Available (free) for
Classroom use

Ball
canning
and
freezing
methods
In winter you are thankful for the beans, peaches, tomatoes, and all the other things you can in spring and summer. But, do you, in mid-summer, surprise and delight your family with sweet potatoes, pumpkin (pie) and cranberry sauce "fixed" just as you like them? Out of season? Too expensive? Not if you can them!

Home canned fruits and vegetables are always in season. They are priceless, but never expensive. Priceless, because their flavor cannot be bought. Inexpensive, because they cost much less than the market kind and leave you more shopping dollars to spend on dairy products, cereals and other basic foods which, when added to those you can, round out the wheel of good nutrition.

When selected, prepared, packed and processed as recommended in this booklet, the fruits and vegetables you can will be rich in flavor, minerals and vitamins. Furthermore, when you can enough to last from one growing season to another, you have what you want when you want it — ready to season, heat and serve.

If you plan wisely and can right, you will have many reasons to be both proud and thankful that modern science and know-how make it possible for you to have row on row of jars filled with good tasting out-of-season foods which cost so little in time, effort and money.
Acid Foods — Foods which normally contain a fairly large amount of natural acid. Also those preserved in vinegar. Examples: Fruits, rhubarb, ripe pimientos, tomatoes, sauerkraut, pickles and relishes.

Low-Acid Foods — Foods which have very little acid in them. Examples: All vegetables except those listed above, meats, game, poultry and sea foods.

Cold or Raw Pack — To fill jars with raw food to be processed. Has nothing to do with the manner of processing.

Hot Pack — To fill jars with hot food to be processed.

Head Space — The space left at the top of a jar when filling or packing.

Processing — Cooking jars of food in a boiling-water bath, or steam pressure canner or cooker, long enough to destroy bacteria, enzymes, molds and yeasts.

Vacuum Sealing — When applied to sealing, vacuum refers to the absence of normal atmospheric (air) pressure in jars; sealing means closing air tight. When a jar is closed at room temperature, atmospheric pressure is the same inside and outside the jar. When the jar is heated everything in it expands and air is forced out, then the pressure inside the jar becomes less than that on the outside. As the jar cools everything in it shrinks, a partial vacuum forms, and atmospheric pressure of almost 15 pounds per square inch (at sea level) holds the lid down to keep the jar sealed. The red rubber sealing compound on a Ball Dome Lid, and the regular rubber ring such as used with Ideal Jars, keep air from going back into sealed jars.

A vacuum seal can also be obtained by filling a hot jar with such food as boiling jam and sealing at once.

Why Foods Keep

Bacteria, Molds and Yeasts — are low forms of plant life known to scientists as micro-organisms. These tiny organisms are everywhere — in air, water and soil. They grow fastest in warm, stale, bruised food materials, and on unclean things around the kitchen. If given the slightest chance, they grow in anything you can, and cause it to spoil. Foods also contain natural substances called enzymes, which cause changes in color, flavor and texture.

Home canned foods keep because heat destroys bacteria, molds and yeasts, and the airtight seal prevents more of the organisms from entering the jars. The molds, yeasts and bacteria, which cause spoilage of carelessly canned fruits and tomatoes, are easily destroyed by processing for a short time in a boiling-water bath. Bacteria, the trouble-makers in jars of under-processed beans, corn and other low-acid foods, can live for many hours at boiling temperature. This is why low-acid foods should be processed under steam pressure.
All persons who have made a scientific study of home canning recommend the boiling-water bath method for processing fruits and tomatoes, and the steam pressure method for processing corn, beans, peas, and all other low-acid foods.

A boiling-water bath supplies enough heat to destroy the organisms which cause spoilage in acid foods without overcooking the foods.

A steam pressure canner or cooker (they are the same) is the only kitchen utensil which supplies enough heat to kill within a reasonable time the spores of bacteria which cause flat sour, botulism and other types of spoilage in low-acid foods.

A BOILING-WATER BATH CANNER is a boiler with cover, and rack or metal basket to keep jars from touching the bottom. The canner should be deep enough for water to cover the top of jars without boiling over. A deep kettle or tin lard can (with a couple of holes punched in cover) may also be used as a boiling-water bath canner. When using a steam pressure canner as a boiling-water bath, set cover on canner, but do not fasten it down. Leave petcock or vent open.

USE BOILING-WATER BATH METHOD (as shown on pages 4, 5, 6 and 7) for processing fruits, tomatoes and other acid foods.

STEAM PRESSURE CANNERS are heavy kettles with cover, which can be clamped or locked down to make the kettle steam tight. The cover is fitted with a safety valve, a petcock or vent, and a weight or a dial pressure gage.

USE STEAM PRESSURE METHOD (as shown on pages 8 and 9) for processing beans, beets, corn, meats and all other low-acid foods.

All parts of the canner must be clean and in good working order. Pressure gauges should be checked at least once a year. Usually, the county home demonstration agent can tell the owner where to have this done.

Venting (or Exhausting). The petcock or vent must be left open when the filled canner, with cover tightly fastened, is placed over heat. The petcock should not be closed until after steam has escaped through it for a full 10 minutes. Venting removes air from the canner. If not removed, air causes cold spots and some, or all, the food may spoil from under-processing.

OPEN KETTLE is an old fashioned method of canning which may be safely used for jams, marmalades, preserves, pickles and relishes. It should not be used for fruits, juices and tomatoes, because bacteria, yeasts and molds are either not destroyed in cooking or are likely to get into the jar before it can be sealed.

When using the open kettle method of canning, boil jars, lids, caps, rubberers, to sterilize. Keep them boiling hot. Cook the food until "done" in a kettle or deep pan. Remove only one jar, at a time, from the hot water; quickly fill with boiling food and seal immediately. Do not process.

OVEN CANNING IS DANGEROUS; regardless of the brand of oven, jar, cap or lid used. Food may spoil because of under-processing. Jars, even those partly sealed when placed in the oven, may explode causing damage to both person and property.

EQUIPMENT. Although, it is possible to get along without them, you can do the work easier and quicker if you have jar lifter, funnel, ladle with lip, sieve or strainer, colander, food mill, food chopper, large measuring cups, large trays, and wire basket.

GOOD ADVICE. It is impossible for any food to be safer than the home canned. However, an error made somewhere along the canning line can cause the presence of harmful toxin in low-acid vegetables and meats. This is why such foods should be boiled for 15 minutes before they are tasted.
GOOD PLANNING —

Home canning is what you choose to make it; it can be an easy, pleasant achievement — or it can be drudgery. It is planning that makes the difference. Good planning means:

1. List the kind and amount of canned foods you will need during the months when locally grown produce is out of season.
2. Decide which style and size Ball Jar to use. All are satisfactory. However, some are not available in all localities because grocers handle those preferred by the majority of their customers. To avoid disappointment and unnecessary trips, get your jars and, if needed, extra caps and lids early in the season when grocers have ample supplies.
3. Store jars, caps, lids, and canners with other canning equipment not in daily use. Keeping these things together saves time throughout the canning season.
4. Watch garden and orchard (or market) and start canning as soon as some of the peaches, tomatoes, beans, etc., reach the most perfect stage for table use. It is much better, when possible, to put up a few jars every day or so than to give a whole day to the job.
5. Plan work so there will be no delay in steps in preparing, packing and processing. This means read the recipe, and get everything needed ready before starting to prepare the material which is to be canned.

ESTIMATE OF NUMBER OF JARS NEEDED FOR CANNING

The actual number of jars needed depends upon the size and condition of the produce, and the manner of preparing and packing it into jars. The standard weight of a bushel, lug or box is not the same in all states.

<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Apples</td>
<td>1 bu (48 lb)</td>
<td>15-20</td>
<td>2½-3 lb</td>
<td>Beans, Lima in pods</td>
<td>1 bu (32 lb)</td>
<td>6-8</td>
<td>4-5 lb</td>
</tr>
<tr>
<td>Apricots</td>
<td>1 lug or 1 box (22 lb)</td>
<td>7-11</td>
<td>2-2½ lb</td>
<td>Beans, Green or Wax</td>
<td>1 bu (30 lb)</td>
<td>15-20</td>
<td>1½-2 lb</td>
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<tr>
<td>Berries</td>
<td>24 quarts</td>
<td>12-18</td>
<td>1½-2 lb</td>
<td>Beets</td>
<td>1 bu (52 lb)</td>
<td>17-20</td>
<td>2½-3 lb</td>
</tr>
<tr>
<td>Cherries</td>
<td>1 bu (50 lb)</td>
<td>22-32</td>
<td>1½-3 lb</td>
<td>Corn, Sweet</td>
<td>1 bu (35 lb)</td>
<td>8-9</td>
<td>6-16 ears</td>
</tr>
<tr>
<td></td>
<td>1 lug (22 lb) (unpitted)</td>
<td>11-13</td>
<td></td>
<td>Okra</td>
<td>1 bu (26 lb)</td>
<td>16-18</td>
<td>1½ lb</td>
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<tr>
<td>Peaches</td>
<td>1 bu (48 lb)</td>
<td>18-24</td>
<td>2-2½ lb</td>
<td>Peas, Green</td>
<td>1 bu (30 lb)</td>
<td>6-7</td>
<td>2-2½ lb</td>
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<tr>
<td></td>
<td>1 lug (22 lb)</td>
<td>8-12</td>
<td></td>
<td>Spinach</td>
<td>1 bu (18 lb)</td>
<td>6-9</td>
<td>2-3 lb</td>
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<tr>
<td>Pears</td>
<td>1 bu (50 lb)</td>
<td>20-25</td>
<td>2-2½ lb</td>
<td>Squash, summer</td>
<td>1 bu (40 lb)</td>
<td>16-20</td>
<td>2-2½ lb</td>
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<tr>
<td></td>
<td>1 box (35 lb)</td>
<td>14-17</td>
<td></td>
<td>Sweet Potatoes</td>
<td>1 bu (55 lb)</td>
<td>18-22</td>
<td>2½-3 lb</td>
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<tr>
<td>Plums</td>
<td>1 bu (56 lb)</td>
<td>24-30</td>
<td>2-2½ lb.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 lug (24 lb)</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tomatoes</td>
<td>1 bu (53 lb)</td>
<td>18-22</td>
<td>2½-3 lb</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 lug (30 lb)</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tomatoes (Juice)</td>
<td>1 bu (53 lb)</td>
<td>12-16</td>
<td>3-3½ lb</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
HOW TO CAN

1. Check sealing shoulder of jars for nicks, chips and cracks; caps for dents.

2. Wash jars, caps, rubbers in hot soapy water. Rinse. Leave in hot water until used. (Make sirup. See page 10.)


4. Cover peaches with boiling sirup.

5. Run knife between fruit and jar to remove air bubbles. Add more sirup, if needed, to cover fruit. Wipe threads and sealing shoulder of jar.

6. Stretch wet rubber slightly; then put flat on sealing shoulder. Rubber may be put on jar either before or after filling.

IF USING BALL DOME CAPS

Check, wash, rinse, fill and close jars as shown on pages 6 and 7. Remember to remove bands and test seal about 12 hours after processing.
The cold pack method is shown below. For hot packing, cook the fruit in sirup until hot through, then pack and process 20 minutes in boiling-water bath.

Dip peaches in boiling water to loosen skins, then into cold water. Drain.

Cut peaches into halves, pit and peel. Drop fruit into salt-vinegar water (2 tablespoons each to 1 gallon water).

Stand hot jar on wood or cloth. Pack peaches, layers overlapping, cavity side down. Leave 1/2 inch head space.

Stand filled jars on rack in canner. Water should be hot; not boiling. Add more hot water, if needed, to cover jars one or more inches. Put cover on canner;

Bring water to boiling. Boil (process) pints and quarts 25 to 30 minutes. Take jars from canner. Screw caps tight. Stand jars several inches apart, and out of draft to cool.

**IF USING BALL IDEAL JARS AND RUBBERS**

Check tops of jars; be sure there are no nicks, cracks, rough spots or sharp edges.

Wash jars in hot soapy water. Rinse. Leave in hot water until used.

Use new lids. Discard rusty or warped bands. Pour boiling water over lids; leave in water while filling jars.

Cut out all the hard core; remove skins and trim off any green spots.

Cut large tomatoes into halves or quarters; leave small ones whole, and drop into hot jar. Press tomatoes together until spaces fill with juice or pack closely and cover with hot tomato juice. Leave 1/2 inch head space. Add 1 teaspoon salt to each quart. Run knife between tomatoes and jar to remove air. Wipe top and threads of jar.

IF USING BALL ZINC CAPS AND RUBBERS

Check, wash, rinse, fill and close jars as shown on pages 4 and 5. Remember to screw cap tight immediately after processing.
Select fresh, firm, red-ripe tomatoes. Tomatoes with decayed spots and cracks are unfit for canning.

Thoroughly wash, rinse and drain tomatoes.

Put tomatoes in thin cloth or wire basket. Dip into boiling water to loosen skins, then dip into cold water. Drain.

Put Dome Lid on jar. Screw band tight. Band must screw down evenly all the way around to hold red rubber sealing compound against top of jar.

Stand filled jars on rack in canner. Water should be hot; not boiling. Add more hot water, if needed, to cover jars one or more inches. Put cover on canner. Bring water to boiling.

Process pints and quarts 45 minutes. Take jars from canner. Let cool about 12 hours. Remove bands and test seal by pressing on lid. If Dome is down, the jar is sealed.

**IF USING BALL IDEAL JARS AND RUBBERS**

 HOW TO CAN

• Check tops of jars; be sure there are no nicks, cracks, rough spots or sharp edges. Wash jars in hot soapy water. Rinse. Leave in hot water until used.

Use new lids. Discard rusty or warped bands. Pour boiling water over lids; leave in water while filling jars.

Thoroughly wash freshly gathered beans. Lift them out of water; rinse and drain.

Put jars into steam pressure canner containing 2 or 3 inches of hot water, or the amount recommended by the manufacturer.

Place canner over heat. Lock cover according to the manufacturer's instructions. Leave petcock or vent open until steam escapes through opening for 10 minutes. Close petcock or vent. Let pressure rise to 10 pounds (240°F); keep it steady for 25 minutes, then remove canner from heat. Let pressure fall to zero.

IF USING BALL ZINC CAPS AND RUBBERS
Check, wash, rinse, fill and close jars as shown on pages 4 and 5. Leave 1 inch head space for corn and other starchy vegetables.
When using Dome Caps for canning corn and other starchy vegetables, leave 1 inch head space.

Trim off ends, remove any strings, and cut or break beans after washing. Cover beans with boiling water. Boil 3 minutes.

Stand hot jar on wood or cloth. Pack hot beans into jar. Leave ¼ inch head space. Add 1 teaspoon salt, if wanted, and boiling water to cover.

Wipe top and threads of jar. Put lid on jar. Screw band tight. Band must screw down evenly all the way around to hold red rubber sealing compound against top of jar.

Let canner stand 2 minutes, then slowly open petcock. Remove cover. Take jars from canner. Do not tighten bands. Stand jars several inches apart, and out of draft to cool.

Let jars cool about 12 hours, then remove bands. Bands are not needed after jars are sealed. (Lids are used once only — bands many times.)

Test seal by pressing center of lid. If Dome is down, the jar is sealed. Store jars in a dry, dark, reasonably cool place.

If using Ball Ideal Jars and Rubbers

Recipes

SIRUPS FOR CANNING

Use the one preferred. Measure sugar and liquid (either water or fruit juice) into a sauce pan. Cook until sugar dissolves. Keep sirup hot until needed, but do not let it boil down. 1 to 1 1/2 cups of sirup are needed for each quart of fruit.

Light Sirup..............1 cup sugar to 3 cups liquid.
Medium Sirup.............1 cup sugar to 2 cups liquid.
Heavy Sirup..............2 cups sugar to 2 cups liquid.
Extra Heavy Sirup........2 cups sugar to 1 cup liquid.
Medium with Corn Syrup...1 1/2 cups sugar, 1 cup light corn syrup to 3 cups liquid.
Medium with Honey......1 cup sugar, 1 cup honey to 4 cups liquid.

APPLESAUCE

Wash and drain fresh, sound apples. Remove stem and blossom ends. Slice apples. Cook until soft. (May need a little water to prevent sticking.) Press apples through sieve or food mill to remove skins and seed. Sweeten sauce to taste. Reheat to boiling. Pour, boiling hot, into hot Ball Jars. Stir to remove air bubbles. Process 20 minutes in boiling-water bath.

Note: Duchess and other apples which “sauce” without straining should be pared and cored before cooking.

APRICOTS—COLD PACK

Make medium or light sirup. Wash, drain and cut fruit into halves (discard pits). Pack into hot Ball Jars, as shown in canning peaches, pages 4 and 5. Heat sirup to boiling and pour over fruit. Process 22 minutes in boiling-water bath.

BERRIES

Cold Pack . . . . Use for Red Raspberries and others, except Strawberries, which do not hold shape well. Make light or medium sirup. Wash and drain berries. Pour about 1/2 cup hot sirup into hot Ball Jar. Fill jar with berries. Shake jar to pack berries closely without crushing. Add more hot sirup, if needed, to cover berries. Process 20 minutes in boiling-water bath.

Hot Pack . . . . Use for Blackberries and others that hold shape well. Wash, drain and measure firm-ripe berries. Put into kettle and add 1/4 to 1/2 cup sugar for each quart berries. Let stand 2 hours. Cook until sugar dissolves and berries are boiling hot. Pour, hot, into hot Ball Jars. Add boiling water if there is not enough sirup to cover berries. Process 15 minutes in boiling-water bath.

Without Sugar—Use in Pies . . . . Wash and drain fresh, firm-ripe berries. Add hot water to barely cover bottom of pan. Put berries in pan. Simmer until hot through. Pack, hot, into hot Ball Jars. Add boiling water if there is not enough juice to cover berries. Process 15 minutes in boiling-water bath.

PEACH CONSERVE

7 cups sliced peaches
1 orange
5 cups sugar
1/2 cup raisins
1/2 teaspoon ginger
1/2 teaspoon salt
Mix peaches, juice and grated peel of orange with other ingredients. Cook until thick. Pour boiling hot into hot ball jar; seal at once.

PEARS

Pears should be removed from the tree when fully mature and stored in a cool place (60-65°F.) until ripe, but not soft. Bartlett pears are considered best for canning, but Keifers and similar varieties are satisfactory, if properly ripened, and then cooked until almost tender in plain water before sugar is added.

CHILI SAUCE

1 gallon tomatoes
3 tablespoons salt
2 cups chopped onions
1 tablespoon mustard seed
2 cups chopped red sweet peppers
1 tablespoon celery seed
1 pod hot pepper
3 tablespoons mixed spices
1 cup sugar
2 1/2 cups vinegar

Wash and drain vegetables. Scald, core, peel and chop red-ripe tomatoes. Peel onions; remove seed from peppers; chop and measure. Mix all ingredients except spices and vinegar. Boil 45 minutes. Add spices (tied in bag). Boil until very thick, then add vinegar and boil until as thick as wanted. (Taste; add more seasoning and sugar if wanted.) Pour, boiling hot, into hot Ball Jars; seal at once.

Note: If preferred, 1/2 of the sweet peppers may be green. Tomato Ketchup—Use recipe for Chili Sauce except; do not peel tomatoes; chop and cook all vegetables until soft, then press through fine sieve and boil until thick before adding other ingredients.

CORN

Use strictly fresh corn. Can as quickly as possible after gathering. Handle in small quantities. Lose no time between preparing, packing and processing.

Cream Style . . . . Cut tip ends from kernels. Scrape out pulp. Measure. Add 1 teaspoon salt and 2 1/2 cups boiling water to each quart of corn. Boil 3 minutes. Pour, boiling pints hot, into hot Ball Jars. Process pints 55 minutes, quarts 75 minutes, at 10 pounds pressure.

Whole Kernel . . . . Cut corn from cob. Do not scrape. Measure. Add 1 teaspoon salt and 2 cups boiling water to each quart of corn. Boil 3 minutes. Pour, boiling pints hot, into hot Ball Jars. Process pints 55 minutes, quarts 75 minutes, at 10 pounds pressure.

PEAS—GREEN OR “ENGLISH”

Wash, drain and shell peas. Rinse. Boil small peas 3 minutes; larger ones 5 minutes. Pour, hot, into hot Ball Jars. Add 1 teaspoon salt to each quart. Add boiling water, if needed, to cover. Process pints 35 minutes, quarts 40 minutes, at 10 pounds pressure. If peas are extra large process 10 minutes longer.

TOMATO JUICE

Wash and drain firm, fresh, red-ripe tomatoes. (One small decayed spot can cause the whole batch to spoil.) Remove core and blossom ends. Leave tomatoes whole and bake in oven; or cut into small pieces and cook slowly (simmer) until soft. Press through fine sieve or food mill. Reheat juice until it is almost, but not quite, boiling. Pour, hot, into hot Ball Jars. Process 15 minutes in boiling-water bath.

Note: Salt, also sugar and spices, to taste, may be added to the juice when it is reheated for canning.

VEGETABLE SOUP MIXTURE

5 quarts chopped tomatoes
2 quarts sliced okra or
2 quarts green lima beans
2 quarts corn
2 tablespoons sugar
2 tablespoons salt

Wash and drain vegetables. Chop and measure red-ripe tomatoes. Cook until soft. While tomatoes are cooking, slice okra (or shell beans), cut corn from cob. Measure. Press tomatoes through sieve. Mix tomatoes, vegetables, sugar and salt. Boil until thick. Pour, hot, into hot Ball Jars. Process pints 55 minutes, quarts 65 minutes, at 10 pounds pressure.

Note: Any mixture of vegetables liked may be canned for soup. Prepare vegetables as for cooking. Mix. Add water or meat broth to cover. Boil 5 minutes. Pour, hot, into hot Ball Jars. Process for the time needed for vegetable in soup requiring the longest processing (see Time Table, page 12).
BOILING-WATER BATH PROCESSING . . . . Half pint, pint and quart jars are processed the same length of time. If using half gallon jars, increase time 15 minutes for fruits, 25 minutes for tomatoes. Start counting time when water in canner reaches a fast boil.

STEAM PRESSURE PROCESSING . . . . Vent canner 10 minutes. Process fruits 10 minutes, tomatoes 15 minutes, at 5 pounds pressure.

ALTITUDE MAKES A DIFFERENCE IN TIMING . . . . The time table below is for processing at sea level to 1,000 feet above. When time given is 20 minutes or less, add 1 minute for each 1,000 feet above sea level. If time is more than 20 minutes, add 2 minutes for each extra 1,000 feet. If using steam pressure, see below for change in altitude.

<table>
<thead>
<tr>
<th>Process at Boiling</th>
<th>½ Pints, Pints and Quarts</th>
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<tr>
<td>Apples</td>
<td>20 Min.</td>
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<tr>
<td>Apricots</td>
<td>20 Min.</td>
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<tr>
<td>Berries</td>
<td>15 to 20 Min.</td>
</tr>
<tr>
<td>Cherries (cold pack)</td>
<td>20 Min.</td>
</tr>
<tr>
<td>Figs</td>
<td>90 Min.</td>
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<tr>
<td>Grapes (cold pack)</td>
<td>20 Min.</td>
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<tr>
<td>Peaches (cold pack)</td>
<td>25 to 30 Min.</td>
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<tr>
<td>Pears</td>
<td>20 to 25 Min.</td>
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<tr>
<td>Plums and Fresh Prunes</td>
<td>15 Min.</td>
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<tr>
<td>Rhubarb</td>
<td>10 Min.</td>
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<tr>
<td>Tomatoes</td>
<td>45 Min.</td>
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ALTITUDE MAKES A DIFFERENCE IN TIMING . . . . The times given below are for processing at 240°F, at sea level to 2,000 feet above. If the altitude is 2,000 to 3,000 feet, use 11½ pounds steam pressure; 3,000 to 4,000 feet, use 12 pounds; 4,000 to 5,000 feet, use 12½ pounds; 5,000 to 6,000 feet, use 13 pounds; 6,000 to 7,000 feet, use 13½ pounds.

<table>
<thead>
<tr>
<th>Process at 240°F. (10 pounds steam pressure)</th>
<th>Pints and Half Pints</th>
<th>Quarts</th>
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<tr>
<td>Asparagus</td>
<td>25 Min.</td>
<td>40 Min.</td>
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<tr>
<td>Beans, Butter &amp; Lima</td>
<td>35 Min.</td>
<td>55 Min.</td>
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<tr>
<td>Beans, Green, snap &amp; wax</td>
<td>20 Min.</td>
<td>25 Min.</td>
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<tr>
<td>Beets</td>
<td>35 Min.</td>
<td>45 Min.</td>
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<tr>
<td>Carrots</td>
<td>20 Min.</td>
<td>25 Min.</td>
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<td>Corn, whole kernel</td>
<td>55 Min.</td>
<td>85 Min.</td>
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<td>Greens, all kinds</td>
<td>50 Min.</td>
<td>70 Min.</td>
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<tr>
<td>Okra</td>
<td>30 Min.</td>
<td>40 Min.</td>
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<tr>
<td>Peas, Blackeye &amp; field</td>
<td>35 Min.</td>
<td>40 Min.</td>
</tr>
<tr>
<td>Peas, Green &quot;English&quot;</td>
<td>35 Min.</td>
<td>40 Min.</td>
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<tr>
<td>Potatoes, Sweet (wet pack)</td>
<td>55 Min.</td>
<td>90 Min.</td>
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<tr>
<td>Potatoes, New White &quot;Irish&quot;</td>
<td>30 Min.</td>
<td>40 Min.</td>
</tr>
<tr>
<td>Pumpkin &amp; Winter Squash</td>
<td>60 Min.</td>
<td>80 Min.</td>
</tr>
<tr>
<td>Squash, summer</td>
<td>30 Min.</td>
<td>40 Min.</td>
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</table>

PROCESSING TIMES FOR fruits and acid vegetables

PROCESSING TIMES FOR low-acid vegetables
Freezing, a good way to preserve many of the perishable foods, prevents or retards the growth of bacteria, molds and yeasts. It also delays the activity of enzymes.

FREEZE THE BEST!
Fruits — Fully ripe, but not over-ripe, fruits of fine flavor and even color are necessary for a good frozen product.
Vegetables — Only garden-fresh vegetables, of uniform size and color, are satisfactory for freezing. They should be frozen when they first reach their most perfect stage for cooking.

USE GOOD CONTAINERS
Food is inferior, often unfit to use, when frozen in leaky containers, or in those made of material which absorb moisture and odor. The container should be air-tight, moisture, odor and vapor-proof.

BALL “ALL-PURPOSE” FREEZER JARS meet all the requirements of a good container for freezing fruits, juices, soups, vegetables, and anything else suitable for freezing in 16 and 22 ounce packages. These jars are made of thick high silica glass, annealed to withstand the coldest, and also the hottest, temperatures used in freezing and canning. (If using them for canning, follow instructions given on pages 6, 7, 8 and 9).

Ball Freezer Jars are wider at the top than at the bottom and have no shoulders. This scientific design prevents breakage when food is frozen, and also permits removal of food before it is thawed.

TO USE FREEZER JARS — See pages 14 and 15

TO REMOVE FROZEN FOOD FROM FREEZER JARS
Let cool water run on cap 2 or 3 minutes — just until surface of food touching the glass thaws, then unscrew band, remove lid, invert jar and let food slide out into pan.

SIRUPS FOR FREEZING FRUITS
Make sirup by boiling sugar with water until sugar dissolves. The sugar may be dissolved in cold water, but the sirup is somewhat clearer if cooked. Sirup must be ice cold when used. A medium sirup is usually preferred for most fruits; however, a heavier one may be used.

Medium (60 percent) 3 1/4 cups sugar to 4 cups water
Medium Heavy (50 percent) 4 3/4 cups sugar to 4 cups water
Heavy (60 percent) 7 cups sugar to 4 cups water
(Follow the manufacturer’s instructions when using Corn Syrup.)

TO PREVENT BROWNING
Apricots, peaches and other light fruits, usually retain color when prepared and placed directly in sirup as shown in freezing strawberries (pages 14 and 15). However, ascorbic acid and other anti-browning agents may be used. Unless the recipe calls for a different amount, use 1/2 teaspoon ascorbic acid for each quart of sirup. Dissolve the acid in a little cold water and add to sirup just before using. For each quart of apricots, nectarines, peaches or light cherries to be mixed with dry sugar, dissolve 1/4 teaspoon ascorbic acid in 2 tablespoons cold water. Sprinkle over fruit before mixing with sugar. Use ascorbic and citric acid mixtures according to the manufacturer’s instructions.

TO FREEZE FRUITS
Wash carefully in cold water. Drain. Prepare as for table use, and pack as shown on pages 14 and 15.

TO FREEZE VEGETABLES
Wash, drain and prepare vegetables as for cooking. Scald about 1 quart at a time in large kettle of boiling water (see page 17 for time). Quickly chill the hot vegetable in cold water. Drain and pack into Ball Freezer Jars. Put Dome Lid on jar; screw band tight and freeze as quickly as possible.
HOW TO FREEZE

In Sirup
Make sirup and place in refrigerator several hours before preparing fruit for freezing.

1. Use only fresh, firm, ripe fruit of fine flavor. Small to medium sized strawberries are best for freezing whole.

2. Wash berries, a few at a time, in ice cold water. Lift berries from water. Drain.

3. Pour about 1/2 cup ice cold sirup into Freezer Jar. Berries do not require ascorbic acid. If freezing apricots, peaches or sweet cherries, dissolve the acid in the sirup just before using.

In Dry Sugar

1. Select fresh, firm, ripe fruit of fine flavor and rich red color.

2. Wash berries, a few at a time, in ice cold water. Lift berries from water. Drain.

3. Hull (cap) and slice berries as wanted, then measure.

Note: Ball Freezer Jars made by Ball Brothers Company of California and sold on the West Coast are fitted with one piece caps. Use them just as you do when fitted with Ball Dome Caps.
All berries, apricots, cherries and peaches are packed in the same manner. After washing and draining, cherries and peaches are pitted; peaches peeled and halved, quartered or sliced for freezing.

1. Remove hull (cap) and drop berry into jar. It is better to cut large or tart berries into halves before dropping into sirup.

2. Fill jar to about 1/2 inch of top; add more sirup, if needed, to cover berries. Place piece of crumpled cellophane or parchment paper on top of fruit to hold it under the sirup.

3. Put Dome Lids on jar and screw band tight. Use china marking pencil or wax crayon to write date on lid. Freeze fruit as quickly as possible.

4. Use 1/2 to 1 cup sugar to each 4 cups berries. Turn fruit over and over until every piece is coated with sugar.

5. Put berries into jar. Shake jar to pack fruit as closely as possible without crushing.

6. Put Dome Lid on jar and screw band tight. Write date on lid. Freeze fruit as quickly as possible.
# To Freeze Fruits and Vegetables in Ball Freezer Jars

- **Thoroughly chill in cold water after scalding. In high altitudes, increase scalding time 1/2 to 1 minute.**

## Fruits

<table>
<thead>
<tr>
<th>FRUITS</th>
<th>TO PREPARE</th>
<th>SCALD</th>
<th>TO SWEETEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apples</td>
<td>Wash, peel, core, slice. Drop into cold salt water (2 tablespoons salt to gallon water). Drain</td>
<td>2 to 3 min.</td>
<td>40 percent sirup; or 4 to 5 parts fruit to 1 of dry sugar; or without sugar</td>
</tr>
<tr>
<td>Applesauce</td>
<td>Make in usual way. Chill</td>
<td></td>
<td>To suit taste</td>
</tr>
<tr>
<td>Apricots</td>
<td>Wash, halve, pit</td>
<td>1 min. (if wanted peeled)</td>
<td>40 to 50 percent sirup</td>
</tr>
<tr>
<td>Blackberries</td>
<td>Wash, sort, drain</td>
<td>Do not scald</td>
<td>40 to 50 percent sirup; or 4 to 6 parts berries to 1 of dry sugar</td>
</tr>
<tr>
<td>Black Raspberries</td>
<td>Wash, drain</td>
<td>1 min. to tenderize skins</td>
<td>40 percent sirup; or without sugar</td>
</tr>
<tr>
<td>Boysenberries</td>
<td>Wash, drain, drain, or leave whole</td>
<td>Do not scald</td>
<td>40 to 60 percent sirup; or 4 to 6 parts fruit to 1 of dry sugar</td>
</tr>
<tr>
<td>Loganberries</td>
<td>Wash, drain, or leave whole</td>
<td>Do not scald</td>
<td>50 percent sirup; or without sugar</td>
</tr>
<tr>
<td>Blueberries</td>
<td>Wash, drain</td>
<td>1 1/2 min.</td>
<td>40 percent sirup</td>
</tr>
<tr>
<td>Cherries</td>
<td>Wash, drain, pit, or leave whole</td>
<td>Do not scald</td>
<td>40 to 50 percent sirup; or 4 to 5 parts fruit to 1 of dry sugar</td>
</tr>
<tr>
<td>Cranberries</td>
<td>Wash, stem, drain</td>
<td>Do not scald</td>
<td>40 to 50 percent sirup</td>
</tr>
<tr>
<td>Figs</td>
<td>Wash, sort, remove stems</td>
<td>Do not scald</td>
<td>40 to 50 percent sirup</td>
</tr>
<tr>
<td>Peaches and Nectarines</td>
<td>Wash, scald 1/2 to 1 minute. Chill in cold water. Drain, halve, pit, skin and drop into jar</td>
<td>3 min.</td>
<td>40 to 50 percent sirup; or 4 to 5 parts fruit to 1 of dry sugar</td>
</tr>
<tr>
<td>Plums and Prunes</td>
<td>Wash, pit, halve</td>
<td>Do not scald</td>
<td>40 to 50 percent sirup</td>
</tr>
<tr>
<td>Raspberries, Red, Purple or Yellow</td>
<td>Rinse in iced water. Drain</td>
<td>Do not scald</td>
<td>40 to 50 percent sirup</td>
</tr>
<tr>
<td>Rhubarb</td>
<td>Wash and cut into one-inch pieces</td>
<td>1 1/2 min.</td>
<td>40 to 50 percent sirup</td>
</tr>
<tr>
<td>Strawberries</td>
<td>Rinse in cold water, hull, slice or leave whole</td>
<td>Do not scald</td>
<td>40 to 50 percent sirup; or 4 parts fruit to 1 of dry sugar</td>
</tr>
</tbody>
</table>

## Vegetables

<table>
<thead>
<tr>
<th>VEGETABLES</th>
<th>TO PREPARE</th>
<th>SCALD*</th>
<th>WITHOUT LIQUID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asparagus</td>
<td>Wash, trim. Use tender parts only</td>
<td>3 min.</td>
<td>Pack without liquid</td>
</tr>
<tr>
<td>Beans—Lima</td>
<td>Shell, wash</td>
<td>3 min.</td>
<td>Pack without liquid</td>
</tr>
<tr>
<td>Beans—Green, Snap, Wax</td>
<td>Wash. Cut as wanted</td>
<td>3 min.</td>
<td>Pack without liquid</td>
</tr>
<tr>
<td>Beans—Soy</td>
<td>Scald pods. Shell</td>
<td>5 min.</td>
<td>Pack without liquid</td>
</tr>
<tr>
<td>Broccoli and Cauliflower</td>
<td>Discard tough stems, divide head in small sections, wash</td>
<td>3 to 4 min.</td>
<td>Pack without liquid</td>
</tr>
<tr>
<td>Brussels Sprouts</td>
<td>Discard tough stems and leaves</td>
<td>3 to 4 min.</td>
<td>Pack without liquid</td>
</tr>
<tr>
<td>Peas—Green, Blackeye, etc.</td>
<td>Shell, wash</td>
<td>2 to 3 min.</td>
<td>Pack without liquid</td>
</tr>
<tr>
<td>Spinach and other Greens</td>
<td>Wash, cut and discard thick stems</td>
<td>2 to 3 min.</td>
<td>Pack without liquid</td>
</tr>
<tr>
<td>Sweet Corn</td>
<td>Boil 3 to 4 min. Dip in cold water. Cut from cob. Rinse in cold water. Drain</td>
<td>See column 2</td>
<td>Pack without liquid</td>
</tr>
</tbody>
</table>
The editor of the first Ball Blue Book promised that new recipes and information would be included in future editions to "improve and enlarge its scope of usefulness." Because of that promise, which has been kept for over forty years, the Blue Book is known, used and treasured throughout the home canning world.

The Blue Book has been revised many, many times. The current edition (all previous editions are out-of-date) contains the most up-to-date methods and is chockfull of easy-to-follow recipes for canning fruits, juices, fish, meats, soups, sandwich spreads and vegetables. And for making butters, conserves, jams, jellies, marmalades, pickles, preserves and relishes. All these and Freezing too!

**HOW TO GET A BALL BLUE BOOK OF HOME CANNING AND FREEZING RECIPES AND METHODS**

If you live in the U. S. A., just mail 25 cents, in coin, please, to Dept. CDSM, Ball Brothers Company, Muncie, Indiana.

*Note:* The price of a Blue Book outside the U. S. A. is 30 cents in International Money Order.