. Process pint or quart jars or No. 2 or 2½ cans 15 minutes.

Contents of the jars will not go above the boiling point of the liquid unless the jars are greater than the pressure on the outside. Open kettle canning should be
Canning Low-Acid Foods in Steam-Pressure Cooker

It is not safe to use a boiling-water bath for vegetables other than tomatoes. The temperature of boiling water is not high enough to destroy spoilage organisms when there is only a small amount of acid in the food. By using a steam-pressure cooker in good condition and following directions, a temperature as high as 240° F. can be obtained at 10 pounds pressure.

Filling and closing the cooker. Put enough hot water into the cooker so that there will be no danger of its boiling dry. (If the rack is very low, the water should come 2 or 3 inches above it.) Place filled jars or cans on the rack. Carefully adjust cover of cooker and fasten the clamps so that the steam will escape only at the petcock.

Adjusting petcock. Place cooker over heat with petcock open; leave petcock open for 10 minutes after the steam begins to escape, in order to be sure that all air has been forced out. Then close the petcock. (If any air is left in, it may form a pocket where the temperature will be much lower than indicated.)

Processing time. Count processing time from the time the desired pressure or temperature is reached. Keep pressure as uniform as possible. Uneven pressure may cause underprocessing and also may force some of the liquid out of the jars.

Temperatures in Cooker at Different Pounds Pressure

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<thead>
<tr>
<th>Pounds</th>
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<tr>
<td>5</td>
<td>228</td>
<td>109</td>
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<td>10</td>
<td>240</td>
<td>115</td>
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<td>25</td>
<td>267</td>
<td>131</td>
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Removing containers. When processing is complete, remove the pressure cooker from the fire. If glass jars are used, let the pressure fall slowly to zero and then slowly open the petcock (if petcock is opened rapidly, more liquid is lost from the jars). If No. 2½ or larger tin cans are used, allow pressure to fall to zero before opening. If No. 2 or smaller cans are used, slowly open the petcock when you take the cooker from the fire — do not wait for the pressure to fall to zero. Release clamps and remove cover of cooker. Be careful to point the cover in such a way that escaping steam will not burn your face.

Allow glass jars to remain in the cooker a few minutes before removing them. As soon as you take them out, seal them completely. (See particularly directions for two-piece cap, page 2.) Do not try to tighten lids again later, as this is likely to break the seal. Do not put the hot jars in a draft or in contact with a cold surface. Cool the jars promptly but not so suddenly as to break them.

After taking tin cans from the cooker, put them into cold water until thoroly cooled. This will stop the cooking and give a better texture.

Long pieces. Cut stalks right length to fit upright in container. Tie in bundles. Place upright in kettle, with boiling water to cover lower part of stalks. Cover tightly. Boil 3 minutes. Pack hot into containers, removing string as asparagus slips into container. Add ½ tsp. salt to each pint. Cover with fresh boiling water. Process at 10 pounds pressure: pint jars 25 minutes, quart jars 55 minutes, No. 2 and No. 2½ cans 20 minutes.

Short pieces. Cut stalks into short lengths. Cover with boiling water and boil 3 minutes. Pack hot into containers. Add ½ tsp. salt to each pint and cover with boiling water. Process same as above.

Beans (lima). Select young, tender beans. Shell and wash. Cover with boiling water and bring to boiling point. Pack hot into containers. Add ½ tsp. salt to each pint and cover with fresh boiling water. Process at 10 pounds pressure: pint jars 35 minutes, quart jars 60 minutes, No. 2 and No. 2½ cans 40 minutes.

Beans (fresh green soybeans). Cover shelled beans with boiling water and boil 3 or 4 minutes. Pack hot, add ½ tsp. salt to each pint. Cover with fresh boiling water. Process at 10 pounds pressure: pint jars or No. 2 cans 60 minutes, quart jars 70 minutes.

Beans (snap). Wash and rewash tender beans. Cut or leave whole. Cover with boiling water and boil 5 minutes. Pack hot. Add ½ tsp. salt to each pint and cover with fresh boiling water. Process at 10 pounds pressure: pint jars 20 minutes, quart jars and No. 2 cans 25 minutes, No. 2½ cans 30 minutes.

Beets. Select tender beets. Leave on root and an inch or more of the stems. Wash thoroly. Cook in boiling water or steam 15 to 25 minutes, according to the size of the beets. Remove skins. Leave small beets whole. Cut large beets into sections. Pack quickly into containers before beets cool. Add ½ tsp. salt to each pint. Cover with fresh boiling water (1 tsp. vinegar added to each pint will help to retain the red color).

Process at 10 pounds pressure: pint jars 25 minutes, quart jars 55 minutes, No. 2 and No. 2½ cans 30 minutes. (Pickled beets may be processed in boiling-water bath.)

Carrots. Select tender carrots. Wash thoroly. If desired, remove skins by scraping. Leave small carrots whole. Cut large carrots into lengthwise quarters or cubes. Cover with boiling water. Boil 5 minutes. Pack hot into containers. Add ½ tsp. salt to each pint. Cover with boiling water—the same water in which the carrots were cooked. Process at 10 pounds pressure: pint jars and No. 2 cans 20 minutes, quart jars and No. 2½ cans 25 minutes.
Circular No. 614

Corn. Use corn in the milk stage. Can immediately after gathering. Work with small quantities at a time and complete the whole canning process as quickly as possible. Husk and silk the corn, using a stiff brush if necessary to remove the silk. Cut corn from cob so that kernels are whole. Do not scrape the cob. Add 1/2 as much boiling water as corn. Heat to boiling point. Pack into pint glass jars or No. 2 C-enamelled tin cans. Add 1/2 tsp. salt and 1/2 to 1 tsp. sugar, if desired, to each pint. Process at 10 pounds pressure: pint jars 55 minutes, quart jars 85 minutes, No. 2 and No. 2 1/2 cans 60 minutes.

Peas. Select young, tender, freshly picked peas. Wash pods and shell only enough to fill containers to be processed at one time. Wash shelled peas. Cover with boiling water and bring to boiling point. Pack hot into pint jars or No. 2 cans. Add 1/2 tsp. salt and 1/2 tsp. sugar, if desired, to each pint. Cover with fresh boiling water. Process at 10 pounds pressure: pint jars 40 minutes, No. 2 cans 30 minutes.


Spinach or other greens. Look over and wash greens carefully. Discard imperfect leaves and tough stems. Heat greens in covered kettle containing small amount of water until completely wilted. Pack into pint jars or No. 2 cans, being careful not to pack too solidly. Add 1/2 tsp. salt to each pint and cover greens with boiling water. Process at 10 pounds pressure: pint jars 45 minutes, No. 2 cans 60 minutes.

Sweet potatoes. Wash. Boil or steam 20 to 30 minutes, depending on size of potato. Peel quickly and cut into sections. Pack hot into pint jars or No. 2 cans, being careful not to pack too solidly. Add 1/2 tsp. salt to each pint and cover with boiling water. Process at 10 pounds pressure: pint jars 55 minutes, No. 2 cans 75 minutes.

Vegetable soup mixtures. Wash vegetables as for cooking, cut in small uniform pieces, cover with boiling water. Season with salt, pepper, and herbs as desired. Boil 5 minutes. Fill containers. Process at 10 pounds pressure: pint jars 60 minutes, quart jars 70 minutes. If any vegetables in the mixture require longer processing, extend the time accordingly.

Prepared by F. W. Tanner and Grace B. Armstrong

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