Easy Guide to Tasty, Thrifty Home Canning and Freezing
Home canning practices are constantly being tested, improved, simplified ... to perfect the money-saving, self-satisfying art of processing foods in the home. The popular Ball Blue Book, in print since 1909, therefore is revised from time to time to reflect these improvements. This new edition combines technical wisdom and practical experience to give you a guide to easy, rewarding canning and freezing.

Methods and techniques described in the Ball Blue Book are believed by canning authorities to be the safest, most effective ways of food processing. The recipes have been painstakingly tested by scientists and home economists, not just compiled, to make sure you get maximum quality, nutrition and flavor ... with the least waste, the least cost.

For greatest success, we recommend that you read the “how-to” information contained in the front part of this book before you start your canning preparation; there are many hints and suggestions that can help you with your canning ... make the undertaking a rewarding adventure.

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The Easy Way to Can

Home canning can be a highly rewarding experience . . . economically, creatively and personally satisfying. When the jars of fresh fruits and vegetables you have "put-up" during the season are all lined up on the shelf you have meal after meal all ready to heat, or chill, and serve. The foods are there, at your fingertips, to feed your family and friends and to give as gifts to very special people. For utmost canning efficiency and enjoyment, here are some helpful tips.

1. Start planning several weeks in advance of the canning season. Make a list of the kinds and amounts of canned foods you are going to need and want in the months ahead. (See page 7 for planning help.) Instead of processing large amounts of one or two fruits and vegetables, can a variety of your family’s favorite canned foods in smaller amounts.

2. Decide the sizes and types of jars you are going to need. (See pages 8, 9 for guidance.) Any Ball jar does the job to perfection, but grocers seem to stock the ones preferred by most of their customers. Pints are best when canning for two or three persons. They are wonderful, too, for jams and relishes when a family is large.

3. Buy jars and extra fittings at a time when grocers usually have ample supplies. Later in the season you may be disappointed when you are unable to locate your favorite size Ball jar or the fittings you need.

4. Check your steam-pressure and water-bath canners to be sure they are in perfect condition.
5. Examine your supply of jars, caps, lids and rubber rings. Discard the unusable ones. Store the perfect ones with all other canning supplies. On canning days everything is right at hand and you don’t have to search for that mislaid box of caps you purchased.

6. It’s more enjoyable if you plan to process a few jars every morning for a number of days rather than devote a whole day to canning. Watch the garden and the orchard and start canning as soon as the peaches, tomatoes or beans, etc., reach the most perfect stage for table use. If you purchase produce at the market, sort it for ripeness. Spread any underripe fruits and vegetables on trays or on a table to finish ripening. Immediately can and process all that is ripe.

7. There are no safe short cuts in canning. Avoid all “trick” methods such as “blanket,” “aspirin,” “cold water,” “vinegar-sugar-salt,” “canning powders,” etc.

8. Before preparing fruits and vegetables:

(a) Read the recipe and check the manufacturer’s instructions for filling and sealing the jar. Taking for granted that all home canning caps are alike and are used exactly the same way is a common cause of sealing failure.

(b) Set out all equipment and clean cloths needed. Put everything not needed out of the way.

(c) If canning fruit or tomatoes, pour a little water in the canner and set it over the heat, then add more water to fill canner about half full. (You may need to add more hot water after jars have been put in the canner.) Place cover on canner.

(d) Wash jars, caps, lids, etc., and rinse well. Jars should be clean and hot when filled. They do not need to be sterilized if they are to be processed in a water-bath canner or a steam-pressure canner. However, if the jar is not processed, it should be sterilized (boiled for 10 minutes).

(e) If you are canning fruit, measure sugar and water for sirup into pan and heat. If recipe calls for it, prepare vinegar-salt water.

9. Wash, drain and prepare only enough produce for a canner load.

10. Process by the recommended method and for the correct amount of time for the specific food being canned.

11. Set jars upright, far apart and out of a draft, to cool.

12. Remove band about 12 hours after canning. If dome (center of lid) is down, or stays down when pressed, jar is properly sealed.

13. Store the jars—without bands—in a dark, cool, dry area.

14. Home canned foods will keep for many years. Some foods hold color, flavor, texture and food value longer than others, but, whether the food is canned at home or in a factory, natural chemical changes are usually noticeable within a year. The cooler the storage space, the longer the canned food will retain its freshly cooked color and flavor.
Except for a steam-pressure canner, most kitchens are already equipped with the utensils actually needed for canning. A jar lifter, a funnel, a ladle with a lip, a sieve or strainer, a colander, a food mill, large measuring cups, large trays and a wire basket are all inexpensive items which make canning more pleasurable. Convenient to have are a food chopper, a household scale and a blender. They are more expensive but they do add to the ease of canning.

A **steam-pressure canner** is a heavy kettle with a cover which can be clamped or locked down to make the kettle steamtight. The cover is fitted with a safety valve, a petcock (vent) and a pressure gauge. All parts of the canner must be clean and in good working order. The pressure gauge should be checked at least once a year; your county home demonstration agent usually can tell you where it can be tested.

A **water-bath canner** is a large kettle with a cover and a rack or metal basket to keep the jars from resting directly on the bottom of the kettle. The canner needs to be deep enough for water to cover the tops of the jars one or two inches without boiling over. The steam-pressure canner may be used as a water-bath canner. In this case, place the cover on the canner but do not fasten it down; leave the vent wide open.
Methods

Steam-Pressure Method

Steam-pressure method is a way of processing foods under pressure at a temperature of 240°F. (10 pounds pressure at sea level to 2,000 feet above). This method is recommended for processing beans, beets, corn, meats and all other low-acid foods. A steam-pressure canner, or cooker, is the only kitchen utensil which supplies enough heat to destroy the spores of bacteria which cause flat-sour, botulism and some other types of spoilage.

Water-Bath Method

Water-bath method is a way of processing foods at a temperature of 212° F. This method is recommended for processing fruits, tomatoes and other acid foods. Enough heat is supplied by the boiling water to destroy the bacteria, enzymes, molds and yeasts which cause spoilage in acid foods. In warm climates, or if storage conditions are poor, butters, conserves, jams and preserves should be processed at simmering (180°–185°F.) for 10 to 20 minutes in a water-bath canner.

Open-Kettle Method

Open-kettle method is recommended only for jams, jellies, conserves, marmalades, preserves, relishes and some pickles. These food products may be canned satisfactorily by the open-kettle method for they contain a large amount of sugar, or vinegar, which helps preserve them. All other food products need and must have a processing period to destroy microorganisms which cause foods to spoil. In the open-kettle method the food is cooked in an uncovered kettle and poured boiling hot into sterilized hot jars. Each jar is quickly sealed before another one is filled.

Warnings

Oven canning is dangerous, regardless of the brand of oven, jar, cap or lid used. Jars—even those partly sealed—may explode when placed in the oven, causing damage to both person and property.

Cold "sealing," or filling jars with cold pickles or preserves which are not to be processed, is not a reliable way to preserve food. Heat is necessary to seal the jars. Pickles (both pickles and liquid) and preserves which are not packed boiling hot and quickly sealed should be processed in a water-bath canner to prevent them from spoiling.

Persons who use unreliable canning methods may have "good luck" for years, then comes a time when everything spoils. This is because heat-resistant bacteria are not always present. When these spoilage microorganisms are absent, underprocessed foods may keep; if they are present, underprocessed foods spoil.
The actual number of jars needed in canning 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>
<th>RAW PRODUCE</th>
<th>MEASURE AND WEIGHT</th>
<th>APPROXIMATE NUMBER QUART JARS NEEDED</th>
<th>APPROXIMATE AMOUNT NEEDED FOR 1 QUART JAR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FRUITS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apples</td>
<td>1 bu. (48 lbs.)</td>
<td>16-20</td>
<td>2½ to 3 lbs.</td>
</tr>
<tr>
<td>Applesauce</td>
<td>1 bu. (48 lbs.)</td>
<td>15-18</td>
<td>2½ to 3½ lbs.</td>
</tr>
<tr>
<td>Apricots</td>
<td>1 lug or 1 box (22 lbs.)</td>
<td>7-11</td>
<td>2 to 2½ lbs.</td>
</tr>
<tr>
<td>Berries</td>
<td>24 quart crate</td>
<td>12-18</td>
<td>1½ to 3 lbs.</td>
</tr>
<tr>
<td>Cherries</td>
<td>1 bu. (56 lbs.)</td>
<td>22-32 (unpitted)</td>
<td>2 to 2½ lbs.</td>
</tr>
<tr>
<td></td>
<td>1 lug (22 lbs.)</td>
<td>9-11 (unpitted)</td>
<td>2 to 2½ lbs.</td>
</tr>
<tr>
<td>Peaches</td>
<td>1 bu. (48 lbs.)</td>
<td>18-24</td>
<td>2 to 3 lbs.</td>
</tr>
<tr>
<td></td>
<td>1 lug (22 lbs.)</td>
<td>8-12</td>
<td>2 to 3 lbs.</td>
</tr>
<tr>
<td>Pears</td>
<td>1 bu. (50 lbs.)</td>
<td>20-25</td>
<td>2 to 3 lbs.</td>
</tr>
<tr>
<td></td>
<td>1 box (35 lbs.)</td>
<td>14-17</td>
<td>2 to 3 lbs.</td>
</tr>
<tr>
<td>Plums</td>
<td>1 bu. (56 lbs.)</td>
<td>24-30</td>
<td>1½ to 2½ lbs.</td>
</tr>
<tr>
<td></td>
<td>1 lug (24 lbs.)</td>
<td>12</td>
<td>1½ to 2½ lbs.</td>
</tr>
<tr>
<td>Tomatoes</td>
<td>1 bu. (53 lbs.)</td>
<td>15-20</td>
<td>2½ to 3½ lbs.</td>
</tr>
<tr>
<td></td>
<td>1 lug (30 lbs.)</td>
<td>10</td>
<td>3 to 3½ lbs.</td>
</tr>
<tr>
<td>Tomatoes (for juice)</td>
<td>1 bu. (53 lbs.)</td>
<td>12-16</td>
<td></td>
</tr>
<tr>
<td><strong>VEGETABLES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beans, Lima (in pods)</td>
<td>1 bu. (32 lbs.)</td>
<td>6-10</td>
<td>3 to 5 lbs.</td>
</tr>
<tr>
<td>Beans, Green or Wax</td>
<td>1 bu. (30 lbs.)</td>
<td>12-20</td>
<td>1½ to 2½ lbs.</td>
</tr>
<tr>
<td>Beets (without tops)</td>
<td>1 bu. (52 lbs.)</td>
<td>15-24</td>
<td>2 to 3½ lbs.</td>
</tr>
<tr>
<td>Carrots (without tops)</td>
<td>1 bu. (50 lbs.)</td>
<td>16-25</td>
<td>2 to 3 lbs.</td>
</tr>
<tr>
<td>Corn, Sweet (in husks)</td>
<td>1 bu. (35 lbs.)</td>
<td>6-10 (whole-kernel)</td>
<td>3 to 6 lbs.</td>
</tr>
<tr>
<td>Okra</td>
<td>1 bu. (26 lbs.)</td>
<td>16-18</td>
<td>1½ lbs.</td>
</tr>
<tr>
<td>Peas, Green (in pods)</td>
<td>1 bu. (30 lbs.)</td>
<td>5-10</td>
<td>3 to 6 lbs.</td>
</tr>
<tr>
<td>Spinach and other greens</td>
<td>1 bu. (18 lbs.)</td>
<td>3-8</td>
<td>2 to 6 lbs.</td>
</tr>
<tr>
<td>Squash, Summer</td>
<td>1 bu. (40 lbs.)</td>
<td>10-20</td>
<td>2 to 4 lbs.</td>
</tr>
<tr>
<td>Sweet Potatoes</td>
<td>1 bu. (50 lbs.)</td>
<td>16-25</td>
<td>2 to 3 lbs.</td>
</tr>
<tr>
<td><strong>MEATS—POULTRY</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steer (prime quality)</td>
<td>800 lbs.</td>
<td>175-200</td>
<td></td>
</tr>
<tr>
<td>Hog</td>
<td>300 lbs.</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Chicken (with bone)</td>
<td>3-4 lbs.</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
Food Planning Guide

This guide is based on the United States Department of Agriculture’s Daily Food Guide. Only foods that may be canned are listed. Knowing that few families serve canned meat at all meals, we have allowed for 4 servings of canned meat a week; in addition 10 other servings of meat, poultry, sea food or eggs are needed weekly. Adjust this guide to your family’s needs and appetites. Increase amounts if you often have guests for meals and if you give gifts of food. Plan to can for one year’s food supply. Next year fresh produce will be available in season at low cost.

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>NUMBER TIMES SERVED</th>
<th>APPROXIMATE SIZE SERVING</th>
<th>AMOUNT NEEDED ONE PERSON</th>
<th>AMOUNT NEEDED FAMILY OF 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>CITRUS FRUIT AND TOMATOES (Includes juices)</td>
<td>7 per week—36 weeks</td>
<td>1 cup</td>
<td>63 quarts</td>
<td>252 quarts</td>
</tr>
<tr>
<td>DARK GREEN AND YELLOW VEGETABLES</td>
<td>4 per week—36 weeks</td>
<td>½ cup</td>
<td>18 quarts</td>
<td>72 quarts</td>
</tr>
<tr>
<td>OTHER FRUITS AND VEGETABLES</td>
<td>17 per week—36 weeks</td>
<td>½ cup</td>
<td>76 quarts</td>
<td>304 quarts</td>
</tr>
<tr>
<td>MEATS, POULTRY, SEA FOODS</td>
<td>4 per week—36 weeks</td>
<td>½ cup (2-3 ounces)</td>
<td>18 quarts or 36 pints</td>
<td>72 quarts or 144 pints</td>
</tr>
<tr>
<td>SOUPS</td>
<td>2 per week—36 weeks</td>
<td>1 cup</td>
<td>18 quarts</td>
<td>72 quarts</td>
</tr>
<tr>
<td>JAMS, JELLIES, PRESERVES</td>
<td>6 per week—52 weeks</td>
<td>2 tablespoons</td>
<td>40 half-pints</td>
<td>160 half-pints</td>
</tr>
<tr>
<td>RELISHES</td>
<td>3 per week—52 weeks</td>
<td>1 tablespoon</td>
<td>5 pints</td>
<td>20 pints</td>
</tr>
<tr>
<td>PICKLES, VEGETABLE</td>
<td>2 per week—52 weeks</td>
<td>13 pints</td>
<td>52 pints</td>
<td></td>
</tr>
<tr>
<td>PICKLES, FRUIT</td>
<td>2 per week—52 weeks</td>
<td>13 quarts</td>
<td>52 quarts</td>
<td></td>
</tr>
</tbody>
</table>

Altitude Chart

The processing times given in this book are for foods canned at altitudes less than 1,000 feet above sea level, when using the water-bath canner. When using the steam-pressure canner, the pressure given is for altitudes less than 2,000 feet above sea level. If you live in an area of a higher altitude, it is necessary to make the following adjustment in time or pressure.

<table>
<thead>
<tr>
<th>WATER-BATH CANNER</th>
<th>STEAM-PRESSURE CANNER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Altitude</td>
<td>20 Minutes or Less</td>
</tr>
<tr>
<td>1,000 feet</td>
<td>1 minute</td>
</tr>
<tr>
<td>2,000 feet</td>
<td>2 minutes</td>
</tr>
<tr>
<td>3,000 feet</td>
<td>3 minutes</td>
</tr>
<tr>
<td>4,000 feet</td>
<td>4 minutes</td>
</tr>
<tr>
<td>5,000 feet</td>
<td>5 minutes</td>
</tr>
<tr>
<td>6,000 feet</td>
<td>6 minutes</td>
</tr>
<tr>
<td>7,000 feet</td>
<td>7 minutes</td>
</tr>
<tr>
<td>8,000 feet</td>
<td>8 minutes</td>
</tr>
<tr>
<td>9,000 feet</td>
<td>9 minutes</td>
</tr>
<tr>
<td>10,000 feet</td>
<td>10 minutes</td>
</tr>
</tbody>
</table>
3. Ball Wide Mouth Mason Jars. Available in quart and half-gallon sizes. The jars seal with Ball Wide Mouth Mason Caps with Dome Lids and are marked for measuring.

BALL FITTINGS

1. Ball Can or Freez Jars. Available in half-pint, pint and 1½-pint sizes. Half-pints seal with Ball Mason Caps with Dome Lids. Pints and 1½ pints seal with Ball Wide Mouth Mason Caps with Dome Lids; the jars are marked for measuring. All three sizes may be used for either canning or freezing.

2. Ball Regular Mason Jars. Available in pint, quart and half-gallon sizes. The jars seal with either Ball Mason Caps with Dome Lids or Ball Zinc Caps and rubber rings (either Number 11 Ball Split-Tab Rubber Rings or Number 21 Ball Good Luck Split-Tab Jar Rings). The jars are marked for measuring.

3. Ball Wide Mouth Mason Jars. Available in quart and half-gallon sizes. The jars seal with Ball Wide Mouth Mason Caps with Dome Lids and are marked for measuring.

Ball 63 Dome Caps and Ball 63 Dome Lids. To be used with jars having 63mm openings.

Ball Zinc Caps (white porcelain lined). Available in regular size only. To be used with regular Mason jars and regular rubber rings.

Number 11 Ball Split-Tab Rubber Rings and Number 21 Ball Good Luck Split-Tab Jar Rings. To be used with regular Mason jars and zinc caps or with regular wire-clamp jars.

Number 33 Ball Split-Tab Rubber Rings. To be used with wide mouth zinc caps or with wide mouth wire-clamp jars.

Ball Jelly Glasses. Tall half-pint size, with protective metal cover.
How to Use Ball Jars and Fittings

**Ball Mason Jars**

Examine jars for nicks, chips and cracks in sealing surface. Discard ones unsuitable for canning. Wash jars in hot soapy water and rinse well. Do not use wire brushes, steel wool or washing soda for cleaning jars; they are apt to damage glass. Place in hot water until ready to fill. It is not necessary to boil jars in which food is to be processed. Seal with Ball Mason Dome Caps or zinc caps and rubber rings. Follow directions for filling and sealing according to fittings being used. A sudden change of temperature is apt to cause any jar to break. Never put a hot jar on a cold surface or in a draft. Never pour boiling liquid into a cool jar.

**Ball Can or Freeze Jars**

For canning, follow instructions for Ball Mason Jars and Ball Mason Dome Caps. For jellies and jams, see page 66. For freezing, see page 87.

**Ball Mason Dome Caps**

1. Examine top and edges of jar; both must be smooth and even. Old jars were made for shoulder sealing; consequently, the top finish is usually unsuitable for top sealing with Ball Mason Dome Caps.
2. Wash and rinse lids and bands.
3. Fill hot jar. Leave 1-inch head space for meats, corn, peas and other low-acid foods; ½-inch head space for fruits and acid vegetables. Add liquid to completely cover food solids. Leave ¼-inch head space for juices, preserves, pickles and relishes which are to be processed; ⅛-inch head space for jellies, other fruit spreads, pickles and relishes which are sealed boiling hot and not processed.
4. Remove air bubbles from fruit and vegetable packs by running rubber bottle scraper or similar non-metal utensil between food and jar.
5. Wipe top and screw threads of jar with clean, damp cloth. Put lid on jar, sealing compound next to glass.
6. Screw band tight but do not use force. Band must screw down evenly all the way around.
7. Process immediately, using right time and method for product being canned.
8. Remove jars from canner. Do not tighten bands after processing.
9. Remove band about 12 hours after canning. If dome (center of lid) is down, or stays down when pressed, jar is sealed. Store without bands.

**Ball Zinc Caps**

1. Use new rubber rings. Wash caps and rubber rings in hot soapy water. Rinse. Keep rubber wet until needed. If zinc caps have been used, boil them for 15 minutes.
2. Before filling jar, stretch wet rubber just enough to place flat on sealing shoulder.
3. See step 3 under Ball Mason Dome Caps for amount of head space to leave when filling jars.
4. Remove air bubbles from fruit and vegetable packs by running rubber bottle scraper or similar non-metal utensil between food and jar.
5. Wipe top surface of rubber and threads of jar with clean, damp cloth.
6. Screw cap tight, then loosen about ¼ inch.
7. Process immediately, using right time and method for product being canned.
8. Remove jars from canner. Slowly screw caps tight... quick turns may cause the rubbers to slip.
9. Let jars cool about 12 hours. Check seal... if top of cap is low in center, jar is sealed. Do not tighten cap after jar has cooled.

**Ball Ideal Jars**

1. Follow instructions for preparing Mason jars. Wash and rinse lids and rubber rings. Keep rubbers wet until needed. Use new rubbers.
2. Before filling jar, stretch wet rubber just enough to place flat on sealing shoulder. Lip must be opposite wire side of jar.
3. See step 3 under Ball Mason Dome Caps for amount of head space to leave when filling jars.
4. Remove air bubbles from fruit and vegetable packs by running rubber bottle scraper or similar non-metal utensil between food and jar.
5. Wipe top surface of rubber and jar rim with clean, damp cloth. Put lid on jar, sealing compound next to glass.
6. Put lid on jar so that it rests on the rubber. Push long wire up to rest in groove in lid. Leave short wire up.
7. Process at once, using right time and method for product being canned.
8. Remove jars from canner. Immediately push short wires down. Let jars cool for about 12 hours. When jar has cooled, check for seal by inverting jar and examining for leaks. If jar leaks, jar is not sealed.
THINGS YOU SHOULD KNOW
For Best Results

TERMS

FRUIT JAR is the traditional name for a glass jar made for use in home canning. There are three styles available:

1. The Mason jar has a screw thread neck and a sloping shoulder. It seals on the top or on a sealing shoulder, depending upon the type of cap used.

2. The Can or Freez jar is a tapered, shoulderless jar which may be used for either home canning or freezing. It seals on the top with a two-piece metal cap.

3. The Lightning jar (example, Ball Ideal) seals with a glass lid and a rubber ring which are held in place with wires.

JAR CAP is the cover used to seal a jar. There are two styles available:

1. The two-piece metal cap (example, Ball Mason Dome Cap) is a lid and screw band combination. The lid is fitted with a rubber sealing compound, and no other rubber is needed. The lid is used once only. The band may be reused with a new lid.

2. The one-piece zinc cap is lined with white porcelain. It is used with Mason jars and rubber rings.

JAR LID is a shallow cover of metal or glass.

JAR RUBBER is a flat rubber ring which is used as a gasket between a zinc cap or a glass lid and the jar.

METAL BAND is a screw thread band that is used with a metal lid to form a two-piece metal cap.

ACID FOODS are foods which normally contain from 0.36 to 2.35 or more per cent natural acid, and foods which are preserved in vinegar. Examples of acid foods are fruits, rhubarb, tomatoes, sauerkraut, pickles and relishes.

LOW-ACID FOODS are foods which contain very little natural acid. Examples of low-acid foods are all vegetables except those listed above, and meats, poultry, sea foods and soups.

SPOILAGE is evident in canned foods when the food “works,” molds, has an unnatural odor, becomes “cheesy,” is sour or is in any other way unfit to eat.
BACTERIA, MOLDS and YEASTS are low forms of plant life known to scientists as microorganisms. These microorganisms are found in vegetative (growing) form or spore (seed) form. They exist everywhere—in the air, in water and in the soil. When they are not destroyed by cooking, they will grow in canned food and cause it to spoil.

ENZYMES are natural substances found in all fruits, meats and vegetables. If they are not destroyed by cooking, they will cause changes in the color, texture and flavor of canned food.

PROCESSING is the cooking of jars of food in a water-bath canner or a steam-pressure canner for a long enough time to destroy bacteria, enzymes, molds and yeasts.

COLD or RAW PACK is a method of filling jars. The jars are filled with raw food, then the filled jars are processed in a water-bath canner or a steam-pressure canner.

HOT PACK is a method of filling jars. The jars are filled with hot food, then the filled jars are processed in a water-bath canner or a steam-pressure canner.

HEAD SPACE is the space left at the top of a jar when filling or packing the jar with food.

PARTLY SEAL is to leave caps or lids loose while the jars are being processed. All jars on which separate rubber rings are used must be partly sealed while in the canner. The jars are closed airtight as soon as they are removed from the canner.

VACUUM SEAL is the absence of normal atmospheric (air) pressure in jars which are airtight. When a jar is closed at room temperature, the 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 Ball Mason Dome Lids, and the rubber rings used with Ideal jars or with zinc caps, keep air from going back into sealed jars.

VENTING or EXHAUSTING is forcing air to escape from a jar or permitting air to escape from a steam-pressure canner.

BOTULISM is a poisoning caused by a toxin. The toxin is produced by the growth of spores of Clostridium botulinum in a sealed jar. Spores of Clostridium botulinum are carried from one place to another by dust, wind and the soil clinging to raw foods. These spores can grow in a tightly sealed jar of any low-acid food because they belong to a species of bacteria which cannot grow in the presence of air and which does not normally thrive in acid foods. The spores are destroyed when low-acid foods are correctly processed in a steam-pressure canner which is in good working order. Home canners who use the correct methods of selecting, preparing, packing and processing foods have no reason to worry about botulism.

As an extra precaution, all low-acid foods should be boiled for 15 minutes before tasting in order to destroy any toxin which could be present if some error were made in processing. Thick masses, such as greens, should be stirred while boiling.

FLAT-SOUR is the most common type of spoilage in canned vegetables. It is caused by bacteria which give food an unpleasant, sourish flavor. Flat-sour is avoided by the use of correct methods of selecting, handling, preparing, packing, processing and cooling foods.

MOLD may change the flavor of the food, but is not considered harmful when a few flecks are present on top of canned fruit, jelly or preserves. A heavy growth of mold is a warning not to use the food.

FERMENTATION of canned food is caused by yeasts which have not been destroyed during processing or yeasts which enter the jar before it is sealed. With the exception of some pickles, fermented food should not be used. If pickles begin to ferment in the jar and some of the liquid runs out, the pickles should be rinsed and packed in clean hot jars, fresh pickling solution should be made and poured boiling hot over the pickles and the jars processed in a water-bath canner to prevent further fermentation.
What's the Cause . . . .

Questions concerning home canned food may arise in your mind now or later. The following chart lists some conditions which might occur in home canned food, the causes for them and how they may be remedied. When the condition might indicate spoilage, it is so noted.

All homemakers should be familiar with the signs of food spoilage for the sake of their families' health and safety. Spoiled food should never be served or eaten. The wise homemaker looks for these signs of spoilage each time she opens a jar: spurting liquid and gas bubbles; soft, mushy, slimy or moldy food; cloudy liquid; sediment in the liquid; leaking jars; bulging caps; and an unnatural odor or color.

All low-acid foods should be boiled for 15 minutes before tasting. If the liquid foams or the food has an unnatural odor when heated, spoilage is indicated. (See "Botulism," page 12.)

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>CAUSE</th>
<th>PREVENTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foods darken in top of jar.</td>
<td>1. Liquid did not cover food product. 2. Food not processed long enough to destroy enzymes. 3. Manner of packing and processing did not produce a high vacuum. 4. Air was sealed in the jars either because head space was too large or air bubbles were not removed.</td>
<td>1. Cover food product with liquid before capping jar. (See &quot;Loss of liquid&quot; reference, page 14.) 2. Process each food by recommended method and for recommended length of time. 3. Pack and process as recommended. 4. Use amount of head space as recommended in the Ball Blue Book. Remove air bubbles by running rubber bottle scraper between food and jar.</td>
</tr>
<tr>
<td>Fruits darken after they have been removed from jar.</td>
<td>Fruits have not been processed long enough to destroy enzymes.</td>
<td>Process each fruit by recommended method and for recommended length of time. Time is counted when water reaches a full boil in the canner.</td>
</tr>
<tr>
<td>Corn is brown.</td>
<td>1. Corn was too mature for canning. 2. Liquid did not cover corn. 3. Jars were processed at too high a temperature. 4. Variety of corn used.</td>
<td>1. Use freshly picked corn which has plump, shiny kernels filled with milk. 2. Cover corn with liquid before capping jar. (See &quot;Loss of liquid&quot; reference, page 14.) 3. Keep pressure in canner at recommended pounds; gauge may be faulty and it should be checked. 4. Use different variety next time.</td>
</tr>
<tr>
<td>Pink, red, blue or purple color in canned apples, pears, peaches and quinces.</td>
<td>A natural chemical change which occurs in cooking the fruit.</td>
<td>None</td>
</tr>
<tr>
<td>Green vegetables lose their bright green color.</td>
<td>Heat breaks down chlorophyll, the green coloring matter in plants.</td>
<td>None</td>
</tr>
<tr>
<td>Green vegetables turn brown.</td>
<td>1. Vegetables were overcooked. 2. Vegetables were too mature for canning.</td>
<td>1. Time precooking and processing exactly. 2. Asparagus tips should be tight and the entire green portion tender. Pods of green beans should be crisp and meaty and the beans tiny. Peas, Lima beans, and all other beans and peas which are shelled should be green.</td>
</tr>
<tr>
<td>Some foods become black, brown or gray.</td>
<td>Natural chemical substances (tannins, sulfur compounds and acids) in food react with minerals in water or with metal utensils used in preparing food.</td>
<td>Use soft water. Avoid using copper, iron or chipped enamelled ware, also utensils from which tinplate has worn.</td>
</tr>
<tr>
<td>Crystals in grape products.</td>
<td>Tartaric acid which is naturally found in grapes.</td>
<td>In juice, carefully ladle juice into clean hot jars, 1 cap and reprocess original length of time. In jelly, see &quot;Jelly contains glass-like particles,&quot; page 15.)</td>
</tr>
<tr>
<td>Yellow crystals on canned green vegetables.</td>
<td>Glucoside, natural and harmless substance, in vegetables.</td>
<td>None</td>
</tr>
<tr>
<td>White crystals on canned spinach.</td>
<td>Calcium and oxalic acid in spinach combine to form harmless calcium oxalate.</td>
<td>None</td>
</tr>
<tr>
<td>White sediment in bottom of jars of vegetables. May denote spoilage.</td>
<td>1. Starch from the food. 2. Minerals in water used. 3. Bacterial spoilage . . . liquid is usually murky, food soft. (Do not use.)</td>
<td>1. None 2. Use soft water. 3. Process each food by recommended method and for recommended length of time.</td>
</tr>
<tr>
<td>Fruit floats in jar.</td>
<td>Fruit is lighter than the sirup.</td>
<td>Use firm, ripe fruit. Heat fruit before packing it. Use a light to medium sirup. Pack fruit as closely as possible without crushing it.</td>
</tr>
<tr>
<td>CONDITION (Product Usable Unless Spoilage Is Indicated)</td>
<td>CAUSE</td>
<td>PREVENTION</td>
</tr>
<tr>
<td>-------------------------------------------------------</td>
<td>-------</td>
<td>------------</td>
</tr>
<tr>
<td>Loss of liquid during processing. (Food may darken, but will not spoil. Do not open jars to replace liquid.)</td>
<td>1. Food not heated before packing. 2. Food packed too tightly. 3. Air bubbles not removed before capping the jar. 4. Pressure canner not operated correctly. 5. Jars not covered with water in waterbath canner. 6. Starchy foods absorbed liquid.</td>
<td>1. Heat food before packing. 2. Pack food more loosely. 3. Remove air bubbles by running rubber bottle scraper between food and jar. 4. Pressure should not be allowed to fluctuate during processing time. Allow pressure to drop to zero naturally; wait 2 minutes before opening lid. 5. Jars should be covered 1 inch with water in canner throughout the processing period. 6. None</td>
</tr>
<tr>
<td>Jar seals, then comes open. Spoilage evident. (Do not use.)</td>
<td>1. Food spoilage from underprocessing. 2. Disintegration of particles of food left on the sealing surface. 3. Hairlike crack in the jar. Many factors could be involved, such as failure to follow instructions for using jar and cap, or a bit of food may have been forced up between the jar and lid during processing.</td>
<td>1. Process each food by recommended method and for recommended length of time. 2. Wipe sealing surface and threads of jar with clean, damp cloth before capping. 3. Check jars; discard ones unsuitable for canning.</td>
</tr>
<tr>
<td>Jar of food fails to seal. (Correct cause and reprocess the full time or use the food immediately.)</td>
<td></td>
<td>Carefully follow methods and instructions for using jars and caps and for foods to be canned. For more information, write Consumer Service Department, Ball Brothers Company Incorporated, Muncie, Indiana, and request the pamphlet “To Be a Successful Home Canner.”</td>
</tr>
<tr>
<td>Zinc caps bulge. May denote spoilage.</td>
<td>1. Cap screwed too tight before processing. (Condition is evident as jar is removed from canner.) 2. Food spoiled from underprocessing. (Condition evident after jar has cooled and has been stored from a day to a few months.) Do not use.</td>
<td>1. Screw cap tight, then loosen about ¼ inch before putting jar in canner. 2. Process each food by recommended method and for recommended length of time.</td>
</tr>
<tr>
<td>Black spots on underside of metal lid. (If jar has been sealed and then comes open, spoilage is evident. Do not use.)</td>
<td>Natural compounds in some foods cause a brown or black deposit on the underside of the lid. This deposit is harmless and does not mean the food is unsafe to eat.</td>
<td>None</td>
</tr>
<tr>
<td>Hollow pickles.</td>
<td>1. Faulty growth of cucumbers. 2. Cucumbers were stale when pickling was begun.</td>
<td>1. None. In washing cucumbers, hollow cucumbers usually float. They may be used in relishes. 2. Pickling process should be started within 24 hours of picking cucumbers.</td>
</tr>
<tr>
<td>Soft or slippery pickles. Spoilage evident. (Do not use.)</td>
<td>1. Brine or vinegar used was too weak. 2. Pickles were not kept covered with liquid. 3. Scum was not kept removed from top of brine. 4. Pickles were not heated long enough to destroy spoilage microorganisms. 5. Jars were not sealed airtight while boiling hot.</td>
<td>1. Use pure refined salt. Use vinegar of 4-6% acidity. Use a recipe developed for modern day use. 2. Pickles should be covered with liquid at all times, during the brining process and when in the jar. 3. Scum should be removed daily during the brining process. 4. See “Pickles and Relishes,” page 53. 5. Each jar should be filled boiling hot and capped immediately before filling next jar. Pickles should be kept boiling hot throughout packing process.</td>
</tr>
<tr>
<td>Darkened and discolored pickles.</td>
<td>1. Minerals present in hard water used in making the pickles. 2. Brass, iron, copper or zinc utensils were used in making the pickles. 3. Ground spices used. 4. Whole spices left in jars of pickles.</td>
<td>1. Use soft water. 2. Use enameled ware, glass, aluminum, stainless steel or stoneware utensils. 3. Use whole spices. 4. Whole cloves, stick cinnamon and other whole spices should be used only to flavor the pickling liquid; they should not be packed in the jars.</td>
</tr>
<tr>
<td>Shriveled pickles.</td>
<td>Too much salt, sugar or vinegar was added to the cucumbers at one time.</td>
<td>Start with a weaker solution of brine, sugar or vinegar and gradually add the full amount called for in recipe. Use recipe developed for modern day use.</td>
</tr>
<tr>
<td>CONDITION</td>
<td>CAUSE</td>
<td>PREVENTION</td>
</tr>
<tr>
<td>-----------</td>
<td>-------</td>
<td>-------------</td>
</tr>
<tr>
<td>White sediment in bottom of jars of firm pickles. (If pickles are soft, spoilage is evident. Do not use.)</td>
<td>Harmless yeasts have grown on the surface and then settled.</td>
<td>None. The presence of a small amount of the white sediment is normal.</td>
</tr>
</tbody>
</table>
| Jelly is cloudy. | 1. Fruit used was too green.  
2. Fruit may have been cooked too long before straining.  
3. Juice may have been squeezed from fruit.  
4. Jelly poured into jars too slowly.  
5. Jelly mixture was allowed to stand before it was poured into the jars. | 1. Fruit should be firm-ripe.  
2. Fruit should be cooked only until it is tender.  
3. To obtain the clearest jelly possible, let juice drip through cotton flannel bag.  
4. Next time, work more quickly.  
5. Immediately upon reaching jellying point, pour into jars and seal. |
| Jelly contains glass-like particles. | 1. Too much sugar was used.  
2. The mixture may have been cooked too little.  
3. The mixture may have been cooked too slowly or too long.  
4. Undissolved sugar, which was sticking to the pan, washed into the jelly as it was poured.  
5. If jelly is grape, the crystals may be tartaric acid, the natural substance in grapes from which cream of tartar is made. | 1. See General Instructions for jelly, page 65.  
2. Too short a cooking period results in the sugar not dissolving completely and not mixing thoroughly with the fruit juice.  
3. Long, slow cooking results in too much evaporation of the water content of the fruit.  
4. Ladle juice into jars instead of pouring it. Or, carefully wipe side of pan free of sugar crystals with a damp cloth before filling jars.  
5. Allow juice to stand in refrigerator for several days; then strain it through two thicknesses of damp cheesecloth before preparing jelly. Use canned juice; if sediment is in bottom of jar, carefully pour juice off so not to disturb sediment. |
| Jelly is low in fruit flavor. | 1. Fruit used had little flavor.  
2. Jelly stored too long.  
3. Storage area too warm. | 1. Use full-flavored fruit; tree-ripened is the best.  
2. Jelly should not be stored over a year.  
3. Storage area should be cool, dark and dry. |
| Bubbles are in jelly. May denote spoilage. | 1. If bubbles are moving, jelly is spoil- ing; usually the airtight seal has been broken. (Do not use.)  
2. If bubbles are standing still, utensil from which jelly was poured was not held close to top of jar or jelly was poured slowly and air was trapped in the hot jelly. | 1. Use vacuum sealing with Ball Mason Dome Caps. (See page 67.) Be sure to test for seal before storing jars.  
2. Hold utensil close to top of jar and pour into jar quickly. |
| Jelly “weeps.” | 1. Syneresis or “weeping” usually occurs in quick-setting jellies and is due to the quantity of acid and the quality of pectin in the fruit.  
2. Storage conditions were not ideal. | 1. None  
2. Store in cool, dark and dry place. |
| Jelly is too soft. | 1. Proportions of sugar and juice not correct.  
2. Too large a batch made at one time. | 1. See General Instructions for jelly, page 65.  
2. Use not more than 4 to 6 cups of juice in each batch of jelly. Never increase the recipe supplied by the manufacturer of pectin. |
| Jelly is tough or stiff. | 1. Too much pectin in fruit.  
2. Jelly was overcooked.  
3. Too little sugar, so mixture had to be cooked too long to reach jellying stage. | 1. Use fruit which is riper. If adding pectin, don’t add as much.  
2. See jelly test, page 67.  
3. When pectin is not added, ¾ cup sugar to 1 cup juice is the right amount for most fruits. When measuring, use graduated dry measuring cups; level off sugar with straight edge of a knife. |
| Jelly ferments. Spoilage evident. (Do not use.) | Yeasts grow on jelly when seal is not airtight (usually noticeable on jars sealed with paraffin) causing the jelly to break through paraffin and to weep. | Use vacuum sealing next time. Test for seal before storing jelly. See page 67. |
| Jelly molds. May denote spoilage; if growth of mold is heavy, do not use. | Jar was not sealed properly, allowing mold to grow on surface of jelly. | Use vacuum sealing next time. Test for seal before storing jelly. See page 67. |
Canning Time Reference

The processing times given here are for foods canned at altitudes less than 1,000 feet above sea level, when using the water-bath canner. When using the steam-pressure canner, the pressure given is for altitudes less than 2,000 feet above sea level. If you live in an area of a higher altitude, see page 7 for necessary adjustment to be made.

<table>
<thead>
<tr>
<th>FRUITS</th>
<th>TYPE PACK</th>
<th>RECIPE PAGE NUMBER</th>
<th>1/2 Pints</th>
<th>Pints</th>
<th>1 1/2 Pints and Quarts</th>
<th>1/2 Gallons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apples</td>
<td>Hot</td>
<td>24</td>
<td>15</td>
<td>20</td>
<td>20</td>
<td>35</td>
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<tr>
<td>Applesauce</td>
<td>Hot</td>
<td>24</td>
<td>15</td>
<td>20</td>
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<td>35</td>
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<tr>
<td>Apricots</td>
<td>Raw</td>
<td>24</td>
<td>20</td>
<td>25</td>
<td>30</td>
<td>45</td>
</tr>
<tr>
<td>Apricots</td>
<td>Hot</td>
<td>24</td>
<td>15</td>
<td>20</td>
<td>25</td>
<td>40</td>
</tr>
<tr>
<td>Berries</td>
<td>Raw</td>
<td>24</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>35</td>
</tr>
<tr>
<td>Berries</td>
<td>Hot</td>
<td>24</td>
<td>10</td>
<td>10</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>Cherries</td>
<td>Raw</td>
<td>25</td>
<td>15</td>
<td>20</td>
<td>25</td>
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<tr>
<td>Cherries</td>
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<td>10</td>
<td>10</td>
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</tr>
<tr>
<td>Currants</td>
<td>See Berries</td>
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<tr>
<td>Dried Fruits</td>
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<td>25</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>35</td>
</tr>
<tr>
<td>Figs</td>
<td>Hot</td>
<td>26</td>
<td>80</td>
<td>85</td>
<td>90</td>
<td>105</td>
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<tr>
<td>Grapes, Ripe</td>
<td>Raw</td>
<td>26</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>35</td>
</tr>
<tr>
<td>Grapes, Unripe</td>
<td>Raw</td>
<td>26</td>
<td>15</td>
<td>20</td>
<td>25</td>
<td>40</td>
</tr>
<tr>
<td>Grapefruit</td>
<td>Raw</td>
<td>26</td>
<td>10</td>
<td>15</td>
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<td>35</td>
</tr>
<tr>
<td>Guavas</td>
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<td>26</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>35</td>
</tr>
<tr>
<td>Loquats</td>
<td>Hot</td>
<td>26</td>
<td>15</td>
<td>20</td>
<td>25</td>
<td>40</td>
</tr>
<tr>
<td>Mixed Fruits</td>
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<td>26</td>
<td>15</td>
<td>20</td>
<td>25</td>
<td>40</td>
</tr>
<tr>
<td>Nectarines</td>
<td>See Apricots</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Peaches</td>
<td>Raw</td>
<td>See Berries</td>
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<tr>
<td>Peaches</td>
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<td>22, 23, 26, 27</td>
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<td>25</td>
<td>30</td>
<td>45</td>
</tr>
<tr>
<td>Peaches</td>
<td>Hot</td>
<td>26, 27</td>
<td>15</td>
<td>20</td>
<td>25</td>
<td>40</td>
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<tr>
<td>Pears</td>
<td>Hot</td>
<td>27</td>
<td>15</td>
<td>20</td>
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<tr>
<td>Persimmons</td>
<td>Hot</td>
<td>28</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>35</td>
</tr>
<tr>
<td>Pineapple</td>
<td>Hot</td>
<td>28</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>35</td>
</tr>
<tr>
<td>Plums</td>
<td>Hot</td>
<td>28</td>
<td>15</td>
<td>20</td>
<td>25</td>
<td>40</td>
</tr>
</tbody>
</table>

FRUIT JUICES

ACID VEGETABLES

| Pimientos | Hot       | 28                 | 35        | 40    | 45                     | 60         |
| Rhubarb    | Hot       | 28                 | 10        | 10    | 10                     | 25         |
| Sauerkraut | Raw       | 84                 | 25        | 30    | 30                     | 45         |
| Tomatoes   | Raw       | 30, 31, 29         | 30        | 35    | 45                     | 60         |
| Tomatoes   | Hot       | 29                 | 10        | 10    | 15                     | 30         |
| Tomato Juice | Hot       | 29                 | 10        | 10    | 15                     | 30         |

LOW-ACID VEGETABLES

<table>
<thead>
<tr>
<th>TYPE PACK</th>
<th>RECIPE PAGE NUMBER</th>
<th>WATER-BATH (212°F.) PROCESSING TIME IN MINUTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asparagus</td>
<td>Raw or Hot</td>
<td>38</td>
</tr>
<tr>
<td>Beans—Green, Snap, Wax</td>
<td>Raw or Hot</td>
<td>36, 37, 38</td>
</tr>
<tr>
<td>Beans—Lima and Butter</td>
<td>Raw or Hot</td>
<td>38</td>
</tr>
<tr>
<td>Beets</td>
<td>Hot</td>
<td>39</td>
</tr>
<tr>
<td>Broccoli</td>
<td>Hot</td>
<td>39</td>
</tr>
<tr>
<td>Brussels Sprouts</td>
<td>Hot</td>
<td>39</td>
</tr>
<tr>
<td>Cabbage</td>
<td>Hot</td>
<td>39</td>
</tr>
<tr>
<td>Carrots</td>
<td>Raw or Hot</td>
<td>39</td>
</tr>
<tr>
<td>Cauliflower</td>
<td>Hot</td>
<td>39</td>
</tr>
</tbody>
</table>

ACID VEGETABLES

ACID VEGETABLES

| Piemin vos | Hot       | 28                 | 35        | 40    | 45                     | 60         |
| Rhubarb    | Hot       | 28                 | 10        | 10    | 10                     | 25         |
| Sauerkraut | Raw       | 84                 | 25        | 30    | 30                     | 45         |
| Tomatoes   | Raw       | 30, 31, 29         | 30        | 35    | 45                     | 60         |
| Tomatoes   | Hot       | 29                 | 10        | 10    | 15                     | 30         |
| Tomato Juice | Hot       | 29                 | 10        | 10    | 15                     | 30         |

LOW-ACID VEGETABLES

<table>
<thead>
<tr>
<th>TYPE PACK</th>
<th>RECIPE PAGE NUMBER</th>
<th>STEAM-PRESSURE CANNER (240°F.) PROCESSING TIME IN MINUTES 10 POUNDS PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asparagus</td>
<td>Raw or Hot</td>
<td>38</td>
</tr>
<tr>
<td>Beans—Green, Snap, Wax</td>
<td>Raw or Hot</td>
<td>36, 37, 38</td>
</tr>
<tr>
<td>Beans—Lima and Butter</td>
<td>Raw or Hot</td>
<td>38</td>
</tr>
<tr>
<td>Beets</td>
<td>Hot</td>
<td>39</td>
</tr>
<tr>
<td>Broccoli</td>
<td>Hot</td>
<td>39</td>
</tr>
<tr>
<td>Brussels Sprouts</td>
<td>Hot</td>
<td>39</td>
</tr>
<tr>
<td>Cabbage</td>
<td>Hot</td>
<td>39</td>
</tr>
<tr>
<td>Carrots</td>
<td>Raw or Hot</td>
<td>39</td>
</tr>
<tr>
<td>Cauliflower</td>
<td>Hot</td>
<td>39</td>
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<tr>
<td>LOW-ACID VEGETABLES</td>
<td>TYPE PACK</td>
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</tr>
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<tr>
<td>Celery</td>
<td>Hot</td>
<td>39</td>
</tr>
<tr>
<td>Corn, Whole-kernel</td>
<td>Raw or Hot</td>
<td>40</td>
</tr>
<tr>
<td>Corn, Cream-style</td>
<td>Hot</td>
<td>40</td>
</tr>
<tr>
<td>Eggplant</td>
<td>Hot</td>
<td>40</td>
</tr>
<tr>
<td>Greens (all kinds)</td>
<td>Hot</td>
<td>40</td>
</tr>
<tr>
<td>Hominy</td>
<td>Hot</td>
<td>40</td>
</tr>
<tr>
<td>Mixed Vegetables</td>
<td>Hot</td>
<td>40</td>
</tr>
<tr>
<td>Mushrooms</td>
<td>Hot</td>
<td>40</td>
</tr>
<tr>
<td>Okra</td>
<td>Hot</td>
<td>41</td>
</tr>
<tr>
<td>Parsnips</td>
<td>Hot</td>
<td>41</td>
</tr>
<tr>
<td>Peas—Blackeye, Crowder, Field</td>
<td>Raw or Hot</td>
<td>41</td>
</tr>
<tr>
<td>Peas—Green or &quot;English&quot;</td>
<td>Raw or Hot</td>
<td>41</td>
</tr>
<tr>
<td>Peppers, Green</td>
<td>Hot</td>
<td>41</td>
</tr>
<tr>
<td>Pimientos</td>
<td>See Acid Vegetables</td>
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</tr>
<tr>
<td>Potatoes, White</td>
<td>Hot</td>
<td>41</td>
</tr>
<tr>
<td>Potatoes, Sweet</td>
<td>Hot and Dry</td>
<td>41</td>
</tr>
<tr>
<td>Potatoes, Sweet</td>
<td>Hot and Wet</td>
<td>42</td>
</tr>
<tr>
<td>Pumpkin</td>
<td>Hot</td>
<td>42</td>
</tr>
<tr>
<td>Rutabagas</td>
<td>Hot</td>
<td>42</td>
</tr>
<tr>
<td>Salsify or Oyster Plant</td>
<td>Hot</td>
<td>42</td>
</tr>
<tr>
<td>Spinach</td>
<td>Hot</td>
<td>42</td>
</tr>
<tr>
<td>Squash, Summer</td>
<td>Hot</td>
<td>42</td>
</tr>
<tr>
<td>Squash, Winter</td>
<td>Hot</td>
<td>42</td>
</tr>
<tr>
<td>Tomatoes</td>
<td>See Acid Vegetables</td>
<td></td>
</tr>
<tr>
<td>Turnips</td>
<td>Hot</td>
<td>42</td>
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<table>
<thead>
<tr>
<th>MEATS, POULTRY, SEA FOODS</th>
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<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Chili</td>
<td>Hot</td>
<td>45</td>
<td>75</td>
<td>90</td>
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<tr>
<td>Chopped Meat—Beef, Veal, Lamb, Mutton, Pork, Chevron, Venison</td>
<td>Hot</td>
<td>45</td>
<td>75</td>
<td>90</td>
</tr>
<tr>
<td>Corned Beef</td>
<td>Hot</td>
<td>45</td>
<td>75</td>
<td>90</td>
</tr>
<tr>
<td>Cracklings and Ham</td>
<td>Raw</td>
<td>46</td>
<td>50</td>
<td>60</td>
</tr>
<tr>
<td>Goulash, Meat Sauce, Stew</td>
<td>Hot</td>
<td>46</td>
<td>60</td>
<td>75</td>
</tr>
<tr>
<td>Headcheese, Pork Sausage</td>
<td>Hot</td>
<td>46</td>
<td>75</td>
<td>50</td>
</tr>
<tr>
<td>Pork Tenderloin</td>
<td>Hot or Raw</td>
<td>46</td>
<td>75</td>
<td>50</td>
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<tr>
<td>Roasts—Beef, Veal, Lamb, Mutton, Pork, Chevron, Venison</td>
<td>Hot</td>
<td>47</td>
<td>75</td>
<td>90</td>
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<tr>
<td>Spareribs</td>
<td>Hot</td>
<td>47</td>
<td>75</td>
<td>90</td>
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<tr>
<td>Steaks and Chops—Beef, Veal, Lamb, Mutton, Pork, Chevron, Venison</td>
<td>Hot or Raw</td>
<td>47</td>
<td>75</td>
<td>90</td>
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<tr>
<td>Poultry, Rabbit and Squirrel—Boned</td>
<td>Hot</td>
<td>48</td>
<td>75</td>
<td>90</td>
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<tr>
<td>Poultry and Rabbit—On Bone</td>
<td>Hot or Raw</td>
<td>48</td>
<td>65</td>
<td>75</td>
</tr>
<tr>
<td>Chicken à la King</td>
<td>Hot</td>
<td>48</td>
<td>65</td>
<td>75</td>
</tr>
<tr>
<td>Roast Poultry</td>
<td>Hot</td>
<td>48</td>
<td>65</td>
<td>75</td>
</tr>
<tr>
<td>Clams</td>
<td>49</td>
<td>70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crab Meat</td>
<td>49</td>
<td>100 at 5 lbs.</td>
<td>Not recommended</td>
<td></td>
</tr>
<tr>
<td>Mackerel, Trout, Salmon, Shad, etc.</td>
<td>49</td>
<td>100 at 5 lbs.</td>
<td>Not recommended</td>
<td></td>
</tr>
<tr>
<td>Shrimp</td>
<td>49</td>
<td>45</td>
<td>Not recommended</td>
<td></td>
</tr>
<tr>
<td>Smelt (in Tomato Sauce)</td>
<td>49</td>
<td>50</td>
<td>Not recommended</td>
<td></td>
</tr>
<tr>
<td>Tuna</td>
<td>49</td>
<td>90</td>
<td>Not recommended</td>
<td></td>
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<table>
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<th>SOUPS</th>
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<th></th>
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<tr>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Bean and Split Pea</td>
<td>Hot</td>
<td>50</td>
<td>50</td>
<td>60</td>
</tr>
<tr>
<td>Chicken</td>
<td>Hot</td>
<td>50</td>
<td>30</td>
<td>45</td>
</tr>
<tr>
<td>Clam Chowder and Fish Chowder</td>
<td>Hot</td>
<td>50</td>
<td>100</td>
<td>Not recommended</td>
</tr>
<tr>
<td>Tomato</td>
<td>Hot</td>
<td>50</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>Vegetable</td>
<td>Hot</td>
<td>51</td>
<td>Length of time needed for vegetable requiring longest processing time</td>
<td></td>
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### Seasonings

<table>
<thead>
<tr>
<th><strong>SPICES</strong></th>
<th><strong>FLAVOR</strong></th>
<th><strong>Whole</strong></th>
<th><strong>USES</strong></th>
<th><strong>Ground</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Allspice</td>
<td>Blend of nutmeg, clove, cinnamon</td>
<td>Jams, jellies, fruit and vegetable pickles, vegetable relishes, tomato catchup and sauce, fruit sauces, fish</td>
<td>Butters, jams, preserves, chutneys, fruit sauces, meat sauces, tomato juice, mincemeat</td>
<td>Jams, jellies, fruit and vegetable pickles, vegetable relishes, tomato catchup and sauce, fruit sauces, fish</td>
</tr>
<tr>
<td>Cayenne</td>
<td>Hot, pungent</td>
<td>Tomato sauce, vegetable pickles</td>
<td>Butters, jams, preserves, mincemeat, vegetable relishes, fruits</td>
<td>Butters, jams, preserves, mincemeat, vegetable relishes, fruits</td>
</tr>
<tr>
<td>Chilies</td>
<td>Hot, pungent</td>
<td>Jams, jellies, fruit and vegetable pickles, vegetable relishes, tomato catchup, fruit sauces</td>
<td>Butters, jams, conserves, chutneys, fruit sauces, meat sauces, mincemeat, vegetable relishes, fruits</td>
<td>Butters, jams, conserves, chutneys, fruit sauces, meat sauces, mincemeat, vegetable relishes, fruits</td>
</tr>
<tr>
<td>Cinnamon</td>
<td>Sweet, pungent</td>
<td>Jams, jellies, fruit and vegetable pickles, vegetable relishes, tomato sauce, fruit sauces, meats, fish</td>
<td>Jellies, preserves, fruit and vegetable pickles</td>
<td>Jellies, preserves, fruit and vegetable pickles</td>
</tr>
<tr>
<td>Cloves</td>
<td>Strong, sweet, pungent</td>
<td>Vegetable pickles, vegetable relishes, chili sauce, chutneys, fruit sauces, soups</td>
<td>Vegetable pickles, vegetable relishes, soups</td>
<td>Vegetable pickles, vegetable relishes, soups</td>
</tr>
<tr>
<td>Ginger</td>
<td>Spicy, sweet, pungent</td>
<td>Vegetable pickles, vegetable relishes, chili sauce, chutneys, fruit sauces, soups</td>
<td>Vegetable pickles, vegetable relishes, soups</td>
<td>Vegetable pickles, vegetable relishes, soups</td>
</tr>
<tr>
<td>Mace</td>
<td>Similar to nutmeg</td>
<td>Jellies, vegetable pickles</td>
<td>Jellies, vegetable pickles</td>
<td>Jellies, vegetable pickles</td>
</tr>
<tr>
<td>Nutmeg</td>
<td>Sweet, warm, spicy undertone</td>
<td>Corned beef, chicken soup, vegetable pickles</td>
<td>Corned beef, chicken soup, vegetable pickles</td>
<td>Corned beef, chicken soup, vegetable pickles</td>
</tr>
<tr>
<td>Paprika</td>
<td>Slightly sweet</td>
<td>Vegetable pickles, vegetable relishes, chili sauce, chutneys, fruit sauces, soups</td>
<td>Vegetable pickles, vegetable relishes, soups</td>
<td>Vegetable pickles, vegetable relishes, soups</td>
</tr>
<tr>
<td>Pepper, Black</td>
<td>Hot, biting, pungent</td>
<td>Vegetable pickles, vegetable relishes, chili sauce, chutneys, fruit sauces, soups</td>
<td>Vegetable pickles, vegetable relishes, soups</td>
<td>Vegetable pickles, vegetable relishes, soups</td>
</tr>
<tr>
<td>Pepper, Red</td>
<td>Hot, pungent</td>
<td>Vegetable pickles, vegetable relishes, chili sauce, chutneys, fruit sauces, soups</td>
<td>Vegetable pickles, vegetable relishes, soups</td>
<td>Vegetable pickles, vegetable relishes, soups</td>
</tr>
<tr>
<td>Turmeric</td>
<td></td>
<td></td>
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<table>
<thead>
<tr>
<th><strong>HERBS</strong></th>
<th><strong>FLAVOR</strong></th>
<th><strong>USES</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Basil</td>
<td>Sweet, warm, pungent undertone</td>
<td>Tomatoes, tomato paste</td>
</tr>
<tr>
<td>Bay Leaves</td>
<td>Pungent</td>
<td>Tomato paste, sauce, juice; vegetable pickles; meat; fish; poultry</td>
</tr>
<tr>
<td>Marjoram</td>
<td>Aromatic, bitter undertone</td>
<td>Tomato sauce, meat sauces</td>
</tr>
<tr>
<td>Mint</td>
<td>Strong, sweet, tangy</td>
<td>Jellies</td>
</tr>
<tr>
<td>Oregano</td>
<td>Strong, aromatic, bitter undertone</td>
<td>Tomato paste, meat sauces</td>
</tr>
<tr>
<td>Parsley</td>
<td>Mild</td>
<td>Tomato paste, meat sauces</td>
</tr>
<tr>
<td>Tarragon</td>
<td>Similar to anise</td>
<td>Tomato juice, sauce; meat; poultry</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>SEEDS</strong></th>
<th><strong>FLAVOR</strong></th>
<th><strong>USES</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Anise</td>
<td>Licorice</td>
<td>Fruit and vegetable pickles</td>
</tr>
<tr>
<td>Caraway</td>
<td>Slightly sharp, sweet undertone</td>
<td>Vegetable pickles, sauerkraut</td>
</tr>
<tr>
<td>Cardamon</td>
<td>Aromatic, pungent</td>
<td>Vegetable pickles</td>
</tr>
<tr>
<td>Celery</td>
<td>Warm, slightly bitter</td>
<td>Vegetable pickles, vegetable relishes, tomato catchup, chili sauce</td>
</tr>
<tr>
<td>Coriander</td>
<td>Blend of lemon peel and sage</td>
<td>Vegetable pickles</td>
</tr>
<tr>
<td>Cumin</td>
<td>Slightly bitter, similar to caraway</td>
<td>Vegetable pickles, chutney, chili</td>
</tr>
<tr>
<td>Dill</td>
<td>Faint caraway tang</td>
<td>Vegetable pickles</td>
</tr>
<tr>
<td>Fennel</td>
<td>Licorice</td>
<td>Vegetable pickles, fruit and vegetable pickles</td>
</tr>
<tr>
<td>Mustard</td>
<td>Sharp, hot, pungent</td>
<td>Vegetable pickles, vegetable relishes, chutneys, tomato catchup, chili sauce</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>BLENDS</strong></th>
<th><strong>FLAVOR</strong></th>
<th><strong>USES</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chili Powder</td>
<td>Chilies, cumin and caraway seeds, onion, garlic, oregano, cayenne, etc.</td>
<td>Tomato sauce, chili</td>
</tr>
<tr>
<td>Curry Powder</td>
<td>Cardamon seed, cayenne, cumin, turmeric, coriander seed, clove, red and black pepper, garlic, ginger, etc.</td>
<td>Vegetable pickles</td>
</tr>
<tr>
<td>Mixed Pickling Spices</td>
<td>Allspice; caraway, cardamon, cumin, fennel, coriander, mustard and dill seeds; cayenne; bay leaves; chilies; ginger; turmeric; cinnamon; clove; mace; black pepper, etc.</td>
<td>Vegetable pickles, vegetable relishes, pumpkin and apple preserves, chili sauce, red hot sauce</td>
</tr>
</tbody>
</table>
Fruits and acid vegetables (pimientos, rhubarb, sauerkraut and tomatoes) must be processed in a water-bath canner to assure all spoilage microorganisms are destroyed. The processing times in this section are for foods processed at altitudes less than 1,000 feet above sea level. If you live in an area of a higher altitude, see page 7 for the adjustment you need to make.

General Instructions

1. Read recipe for food being canned. Check manufacturer’s instructions for filling and sealing jars.

2. Get out all equipment and utensils needed. Fill water-bath canner half full with hot water and put it on to heat. Prepare salt-vinegar water solution and sugar sirup, if needed.

3. Check jars for nicks, cracks and sharp edges on sealing surfaces. Wash jars in hot soapy water. Rinse. Cover with hot water. Let jars remain in hot water until ready to use. Wash and rinse fittings. (See page 10.)

4. Use sound, fresh, firm-ripe produce. Sort it for size, ripeness and color.

5. Wash and drain fruits and vegetables before removing hulls (caps), cores, pits, seeds or skins.

6. Waste no time between steps in preparing, packing and processing.

7. Prepare only enough produce for one canner load at a time.

8. Cover food with boiling water or boiling hot sirup, leaving ½-inch head space.

9. Remove air bubbles by running rubber bottle scraper or similar non-metal utensil between jar and food. If needed, add more liquid to cover.

10. Wipe top and threads of jar with clean, damp cloth before capping.
11. Place each jar as it is filled on rack in canner. Water should be hot, but not boiling. When all jars are in the canner, add water to cover them 1 to 2 inches. Bring water to a boil. Reduce heat to hold water at a steady but gentle boil. Start counting processing time and process for recommended length of time. If, during the processing time, the water should boil away and the tops of the jars are above the water line, add boiling water to cover them 1 to 2 inches.

12. Remove jars from canner. Stand them on cloths or wood, a few inches apart, out of drafts, to cool. About 12 hours later, test jars for seal. (See page 10.)

13. If for any reason a jar has failed to seal, repack and process the full length of time or refrigerate and use the food as soon as possible.

14. Store jars in a dark, dry, reasonably cool place.

15. Processing times are given for pints and quarts; if using half-pints or half-gallons, see chart, page 16.

16. When measuring use standard 8-ounce cup. 2 cups = 1 pint; 4 cups (2 pints) = 1 quart; 16 cups (4 quarts) = 1 gallon.

17. If using a steam-pressure canner, vent canner for 10 minutes. Close vent and bring pressure to 5 pounds. Process fruits for 10 minutes, tomatoes for 15 minutes.

To Keep Fruit From Darkening
While preparing for canning... use ascorbic acid and citric acid mixtures according to the manufacturer's instructions or add 2 tablespoons each salt and vinegar to 1 gallon water. Drop apples, apricots, peaches or pears into the solution as they are pared, cored, peeled or pitted. If using the salt-vinegar water mixture, do not leave fruit in longer than 20 minutes and rinse the fruit before packing.

To prevent darkening in the jar... use ascorbic and citric acid mixtures according to the manufacturer's instructions. If using pure ascorbic acid, sprinkle ¼ teaspoon to each quart over the fruit just before capping the jar.

Sirups for Canning

<table>
<thead>
<tr>
<th>Type of Sirup</th>
<th>Sugar to One Quart Water</th>
<th>Yield of Sirup</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light</td>
<td>2 cups</td>
<td>5 cups</td>
</tr>
<tr>
<td>Medium</td>
<td>3 cups</td>
<td>5 1/2 cups</td>
</tr>
<tr>
<td>Heavy</td>
<td>4 3/4 cups</td>
<td>6 1/2 cups</td>
</tr>
</tbody>
</table>

Medium with Corn Sirup: Use 1 1/2 cups sugar, 1 cup corn sirup to 3 cups water.

Medium with Honey: Use 1 cup sugar, 1 cup honey to 4 cups water.

Measure sugar and liquid (either water or fruit juice) into a saucepan. Cook until sugar dissolves. Keep sirup hot until needed, but do not let it boil down. Usually 1 to 1 1/2 cups of sirup are needed for each quart of fruit.
Canning Peaches

1. Check jars. Be sure there are no nicks, cracks or sharp edges. Use new lids.
2. Wash and rinse jars and caps. Leave jars in hot water until ready to use.
3. Cut peaches into halves, pit and peel. Drop halves into salt-vinegar water (2 tablespoons each to 1 gallon cold water). Rinse before packing.
4. Stand hot jar on rubber tray, wood or cloth. Pack peaches, cavity-side down, layers overlapping. Leave 1/2-inch head space.
5. Wipe top and threads of jar with clean, damp cloth. Put lid on; screw band tight . . . it must screw down evenly to hold red rubber sealing compound against top of jar.
6. As each jar is filled, stand it on rack in canner. Water should be hot, but not boiling. If needed, add more water to cover jars 1 to 2 inches. Put cover on canner.
Step by Step

Sort, wash and drain only enough firm-ripe peaches for one canner load. Fill water-bath canner half full with hot water. Put canner on to heat. Prepare sugar sirup.

Cover peaches with boiling hot sirup, leaving ½-inch head space. It will take 1 to 1½ cups sirup for each quart jar.

Bring water to a boil. At altitudes less than 1,000 feet above sea level process pints 25 minutes, quarts 30 minutes, at a gentle but steady boil. (For higher altitudes see page 7.)

Run rubber bottle scraper or similar non-metal utensil between fruit and jar to release air bubbles. Add more sirup, if needed.

Remove jars from canner. Let cool for about 12 hours. Remove bands. Test for seal. (See page 37.) Store without bands.

The raw (cold) pack is shown on these pages. For hot pack, see page 27. When using Ball Zinc Caps and Mason Jars, or Ball Ideal Jars, prepare, pack and process as shown here. Seal jars as instructed on page 10.
Fruits

Apples - Baked
Make thin sugar or medium honey sirup. Wash and core baking apples; leave whole or cut into halves. Arrange apples in shallow baking pan; pour sirup over apples until it is about 1/4-inch deep in bottom of pan. For each apple, mix 1 teaspoon sugar and a little cinnamon or ginger. Sprinkle over apples. Bake apples in moderate oven (350°F.) until about half done, basting occasionally. Pack, hot, into hot Ball jars, leaving 1/2-inch head space. Cover with boiling sirup, leaving 1/2-inch head space. Adjust caps. Process pints 25 minutes, quarts 30 minutes, in boiling-water bath.

Apples - Hot Pack
Make light or medium sirup. Wash, drain, core, pare and slice cooking apples (or cut into halves or quarters). Treat to prevent darkening. (See page 21.) Drain. Pack, hot, into hot Ball jars, leaving 1/2-inch head space. Cover with boiling sirup, leaving 1/2-inch head space. Adjust caps. Process pints and quarts 20 minutes in boiling-water bath.

Apples - For Pies
Make sirup (1 cup sugar to 4 or 5 cups water). Follow recipe for Apples—Hot Pack.

Applesauce
Wash, pare, if desired, quarter and core cooking apples. Simmer, covered, in a small amount of water, until tender. Press apples through sieve or food mill. Sweeten sauce to taste (about 1/4 cup sugar to 4 medium apples). Reheat to boiling. Pour, boiling hot, into hot Ball jars, leaving 1/2-inch head space. Adjust caps. Process pints and quarts 20 minutes in boiling-water bath.

Apricots
Tree-ripened apricots may be canned whole. Pits should be removed from fruit harvested before it was fully ripe. Some varieties of apricots should be packed raw because they do not hold their shape when heated before packing.

COLD or RAW PACK . . . Make medium or light sirup. Wash, drain and cut fruit into halves. Pit. Treat to prevent darkening. (See page 21.) Drain. Pack into hot Ball jars, leaving 1/2-inch head space. Cover with boiling sirup, leaving 1/2-inch head space. Adjust caps. Process pints 25 minutes, quarts 30 minutes, in boiling-water bath.

HOT PACK . . . Make medium or heavy sirup. Wash and scald apricots. Remove pits and skins. Treat to prevent darkening. (See page 21.) Drain. Cook a few apricots at a time in sirup until hot through. Pack, hot, into hot Ball jars, leaving 1/2-inch head space. Cover with boiling sirup, leaving 1/2-inch head space. Adjust caps. Process pints 20 minutes, quarts 25 minutes, in boiling-water bath.

Berries
COLD or RAW PACK . . . Use for red raspberries and others (except strawberries) which do not hold shape well. Make light or medium sirup. Wash berries in cold or ice water to firm fruit. Drain. Pour about 1/2 cup boiling sirup into hot Ball jar. Fill jar with berries. Shake jar to pack berries closely without crushing, leaving 1/2-inch head space. Add more hot sirup, if needed, leaving 1/2-inch head space. Adjust cap. Process pints 15 minutes, quarts 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; 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, leaving 1/2-inch head space. If there is not enough sirup to cover berries, add boiling water, leaving 1/2-inch head space. Adjust caps. Process pints 10 minutes, quarts 15 minutes, in boiling-water bath.

WITHOUT SUGAR—USE IN PIES . . Wash and drain firm-ripe berries. Pour hot water into pan, barely covering the bottom. Add berries. Simmer until hot through. Pack, hot, into hot Ball jars, leaving 1/2-inch head space. If there is not enough juice to cover berries, add boiling water, leaving 1/2-inch head space. Adjust caps. Process pints 10 minutes, quarts 15 minutes, in boiling-water bath.

Blueberries and Huckleberries
These berries may be canned in sirup or water, but the method given here is better if berries are to be used in muffins, etc. Put 2 or 3 quarts clean

**Elderberries**

Follow any recipe for berries. You may add 1 tablespoon vinegar to each quart to improve flavor.

**Gooseberries**

Make medium or heavy sirup. Wash and drain green berries. Use scissors to snip off "heads and tails." Pour 1/2 cup boiling sirup into hot Ball jar. Fill jar with berries. Shake jar to pack berries closely without crushing, leaving 1/2-inch head space. Add more boiling sirup, if needed, to cover berries, leaving 1/2-inch head space. Adjust cap. Process pints 15 minutes, quarts 20 minutes, in boiling-water bath.

**Strawberries**

Strawberries tend to fade and lose flavor when canned. Use firm, red-ripe berries, which have neither white nor hollow centers. Hull (cap), wash, drain and measure berries. Use 1/2 to 3/4 cup sugar to each quart berries. Gently mix sugar with berries. Let stand 5 to 6 hours in a cool place. Heat slowly until sugar dissolves and berries are hot. Pack, hot, into hot Ball jars, leaving 1/2-inch head space. Adjust caps. Process pints 10 minutes, quarts 15 minutes, in boiling-water bath.

**Cherries**

COLD or RAW PACK . . . If cherries are sweet, make a light or medium sirup; if sour, use medium or heavy sirup. Cherries for pies may be canned in water, but hold color better when some sugar is used. Wash, drain and stem cherries. (Fruit which floats may contain worms.) Pits may be left in or taken out, depending upon how fruit is to be used. If pit is left in, prick each cherry with a needle to prevent bursting and shrinking. If no regular cherry pitter or stoner is available, use a wire hairpin or wire paper clip to remove pits. Boil pin to sterilize. Stick loop end through stem end of cherry and lift out pit. Pour about 1/2 cup boiling sirup into hot Ball jar. Fill jar with cherries. Shake jar to pack cherries closely without crushing, leaving 1/2-inch head space. Cover with boiling sirup or boiling water, leaving 1/2-inch head space. Adjust cap. Process pints 20 minutes, quarts 25 minutes, in boiling-water bath.

HOT PACK . . . Prepare cherries as for Cold or Raw Pack. Measure after pitting. Mix 1/2 to 3/4 cup sugar with each quart cherries. Heat slowly until sugar dissolves and cherries are hot through. If cherries are unpitted, add a little water to prevent sticking. Pack, hot, into hot Ball jars, leaving 1/2-inch head space. If there is not enough sirup to cover cherries, add boiling water or light sirup, leaving 1/2-inch head space. Adjust caps. Process pints 10 minutes, quarts 15 minutes, in boiling-water bath.

**Cranberry Sauce**


NOTE: A stick of cinnamon or a few whole cloves may be cooked with the sauce to give a spicy flavor. Remove spices before packing sauce.

JELLIED . . . Wash, sort and stem berries. Boil 4 1/4 cups berries and 1 3/4 cups water together until skins burst. Press through sieve or food mill. Add 2 cups sugar to pulp and juice. Boil almost to jellying point. (See page 67.) Pour, boiling hot, into sterilized Ball jars, leaving 1/2-inch head space. Adjust caps. Yield: about 2 pints.

**Dried Fruits**

Prunes, Apricots, Peaches, etc.

Wash fruit. Cover with cold water. Let stand 12 to 18 hours in cool place. Drain off water and save. Pack fruit into hot Ball jars, leaving 1/2-inch head space. Make sirup of water and 2 tablespoons sugar for each quart of fruit. Pour hot sirup over fruit, leaving 1/2-inch head space. Adjust caps. Process pints 15 minutes, quarts 20 minutes, in boiling-water bath.
**Figs**


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**Frozen Fruits For Canning**

Be sure the frozen fruit is of excellent quality and that it has not been thawed and refrozen. Defrost fruit in unopened package. Drain off sirup. Heat sirup to boiling. Add fruit and boil gently 2 to 3 minutes. Pack, hot, into hot Ball jars, leaving ⅛-inch head space. Add boiling water if there is not enough sirup to cover fruit, leaving ⅛-inch head space. Adjust caps. Process for the time given on page 16 for hot-packed fruit.

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**Grapes - Ripe**

Make light or medium sirup. Wash and drain grapes. Remove stems. Pour about ⅛ cup boiling sirup into hot Ball jar. Fill jar with grapes. Shake jar to pack grapes closely without crushing, leaving ⅛-inch head space. Add more sirup, if needed, to cover grapes, leaving ⅛-inch head space. Adjust cap. Process pints 15 minutes, quarts 20 minutes, in boiling-water bath.

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**Grapes - Unripe**

Green grapes, canned before the seeds harden, are used in pies. Make medium or heavy sirup. Wash, drain and stem grapes. Pack into hot Ball jars, leaving ⅛-inch head space. Cover with boiling sirup, leaving ⅛-inch head space. Adjust caps. Process pints 20 minutes, quarts 25 minutes, in boiling-water bath.

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**Grapefruit**

Make light sirup. Wash and drain firm, heavy, fresh, tree-ripened fruit. Pare grapefruit, cutting deep enough to remove white membrane. Run a thin knife between pulp and skin of each section and lift out the pulp or “heart” without breaking. Discard seeds. Pack fruit into hot Ball jars, leaving ⅛-inch head space. Cover with boiling sirup, leaving ⅛-inch head space. Adjust caps. Process pints and quarts 10 minutes in boiling-water bath, or 30 minutes at 190°F. in hot-water bath.

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**Guavas**


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**Loquats**


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**Mixed Fruits**

Use three or more fruits, such as apricots, grapefruit, peaches, pears, green gage plums, pineapple, white cherries, white grapes. Make light sirup. Prepare each fruit as given in the recipe for canning it. If to be used for salad or dessert, leave in large pieces; cut into small pieces for cocktails. Simmer fruit in sirup until hot through. Pack, hot, into hot Ball jars, leaving ⅛-inch head space. Cover with boiling sirup, leaving ⅛-inch head space. Adjust caps. Process pints 20 minutes, quarts 25 minutes, in boiling-water bath.

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**Nectarines**

Follow recipes for canning Apricots. page 24.

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**Peaches**

See pages 22, 23 for the best way to handle evenly ripened peaches. Unevenly ripened fruit must be peeled with a knife or by the lye method.

Scrape cavities to remove pink or red fibers. The fibers are likely to become an ugly brownish color; there is no other reason for removing them. Cling peaches are easier to cut into halves if a pitting spoon is pushed all the way through from the stem end to the end of the stone. If no
spoon is available, cut both sides through to stone; begin at stem end and follow crease. After cutting, hold peach with both hands and twist in opposite directions.

The lye method of peeling, while practical when a large quantity is to be canned, requires skill. To lye peel... put 2 tablespoons lye in an enameled ware or iron kettle. Do not use aluminum, copper, tin or zinc. Add 1 gallon water and heat to boiling. Put fruit, cut into halves, in a basket and hold in the boiling lye ½ to 1 minute. Wash immediately in cold water. Rinse through several changes of water to remove skin and lye. Fruit will darken if left in lye too long, or if not well rinsed.


HOT PACK... Make medium or heavy sirup. Wash and scald peaches. Cut into halves, pit and peel. Treat to prevent darkening. (See page 21.) Drain. Cook a few peaches at a time in sirup until hot through. Pack, hot, into hot Ball jars, leaving ½-inch head space. Cover with boiling sirup, leaving ½-inch head space. Adjust caps. Process pints 20 minutes, quarts 25 minutes, in boiling-water bath.

FOR JUICY PEACHES... Measure after pitting and peeling. Add 1 to 2 cups sugar to each 5 quarts fruit. Heat slowly until sugar dissolves and fruit is boiling hot through. Pack and process as for Peaches—Hot Pack. If there is not enough sirup, add boiling water to cover peaches, leaving ½-inch head space.

Pears

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


CINNAMON PEARS... Add 2 sticks cinnamon and a few drops of red food color to each quart sirup. Remove cinnamon before packing pears.

ORANGE PEARS... Cook peel of ¼ orange with each quart of sirup. Remove orange peel before packing pears.

MINT PEARS... Add oil of peppermint and green food color, a drop at a time, until sirup is flavored and colored as wanted. Cook pears in sirup 10 minutes before packing.

PINEAPPLE PEARS... Use pineapple juice instead of water for making sirup.

Pears - Baked


Pear and Melon Balls

Persimmons

Wash ripe wild persimmons. Steam until soft, or cook in just enough water to prevent sticking. Press through sieve or food mill. Sweeten pulp to taste, if to be used as a sauce; otherwise add no sugar. Reheat to boiling. Pour, boiling hot, into hot Ball jars, leaving 1/2-inch head space. Stir with rubber bottle scraper or similar non-metal utensil to remove air bubbles. Adjust caps. Process pints 15 minutes, quarts 20 minutes, in boiling-water bath.

Persimmons - Dried

Place ripe wild persimmons in sun until dried (like dates). Pack into hot Ball jars, leaving 1/2-inch head space. Add no sirup or water. Adjust caps. Process pints and quarts 15 minutes in boiling-water bath. Canned dried persimmons may be used in any recipe calling for dates.

Pineapple

Make light sirup. Scrub firm-ripe pineapple. Cut thin slice from bottom, then cut fruit into 1/2-inch slices, crosswise. Pare, remove “eyes” and core after slicing. This may be done with heavy doughnut cutter. Pineapple may also be cut into 8 wedge-shape slices, lengthwise; cut into halves, then quarters, etc. Simmer pineapple in sirup until tender. Pack, hot, into hot Ball jars, leaving 1/2-inch head space. Cover with boiling sirup, leaving 1/2-inch head space. Adjust caps. Process pints 15 minutes, quarts 20 minutes, in boiling-water bath.

Plums and Fresh Prunes

Green gage and other meaty plums are better for canning than the more juicy varieties. Plums may be scalded and peeled, but are usually canned unpeeled. Prick plums with needle. Pricking does not prevent skins cracking, but helps prevent the fruit bursting. Make medium or heavy sirup. Wash and drain plums. Heat sirup to boiling. Add plums (not more than 2 layers in pan). Remove pan from heat 2 minutes after adding fruit. Cover. Let stand 20 to 30 minutes. Pack plums into hot Ball jars, leaving 1/2-inch head space. Reheat sirup to boiling. Pour over plums, leaving 1/2-inch head space. Adjust caps. Process pints 20 minutes, quarts 25 minutes, in boiling-water bath.

Acid Vegetables

Pimientos

Scald ripe pimientos in boiling water, or roast in oven until skins can be rubbed off. Remove skins, stem and blossom ends and seeds. Flatten pimientos. Pack into hot Ball jars, leaving 1/2-inch head space. Add no liquid. Adjust caps. Process pints 40 minutes, quarts 45 minutes, in boiling-water bath; or process pints and quarts 15 minutes at 5 pounds pressure.

Rhubarb

Wash and cut unpeeled stalks into 1-inch pieces. Measure. Add 1/2 to 1 cup sugar for each quart rhubarb. Mix well. Let stand 3 to 4 hours. Heat slowly to boiling. Boil 1/2 minute. Pack, hot, into hot Ball jars, leaving 1/2-inch head space. Adjust caps. Process pints and quarts 10 minutes in boiling-water bath.

Rhubarb - Baked

Cut rhubarb into 1 1/2-inch pieces. Add 1 cup sugar and 1/2 teaspoon spice to each quart of rhubarb. Bake in moderate oven (350° F.) until tender. Pack, hot, into hot Ball jars, leaving 1/2-inch head space. Adjust caps. Process pints and quarts 5 minutes in boiling-water bath.
Tomatoes

Use fresh, firm, red-ripe tomatoes which are free of decayed spots, weather cracks and fungus growths. Wash tomatoes clean before scalding. Scald a few at a time to loosen skins, then dip in cold water. Cut out all core and green spots; skin.

COLD or RAW PACK . . . See pages 30, 31 for "how-to" picture series. Prepare as instructed above. Pack into hot Ball jars, pressing tomatoes until spaces fill with juice, leaving ¼-inch head space. Add 1 teaspoon salt to each quart, if desired. Adjust caps. Process pints 10 minutes, quarts 15 minutes, in boiling-water bath.

HOT PACK . . . Prepare as instructed above. Boil tomatoes 5 minutes, stirring constantly. Pour, hot, into hot Ball jars, leaving ½-inch head space. Adjust caps. Process pints 10 minutes, quarts 15 minutes, in boiling-water bath.

Tomatoes For Salad

Prepare tomato juice. (See recipe below or use canned tomato juice.) Pack peeled and cored whole tomatoes into hot Ball jars, leaving ½-inch head space. Pour hot tomato juice over tomatoes, leaving ½-inch head space. Adjust caps. Process pints 35 minutes, quarts 45 minutes, in boiling-water bath.

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, stirring often. Press through fine sieve or food mill. Reheat juice until it is almost, but not quite, boiling. Pour, hot, into hot Ball jars, leaving ¼-inch head space. Adjust caps. Process pints 10 minutes, quarts 15 minutes, in boiling-water bath. Salt, sugar and spices, to taste, may be added to the juice.

Stewed Tomatoes

4 quarts peeled, cored, chopped tomatoes (about 2 dozen large) 1 cup chopped celery

1/2 cup chopped onion 1/4 cup chopped green pepper

1 tablespoon sugar 2 teaspoons salt

Combine all ingredients; cover and cook 10 minutes, stirring occasionally to prevent sticking.

Pour, hot, into hot Ball jars, leaving ¼-inch head space. Adjust caps. Process pints 15 minutes, quarts 20 minutes, at 10 pounds pressure. Yield: about 7 pints.

To Serve: Add a tablespoon butter, cubes of bread and corn starch or flour to thicken before heating.

Tomato Paste

8 quarts peeled, cored, chopped tomatoes (about 4 dozen large) 1 1/2 cups chopped sweet red peppers (about 3)

2 bay leaves 1 tablespoon salt

1 clove garlic (optional)

Combine first four ingredients and cook slowly 1 hour. Press through a fine sieve; add garlic if desired. Continue cooking slowly until thick enough to round up on a spoon, about 2 1/2 hours. Stir frequently to prevent sticking. Remove garlic. Pour, hot, into hot Ball jars, leaving ¼-inch head space. Adjust caps. Process half-pints 45 minutes in boiling-water bath. Yield: about 9 half-pints.

Tomato Puree

Wash, scald, peel and core tomatoes. Cook until soft. Press through fine sieve. Cook until thick; stir frequently to prevent sticking. If permitted in diet, 1 teaspoon each salt and sugar may be added to each quart puree. Pour, hot, into hot Ball jars, leaving ¼-inch head space. Adjust caps. Process half-pints and pints 30 minutes in boiling-water bath.

Tomato Puree - Seasoned

4 quarts peeled, cored, chopped tomatoes (about 2 dozen large) 3 cups chopped onions

2 cups sliced carrots (about 4 medium)

1/2 cup chopped celery 1 1/2 cups chopped green peppers (about 3 medium)

1 tablespoon salt

Combine all ingredients; cook until tender. Press through fine sieve. Cook pulp until thick, about 1 1/2 hours. Stir frequently to prevent sticking. Pour, hot, into hot Ball jars, leaving ¼-inch head space. Adjust caps. Process half-pints and pints 45 minutes in boiling-water bath. Yield: about 9 half-pints.
Canning Tomatoes...

1. Check manufacturer's instructions for filling and sealing jars. Set out all equipment and utensils needed.

2. Check jars. Be sure there are no nicks, cracks or sharp edges. Use new lids. Fill water-bath canner half full with hot water. Put canner on to heat.

3. Cut out all cores, remove skins and trim off any green spots. Cut tomatoes in quarters or leave whole.

4. As each jar is filled, stand it on rack in canner of hot, not boiling, water. Water should cover jars 1 to 2 inches.

5. Put tomatoes in wire basket or cheesecloth. Place in boiling water about ½ minute to loosen skins. Dip into cold water. Drain.

6. Wipe top and threads of jar with clean, damp cloth. Put lid on, red rubber sealing compound next to jar. Screw band down evenly and tight.
Step by Step

3 Wash and rinse jars and caps. Leave jars in hot water until ready to use.

4 Use fresh, firm, red-ripe tomatoes. Those with decayed spots and cracks are unfit for canning. Wash and drain only enough tomatoes for one canner load.

5 Pack tomatoes into hot jar. Cover with hot tomato juice or press tomatoes until spaces fill with juice. Leave 1/2-inch head space.

6 Add 1 teaspoon salt per quart. Run rubber bottle scraper or similar non-metal utensil between tomatoes and jar to release air bubbles.

7 Put cover on canner. Bring water to a boil. At altitudes less than 1,000 feet above sea level process pints 35 minutes, quarts 45 minutes, at a gentle but steady boil. (For higher altitudes see page 7.)

8 Remove jars from canner. Let cool for about 12 hours. Remove bands. Test for seal by pressing center of lid. If dome is down, or stays down when pressed, jar is sealed. (See page 37.)
Fruit Juices

Apricot or Peach Juice, Nectar or Purée

Although it may be thinned with a light or medium sirup before canning, the pulp of apricots is usually canned as a purée and thinned with ice-cold water when used as a drink.

**TO MAKE**... Wash, drain, pit and measure ripe apricots. Add 1 cup boiling water to each quart fruit. Cook until fruit is soft. Press through sieve or food mill. Add sugar to taste, also 1 tablespoon lemon juice to each quart if wanted. Reheat until sugar dissolves. Pour, hot, into hot Ball jars, leaving ¼-inch head space. Adjust caps. Process half-pints and pints 15 minutes in boiling-water bath. (3¾ quarts prepared fruit and 3½ cups water yield about 9 pints canned purée.)

**NOTE:** If using blender to make purée, fruit should be peeled.

**Berry Juices**

Use boysenberries, loganberries, raspberries, etc. Wash, crush and simmer berries until soft. Strain through cotton flannel, jelly bag or 4 layers of cheesecloth. (For a greater yield of juice, twist the two ends of the bag in opposite directions until most of the juice is extracted.) Add 1 to 2 cups sugar to each gallon juice. Reheat to 190°F. Pour, hot, into hot Ball jars, leaving ¼-inch head space. Adjust caps. Process pints and quarts 30 minutes at 190°F in hot-water bath.

**NOTE:** If clearer juice is desired, before adding sugar let juice stand for 24 hours in refrigerator. Carefully ladle juice into pan (do not disturb sediment), add sugar and proceed as above.

**Blackberry Cordial**

To 2 quarts blackberry juice (see Berry Juices, above, for how to prepare juice), add 3 cups sugar, and 1 tablespoon each whole cloves, whole allspice, whole cinnamon and whole nutmeg (tied in bag). Simmer 30 minutes. Bring to boiling. Discard spice bag. Pour, boiling hot, into sterilized Ball jars, leaving ¼-inch head space. Adjust caps.

Cider

Put clean, sound, ripe apples through cider mill. Strain. Pour cider into hot Ball jars, leaving ¼-inch head space. Adjust caps. Process pints and quarts 30 minutes at 185°F in hot-water bath. Strain before serving. (Yield depends upon juiciness of apples used.)

**Cranberry Juice**

Wash cranberries. Boil equal measure of berries and water together until berries burst. Strain juice through cotton flannel, jelly bag or 4 layers of cheesecloth. (For a greater yield of juice, twist the two ends of the bag in opposite directions until most of the juice is extracted.) Add sugar to taste. Boil 1 minute. Pour, boiling hot, into sterilized Ball jar, leaving ¼-inch head space. Adjust cap.

**Grape Juice I**

Wash, stem, crush and measure fresh, firm-ripe grapes. Add 1 cup water to each gallon crushed grapes. Heat 10 minutes at 190°F. (Boiling develops a poor flavor.) Strain through cotton flannel, jelly bag or 4 layers of cheesecloth. (For a greater yield of juice, twist the two ends of the bag in opposite directions until most of the juice is extracted.) Add 1 to 2 cups sugar to each gallon juice. Reheat to 190°F. Pour, hot, into hot Ball jars, leaving ¼-inch head space. Adjust caps. Process pints and quarts 30 minutes at 190°F in hot-water bath.

**Grape Juice II**

Wash and stem fresh, firm-ripe grapes. Put 1 cup grapes into a hot quart Ball jar. Add ½ to 1 cup sugar. Fill jar with boiling water, leaving ¼-inch head space. Adjust cap. Process quarts 10 minutes in boiling-water bath.

**Grapefruit Juice**

Wash fresh, tree-ripened grapefruit. Extract and strain juice. Add sugar to taste. Heat to 165°F. Pour, hot, into hot Ball jars, leaving ¼-inch head space. Adjust caps. Process pints and quarts 30 minutes at 165°-175°F in hot-water bath. (Yield depends upon juiciness of fruit used.)
Low-acid vegetables must be processed in a steam-pressure canner at a temperature of 240°F. (10 pounds pressure) to assure that all spoilage microorganisms are destroyed. The pounds pressure in this section are for foods processed at altitudes less than 2,000 feet above sea level. If you live in an area of a higher altitude, see page 7 for the adjustment you need to make.

General Instructions

1. Read recipe for product being canned. Check manufacturer's instructions for filling and sealing jars.

2. Get out all equipment and utensils needed. To assure safe operation of your steam-pressure canner, clean petcock (vent) and safety valve openings by drawing a string through them. Wash canner kettle thoroughly. Reread manufacturer's instructions for using the steam-pressure canner.

3. Check jars for nicks, cracks and sharp edges on sealing surfaces. Wash jars in hot soapy water. Rinse. Cover with hot water. Let jars remain in hot water until ready to use. Wash and rinse fittings. (See page 10.)

4. Can vegetables when they are garden-fresh and at the best stage for cooking.

5. Wash and drain vegetables before cutting or breaking the skin. Lift vegetables out of water, so dirt that is washed off will not be drained back over them.

6. Waste no time between steps in preparing, packing and processing.

7. Prepare only enough produce for one canner load at a time.

8. Pack vegetables loosely enough for water to circulate between the pieces, but tightly enough to prevent waste of jar space.

9. Cover vegetables with fresh boiling water, or with the water in which they were heated for packing, leaving 1-inch head space.

10. Remove air bubbles by running rubber bottle scraper or similar non-metal utensil between jar and food. If needed, add more liquid to cover.

11. Wipe top and threads of jar with clean, damp cloth before capping.

12. Put each jar on rack in steam-pressure canner, containing 2 to 3 inches of hot water, as jar is filled. Fasten canner cover on securely, according to the manufacturer's instructions.
Leave petcock (vent) open until steam escapes steadily for 10 minutes. Close petcock and bring pressure to 10 pounds. Start counting processing time. Process for recommended length of time, keeping pressure constant. (See pages 16, 17.)

13. Remove canner from heat. Let pressure fall to zero. Wait 2 minutes, then slowly open petcock. Unfasten cover; tilt the far side up so steam escapes away from you. Remove jars. Stand them on cloths or wood, a few inches apart and out of drafts, to cool. About 12 hours later, test jar for seal. (See page 10.)

14. If for any reason a jar has failed to seal, re-pack and process the full length of time or refrigerate and use the food as soon as possible.

15. Store jars in a dark, dry, reasonably cool place.

16. Salt may or may not be used when canning vegetables. The amount used (usually 1 teaspoon per quart) is too small to prevent spoilage and should be left out if it is not wanted for flavor.

17. Monosodium glutamate, if used, should be added before canning, following the manufacturer's instructions for the amount to use.

18. Steam-pressure saucepans may be used for processing pint and half-pint jars, provided the pressure can be held at 10 pounds. Since the pans heat and cool quickly, 20 minutes should be added to the regular steam-pressure processing time.

19. We cannot recommend processing low-acid vegetables in a water-bath canner, because a high enough temperature is not reached within a reasonable length of time to destroy all of the bacteria which cause spoilage.

20. Some vegetables, which are considered "quick-cooking" ones, need a long processing time in order to assure that all spoilage micro-organisms are destroyed.

**Raw Packing Vegetables**

The Human Nutrition Research Branch, Agricultural Research Service, United States Department of Agriculture, and other competent investigators have determined that asparagus, carrots, blackeye and green peas, green and Lima beans and corn may be safely packed raw for canning. Directions for packing these vegetables raw may be found in this book. Whether raw or hot packing gives better flavor and texture is debatable. You might like to try both methods and then use the one you prefer.
Canning Green Beans...

1. Check jars for nicks, cracks and sharp edges. Wash jars and caps in hot soapy water; rinse. Leave jars in hot water until ready to use. Use new lids and good bands.

2. Thoroughly wash freshly gathered beans, which are young, tender and crisp, in several changes of water. Lift beans out of water and drain.

3. Leave vent open until steam escapes steadily for 10 minutes. Close vent. At altitudes less than 2,000 feet above sea level bring pressure to 10 pounds. Keep pressure steady 20 minutes for pints, 25 minutes for quarts.


5. Stand hot jar on wood or cloth. Add 1 teaspoon salt per quart; cover beans with boiling water, leaving 1-inch head space.

6. Wipe top and threads of jar with clean, damp cloth. Put lid on, red rubber sealing compound next to jar. Screw band down evenly and tight.
Beans may be raw (cold) packed. (For instructions see page 38.) When using Ball Zinc Caps and Mason Jars, or Ball Ideal Jars, prepare, pack and process as shown here. Seal jars as instructed on page 10.

3 Trim ends; remove any strings; cut or break into pieces. Prepare only enough for one canner load.

4 Cover beans with boiling water and boil for 5 minutes, or pack raw.

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

8 Place canner over heat. Lock cover according to the manufacturer's instructions.

11 Stand jars several inches apart, out of drafts, to cool for about 12 hours. Remove bands.

12 Test the seal by pressing center of lid. If dome is down, or stays down when pressed, jar is sealed. Store without bands in dry, dark, reasonably cool place.
Asparagus

HOT PACK . . . Wash and drain tender, tight-tipped asparagus. Remove tough ends and scales. Wash again. Leave asparagus whole or cut into 1-inch pieces. Boil 3 minutes. Pack, hot, into hot Ball jars, leaving 1-inch head space. Add 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Adjust caps. Process pints 25 minutes, quarts 30 minutes, at 10 pounds pressure.

COLD or RAW PACK . . . Prepare as for Hot Pack. Pack as tightly as possible, without crushing, into hot Ball jars, leaving 1-inch head space. Add 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Adjust caps. Process pints 25 minutes, quarts 30 minutes, at 10 pounds pressure.

Beans - Boston Baked

1 quart dried navy beans
(about 2 pounds)
2 teaspoons salt
½ pound salt pork, cut in pieces
3 small onions, sliced
½ cup brown sugar, packed
2 teaspoons salt
2 teaspoons dry mustard
½ cup molasses

Cover beans with 3 quarts water; let stand 12 to 18 hours in a cool place. Add 2 teaspoons salt to beans and soaking water; bring to boil. Cover and simmer until skins begin to crack. Drain, reserving liquid. Pour beans into a baking dish or bean pot. Add pork and onions. Combine remaining ingredients. Add 4 cups reserved bean liquid (adding water, if necessary, to make 4 cups). Pour over beans. Cover and bake in a moderate oven (350°F) 3½ hours. Add water, if necessary, as beans should be “soupy.” Pack into hot Ball jars, leaving 1-inch head space. Adjust caps. Process pints 1 hour and 20 minutes, quarts 1 hour and 35 minutes, at 10 pounds pressure. Yield: about 6 pints.

Beans - Green, Snap and Wax

HOT PACK . . . See pages 36, 37 for “how-to” picture series. Wash, drain, string, trim ends and break or cut freshly gathered beans into 2-inch pieces. Boil 3 minutes. Pack, hot, into hot Ball jars, leaving 1-inch head space. Add 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Adjust caps. Process pints 20 minutes, quarts 25 minutes, at 10 pounds pressure.

NOTE: The processing time given applies only to young, tender pods. Beans that have almost reached the “shell-out” stage require 15 to 20 minutes longer processing time.

COLD or RAW PACK . . . Wash, drain, string, trim ends and break or cut freshly gathered beans into 2-inch pieces. Pack tightly into hot Ball jars, leaving 1-inch head space. Add 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Adjust caps. Process pints 20 minutes, quarts 25 minutes, at 10 pounds pressure.

Beans - Lima and Butter

HOT PACK . . . Wash, drain and shell tender young beans. Wash again. Boil 3 minutes. Pack, hot, into hot Ball jars, leaving 1-inch head space. Add 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Adjust caps. Process pints 40 minutes, quarts 50 minutes, at 10 pounds pressure. If beans are large process 10 minutes longer.

COLD or RAW PACK . . . Wash, drain and shell tender young beans. Wash again. Pack loosely into hot Ball jars, leaving 1-inch head space. Do not press or shake down. Add 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Adjust caps. Process pints 40 minutes, quarts 50 minutes, at 10 pounds pressure.

Beans - Soy

Use green soy beans. Follow recipe for Lima Beans. Process pints 55 minutes, quarts 1 hour and 5 minutes, at 10 pounds pressure.

Beans - With Pork and Tomato Sauce

1 quart dried navy beans
(about 2 pounds)
¼ pound salt pork, cut in pieces
1 quart tomato juice
3 tablespoons sugar
2 teaspoons salt
1 cup chopped onions
¼ teaspoon cloves
¼ teaspoon allspice

Use kidney or any other variety of dried beans or dried peas. Cover beans or peas with cold water. Let stand 12 to 18 hours in a cool place. Boil 30 minutes. Pack, hot, into hot Ball jars, leaving 1-inch head space. Add 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Adjust caps. Process pints 1 hour and 15 minutes, quarts 1 hour and 30 minutes, at 10 pounds pressure.
Cover beans with cold water and let stand 12 to 18 hours in a cool place. Drain and cover with boiling water; boil for 3 minutes. Remove from heat and let stand 10 minutes; drain. Pack 1 cup of beans into hot Ball jar. Top with piece of pork and fill jar about ¾ full with beans. Combine tomato juice, sugar, salt, onions and spices; heat to boiling. Pour hot sauce to within 1 inch of top of jar. Adjust cap. Process pints 1 hour and 5 minutes, quarts 1 hour and 15 minutes, at 10 pounds pressure. Yield: about 3 quarts.

Beets

Wash deep red beets. Leave 2 inches of stems and the tap roots. Boil until skins can be slipped. Remove skins, trim beets; leave whole, slice or dice. Pack into hot Ball jars, leaving 1-inch head space. Add 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Adjust caps. Process pints 30 minutes, quarts 35 minutes, at 10 pounds pressure.

Broccoli

NOTE: Broccoli, Brussels sprouts, cabbage, cauliflower, rutabagas and turnips usually discolor when canned, and also develop a strong flavor. Wash all-green broccoli. Cut into 2-inch pieces, or as wanted. Boil 3 minutes. Pack, hot, into hot Ball jars, leaving 1-inch head space. Add 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Adjust caps. Process pints 30 minutes, quarts 35 minutes, at 10 pounds pressure.

Brussels Sprouts

See note under Broccoli. Wash and prepare as for cooking. Soak 10 minutes in salt water (1 tablespoon salt to 1 quart water). Drain. Boil 3 minutes. Pack, hot, into hot Ball jars, leaving 1-inch head space. Cover with boiling water, leaving 1-inch head space. Adjust caps. Process pints 30 minutes, quarts 35 minutes, at 10 pounds pressure.

Cabbage


Carrots

HOT PACK ... Wash and scrape carrots. Wash again. Slice, dice or leave whole. Boil 3 minutes. Pack, hot, into hot Ball jars, leaving 1-inch head space. Add 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Adjust caps. Process pints 25 minutes, quarts 30 minutes, at 10 pounds pressure.

COLD or RAW PACK ... Wash and scrape carrots. Wash again. Slice, dice or leave whole. Pack tightly into hot Ball jars, leaving 1-inch head space. Add 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Adjust caps. Process pints 25 minutes, quarts 30 minutes, at 10 pounds pressure.

Cauliflower

See note under Broccoli. Clean and separate cauliflower into small pieces. Soak 10 minutes in salt water (1 tablespoon salt to 1 quart water). Drain. Boil 3 minutes. Pack, hot, into hot Ball jars, leaving 1-inch head space. Cover with boiling water, leaving 1-inch head space. Adjust caps. Process pints 30 minutes, quarts 35 minutes, at 10 pounds pressure.

Celery

Wash and cut celery into 2-inch pieces. Boil 3 minutes. Pack, hot, into hot Ball jars, leaving 1-inch head space. Add 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Adjust caps. Process pints 30 minutes, quarts 35 minutes, at 10 pounds pressure.

Celery and Tomatoes

Use equal parts celery and peeled, cored, chopped tomatoes. Mix and boil 5 minutes (no water needed). Pack, hot, into hot Ball jars, leaving 1-inch head space. Add 1 teaspoon salt to each quart, if needed. Cover with boiling water, leaving 1-inch head space. Adjust caps. Process pints 30 minutes, quarts 35 minutes, at 10 pounds pressure.

Corn

Use freshly gathered corn. The kernels should be plump, shiny and filled with milk. Can as quickly as possible after gathering. Handle in small quantities. Lose no time between preparing, packing and processing.
Cream-Style


COLD or RAW PACK . . . Husk corn; remove silk. Wash. Cut tip ends from kernels. Scrape out pulp. Pack corn loosely into hot pint Ball jars, leaving 1-inch head space. Do not shake or press down. Add 1/2 teaspoon salt to each pint. Cover with boiling hot water, leaving 1-inch head space. Adjust caps. Process pints 1 hour and 10 minutes, quarts 1 hour and 30 minutes, at 10 pounds pressure.

Whole-Kernel


COLD or RAW PACK . . . Husk corn; remove silk. Wash. Cut corn from cob. Do not scrape. Pack corn loosely into hot Ball jars, leaving 1-inch head space. Do not shake or press down. Add 1 teaspoon salt to each quart. Cover with boiling hot water, leaving 1-inch head space. Adjust caps. Process pints 55 minutes, quarts 1 hour and 25 minutes, at 10 pounds pressure.

Eggplant


Greens

Chard, Kale, Mustard, Spinach, Turnip, Beet Tops, Poke and Other Wild Greens

Wash greens thoroughly through several changes of water. Discard large, tough stems. Heat greens until wilted in just enough water to prevent sticking. To hasten wilting and prevent over-cooking, turn greens over when steam begins to rise around the edges of pan. Cut through greens several times with a sharp knife before packing. Pack, hot, into hot Ball jars, leaving 1-inch head space. Add 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Adjust caps. Process pints 1 hour and 25 minutes at 10 pounds pressure.

Lye Hominy

For each quart shelled white or yellow field corn: dissolve 2 tablespoons lye in 1 gallon boiling water. (Use enameled ware or iron kettle. Do not use aluminum, copper, tin or zinc.) Add corn. Boil about 30 minutes, or until hulls loosen. Rinse corn through several changes of hot water to remove lye, then cover with cold water. Rub to remove hulls and black tips. Let stand in fresh water 2 to 3 hours. Change water 3 or 4 times. Drain. Cover with boiling salted water (1 teaspoon salt to each quart water). Boil until almost tender. Pour, hot, into hot Ball jars, leaving 1-inch head space. Adjust caps. Process pints 1 hour, quarts 1 hour and 10 minutes, at 10 pounds pressure.

Mixed Vegetables

Carrots, green beans, celery and Lima beans, or any other mixture liked, may be canned. Prepare each vegetable according to recipe. Mix vegetables together. Boil 3 minutes. Drain. Pack, hot, into hot Ball jars, leaving 1-inch head space. Add 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Adjust caps. Process pints and quarts for the time needed for the vegetable requiring the longest processing (see "Canning Time Reference," pages 16, 17) at 10 pounds pressure.

Mushrooms

Use only edible fresh mushrooms.

Wash and trim mushrooms. Cover with cold water. Let stand 10 minutes. Drain. Heat, do not boil, 15 minutes in just enough water to prevent sticking. Pack, hot, into hot Ball jars, leaving 1-inch head space. Add 1 teaspoon salt to each pint. Cover with boiling water, if needed, to cover mushrooms, leaving 1-inch head space. Adjust caps. Process pints and quarts 30 minutes at 10 pounds pressure. Do not use quarts.
**Nuts**

Place fresh shelled nuts in shallow pan. Set pan in warm, not hot, oven (300° F.) until nuts are dry. Do not brown. Boil pint Ball jars 5 minutes. Invert jars on clean cloth to drain dry. Pack hot nuts into jars, leaving \( \frac{1}{2} \) inch head space. Adjust caps. Process pints 10 minutes at 5 pounds pressure. Store in a cool place.

**NOTE:** If you prefer, nuts may be processed 20 minutes in boiling-water bath. Let the water in canner stand well below the tops of the jars.

**Okra**

Use young, tender okra. If to be added to soup, it should be sliced; otherwise can pods whole. Wash and drain okra. Remove stem and blossom ends without cutting into pod. Boil 2 minutes. Pack, hot, into hot Ball jars, leaving 1-inch head space. Add 1 teaspoon salt to each quart. If needed, add boiling water to cover, leaving 1-inch head space. Adjust caps. Process pints 25 minutes, quarts 40 minutes, at 10 pounds pressure.

**Parsnips**

Scrub, wash, scrape and wash again. Slice or leave whole. Boil 3 minutes. Pack, hot, into hot Ball jars, leaving 1-inch head space. Add 1 teaspoon salt to each quart. If needed, add boiling water to cover, leaving 1-inch head space. Adjust caps. Process pints 30 minutes, quarts 35 minutes, at 10 pounds pressure.

**Peas - Blackeye Snap**

Follow recipe for canning Green Beans, page 38.

**Peas - Green or "English"**

**HOT PACK . . .** Wash, drain and shell freshly gathered peas. Wash again. Boil small peas 3 minutes; larger ones 5 minutes. Pour, hot, into hot Ball jars, leaving 1-inch head space. Add 1 teaspoon salt to each quart. Add boiling water, if needed, to cover, leaving 1-inch head space. Adjust caps. Process pints and quarts 40 minutes at 10 pounds pressure. If peas are extra large, process 10 minutes longer.

**COLD PACK . . .** Wash, drain and shell freshly gathered peas. Wash again. Pack loosely into hot Ball jars, leaving 1-inch head space. Do not shake or press down. Add 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Adjust caps. Process half-pints 30 minutes, pints 35 minutes, at 10 pounds pressure.

**Peppers - Green**

Wash and drain sweet bell peppers, or "mangoes," which do not taste bitter when cooked. Remove stems and seeds. Boil 3 minutes. Pack, hot, into hot Ball jars, leaving 1-inch head space. Add 1 tablespoon vinegar and \( \frac{1}{2} \) teaspoon salt to each pint. If needed, add boiling water to cover, leaving 1-inch head space. Adjust caps. Process half-pints 30 minutes, pints 35 minutes, at 10 pounds pressure.

**Potatoes - White or Irish**


**Peas - Blackeye, Crowder and Field**

**HOT PACK . . .** Shell and wash freshly gathered green peas. Boil 3 minutes. Pour, hot, into hot Ball jars, leaving 1-inch head space. Add 1 teaspoon salt to each quart. Add boiling water, if needed, to cover, leaving 1-inch head space. Adjust caps. Process pints 35 minutes, quarts 40 minutes, at 10 pounds pressure.

**COLD or RAW PACK . . .** Shell and wash freshly gathered green peas. Pack loosely into hot Ball jars, leaving 1-inch head space. Do not shake or press down. Add 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Adjust caps. Process pints 35 minutes, quarts 40 minutes, at 10 pounds pressure.

**Potatoes - Sweet**

**DRY PACK . . .** Use freshly dug potatoes of uniform size and color. Wash. Boil or steam slowly until skins can be rubbed off. (Do not stick with fork.) Pack, hot, into hot Ball jars, leaving 1-inch head space. Pack tightly, pressing to fill spaces. Do not add liquid. Adjust caps. Process pints 1 hour and 5 minutes, quarts 1 hour and 35 minutes, at 10 pounds pressure.
WET PACK . . . Use freshly dug potatoes of uniform size and color. Wash. Boil or steam slowly until skins can be rubbed off. (Do not stick with fork.) Pack, hot, into hot Ball jars, leaving 1-inch head space. Cover with boiling water or medium or light syrup, leaving 1-inch head space. Adjust caps. Process pints 55 minutes, quarts 1 hour and 30 minutes, at 10 pounds pressure.

Pumpkin and Winter Squash

Wash firm, fully ripe pumpkin or squash. Cut into large pieces. Discard seeds. Steam or bake until tender. Scoop out pulp. Put through sieve or food mill. Add boiling water to make pulp a little thinner than needed for pies. Pour, hot, into hot Ball jars, leaving 1-inch head space. Add 1 teaspoon salt to each quart. Adjust caps. Process pints 1 hour and 5 minutes, quarts 1 hour and 20 minutes, at 10 pounds pressure.

Rutabagas


Salsify or Oyster Plant

Wash and scrub freshly dug salsify. Wash again. Add 1 tablespoon vinegar to each quart water. Boil salsify 15 minutes in vinegar water. Rinse in cool water. Scrape to remove skins. Slice or leave whole. Pack into hot Ball jars, leaving 1-inch head space. Cover with boiling water, leaving 1-inch head space. Adjust caps. Process pints 25 minutes, quarts 35 minutes, at 10 pounds pressure.

Sauce - Creole

| 3 quarts peeled, cored, chopped tomatoes (about 1½ dozen) | 1 hot red pepper |
| 2 cups chopped onions | 1 tablespoon chopped parsley |
| 1 cup chopped sweet red peppers (about 2 medium) | 1 tablespoon sugar |
| 1 clove garlic, minced | 2 teaspoons salt |
| ½ teaspoon marjoram | ¼ teaspoon chili powder |

Combine all ingredients and cook slowly until thick, about 1½ hours. Stir frequently to prevent sticking. Pour, hot, into hot Ball jars, leaving 1-inch head space. Adjust caps. Process pints 25 minutes, quarts 30 minutes, at 10 pounds pressure. Yield: about 4 pints.

To Serve: Cook a small amount of chopped celery in oil, add Creole Sauce and heat to blend. Serve over rice, meat balls or shrimp.

Succotash

Boil fresh corn 5 minutes. Cut from cob. Do not scrape. Mix with ½ to equal measure of green string, or green Lima beans, which have been boiled 3 minutes. Pack, hot, into hot Ball jars, leaving 1-inch head space. Add 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Adjust caps. Process pints 1 hour, quarts 1 hour and 25 minutes, at 10 pounds pressure.

Summer Squash

Zucchini and Chayote

Wash squash. Do not pare. Cut into small pieces. Steam or boil 2 or 3 minutes. Pack, hot, into hot Ball jars, leaving 1-inch head space. Add 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Adjust caps. Process pints 30 minutes, quarts 40 minutes, at 10 pounds pressure.

Tomatoes

See page 29.

Tomatoes With Okra

Use equal measure of sliced okra and peeled, cored and chopped tomatoes. Cook tomatoes 20 minutes. Add okra. Boil 5 minutes. Pour, hot, into hot Ball jars, leaving 1-inch head space. Add 1 teaspoon salt to each quart. Adjust caps. Process pints 30 minutes, quarts 35 minutes, at 10 pounds pressure.

NOTE: 1 small onion may be chopped and added to each quart of tomatoes before cooking.

Turnips

Meats, poultry and sea foods are low-acid foods. Therefore, they must be processed in a steam-pressure canner at a temperature of 240°F. (10 pounds pressure). The pounds pressure in this section are for foods processed at altitudes less than 2,000 feet above sea level. If you live in an area of a higher altitude, see page 7 for the adjustment you need to make.

General Instructions

1. The flavor and texture of canned meats depend upon the quality of the meat canned. The quality depends upon the breed, feed and manner of handling the animal at the time of, and immediately after, slaughtering.

2. Confine animal 24 hours before killing. Give water, but no feed. Hang carcass head down, immediately after killing, to permit thorough bleeding. Skin, scrape or pluck. Draw, rinse and dry. Chill thoroughly: pork, mutton and veal, 24 to 36 hours; beef, 36 to 48 hours; poultry, 6 to 12 hours. Avoid freezing. Frozen meat is hard to handle and gives a canned product of poor quality.

3. Read recipe for product being canned. Check manufacturer’s instructions for filling and sealing jars. Reread manufacturer’s instructions for using the steam-pressure canner.

4. Get out all equipment needed. Check jars for nicks, cracks and sharp edges. Wash jars in hot soapy water. Rinse. Cover with hot water. Let jars remain in hot water until ready to use. Wash and rinse fittings. (See page 10.)

5. Cut meat into pieces suitable for cooking or canning. Cut slices across the grain and about 1-inch thick; cut jar-size pieces with the grain and that for stew in uniform cubes or squares.

6. Trim meat free of gristle, bruised spots and fat. Too much fat is likely to cause the meat to have a strong flavor and may also ruin the rubber used in sealing the jars.

7. Wipe meat with clean, damp cloth, if necessary, but do not let meat stand in water. Exceptions to this rule: fish and strong-flavored game are usually soaked in salt-water before canning.

8. Prepare and pack meat according to recipe for specific meat being canned. If using meat tenderizer, follow the manufacturer’s instructions.

9. Wipe top and threads of jar with clean, damp cloth before capping.

10. Put each jar, as it is filled, on rack in steam-pressure canner containing 2 to 3 inches of hot water. Fasten canner cover on securely, according to manufacturer’s instructions. Leave petcock open until steam escapes steadily for 10 minutes. Close petcock and bring pressure to 10 pounds. Start counting processing time. Process for length of time recommended in recipe, keeping the pressure constant.

11. Remove canner from heat. Let pressure fall to zero. Wait 2 minutes; slowly open petcock. Unfasten cover; tilt the far side up when removing the cover so that the steam escapes away from you. Remove jars. Stand them on cloths or wood, a few inches apart and out of drafts, to cool. About 12 hours later, test jars for seal. (See page 10.) Store jars in a dark, dry, reasonably cool place.

12. If for any reason a jar has failed to seal, repack and process the full length of time or refrigerate and use the food as soon as possible.

Warning

We cannot recommend processing low-acid foods in a water-bath canner because a high enough temperature is not reached within a reasonable length of time to destroy all of the bacteria which may cause spoilage.
Meats

Chili

5 pounds ground beef
2 cups chopped onions
1 clove garlic, minced
6 cups cooked or canned tomatoes and juice

1/2 cup chili powder
1 1/2 tablespoons salt
1 hot red pepper
1 teaspoon cumin seed

Brown meat; add onions and garlic and cook slowly until tender. Add remaining ingredients and simmer 20 minutes. If meat is fat, skim off excess fat before canning. Pour, hot, into hot Ball jars, leaving 1-inch head space. Adjust caps. Process pints 1 hour and 15 minutes, quarts 1 hour and 30 minutes, at 10 pounds pressure.

Yield: about 3 quarts.

To Serve: Add cooked or canned pinto or kidney beans, heat and serve.

Chopped Meat

Beef, Veal, Lamb, Mutton, Pork, Chevron, Venison

Put meat through food chopper; measure. Cook it in hot skillet until seared. Add 1 to 1 1/2 cups boiling water, meat stock or tomato juice, and 1 teaspoon salt for each quart ground meat. Pack, hot, into hot Ball jars, leaving 1-inch head space. Adjust caps. Process pints 1 hour and 15 minutes, quarts 1 hour and 30 minutes, at 10 pounds pressure.

To Serve: Use for meat loaf, baked hash, or stuffing vegetables.

To CORN . . .

25 pounds beef (brisket, chuck, plate or rump)
1/2 teaspoons baking soda
2 pounds pickling, dairy or kosher salt

Cut meat into pieces 3 to 6 inches thick. Put thin layer of salt in bottom of stone jar or tight keg. Add layer of meat. Sprinkle with salt. Add other layers of meat and salt; the top layer must be salt. Let stand 12 to 18 hours in a cool place. Dissolve sugar, soda and salt in a quart of lukewarm water; mix with 3 quarts cool water; pour over meat. Cover with dinner plate or glass pie plate. Fill Ball jar with water and use to hold plate below brine. Meat must be kept under brine at all times. Scum should be removed each day. (If brine ferments, drain and wash meat, scald container and prepare new brine. Put meat back into keg and add fresh brine.) The meat should be ready to can in 3 or 4 weeks; it will be a bright red color.

Cracklings

Sprinkle with salt to season. Pack into hot Ball jars, leaving 1-inch head space. Adjust caps. Process pints 50 minutes, quarts 1 hour, at 10 pounds pressure.

Goulash

Combine flour, salt, paprika and mustard. Roll meat in flour mixture. Brown slowly in hot oil. Sprinkle remaining flour mixture over meat; add remaining ingredients. Cover and simmer for 1 1/2 to 2 hours or until almost tender. Remove vegetables and bay leaves. Pack meat into hot Ball jars, leaving 1-inch head space. Cover with sauce, leaving 1-inch head space. Adjust caps. Process pints 1 hour, quarts 1 hour and 15 minutes, at 10 pounds pressure. Yield: about 4 pints.

Gravy To Use In Hot Packing

Remove meat from cooking pan. Add one cup boiling water, or broth, for each 1 to 2 tablespoons fat in pan. Boil 2 or 3 minutes. Do not thicken.

Ham and Other Cured Meats

Unless storage conditions are poor, old-fashioned, wood-smoked “country” hams will keep two or more years without canning. This is not true of quickly cured or smoked ham.

Slice ham, Canadian bacon or other cured meats. Trim free of fat. Pack into hot Ball jars, leaving 1-inch head space. Adjust caps. Process pints 50 minutes, quarts 1 hour, at 10 pounds pressure.

Headcheese

Use any good recipe for making headcheese. (Omit sage and garlic.) Pack hot headcheese into hot Ball jars, leaving 1-inch head space. Adjust caps. Process pints 1 hour and 15 minutes, quarts 1 hour and 30 minutes, at 10 pounds pressure.

Meat Sauce

For Spaghetti, Lasagne or Casseroles

Brown beef; add onions and green peppers and cook slowly until tender. Add remaining ingredients and simmer until thick enough for serving. If the meat is fat, skim off excess fat before canning. Pour, hot, into hot Ball jars, leaving 1-inch head space. Adjust caps. Process pints 1 hour, quarts 1 hour and 15 minutes, at 10 pounds pressure. Yield: about 3 quarts.

Pork Sausage

Use freshly made sausage. Season with salt, black and cayenne pepper. A very small amount of spice may be added. It is better not to use sage. Make sausage into cakes or patties. Cook until lightly browned. Pack, hot, into hot Ball jars, leaving 1-inch head space. Adjust caps. Gravy may be added; however, enough fat for making gravy will cook out of the sausage during processing. Process pints 1 hour and 15 minutes, quarts 1 hour and 30 minutes, at 10 pounds pressure.

Pork Tenderloin

HOT PACK... Cook 1/3 to 1/2 done. Slice. Salt to taste. Pack, hot, into hot Ball jars, leaving 1-inch head space. Cover with hot broth or gravy, leaving 1-inch head space. Adjust caps. Process pints 1 hour and 15 minutes, quarts 1 hour and 30 minutes, at 10 pounds pressure.

COLD or RAW PACK... Slice, or leave in jar-length pieces. Pack into hot Ball jars, leaving 1-inch head space. Add 1 teaspoon salt to each quart. Adjust caps. Process pints 1 hour and 15 minutes, quarts 1 hour and 30 minutes, at 10 pounds pressure.
Roast
*Beef, Veal, Lamb, Mutton, Pork, Chevron, Venison*

Cut meat into 1 or 2 pound chunks. Bake or roast meat until well browned, but not done; or brown in small amount of fat. Salt to taste. Pack, hot, into hot Ball jars, leaving 1-inch head space. Cover with hot gravy or broth, leaving 1-inch head space. Adjust caps. Process pints 1 hour and 15 minutes, quarts 1 hour and 30 minutes, at 10 pounds pressure.

Steaks and Chops
*Beef, Veal, Lamb, Mutton, Pork, Chevron, Venison*

**HOT PACK** ... Cut meat into 1-inch slices. Remove large bones. Quickly brown in small amount of fat. Salt to taste. Pack, hot, into hot Ball jars, leaving 1-inch head space. Adjust caps. Process pints 1 hour and 15 minutes, quarts 1 hour and 30 minutes, at 10 pounds pressure.

**COLD or RAW PACK** ... Cut meat into 1-inch slices. Remove large bones. Pack meat into hot Ball jars, leaving 1-inch head space. Add 1 teaspoon salt to each quart. Adjust caps. Process pints 1 hour and 15 minutes, quarts 1 hour and 30 minutes, at 10 pounds pressure.

Spareribs

Crack ribs evenly. Cook until about 1/2 done. Cut into squares. Remove bones. Salt to taste. Pack, hot, into hot Ball jars, leaving 1-inch head space. Cover with hot barbecue sauce (see page 62), gravy or broth, leaving 1-inch head space. Adjust caps. Process pints 1 hour and 15 minutes, quarts 1 hour and 30 minutes, at 10 pounds pressure.

Stew Meat

Use beef or any other meat suitable for stewing. Cut meat into 1 1/2 to 2 inch squares. Trim free of fat and gristle. Process pints 1 hour, quarts 1 hour and 15 minutes, at 10 pounds pressure.

**RECIPE 1** ... Simmer meat until hot through in water to cover. Salt to taste. Pack, hot, into hot Ball jars, leaving 1-inch head space. Cover with water in which cooked, leaving 1-inch head space. Adjust caps.

**RECIPE 2** ... Brown meat in smallest possible amount of fat. Salt to taste. Pack, hot, into hot Ball jars, leaving 1-inch head space. Cover with boiling water, leaving 1-inch head space. Adjust caps.

**Beef Stew With Vegetables**

4 to 5 pounds beef stew meat
2 quarts sliced small carrots (about 16)
3 cups chopped celery
3 cups chopped onions
3 quarts cubed, pared potatoes (about 12 medium)
1 1/2 tablespoons salt
1 teaspoon thyme
1/2 teaspoon pepper

Cut meat into 1 1/2-inch cubes (about 2 quarts); brown in a small amount of fat. Combine meat, vegetables and seasonings; cover with boiling water. Pack, hot, into hot Ball jars, leaving 1-inch head space. Adjust caps. Process pints 1 hour, quarts 1 hour and 15 minutes, at 10 pounds pressure. **Yield: about 7 quarts.**

**NOTE:** Vegetables do not need to be precooked.

**Mincemeat**

5 cups ground, cooked beef (about 2 pounds)
1 quart ground suet (about 1 pound)
3 quarts chopped, pared tart apples (about 12 medium)
1/2 cup finely chopped orange peel
1 1/2 cups chopped orange pulp (about 2 large)
3/4 cup lemon juice
3 11-ounce packages currants
1 quart sweet cider or grape juice
3 pounds seeded raisins (mixture of light and dark)
1 8-ounce package chopped, candied citron
2 1-pound packages brown sugar (4 1/4 cups, packed)
1 tablespoon salt
1 tablespoon cinnamon
1 tablespoon allspice
2 teaspoons nutmeg
1 teaspoon cloves
1/4 teaspoon cloves

Mix together all ingredients in a large kettle; simmer 1 hour. Stir frequently to prevent sticking. Pack, hot, into hot Ball jars, leaving 1-inch head space. Adjust caps. Process pints and quarts 20 minutes at 10 pounds pressure, or 1 hour and 30 minutes in boiling-water bath. **Yield: about 6 quarts.**
Poultry

One or two year old fowls are better than younger ones for canning. After picking and washing fowl, cut skin between legs and body. Bend legs until hip joints snap. Slip knife under ends of shoulder blades and cut up to wings. Pull back and breast apart. Remove entrails. Rinse. Dry. Chill 6 to 12 hours. Do not salt.

Chicken à la King

True Chicken à la King is made of all white meat, pure cream and sherry wine. The recipe given here is for a product suitable for canning or freezing.

7 to 8 pounds ready-to-cook
stewing chickens, cut in pieces
¼ cup chicken fat or butter
½ cup flour
5 cups chicken broth
½ cup chopped celery
¼ cup chopped pimiento
1 tablespoon chopped parsley
Salt and pepper to taste

To prepare chicken... cook chicken in water to cover. Add 2 stalks celery, 1 onion, 1 carrot, 4 peppercorns, 2 whole allspice, 1 bay leaf and 2 teaspoons salt. Bring to boiling, reduce heat and simmer 2 to 3 hours or until chicken is tender. Remove vegetables. Allow chicken to cool in broth. Remove chicken; spoon off excess fat; strain broth. Remove skin and bones from meat. Cut meat into 1-inch pieces. Melt fat; add flour and stir until smooth. Gradually add chicken broth and cook until thickened, stirring constantly. Add chicken and remaining ingredients. Simmer 5 minutes. Pack, hot, into hot Ball jars, leaving 1-inch head space. Yield: about 4 pints.

To Serve: Brown mushrooms in butter; add to Chicken à la King and heat until hot through.

Chicken - Boned

Use for All Poultry

Steam or boil chicken until about ¾ done. Remove skin and bones. Pack meat into hot Ball jars, leaving 1-inch head space. Add 1 teaspoon salt to each quart. Skim fat from broth. Reheat broth to boiling. Pour over chicken, leaving 1-inch head space. Adjust caps. Process pints 1 hour and 15 minutes, quarts 1 hour and 15 minutes, at 10 pounds pressure.

Roast Poultry

Roast fowl until about ¾ done. (Do not stuff.) Cut meat from bones of large fowl; leave bones in small fowl. Pack into hot Ball jars, leaving 1-inch head space. Add 1 teaspoon salt to each quart. Cover with hot broth, leaving 1-inch head space. Adjust caps. Process pints 1 hour and 5 minutes, quarts 1 hour and 15 minutes, at 10 pounds pressure.

Wild Rabbit and Squirrel

Soak the meat 1 hour in brine made by dissolving 1 tablespoon salt in 1 quart water. Rinse. Follow any recipe for canning chicken, omitting salt.

NOTICE: In most states the length of time for storage of game is controlled by law. Conservation officials can supply information on this subject.
Prepare freshly caught, thoroughly bled fish as for cooking. Leave backbone in small fish; remove it from large ones. Use pint or half-pint jars.

**NOTE:** The majority of these recipes are based upon information supplied by the Division of Fishery Industries, United States Department of the Interior.

### Clams

Scrub, steam and open fresh clams. Save juice. Drop clams into weak salt-water. Wash thoroughly, then drop into 1 gallon boiling water containing 1/2 teaspoon citric acid. Boil 2 minutes. Drain. Pack clams into hot pint Ball jars, leaving 1-inch head space. Pour juice over clams. Add boiling water, if needed, to cover, leaving 1-inch head space. Adjust caps. Process 1 hour and 10 minutes at 10 pounds pressure.

### Salmon and Shad

Dissolve 1 cup salt in 1 gallon water to make brine. Cut fish into jar-length pieces. Let stand 1 hour in brine. Drain 10 minutes. Pack into hot pint Ball jars, skin side next to glass, leaving 1-inch head space. Adjust caps. Process 1 hour and 40 minutes at 10 pounds pressure.

### Shrimp

Add 1/4 cup lemon juice, or white vinegar, and 1 cup salt to 1 gallon boiling water. Keep hot. Remove back shell and thoroughly cleanse crabs. Wash bodies through several changes of cool water. Boil 20 minutes in the acid-brine. While crabs are boiling, add 1 cup salt, 2 cups lemon juice or white vinegar, to 1 gallon cool water. Drain cooked crabs. Remove meat from body and claws. Rinse in cool acid-brine. Squeeze meat to remove some of the liquid. Pack into hot half-pint or pint Ball jars, leaving 1-inch head space. Cover with boiling water, leaving 1-inch head space. Adjust caps. Process half-pints and pints 1 hour and 40 minutes at 5 pounds pressure.

### Crab Meat

Add 1/4 cup lemon juice, or white vinegar, and 1 cup salt to 1 gallon boiling water. Keep hot. Remove back shell and thoroughly cleanse crabs. Wash bodies through several changes of cool water. Boil 20 minutes in the acid-brine. While crabs are boiling, add 1 cup salt, 2 cups lemon juice or white vinegar, to 1 gallon cool water. Drain cooked crabs. Remove meat from body and claws. Rinse in cool acid-brine. Squeeze meat to remove some of the liquid. Pack into hot half-pint or pint Ball jars, leaving 1-inch head space. Cover with boiling water, leaving 1-inch head space. Adjust caps. Process half-pints and pints 1 hour and 40 minutes at 5 pounds pressure.

### Smelt In Tomato Sauce

- 6 pounds cleaned smelt
- 2 cups Barbecue Sauce
- 1/4 cup oil
- 1/4 cup vinegar
- 2 teaspoons salt

Pack fish into hot Ball jars, leaving 1-inch head space. Combine remaining ingredients and pour over fish; add water, if necessary, to cover fish, leaving 1-inch head space. Adjust caps. Process pints 50 minutes, quarts 1 hour, at 10 pounds pressure. Yield: about 7 pints.

### Mackerel, Mullet, Trout, Whitefish, etc.

Dissolve 1 cup salt in 1 gallon cool water to make brine. Cut fish into jar-length pieces. Let stand 1 hour in brine. Drain. Pack into hot pint Ball jars, skin side next to glass, leaving 1-inch head space. Put open jars into kettle. Cover with hot brine (1/2 cup salt to 1 gallon water). Boil 15 minutes. Remove jars and invert to drain 5 minutes. Adjust caps. Process 1 hour and 10 minutes at 10 pounds pressure.

### Tuna

Steam tuna until cooked. Chill 6 to 12 hours. Cut into jar-length pieces. Pack into hot pint Ball jars, leaving 1-inch head space. Add 1 teaspoon salt and 2 tablespoons salad oil to each pint. Adjust caps. Process 1 hour and 30 minutes at 10 pounds pressure.
Soups and Sandwich Spreads

**Bean Soup**

- 2 cups dried navy beans (1 pound)
- 1 ham hock or 1/4 pound salt pork
- 1/2 cup chopped onion
- 1/2 hot red pepper
- Salt to taste

Cover beans with cold water and soak 12 to 18 hours in a cool place. Add meat, onion and pepper; bring to boiling. Cover and simmer 2 to 3 hours or until beans are mushy. Remove meat and cut into small pieces. Press remaining ingredients through a sieve or food mill; add meat. Add boiling water, if necessary, for desired consistency. Salt to taste. Pour, hot, into hot Ball jars, leaving 1-inch head space. Adjust caps. Process pints 50 minutes, quarts 1 hour, at 10 pounds pressure. **Yield: about 5 pints.**

**Chicken Soup**

- 2 ready-to-cook stewing chickens, about 5 pounds each
- 1 medium onion
- 1 medium carrot
- A few celery leaves
- 1 bay leaf
- 4 to 6 peppercorns
- 4 to 6 allspice
- 1/2 teaspoon salt

Cut chickens into pieces. Use all pieces for soup except breast. Cover chicken with water (about 3 quarts). Add vegetables and spices; bring to boiling. Simmer until tender, 2 to 3 hours. Remove skin and bones from meat; cut meat into pieces. Strain broth and skim off fat. Add chicken to broth; salt to taste. Boil 3 minutes. Pour, hot, into hot Ball jars, leaving 1-inch head space. Adjust caps. Process pints 30 minutes, quarts 45 minutes, at 10 pounds pressure. **Yield: about 6 pints.**

**To Serve:** Heat and serve; or cook noodles 1 minute in boiling water; rinse; drain. Add to soup and heat until noodles are tender.

**Clam Chowder**

- 1/4 pound salt pork, diced
- 2 cups diced, pared potatoes (about 8 medium)
- 1 ham hock
- 2 quarts boiling water
- Salt and pepper to taste

Cook salt pork until light brown. Drain off excess fat. Add onions and cook until tender but not brown. In a large kettle, combine clams and juice, pork, onions, potatoes and water. Boil 10 minutes. Season to taste. Pour, hot, into hot pint Ball jars, leaving 1-inch head space. Adjust caps. Process pints 1 hour and 40 minutes at 10 pounds pressure. **Yield: about 12 pints.**

**Tomato Soup**

- 4 quarts peeled, cored, chopped tomatoes (about 2 dozen large)
- 2 cups chopped sweet red peppers (about 4 medium)
- 1 1/2 cups sliced carrots (about 3 medium)
- 2 teaspoons salt

**NOTE:** For Manhattan Chowder... add 1/2 bay leaf, 1/2 teaspoon thyme, 1/2 cup chopped celery and 2 cups cooked tomatoes to Clam Chowder before canning.

For New England Chowder... add 2 tablespoons butter and 2 cups milk to each pint Clam Chowder before heating for serving.

**Fish Chowder**

- 5 pounds cleaned fish
- 1/4 pound salt pork, diced
- 1 cup sliced carrots
- 1 cup sliced onions
- 1/2 teaspoon salt
- 1/2 teaspoon pepper
- 1/2 bay leaf
- 1/2 teaspoon thyme

Bone fish; cut fillets into 1-inch pieces. Refrigerate until ready to use. Make a fish stock by cooking bones, head and tail in 3 quarts water. Add seasonings and cook slowly until fish falls from bones. Strain stock and reserve. Cook salt pork until light brown; drain off excess fat. Add onions to pork and cook until tender but not brown. In a large kettle, combine stock, fish and remaining ingredients. Bring to boiling and cook 10 minutes. Season to taste. Pour, hot, into hot pint Ball jars, leaving 1-inch head space. Adjust caps. Process pints 1 hour and 40 minutes at 10 pounds pressure. **Yield: about 12 pints.**

**Split Pea Soup**

- 2 1/4 cups dried split peas (1 pound)
- 3 quarts water
- 1 ham hock
- 1 cup sliced carrots
- 1 cup sliced celery
- Salt to taste

Cover peas with cold water and soak 12 to 18 hours in a cool place. Drain. Add 2 1/2 quarts water, ham hock and vegetables; bring to boiling. Cover and simmer 2 hours or until peas are tender. Remove ham hock; cut meat into small pieces. Press vegetables through a sieve or food mill; add meat. Add boiling water, if necessary, for desired consistency. Salt to taste. Pour, hot, into hot Ball jars, leaving 1-inch head space. Adjust caps. Process pints 50 minutes, quarts 1 hour, at 10 pounds pressure. **Yield: about 10 pints.**
Cook tomatoes until soft; press through a sieve or food mill. Meanwhile combine onions, celery, peppers and carrots. Add only enough water to cover; cook until soft. Press through a sieve or food mill. Add to tomatoes. Add salt. Cook slowly until thick, about 1 hour. Stir frequently to prevent sticking. Pour, hot, into hot Ball jars, leaving 1-inch head space. Adjust caps. Process pints 20 minutes, quarts 30 minutes, at 10 pounds pressure. Yield: about 4 pints.

**Vegetable Soup**

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1¾ quarts water</td>
<td></td>
</tr>
<tr>
<td>2 quarts peeled, cored,</td>
<td></td>
</tr>
<tr>
<td>chopped tomatoes (about</td>
<td></td>
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<tr>
<td>12 large)</td>
<td></td>
</tr>
<tr>
<td>1½ quarts cubed, pared</td>
<td></td>
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<tr>
<td>potatoes (about 6 medium)</td>
<td></td>
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<tr>
<td>1 quart green Lima beans</td>
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</tbody>
</table>

Add water to vegetables; boil 5 minutes. Pour, hot, into hot Ball jars, leaving 1-inch head space. Add ½ teaspoon salt to each quart. Adjust caps. Process pints 55 minutes, quarts 1 hour and 25 minutes, at 10 pounds pressure. Yield: about 7 quarts.

**NOTE:** Or use any mixture of vegetables liked in soup. Process the length of time needed for vegetable requiring longest processing time. (See “Canning Time Reference,” pages 16, 17.)

**Chicken Sandwich Spread**

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
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<tbody>
<tr>
<td>1 cup chicken broth</td>
<td></td>
</tr>
<tr>
<td>¼ cup prepared mustard</td>
<td></td>
</tr>
<tr>
<td>1 tablespoon grated onion</td>
<td></td>
</tr>
<tr>
<td>1 tablespoon vinegar</td>
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</table>

To prepare ground chicken . . . cook chicken pieces in water to cover. Add 2 stalks celery, 1 onion, 1 carrot, 4 peppercorns, 2 whole allspice, 1 bay leaf and 2 teaspoons salt. Bring to boiling; reduce heat and simmer 2 to 3 hours or until chicken is tender. Remove vegetables. Cool immediately; chill. Skim off fat; reserve 1 cup broth. Remove skin and bones from meat; grind meat. To ground chicken, add remaining ingredients; season to taste with salt and pepper. Pack into hot Ball jars, leaving 1-inch head space. Adjust caps. Process half-pints 1 hour, pints 1 hour and 15 minutes, at 10 pounds pressure. Yield: about 4 half-pints.

**To Serve:** Combine Chicken Sandwich Spread with salad dressing; add pickle relish, chopped olives or celery, if desired.

**Ham Sandwich Spread**

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
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<tbody>
<tr>
<td>1 quart chopped, cooked</td>
<td></td>
</tr>
<tr>
<td>ham</td>
<td></td>
</tr>
<tr>
<td>½ cup pickle juice</td>
<td></td>
</tr>
<tr>
<td>2 tablespoons prepared</td>
<td></td>
</tr>
<tr>
<td>horseradish</td>
<td></td>
</tr>
<tr>
<td>½ cup chili sauce</td>
<td></td>
</tr>
<tr>
<td>1 tablespoon prepared mustard</td>
<td></td>
</tr>
<tr>
<td>½ cup chopped pickle</td>
<td></td>
</tr>
<tr>
<td>¼ teaspoon pepper</td>
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</table>

Combine all ingredients. The mixture should be a little thinner than needed for spreading. If dry, add meat stock to moisten. Pack into hot Ball jars, leaving 1-inch head space. Adjust caps. Process half-pints and pints 50 minutes at 10 pounds pressure. Yield: about 5 half-pints.

**To Serve:** Combine Ham Sandwich Spread with mayonnaise, dairy sour cream or chopped hard-cooked egg, if desired.

**Liver Paste**

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
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</thead>
<tbody>
<tr>
<td>3 pounds liver</td>
<td></td>
</tr>
<tr>
<td>¼ pound salt pork, sliced</td>
<td></td>
</tr>
<tr>
<td>1 medium onion</td>
<td></td>
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<tr>
<td>½ cup catchup</td>
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</tbody>
</table>

Cook liver and salt pork together in a small amount of water until tender; drain. Finely chop meat and onion in a food chopper or blender. Add catchup, seasonings and meat stock to make a smooth paste. Heat until hot through. Pack, hot, into hot Ball jars, leaving 1-inch head space. Adjust caps. Process half-pints 1 hour and 25 minutes, pints 1 hour and 30 minutes, at 10 pounds pressure. Yield: about 3 pints.

**NOTE:** Mix mayonnaise or dairy sour cream with paste before serving as a sandwich spread or appetizer.

**Peanut Butter**

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 quarts skinned, shelled,</td>
<td></td>
</tr>
<tr>
<td>roasted Virginia peanuts</td>
<td></td>
</tr>
<tr>
<td>2 quarts skinned, shelled,</td>
<td></td>
</tr>
<tr>
<td>roasted Spanish peanuts</td>
<td></td>
</tr>
<tr>
<td>2 tablespoons salt</td>
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</table>

Grind nuts in a food chopper or blender; add salt and regrind until smooth and creamy. Pack into hot Ball jars, leaving 1-inch head space. Adjust caps. Process half-pints and pints 1 hour at 190°F in a hot-water bath. Yield: about 6 pints.

**NOTE:** If shelled, salted nuts are used, do not add salt.
Pickles and Relishes

In the Ball Blue Book, "pickles" and "relishes" mean whole, sliced or chopped fruits and vegetables which are canned in brine or vinegar. Relishes and some pickles are canned by the open-kettle method of canning because there is enough vinegar or salt to prevent the growth of spoilage microorganisms. Pickles which are packed hot and covered with boiling hot pickling liquid do not need to be processed. If the pickles are packed cold and covered with boiling hot pickling liquid, they need to be processed in a water-bath canner for 10 to 15 minutes when packed in pints or quarts, and 25 minutes when packed in half-gallons, to make sure all spoilage microorganisms are destroyed. For best results in making pickles and relishes, ingredients must be of good quality, recipe directions must be followed closely and ingredients must be measured accurately.

General Instructions

1. Fruits and vegetables used in pickling should be fresh, firm and free of decayed spots. Fruits which are slightly underripe are best for pickling. Cucumbers and green tomatoes should be small to medium size and should be pickled within 24 hours of picking. Chicago Pickling Cucumbers or one of the other varieties of the black spine type should be used for pickles. Gherkins may be used in any recipe which calls for cucumbers.

2. Use pure refined dairy, pickling or kosher salt. Pound for pound granulated and flake salts have the same strength, but they do not measure the same. When using a flake salt, increase the measure by one-half. Table salt—salt which has been treated to keep it free flowing—tends to cloud the brine. If necessary to use table salt, use measures as given in recipes.

3. Cider or white distilled vinegar, free of sediment, of 40 to 60 per cent grain strength (4-6 per cent acid) should be used in pickling. Vinegars of unknown grain strength should not be used in these recipes. Many people prefer to use white distilled vinegar when pickling light-colored foods like onions and cauliflower.

4. Fresh spices and herbs should be used. When left in pickles too long, spices cause pickles to become dark and strong-flavored. Spices should be tied in a piece of cloth which is large enough to allow the pickling liquid to flow through it, picking up the spicy flavors during the cooking period. Remove the spice bag prior to packing the product. The amount and variety of spices and herbs may be changed in any recipe to suit individual tastes.

5. Use soft water for making brine. If water is hard, boil it for 15 minutes. Let it stand for 24 hours. Then, remove scum from top and carefully ladle water from the kettle so the sediment in the bottom is not disturbed. Add 1 tablespoon vinegar per gallon of boiled water before using.

6. White granulated sugar is used in all recipes calling for sugar unless brown sugar is listed.

7. Garlic may be used in or left out of any pickle or relish recipe.

8. Some pickle recipes call for slaked lime (calcium hydroxide); it should be available at drugstores or farm seed stores.

9. Use standard measures. For measuring liquids, fruits and vegetables, use liquid measuring cups: 8 ounces = 1 cup, 16 ounces = 1 pint, 32 ounces = 1 quart. For measuring dry ingredients, use graduated dry measuring cups: \(\frac{1}{4}, \frac{1}{2}, 1\) cup measures. For measuring spices and herbs, use measuring spoons: \(\frac{1}{4}, \frac{1}{2}\) and 1 teaspoon, and 1 tablespoon.

10. Use enameled ware, glass, aluminum, stainless steel or stoneware utensils for pickling. Brass, copper, iron and galvanized utensils should not be used, for they are apt to cause undesirable color changes or they will react with the acid or salt to produce unwholesome substances.

11. Read recipe which is to be used. Check manufacturer's instructions for filling and sealing jars. Get out all utensils, equipment and ingredients needed.

12. Sort produce for size and age. Wash and drain. Check jars for nicks, cracks and sharp edges on sealing surfaces. Wash jars in hot soapy water. Rinse. Wash and rinse fittings. (See page 10.)

13. Prior to packing pickles or relishes, if recipe does not call for processing the filled jars in a water-bath canner, sterilize jars. Cover jars with hot water and put on to heat. Bring water to a boil and boil jars for 10 minutes. Boil new lids and caps for 5 minutes. If recipe calls for processing the filled jars in a water-bath canner, see pages 20 and 21, steps 3, 11 and 12.
14. Follow recipe instructions exactly. After packing, remove air bubbles by running a rubber bottle scraper or similar non-metal utensil between jar and food. If needed, add more liquid to cover. The amount of pickling solution called for in a recipe may not be “just right” every time. The condition of the fruit or vegetable and the manner of packing the food product into the jar determine how much is needed. If there is not enough to cover the fruit or vegetables, add more vinegar. If there is too much, refrigerate it and use later.

15. Wipe top and threads of jar with clean, damp cloth before capping.

16. Fill one jar and adjust cap before filling next jar. Keep everything boiling hot as you pack and cap.

17. Stand filled jars, right side up, on cloths or wood, a few inches apart, out of drafts, to cool.

18. About 12 hours later, test jars for seal. (See page 10.) If for any reason a jar has failed to seal, either reheat product to boiling, pack and cap, using sterilized jars and caps, or refrigerate and use.

19. Store jars in dark, dry, reasonably cool area. Pickles will have a better blended and more mellow flavor if permitted to stand a few months before eating.

Vegetable Pickles

Vegetable pickles may be sour or sweet, spiced or unspiced. They should be crisp, firm, solid and evenly colored. Cucumbers are an olive green, not a bright green, when pickled. Cucumbers, gherkins and other vegetables may be cured in brine for 6 or 8 weeks, or for only a few hours, before being made into pickles. The success of a long cure is largely a matter of luck, unless both temperature and strength of the brine can be controlled. A salometer or hydrometer is needed to determine the exact amount of salt which must be added from time to time to keep the brine at proper strength. Therefore, recipes for pickles in the Ball Blue Book give directions for the fresh-pack or quick-process method of pickle making. Instructions for the long brining cure (fermented pickles) may be obtained by writing the Consumer Service Department, Ball Brothers Company Incorporated, Muncie, Indiana.

Dill Pickles

**Long Method**

Green or dry dill 1½ cups salt 3 tablespoons mixed pickling spices 2 cups vinegar 35 to 40 cucumbers, about 8 quarts hot water 4 to 6 inches long

Wash and dry cucumbers. Place a layer of dill and half of the spices in a stone jar or stainless steel container; top with cucumbers. Put another layer of dill and remaining spices over cucumbers. Dissolve salt in vinegar and water. Cool; pour over cucumbers. Cover with dinner plate or glass pie plate. Fill Ball jar with water and use to hold plate under brine. Cover and store in a cool place (68°-72°F.) 2 to 4 weeks. Be certain that the cucumbers are covered with brine at all times. If necessary, during the curing process, make additional brine and pour over cucumbers. Remove scum each day. The pickles are cured when well-flavored and even in color. There should be no white spots. Pack pickles into hot Ball jars, leaving ½-inch head space. Prepare fresh, hot brine: combine ¾ cup salt, 1 cup vinegar and 4 quarts water; boil 5 minutes; or strain brine in which cucumbers were cured and boil 5 minutes. Pour hot brine over pickles, leaving ½-inch head space. Adjust caps. Process pints and quarts 10 minutes in boiling-water bath. Yield: about 5 quarts.

**Short Method**

3 tablespoons mixed pickling spices 3 cups sugar ½ cup salt 1 quart vinegar 1 quart water

Combine sugar, salt, vinegar and water. Tie spices in a cheesecloth bag; add to vinegar mixture; simmer 15 minutes. Pack cucumbers into hot Ball jars, leaving ¼-inch head space; put a head of dill in each jar. Heat brine to boiling. Pour boiling hot vinegar mixture over cucumbers, leaving ¼-inch head space. Adjust caps. Process pints and quarts 15 minutes in boiling-water bath. Yield: about 7 pints.
**Kosher—Long Method**
Follow recipe for Dill Pickles (Long Method). When packing cured cucumbers in jars, add 1 clove garlic, 1 bay leaf, 1/2 teaspoon mustard seed and 1 piece hot red pepper to each jar.

**Kosher—Short Method**
Follow recipe for Dill Pickles (Short Method). When packing cucumbers, add 1 clove garlic, 1 bay leaf, 1/2 teaspoon mustard seed and 1 piece hot red pepper to each jar.

**Sweet**
- 1 quart medium dill pickles
- 3 tablespoons mixed pickling spices
- 36 medium or 72 small green tomatoes
- 2 cups sugar
- 1 teaspoon powdered alum

Wash and dry tomatoes. Place a layer of dill and half of the pickling spices in a stone jar or stainless steel container; top with tomatoes. Put another layer of dill and remaining spices over tomatoes. Dissolve salt in vinegar and water. Cool; pour over tomatoes. Cover with dinner plate or glass pie plate. Fill Ball jar with water; use to hold plate under brine. Cover and store in a cool place (68°–72°F.) 2 to 4 weeks. Be certain that the tomatoes are covered with brine at all times. If necessary, during the curing process, make additional brine and pour over tomatoes. Remove scum each day. The pickles are cured when well-flavored and even in color. Drain. Pack tomatoes into hot Ball jars, leaving 1/4-inch head space. Prepare fresh, hot brine: combine 3 1/2 cups salt, 1 cup vinegar and 4 quarts water; boil 5 minutes; or strain brine in which tomatoes were cured and boil 5 minutes. Pour hot brine over pickles, leaving 1/4-inch head space. Adjust caps. Process pints and quarts 10 minutes in boiling-water bath. Yield: about 6 quarts.

**NOTE:** These pickles have not been sealed airtight. Store in the refrigerator.

**Green Tomato—Long Method**
Follow recipe for Green Tomato (Long Method). When packing cured tomatoes in jars, add 1 clove garlic, 1 bay leaf, 1/2 teaspoon mustard seed and 1 piece hot red pepper to each jar.

**Kosher Green Tomato—Long Method**
Follow recipe for Green Tomato (Long Method). When packing cured tomatoes in jars, add 1 clove garlic, 1 bay leaf, 1/2 teaspoon mustard seed and 1 piece hot red pepper to each jar.

**Cucumber Chips**
- 1/2 cup salt
- 24 thin cucumbers, 4 to 5 inches long, cut into 1/4-inch slices
- 1 tablespoon mustard seed
- 3 cups vinegar
- 1 quart water
- 2 cups white sugar

Sprinkle salt over cucumber slices; mix thoroughly. Let stand 3 hours; drain thoroughly. Combine turmeric, 3 cups vinegar and 1 quart water; bring to boiling and pour over cucumbers. Let stand until cold; drain. (Taste cucumbers; if too salty, rinse thoroughly, drain.) Add white sugar to 1 quart vinegar and 1 cup water. Tie spices in a cheesecloth bag. Add to vinegar mixture and simmer 15 minutes; pour over cucumbers. Let stand 12 to 24 hours in a cool place. Remove spice bag. Drain sirup into kettle; add brown sugar and heat to boiling. Add cucumbers; simmer 10 minutes. Pack hot cucumbers into sterilized Ball jars, leaving 1/4-inch head space. Add alum to sirup and heat to boiling. Pour sirup, boiling hot, over cucumbers, leaving 1/4-inch head space. Adjust caps. Yield: about 3 pints.

**Cucumber Chunks**
- 1 1/2 cups salt
- 4 quarts water
- 4 quarts 1-inch slices small to medium cucumbers

Sprinkle salt over cucumber slices; mix thoroughly. Let stand 3 hours; drain thoroughly. Combine turmeric, 3 cups vinegar and 1 quart water; bring to boiling and pour over cucumbers. Let stand until cold; drain. (Taste cucumbers; if too salty, rinse thoroughly, drain.) Add white sugar to 1 quart vinegar and 1 cup water. Tie spices in a cheesecloth bag. Add to vinegar mixture and simmer 10 minutes. Pour over cucumbers; cover and let stand 24 hours. Drain, reserving sirup; add remaining sugar and alum to sirup; heat to boiling. Pour over cucumbers. Cover and let stand 24 hours. Pack pickles into sterilized Ball jars, leaving 1/4-inch head space. Remove spice bag. Heat sirup to boiling. Pour, boiling hot, over pickles, leaving 1/4-inch head space. Adjust caps. Yield: about 8 pints.
**Sweet Chunk Pickles**

- 1/2 cup salt
- 1/4 cup vinegar
- 2 quarts water
- 2 dozen 3 to 4 inch cucumbers
- 1 tablespoon powdered alum

**Cucumber Sandwich Pickles**

- 1/4 cup salt
- 6 cups 1/2-inch slices small to medium cucumbers
- 2 quarts water
- 3 cups vinegar
- 2 cups sugar

**Sweet Icicle Pickles**

- 1 cup salt
- 2 quarts water
- 1/2 stick cinnamon
- 3/4 teaspoons whole cloves
- 1 1/2 teaspoons mixed pickling spices

**Olive Oil Pickles**

- 1/8 cup salt
- 3 quarts 1/2-inch slices small cucumbers (about 100)
- 3 medium onions, sliced
- 2 cups vinegar
- 1/4 cup sugar
- 1/2 cup olive oil

**Mixed Pickles**

- 1 cup salt
- 4 quarts water
- 1 quart 1-inch slices small cucumbers (about 10)
- 1/2 cup mustard seed
- 2 cups peeled pickling onions
- 1 hot red pepper
- 6 1/2 cups vinegar

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Wash and dry cucumbers. Put cucumbers in a stone jar or stainless steel container. Add salt and 1/4 cup vinegar to 2 quarts water; bring to boiling; cool. Pour over cucumbers. Cover with dinner plate or glass pie plate. Fill Ball jar with water and use to hold plate under brine. Cover and let stand 2 weeks in a cool place. (If scum forms, remove it each day.) Drain, discarding brine; rinse cucumbers thoroughly. Cover with boiling water; let stand 24 hours. Drain. Add alum to cucumbers; cover with boiling water. Cover; let stand 24 hours. Drain. Tie spices in a cheesecloth bag. Add to remaining ingredients. Bring to boiling; pour over cucumbers. Let stand 24 hours. Drain, reserving sirup. Heat sirup to boiling; pour over pickles. Let stand 24 hours. Repeat the last step three times. Pack pickles into hot Ball jars, leaving 1/2-inch head space. Remove spice bag. Heat sirup to boiling. Pour, boiling hot, over pickles, leaving 1/2-inch head space. Adjust caps. Process pints and quarts 10 minutes in boiling-water bath. **Yield: about 6 pints.**

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Sprinkle salt over cucumbers; add 2 quarts water and let stand 2 to 3 hours. Drain thoroughly. Combine 3 cups vinegar and 3 cups water; bring to boiling. Add cucumbers; simmer about 8 minutes. (Cucumbers should not become soft.) Drain well, discarding liquid. Combine 2 cups vinegar and 1 cup water with remaining ingredients; simmer 10 minutes. Remove from heat; add drained cucumbers. Cover and let stand 2 days in a cool place. Bring to boiling and pack, boiling hot, into sterilized Ball jars, leaving 1/2-inch head space. Adjust caps. **Yield: about 3 pints.**
Dissolve salt in water. Pour over prepared vegetables. Let stand 12 to 18 hours in a cool place. Drain thoroughly. Add spices, hot red pepper and sugar to vinegar; boil 3 minutes. Add vegetables; simmer until thoroughly heated. Pack, boiling hot, into sterilized Ball jars, leaving ¼-inch head space. Adjust caps. Yield: about 6 pints.

**NOTE:** If more cucumbers are desired, increase cucumber measure to 1½ quarts (6 cups) and reduce carrot and celery measures to 1 cup each.

**Mustard Pickles**

- 3 medium sweet green peppers, cut in pieces
- 3 medium sweet red peppers, cut in pieces
- 1½ cups sugar
- 1¼ cup flour
- 1 tablespoon turmeric
- ½ cup water
- ½ cup prepared mustard
- 5 cups vinegar

Yield: about 3 quarts.

**Mangoes**

(Stuffed Peppers or Green Tomatoes)

- 12 medium green peppers or green tomatoes
- 1 cup salt
- 1 quart shredded cabbage (about 1 medium head)
- ½ cup sugar

Cut tops off peppers or tomatoes; reserve. Scoop out centers. Dissolve 1 cup salt in 4 quarts cold water; pour over vegetable shells and tops; let stand 24 hours in a cool place. Drain; rinse and drain thoroughly. Combine cabbage, 1 teaspoon salt and the pepper and mustard seed; press into shells. Replace tops and fasten with toothpicks or sew with coarse thread. Pack into sterilized Ball jars, leaving ¼-inch head space. Combine vinegar, water and sugar. Bring to boiling and pour, boiling hot, over peppers, leaving ¼-inch head space. Adjust caps. Yield: about 3 quarts.

**NOTE:** If desired, stuff vegetable shells with any relish you prefer.

**Beet Pickles**

- 2 cups sugar
- 1 teaspoon salt
- 2 tablespoons prepared horseradish
- ¼ cup mustard seed

Yield: about 6 pints.

**Carrot Pickles**

- 2 to 3 bunches small carrots
- 1 cup sugar
- 2 cups vinegar
- 1½ cups water

**Gherkin Pickles**

Gherkins may be used in any recipe calling for cucumbers.

**Onion Pickles**

- 4 quarts tiny pickling onions, peeled
- 3½ cups vinegar
- 1 tablespoon whole allspice
- 1¾ cups water
- 3 quarts peeled, cooked small beets


**Onion Pickles**

- 4 quarts tiny pickling onions, peeled
- 2½ tablespoons prepared horseradish
- 1 cup salt
- 2 quarts white vinegar
- 1 tablespoon mixed pickling spices
- 1 stick cinnamon
- 1 teaspoon salt
- 1 teaspoon bay leaf
- 1 medium hot red pepper

To peel pickling onions . . . cover onions with boiling water; let stand 2 minutes. Drain; dip in cold water; peel. Sprinkle onions with salt; add cold water to cover. Let stand 12 to 18 hours in a cool place. Drain; rinse and drain thoroughly. Combine sugar, mustard seed, horseradish and vinegar; simmer 15 minutes. Pack onions into hot Ball jars, leaving ¼-inch head space. Add 1 pepper and 1 bay leaf to each jar. Heat pickling liquid to boiling. Pour, boiling hot, over onions, leaving ¼-inch head space. Adjust caps. Process half-pints and pints 10 minutes in boiling-water bath. Yield: about 7 pints.
Sour Onion Pickles

1 quart tiny pickling onions, peeled
3 tablespoons sugar
1 tablespoon mustard seed
1/4 cup salt
3 tablespoons horseradish
3 cups white vinegar
Small hot red peppers

To peel pickling onions... cover onions with boiling water; let stand 2 minutes. Drain; dip in cold water; peel. Sprinkle onions with salt; add cold water to cover. Let stand 12 to 18 hours in a cool place. Drain; rinse and drain thoroughly. Combine sugar, mustard seed, horseradish and vinegar; simmer 15 minutes. Pack onions into hot Ball jars, leaving 1/4-inch head space, adding 1 hot red pepper to each jar. Heat pickling liquid to boiling. Pour, boiling hot, over onions, leaving 1/4-inch head space. Adjust caps. Process half-pints and pints 10 minutes in boiling-water bath. Yield: about 4 half-pints.

Dilly Beans

2 pounds green beans, trimmed
1 teaspoon cayenne pepper
4 cloves garlic
1/2 cup salt
2 1/2 cups water

Pack beans, lengthwise, into hot Ball jars, leaving 1/4-inch head space. To each pint, add 1/2 teaspoon cayenne pepper, 1 clove garlic and 1 head dill. Combine remaining ingredients and bring to boiling. Pour, boiling hot, over beans, leaving 1/4-inch head space. Adjust caps. Process pints and quarts 10 minutes in boiling-water bath. Yield: about 4 pints.

Pickled Peppers

4 quarts long red, green or yellow peppers (Hungarian, Banana or other varieties)
1 1/2 cups salt
1/4 cup sugar
2 cloves garlic
2 1/2 teaspoons prepared horseradish
2 cups water

Cut two small slits in each pepper. Wear rubber gloves to prevent burning hands. Dissolve salt in 4 quarts water. Pour over peppers and let stand 12 to 18 hours in a cool place. Drain; rinse and drain thoroughly. Combine remaining ingredients; simmer 15 minutes. Pack peppers into hot Ball jars, leaving 1/4-inch head space. Pour boiling hot pickling liquid over peppers, leaving 1/4-inch head space. Adjust caps. Process half-pints and pints 10 minutes in boiling-water bath. Yield: about 8 pints.

Southern Crystal Pickles

1/2 cup slaked lime
2 quarts water
3 quarts 1/4-inch slices small green tomatoes
4 sticks cinnamon

Dissolve the lime in 2 quarts water. Pour over tomato slices and cover; let stand 24 hours in a cool place. Drain; rinse thoroughly through several changes of cold water. Drain again. Combine remaining ingredients; boil 3 minutes. Let stand until cold; remove cinnamon. Add tomatoes; cook until tomatoes are clear and sirup is thick, about 45 minutes. Pack, boiling hot, into hot Ball jars, leaving 1/4-inch head space. Adjust caps. Process pints and quarts 10 minutes in boiling-water bath. Yield: about 4 pints.

Fruit Pickles

Fruit pickles should be whole or else cut into pieces of uniform and attractive sizes and shapes. The fruits should be firm, tender and plump. Fruit pickles may be packed, boiling hot, into hot sterilized Ball jars and sealed at once. They will have a better flavor and be more plump if left standing in the sirup for several hours after cooking, then packed and processed as instructed in the recipes.

Crab Apple Pickles

2 quarts crab apples with stems (about 2 1/2 pounds)
1 1/2 tablespoons whole allspice
6 cups sugar
3 cups vinegar
2 sticks cinnamon

To prevent apples from bursting, run a large needle through each. Tie spices in a cheesecloth bag. Combine remaining ingredients; add spices and boil 5 minutes. Add apples, a layer at a time; cook gently until the apples are almost tender. Carefully remove apples. Repeat until all apples
are cooked. Pour boiling sirup over apples. Cover and let apples stand 12 to 18 hours in a cool place. Carefully pack apples into hot Ball jars, leaving \( \frac{1}{4} \)-inch head space. Remove spice bag. Heat sirup to boiling. Pour boiling sirup over apples, leaving \( \frac{1}{4} \)-inch head space. Adjust caps. Process pints and quarts 10 minutes in boiling-water bath. Yield: about 6 pints.

**Fig Pickles**

4 quarts firm-ripe figs  
3 cups sugar  
2 quarts water  
2 cups sugar

Peel figs. (If unpeeled are preferred, pour boiling water over figs and let stand until cool; drain.) Add 3 cups sugar to water and cook until the sugar dissolves. Add figs and cook slowly 30 minutes. Add 2 cups sugar and vinegar. Tie spices in a cheesecloth bag; add to figs. Cook gently until figs are clear. Cover and let stand 12 to 24 hours in a cool place. Remove spice bag. Heat to simmering; pack, hot, into hot Ball jars, leaving \( \frac{1}{4} \)-inch head space. Adjust caps. Process pints and quarts 10 minutes in boiling-water bath. Yield: about 8 pints.

**Peach Pickles**

1 piece ginger root  
2 sticks cinnamon  
1 tablespoon whole allspice  
1 tablespoon whole cloves  
2 cups sugar

Clingstones are best for pickling, but freestone peaches may be used. Tie spices in a cheesecloth bag. Add spice bag, 2 cups sugar and water to vinegar. Bring to boiling; add peaches, a few at a time; simmer until heated thoroughly. Carefully remove peaches. Repeat until all peaches have been heated. Pour boiling sirup over peaches; cover and let stand 3 to 4 hours. Carefully remove peaches from sirup. Add 2 cups sugar to the sirup and heat to boiling. Pour over peaches; cover and let stand 12 to 18 hours in a cool place. Pack peaches into hot Ball jars, leaving \( \frac{1}{4} \)-inch head space. Add remaining 1 to 2 cups sugar to sirup. Bring to boiling, pour over peaches, leaving \( \frac{1}{4} \)-inch head space. Adjust caps. Process pints and quarts 10 minutes in boiling-water bath. Yield: about 6 pints.

**Pear Pickles**

4 dozen firm-ripe Seckel pears  
(about 3 pounds)  
1 tablespoon mixed pickling spices  
1 teaspoon whole cloves  
1/2 lemon, thinly sliced

Pare pears, leaving whole with stem intact. Tie spices in a cheesecloth bag; add to remaining ingredients; simmer 5 minutes. Add pears, a layer at a time, and cook gently until just tender, about 15 minutes. Carefully remove pears. Repeat until all pears are cooked. Pour boiling sirup over pears. Cover and let stand 12 to 18 hours in a cool place. Pack pears into hot Ball jars, leaving \( \frac{1}{4} \)-inch head space. Remove spice bag. Heat sirup to boiling. Pour boiling sirup over pears, leaving \( \frac{1}{4} \)-inch head space. Adjust caps. Process pints and quarts 10 minutes in boiling-water bath. Yield: 3 to 4 pints.

**Watermelon Rind Pickles**

4 quarts prepared watermelon rind  
3 tablespoons slaked lime or 1 cup salt  
2 quarts cold water  
2 tablespoons whole cloves

To prepare watermelon rind . . . trim dark skin and pink flesh from thick watermelon rind; cut in 1-inch pieces or as wanted. Dissolve lime or salt in 2 quarts water, pour over rind. If needed, add more water to cover rind. Let stand 2 hours if lime is used, or 6 hours if salt is used. Drain; rinse and cover rind with cold water. Cook until just tender; drain. Tie spices in a cheesecloth bag. Combine spices with remaining ingredients and simmer 10 minutes. Add watermelon rind and simmer until clear. Add boiling water if sirup becomes too thick before rind is clear. Remove spice bag. Pack, boiling hot, into sterilized Ball jars, leaving \( \frac{1}{4} \)-inch head space. Adjust caps. Yield: about 7 pints.

NOTE: Sugar is added in small amounts to avoid shriveling the peaches.

NOTE: If lime is used, pickles will be crisper.
Vegetable relishes are finely chopped vegetables, either sweet or sour, spiced or unspiced. The relish should be moist but not juicy and the vegetables should be firm.

### Beet or Red Relish

1 quart chopped cooked beets
1 quart chopped cabbage (about 1 small head)
1 cup chopped onions
1 cup chopped sweet red peppers (about 2 medium)

Combine all ingredients; simmer 10 minutes. Bring to boiling. Pack, boiling hot, into sterilized Ball jars, leaving ⅛-inch head space. Adjust caps. **Yield: about 3 half-pints.**

### Cucumber Relish

2 quarts chopped cucumbers (about 4 medium-large)
2 cups chopped sweet red peppers (about 4 medium)
2 cups chopped sweet green peppers (about 4 medium)
1 cup chopped onions
1 ½ cups brown sugar, packed

Combine cucumbers, peppers and onions; sprinkle with turmeric. Dissolve salt in 2 quarts cold water and pour over vegetables; let stand 3 to 4 hours. Drain; cover vegetables with cold water and let stand 1 hour. Drain thoroughly. Tie spices in a cheesecloth bag; add to sugar and vinegar. Heat to boiling and pour over vegetables. Cover and let stand 12 to 18 hours in a cool place. Simmer until vegetables are hot. Bring to boiling. Pack, boiling hot, into sterilized Ball jars, leaving ⅛-inch head space. Adjust caps. **Yield: about 6 pints.**

### Chow-Chow Relish

1 quart chopped cabbage (about 1 small head)
3 cups chopped cauliflower (about 1 medium head)
2 cups chopped onions
2 cups chopped green tomatoes (about 4 medium)
2 cups chopped sweet green peppers (about 4 medium)

Combine chopped vegetables; sprinkle with salt. Let stand 4 to 6 hours in a cool place. Drain well. Combine vinegar, sugar and spices; simmer 10 minutes. Add vegetables; simmer 10 minutes. Bring to boiling. Pack, boiling hot, into sterilized Ball jars, leaving ⅛-inch head space. Adjust caps. **Yield: about 4 pints.**

### Corn Relish

2 quarts cut corn (about 1½ dozen ears)
1 quart chopped cabbage (about 1 small head)
1 cup chopped sweet red peppers (about 2 medium)
1 cup chopped sweet green peppers (about 2 medium)

To prepare corn... boil 5 minutes, cut from cob. Combine with remaining ingredients and simmer 20 minutes. Bring to boiling. Pack, boiling hot, into sterilized Ball jars, leaving ⅛-inch head space. Adjust caps. **Yield: about 6 pints.**

### Dixie Relish

1 quart chopped cabbage (about 1 small head)
2 cups chopped onions
2 cups chopped sweet red peppers (about 4 medium)
2 cups chopped sweet green peppers (about 4 medium)
1 cup water
1 quart vinegar

Dissolve salt in 2 quarts cold water. Pour over chopped vegetables and let stand 1 hour. Drain. (If too salty, rinse and drain again.) Add vegetables, sugar and spices to vinegar; simmer 20 minutes. Bring to boiling. Pack, boiling hot, into sterilized Ball jars, leaving ⅛-inch head space. Adjust caps. **Yield: about 7 half-pints.**
Pepper Hash or Relish

2 quarts chopped sweet red peppers (about 16 medium) 2 teaspoons mixed pickling spices
2 quarts chopped sweet green peppers (about 16 medium) 1 hot red pepper
1 1/2 cups chopped onions 3/4 cup sugar
1 1/2 cups vinegar 2 teaspoons salt

Cover chopped vegetables with boiling water; let stand 5 minutes. Drain; cover again with boiling water and let stand 10 minutes. Drain. Tie spices and hot red pepper in a cheesecloth bag. Add spice bag, sugar and salt to vinegar; simmer 15 minutes. Add drained vegetables and simmer 10 minutes. Remove spice bag. Bring to boiling. Pour, boiling hot, into sterilized Ball jars, leaving 1/8-inch head space. Adjust caps. 

Yield: about 6 half-pints.

Red Pepper Relish or Jam

Excellent sweet-sour accompaniment with meats.

7 cups finely chopped sweet red peppers (14 to 16 medium) 2 tablespoons salt
2 tablespoons salt 6 cups sugar
2 teaspoons salt 1 quart vinegar

Combine peppers and salt; let stand 3 to 4 hours. Add sugar and vinegar; cook, stirring frequently, until thick, about 45 minutes. Pour, boiling hot, into sterilized Ball jars, leaving 1/8-inch head space. Adjust caps. Yield: about 6 half-pints.

Rummage Relish

2 quarts cored, chopped green tomatoes (about 32 medium) 1 cup chopped sweet red peppers (about 2 medium)
1 quart peeled, cored, chopped ripe tomatoes (about 6 large) 1 cup chopped cucumbers
1 quart chopped cabbage (about 1 large head) 1/2 cup salt
2 cups chopped sweet red peppers (about 4 medium) 1 cup chopped onions
1 1/2 cups brown sugar, packed 1/2 cup salt
2 tablespoons mustard seed 4 tablespoons sugar, packed
1 tablespoon celery seed 2 tablespoons vinegar
1 tablespoon ground cinnamon 1/2 teaspoon ground cloves
1 teaspoon ground ginger 2 cloves garlic, minced
1/2 teaspoon ground cloves 2 quarts vinegar

Combine vegetables; add salt and mix thoroughly; let stand 3 to 4 hours. Drain thoroughly. Press to remove free liquid. Add sugar, spices and horseradish to vinegar; simmer 15 minutes. Add vegetables and heat to boiling. Pack, boiling hot, into sterilized Ball jars, leaving 1/8-inch head space. Adjust caps. Yield: about 8 pints.

Spiced Berries

21/2 quarts hard-ripe berries (blueberries, cranberries, currants or elderberries) 2 teaspoons ground cinnamon
cups sugar 1/2 teaspoon ground allspice
5 cups sugar 1/2 teaspoon ground cloves
1 cup vinegar

Cook berries until soft; add remaining ingredients. Cook almost to the jellying point. (See page 67.) Stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars, leaving 1/8-inch head space. Adjust caps. Yield: about 7 half-pints.

Spiced Grapes

21/2 quarts stemmed Concord grapes 2 teaspoons ground cinnamon
cups sugar 1/2 teaspoon ground cloves
5 cups sugar 1/2 teaspoon ground allspice
1 cup vinegar

Separate pulp from skins of grapes. Cook pulp until soft; press through a sieve or food mill to remove seeds. Combine skins and pulp with remaining ingredients. Cook almost to the jellying point. (See page 67.) Stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars, leaving 1/8-inch head space. Adjust caps. Yield: about 9 half-pints.
Apple Chutney

2 quarts chopped, cored, pared tart apples (about 16 medium)  
1 cup chopped onions  
1 clove garlic, crushed  
1 cup chopped sweet red peppers (about 2 medium)  
2 pounds seedless raisins

Combine ingredients; simmer until thick, about 1 hour and 15 minutes. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars, leaving ⅛-inch head space. Adjust caps. Yield: about 10 pints.

NOTE: For a milder chutney, another quart of chopped apples may be used.

Peach or Pear Chutney

4 quarts finely chopped, peeled peaches or pears  
1 cup seedless raisins  
1 cup chopped onions  
1 clove garlic, minced (optional)  
1 cup sugar  
½ teaspoon ground cinnamon

Combine all ingredients and cook slowly until thick, about 40 minutes. Stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars, leaving ⅛-inch head space. Adjust caps. Yield: about 7 pints.

Tomato Chutney

2½ quarts peeled, cored, chopped, ripe tomatoes (about 24 large)  
1 cup brown sugar, packed  
1 cup chopped onions  
2 medium onions, quartered  
1 cup chopped celery  
2 cups chopped sweet red or sweet green peppers (about 3 medium)  
2 hot red peppers  
1 teaspoon paprika

Combine all ingredients and cook slowly until thick, about 1½ to 2 hours. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars, leaving ⅛-inch head space. Adjust caps. Yield: about 3 pints.

Catchups and Sauces

Catchups and sauces are made of either fruits or vegetables. They are highly seasoned with salt, pepper and spices. Both are boiled to a thick liquid. Catchup is strained through a small sieve; a sauce is not strained.

Barbecue Sauce

4 quarts peeled, cored, chopped, red-ripe tomatoes (about 24 large)  
2 medium onions, quartered  
2 cups chopped celery  
1½ cups chopped sweet green or sweet red peppers (about 3 medium)  
2 hot red peppers  
½ teaspoon cayenne pepper  
1 teaspoon salt  
1 teaspoon dry mustard

Combine tomatoes, quartered onions, celery and peppers. Cook until vegetables are soft, about 30 minutes. Press through a fine sieve or food mill. Cook until mixture is reduced to about one-half, about 45 minutes. Tie peppercorns in a cheesecloth bag; add with remaining ingredients and cook slowly until mixture is the consistency of catchup, about 1½ hours. As mixture thickens, stir frequently to prevent sticking. Pour, hot, into hot Ball jars, leaving ⅛-inch head space.

Chili Sauce

4 quarts peeled, cored, chopped, red-ripe tomatoes (about 24 large)  
2 cups chopped onions  
2 cups chopped sweet red peppers (about 4 medium)  
1 hot red pepper  
1 tablepoon mustard seed  
1 teaspoon paprika

Combine tomatoes, onions, sweet and hot peppers, sugar and salt. Cook gently 45 minutes. Tie spices in a cheesecloth bag; add to tomato mixture; cook until very thick, about 45 minutes. As mixture thickens, stir frequently to prevent sticking. Add vinegar and cook slowly until as thick as wanted. Pour, boiling hot, into sterilized Ball jars, leaving ⅛-inch head space. Adjust caps. Yield: about 6 pints.
Spicy Chili Sauce

4 quarts peeled, cored, chopped, red-ripe tomatoes (about 24 large)
1½ cups chopped sweet green peppers (about 3 medium)
2 cups chopped onions
1 to 1½ cups vinegar

Combine all ingredients. Bring to boiling; simmer until thick as wanted, about 1 to 2 hours. Stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars, leaving ¼-inch head space. Adjust caps. Yield: about 8 pints.

NOTE: Chili sauce is not a bright red color, because ground spices are used.

Tomato Catchup

4 quarts peeled, cored, chopped, red-ripe tomatoes (about 24 large)
1 cup chopped onions
½ cup chopped sweet red pepper (about 1 medium)
1½ teaspoons celery seed

Combine puree, vinegar and sugar. Tie whole spices in a cheesecloth bag. Add to tomato mixture; add remaining ingredients and cook slowly until thick as wanted, about 45 to 60 minutes. As mixture thickens, stir frequently to prevent sticking. Remove spice bag. Pour, boiling hot, into sterilized Ball jars, leaving ¼-inch head space. Adjust caps. Yield: 2 to 3 pints.

Victoria Sauce (Rhubarb)

Excellent accompaniment with meats.

Victoria Sauce (Rhubarb)

2 quarts chopped rhubarb
½ cup chopped onion
1½ cups chopped, seedless raisins
3½ cups brown sugar, packed

Combine rhubarb, onion, raisins, sugar and vinegar. Cook until thick, about 25 minutes. As mixture thickens, stir frequently to prevent sticking. Add spices; cook 5 minutes longer. Pour, boiling hot, into sterilized Ball jars, leaving ¼-inch head space. Adjust caps. Yield: about 4 pints.

NOTE: Recipe may be doubled. Cooking times will be increased because of larger amount.
Jelly

Jelly is made by cooking fruit juice with sugar. The product should be firm enough to hold its shape when turned from the jar, yet soft enough to be spread with a knife. Whether jellies are clear or translucent depends upon the fruit used and the manner of extracting the juice.

Juice used for making jelly must contain, or else have added to it, acid and a jellifying substance called pectin. Crab and other tart hard-ripe apples, blackberries, Concord and similar grapes, currants, tart plums, quinces and sour oranges usually contain enough acid and pectin for making jelly. Juice which does not have a tart taste is not acid enough and needs to have lemon juice added to it, about 1 tablespoon to each cup of juice. Pectin must be added to the juice of cherries, peaches and strawberries. Nowadays, the majority of home canners prefer to use powdered or liquid pectin with all fruit juices. When pectin is added, fully ripe fruits are used, cooking times are shorter, sugar measures are larger and the yields are greater.

**General Instructions**

1. Use fully ripe fruits, if using liquid or powdered pectin. Use hard-ripe, full-flavored fruits or ¾ fully ripe and ¼ underripe fruits, when NOT adding pectin, in order to have enough pectin content to jell the recipe. Imperfect or irregularly shaped fruits may be used as long as spoiled and bruised portions are carefully removed and discarded.

2. Prepare fruit by washing it gently in cold running water, or washing it in several changes of cold water, lifting the fruit out of the water. Sort. Remove hulls (caps), stems, pits or seeds according to recipe instructions. Leave whole, slice, chop or crush as stated in the recipe, discarding all spoiled portions.

3. Measure fruit after preparing. Use standard measures. For measuring water and fruits, use liquid measuring cups: 8 ounces = 1 cup, 16 ounces = 1 pint, 32 ounces = 1 quart.

4. Prepare juice as directed in recipe. To extract the juice, wet a jelly bag, cotton flannel or several layers of cheesecloth and wring the water from it. For the clearest jelly, let juice drip without squeezing or pressing the jelly bag. A faster method, and one which gives a greater yield of juice, is to squeeze or press the bag until most of the juice is extracted. If this method is used, re-strain the juice through a clean, damp jelly bag, without squeezing, to clarify the juice.

5. Either cane or beet sugar may be used; they give the same results. For measuring sugar, use standard, level graduated measuring cups: ¼, ½, ¾ and 1 cup measures. In making jelly WITHOUT added pectin, usually ¾ cup sugar to 1 cup juice is used. Very sour fruits need the larger measure of sugar given in the “Short Directions for Making Jelly,” page 68. Juice which does not have a tart taste needs to have lemon juice added to it, about 1 tablespoon to each cup of juice.

6. A large, heavy kettle of 6-8 quart capacity, with a broad, flat bottom is essential in jelly making. This size kettle will let the juice and sugar mixture bubble and cook rapidly within the confines of the utensil.

7. Jellies should be cooked in small batches. Do not double recipes. In making jelly WITHOUT added pectin, the sugar should be stirred until it dissolves and then the mixture cooked rapidly (boiled), without stirring, to the jellying point (see page 67). When using liquid or powdered pectin, follow the manufacturer’s instructions exactly.

8. Ball Can or Freez Jars are the best containers for jelly. The Can or Freez jar has straight tapered sides like a jelly glass and a screw thread neck which permits it to be sealed with a two-piece home canning cap. No paraffin is needed because the Ball Mason Dome Lid gives an airtight, leakproof seal. Jelly can be unmolded from this jar just as from a jelly glass. Regular Mason jars and Ball Mason Dome Lids are also satisfactory for canning jellies and jams. However, jelly must be “spooned” rather than unmolded from a Mason jar.


10. When preparing jelly WITHOUT adding pectin, 4 cups juice and 3 cups sugar will usually make 4 half-pints jelly.

11. When jelly is cool, store in dark, dry, reasonably cool area. The shorter the storage time the better the flavor.

12. For “Butters, Conserve, Jams, Preserves and Marmalades,” see pages 70 to 81.
The Quick and Easy Way to Make Jelly

With Fruit Pectin . . . Without Paraffin

1. See page 69 for “how-to” picture series. Follow recipe and cooking time which come with the powdered or liquid pectin, EXCEPT, if recipe calls for stirring jelly (or other fruit spread) to cool before pouring into jars, DO NOT do so.

2. Assemble everything needed.

3. Examine tops and edges of Can or Freez jars; both must be smooth and even. Wash jars in hot soapy water; rinse. Wash and rinse Ball Mason Dome Caps. Cover jars and lids with hot, not boiling, water and bring to a boil; no further boiling is necessary.

4. Just before putting jelly (or other fruit spread) on to cook, remove jars and lids from hot water. Invert them on rubber tray or towels to drain.

5. Cook jelly (or other fruit spread) as directed in recipe.

6. Quickly skim to remove foam, then fill jar, leaving ⅛-inch head space with the boiling hot jelly (or other fruit spread). Wipe away anything spilled on top or threads of jar with clean, damp cloth.

7. Immediately place lid on jar, sealing compound next to glass. Screw band tight. Invert jar for about 30 seconds so hot jelly can destroy mold or yeast which may have settled on the lid. Stand jar upright. Fill one jar and adjust cap before filling next jar.

8. Let jars stand upright to cool. Remove band about 12 hours after canning. If dome (center of lid) is down, or stays down when pressed, jar is sealed. Bands are not needed after jars are sealed. (If the product was not hot enough to produce a vacuum seal, the bands must be left on to keep the jars tightly closed.)

To Prevent Floating of Fruit in Jellied Products

Fruits may rise to the top when jams, conserves and marmalades made with powdered or liquid pectin are canned boiling hot. This is why some recipes call for stirring these products for several minutes to cool before pouring into jars. Jams, marmalades, etc. should not be stirred to cool when jars are to be sealed with home canning caps. After filling and sealing jars as directed in steps 6 and 7 above, let half-pints stand about 25 minutes, pints about 30 minutes. (Exact standing time depends upon fruit used and room temperature.) Then, shake jars to distribute the fruit through the thickened sirup. Do not squeeze or press.) If to be canned, reheat just to boiling. Pour, hot, into hot Ball jars, leaving ⅛-inch head space. Adjust caps. Process pints and quarts 10 minutes in boiling-water bath.

Juice for Jelly

It is practical to can unsweetened fruit juice and make jelly as needed. Bottled Concord grape and apple juices are also excellent for making jelly with powdered or liquid pectin. Bottled juices are usually made from very ripe fruit and cannot be depended upon for making jelly without added pectin.

Apple Juice for Jelly

Use fresh or can for future use.

Select fresh, sound, tart fruit. Wash. Cut out and discard blossom and stem ends. Do not pare or core. Slice or chop apples. Add 2 cups water to each slightly heaped quart prepared apples. Cover and cook gently until soft. Drain through damp cotton flannel, jelly bag or 4 layers of cheesecloth. (For greater yield of juice, twist the two ends of the bag in opposite directions until most of the juice is extracted.) Then, strain through clean, damp cotton flannel or jelly bag.

Grape Juice for Jelly

Use fresh or can for future use.

Wash, stem, crush and measure fresh, firm-ripe Concord type grapes. Add ½ cup water to 4 quarts prepared grapes. Heat 10 minutes at simmering. Do not boil. Drain through damp cotton flannel, jelly bag or 4 layers of cheesecloth. (For a greater yield of juice, twist the two ends of the bag in opposite directions until most of the juice is extracted.) If to be used fresh, let juice stand in refrigerator from 12 to 24 hours. Then, strain through damp cheesecloth. If to be canned, reheat to simmering. Pour, hot, into hot Ball jars, leaving ⅛-inch head space. Adjust caps. Process pints and quarts 10 minutes in boiling-water bath. Strain before using.
Test for Jellying Point
(Necessary when making jelly without added pectin)

Dip a large metal spoon into the boiling sirup; tilt spoon until sirup runs from side (Fig. 1). When jellying point is reached, liquid will not flow in a stream, but will divide into distinct drops which run together and flake or sheet from the spoon (Fig. 2). Thermometers are helpful when cooking jelly, but the sheet test should also be used because the jellying point is not always the same. The temperature at the finish, or jellying point, of jellies is usually about 8°F. above the boiling point of water in your locality.

To Make Jelly Without Adding Pectin
(Cook no more than 4 to 6 cups juice at a time.)

1. Check recipe for preparing fruit for juice and amount of sugar to use. Assemble everything needed.

2. Separate juice from cooked fruit by letting it drain through damp cotton flannel, jelly bag or 4 layers of cheesecloth.

3. Examine tops and edges of Can or Freez jars; both must be smooth and even. Wash Can or Freez jars, or jelly glasses and lids, in hot soapy water; rinse. Wash and rinse Ball Mason Dome Caps. Cover jars and dome lids, or jelly glasses, with hot, not boiling, water and bring to a boil; no further boiling is necessary.

4. Measure juice and sugar. Put juice into large kettle, bring to boiling. While juice is coming to boiling, remove jars and lids from hot water and invert them on rubber tray or towels to drain.

5. Add sugar to juice. Stir until sugar dissolves. Boil rapidly to jellying point (see above).

6. Remove jelly from heat; quickly skim to remove foam. Fill jar, leaving ¼-inch head space with boiling hot jelly. Wipe away anything spilled on top or threads of jar with clean, damp cloth.

7. Immediately place lid on jar, sealing compound next to glass. Screw band tight. Invert jar for about 30 seconds so hot jelly can destroy mold or yeast which may have settled on the lid. Stand jar upright. Fill one jar and adjust cap before filling next jar.

8. Let jars stand upright to cool. Remove band about 12 hours after canning. If dome (center of lid) is down, or stays down when pressed, jar is sealed. Bands are not needed after jars are sealed. (If the product was not hot enough to produce a vacuum seal, the bands must be left on to keep the jars tightly closed.)

9. If jelly glasses are used, leave about ¼-inch head space when filling jars. Cover immediately with about ¼-inch hot paraffin. Allow jars to stand, undisurbed, overnight or until cool. Cover glasses with metal lids.
**Apple Jelly**

**Without Added Pectin**

Use either fresh or unsweetened home canned juice. (See “Apple Juice for Jelly,” page 66.) Measure juice. Heat to boiling. Add 3/4 cup sugar for each cup juice. Stir until sugar dissolves, then cook rapidly (boil) to jellying point. Skim and pour, boiling hot, into Can or Freeze jars or jelly glasses. See page 67, “To Make Jelly Without Adding Pectin,” steps 6, 7, 8 and 9 for filling and sealing.

**Berry Jellies**

**Without Added Pectin**

Blackberries, dewberries and many others may be used for jelly. Jelly has better flavor when berries are fully ripe, but is easier to make (unless powdered or liquid pectin is used) when 1/4 of them are underripe. Wash, stem, drain and crush berries. If the berries are very juicy, add no water; otherwise, add 1/4 to 1 cup water for each 4 quarts of crushed berries. Cook gently for 10 to 15 minutes, then drain juice through damp cotton flannel, jelly bag or 4 layers of cheesecloth. (For a greater yield of juice, twist the two ends of the bag in opposite directions until most of the juice is extracted. Then, strain through clean, damp cotton flannel or jelly bag. Do not squeeze or press.) Use 3/4 cup sugar for each cup juice. Cook and seal as directed on page 67, “To Make Jelly Without Adding Pectin,” steps 4, 5, 6, 7, 8 and 9.

**Grape Jelly**

**Without Added Pectin**

Use either fresh or unsweetened home canned juice. (See “Grape Juice for Jelly,” page 66.) Measure juice. Heat to boiling. Add 3/4 cup sugar for each cup juice. Stir to dissolve sugar, then cook rapidly (boil) to jellying point. Skim and pour, boiling hot, into Can or Freeze jars or jelly glasses. See page 67, “To Make Jelly Without Adding Pectin,” steps 6, 7, 8 and 9 for filling and sealing.

**Mint Jelly**

Either cook a few sprigs of mint with apple jelly or add peppermint or spearmint extract to taste and a few drops of green food color to apple jelly just before pouring it into jars.

**Spiced Jelly**

Tie a few whole spices in a cheesecloth bag. Cook with the fruit when preparing the juice.

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**Short Directions for Making Jelly**

From fruits which usually have enough acid and pectin for jellying. For cooking and sealing, see page 67, “To Make Jelly Without Adding Pectin.”

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<th>WATER FOR EACH QUART FRUIT</th>
<th>TO COOK FRUIT</th>
<th>SUGAR FOR EACH 4 CUPS JUICE*</th>
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<tbody>
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<td>Apple, Tart</td>
<td>Wash; discard stem and blossom ends; slice or chop.</td>
<td>2 cups</td>
<td>Cook gently until soft.</td>
<td>3 cups</td>
</tr>
<tr>
<td>Berry, Tart</td>
<td>Wash, stem, crush.</td>
<td>1 to 4 tablespoons</td>
<td>Cook gently 10 to 15 minutes.</td>
<td>3 cups</td>
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<tr>
<td>Crabapple, Tart</td>
<td>Wash; discard stem and blossom ends; slice or chop.</td>
<td>2 cups</td>
<td>Cook gently until soft.</td>
<td>3 to 4 cups</td>
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<tr>
<td>Cranberry</td>
<td>Wash, stem.</td>
<td>2 1/2 cups</td>
<td>Cook gently 5 to 10 minutes.</td>
<td>3 cups</td>
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<tr>
<td>Currant, Red</td>
<td>Wash, stem, crush.</td>
<td>1/4 cup</td>
<td>Cook gently until soft, about 10 minutes.</td>
<td>3 to 4 cups</td>
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<tr>
<td>Gooseberry, Green</td>
<td>Wash, stem.</td>
<td>to cover</td>
<td>Cook gently until soft, 10' to 15 minutes.</td>
<td>3 to 4 cups</td>
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<tr>
<td>Grape</td>
<td>Wash, stem, crush.</td>
<td>1/4 cup</td>
<td>Cook gently 15 minutes.</td>
<td>3 to 31/2 cups</td>
</tr>
<tr>
<td>Mayhaw</td>
<td>Wash, stem.</td>
<td>2 cups</td>
<td>Cook gently until tender.</td>
<td>3 to 4 cups</td>
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<tr>
<td>Plum, Tart</td>
<td>Wash, stem.</td>
<td>1 cup</td>
<td>Cook gently until soft.</td>
<td>3 cups</td>
</tr>
<tr>
<td>Quince</td>
<td>Wash, core, slice.</td>
<td>3 cups</td>
<td>Cook gently 45 minutes.</td>
<td>3 cups</td>
</tr>
<tr>
<td>Scuppernong</td>
<td>Wash, stem, crush.</td>
<td>1/4 cup</td>
<td>Cook gently until tender.</td>
<td>3 cups</td>
</tr>
<tr>
<td>Sour Orange</td>
<td>Wash, peel, seed, chop.</td>
<td>4 cups</td>
<td>Cook rapidly until pulp falls apart.</td>
<td>4 cups</td>
</tr>
</tbody>
</table>

*Use larger amount when fruit is very sour.
Canning Jelly . . . Step by Step

For instructions on making jelly without adding pectin, see page 67.
If using jelly glasses, see page 67 for sealing with paraffin.

1. Check jars for nicks, cracks or sharp edges. Wash and rinse jars and caps. Put jars and lids in large pan. Cover with hot water. Place pan on heat and bring water to a boil.

2. Following pectin manufacturer's instructions, measure prepared juice and sugar into a 6-8 quart kettle. Stir to dissolve sugar. Remove jars and lids from boiling water. Invert on towel to drain.

3. Put kettle of juice and sugar on high heat. Quickly bring to a full rolling boil—one that cannot be stirred down—stirring constantly. Boil for one minute.

4. Remove from heat. Following pectin manufacturer's instructions, immediately stir in liquid pectin.

5. Skim off foam. Quickly fill jar to ½ inch from top. Wipe top and threads of jar with clean, damp cloth. Put lid on, rubber sealing compound next to jar. Screw band down evenly and tight.

6. Invert jar for about 30 seconds so hot jelly can destroy mold or yeast which may have settled on lid. Then stand upright to cool. When jars are cold, test for seal. (See page 37.)
Butters, Conserves, Jams, Marmalades and Preserves

The fun foods in canning, and often the ones which produce the most satisfaction for the home canner, are the butters, conserves, jams, marmalades and preserves. Although many have tried, few have succeeded in imitating the distinctive flavor of choice homemade products. The smart home canner knows, or can easily learn, how to combine orchard-fresh fruits with sugar, add spices or extracts to please the taste of her own family and cook the mixture in small batches.

With butters, conserves, jams, marmalades and preserves, you can use your imagination. The natural fruit flavor can be changed or emphasized by adding a tiny pinch of salt, a small amount of spice, extract, orange peel, lemon juice, etc., to any of the recipes.

General Instructions

1. Use hard-ripe, full-flavored fruits. If using fully ripe fruits, use ¾ fully ripe and ¼ under-ripe when preparing the recipes, in order to have enough pectin content to jell the recipes. Imperfect or irregularly shaped fruits may be used as long as spoiled and bruised portions are carefully removed and discarded.

2. Prepare fruit by washing it gently in cold running water, or washing it in several changes of cold water, lifting the fruit out of the water. Sort. Remove hulls (caps), cores, pits, seeds or skins; leave whole, slice or chop as stated in the recipe, discarding all spoiled portions.

3. Weigh or measure fruit after preparing. When possible, weigh, for results will be more perfect. The general rule of ¾ pound sugar to 1 pound prepared fruit is used when making conserves, jams and marmalades. Preserves usually require pound for pound fruit and sugar. Kitchen scales are a profitable investment if “jam-making” is a favorite pastime in your household.

4. Cane or beet sugar may be used. They give the same results. Up to ¼ of the granulated sugar may be replaced with corn sirup. (Special recipes may be obtained from the larger manufacturers of corn sirup.) Up to ½ of the granulated sugar may be replaced with honey. Honey changes the fruit flavor and may even mask it.

5. Use standard measures. For measuring liquids and fruits, use liquid measuring cups: 8 ounces = 1 cup, 16 ounces = 1 pint, 32 ounces = 1 quart. For measuring dry ingredients, use graduated measuring cups: ¼, ½, ⅓ and 1 cup measures. For measuring spoons, use measuring spoons: ¼, ½ and 1 teaspoon and 1 tablespoon.

6. Measurements given in the recipes are for prepared fruits. When possible, approximate sizes and pounds of the fruit have been given to guide you in about how much will be needed for the measurement.

7. A large, heavy kettle of 8-10 quart capacity with a broad, flat bottom is an essential in “jam-making.” This size kettle will let the fruit and sugar mixture bubble and cook rapidly within the confines of the utensil.

8. Conserves, jams, preserves and marmalades should all be cooked in small batches. Do not double recipes. Sugar should be stirred over low heat until it dissolves. When the sugar has dissolved, the mixture should be cooked rapidly (boiled) for a bright and sparkling finished product. To prevent sticking and scorching, the fruit mixture should be stirred frequently as it thickens.

9. All butters, conserves, jams, marmalades and preserves thicken more as they cool. Thickness is hard to judge when the product is hot. The jellying point test (see page 67) is an excellent one to use, and can be combined with using the temperature test (candy thermometer will be needed). In using a candy thermometer, check the boiling temperature of water before you start. Boil jams, conserves, marmalades and preserves until the temperature is 9°F. above the boiling point of water. A firm product is obtained when cooked to this temperature. For a softer product, shorten the cooking time; for a firmer product, lengthen it.
10. Times given in the recipes are approximate and a guide only. Conditions vary when making "jams," so it is impossible to state exact times. For instance, the size and weight of the kettle used, the humidity of the day on which the "jam" is being made and the altitude at which it is being prepared all enter into how long it takes to thicken or reach the jellying point.

11. Many home canners prefer to use commercial pectin when making jams or marmalades. Liquid or powdered pectin should be used according to the manufacturer's instructions. When using commercial pectin, fully ripe fruits are used, cooking times are shorter, sugar measures are larger and the yields are greater. To vacuum seal "jams" when made with commercial pectin, see page 66, "The Quick and Easy Way to Make Jelly."

12. In warm climates, and elsewhere if storage conditions are poor, process butters, conserves, jams and preserves 10 to 20 minutes at simmering (180°-185°F.) in a water-bath canner.

13. Read recipe which is to be used. Check manufacturer's instructions for filling and sealing.

14. Prepare fruits. Check jars for nicks, cracks and sharp edges on sealing surfaces. Get out all utensils, equipment and ingredients needed.

15. To sterilize jars and lids... cover with hot, not boiling, water and bring to a boil—no further boiling is necessary. Keep hot until ready to use.

16. Follow recipe instructions exactly. When fruit mixture begins to thicken, remove jars and lids from hot water and invert them to drain. Jars should be hot and dry when filled.

17. Remove fruit mixture from heat. Seal all fruit products airtight in home canning jars. (See page 67, "To Make Jelly Without Adding Pectin," steps 6, 7 and 8.)

18. Store in dark, dry, reasonably cool area. The shorter the storage time, the better the product.

19. For "Jelly," see pages 65 to 69.

Butter Recipes

Butters are made by cooking fruit pulp with sugar to a thick consistency which will spread easily. Spices may be added; the amount and variety depends upon personal taste. After sugar is added, butters should be cooked slowly and stirred frequently to prevent scorching. Less sugar is used in butters, so it is advisable to process them 10 minutes in a water-bath canner. If a fine-textured butter is desired, straining the pulp through a food mill and then re-straining it through a fine-meshed sieve will make the job easier.

**Apple Butter**

**Old-Fashioned Kind**

- 2 dozen medium apples, quartered (about 6 pounds)
- 2 quarts sweet cider
- ½ teaspoon ground cloves

Cook apples in cider until tender. Press through a sieve or food mill; measure 3 quarts apple pulp. Cook pulp until thick enough to round up in a spoon. As pulp thickens, stir frequently to prevent sticking. Add sugar and spices. Cook slowly, stirring frequently, until thick, about 1 hour. Pour, hot, into hot Ball jars, leaving ½-inch headspace. Adjust caps. Process pints and quarts 10 minutes in boiling-water bath. **Yield: about 5 pints.**

**2 quarts cooked apple pulp**

**2 cups sugar**

**1½ teaspoons ground cinnamon**

Use apple pulp left from preparing apple juice for jelly. (See page 66.) Press through a sieve or food mill. Measure pulp. Add sugar and spices. Cook until the flavors are well blended, about 15 minutes. To prevent sticking, stir frequently as mixture thickens. (If too thick, add a small amount of water for desired consistency.) Pour, hot, into hot Ball jars, leaving ½-inch head space. Adjust caps. Process pints and quarts 10 minutes in boiling-water bath. **Yield: about 5 pints.**
Apricot Butter

1 1/2 quarts apricot pulp  3 cups sugar
2 tablespoons lemon juice

To prepare pulp . . . cook pitted apricot halves until soft, adding only enough water to prevent sticking. Press through a sieve or food mill. Measure pulp. Add sugar; cook until thick, about 30 minutes. As mixture thickens, stir frequently to prevent sticking. Add lemon juice; pour, hot, into hot Ball jars, leaving 1/4-inch head space. Adjust caps. Process pints and quarts 10 minutes in boiling-water bath. *Yield: about 3 pints.*

Peach Butter

2 quarts peach pulp (about 1 1/2 dozen medium, fully ripe peaches)  4 cups sugar

To prepare pulp . . . wash, scald, pit, peel and chop peaches; cook until soft, adding only enough water to prevent sticking. Press through a sieve or food mill. Measure pulp. Add sugar; cook until thick, about 30 minutes. As mixture thickens, stir frequently to prevent sticking. Pour, hot, into hot Ball jars, leaving 1/4-inch head space. Adjust caps. Process pints and quarts 10 minutes in boiling-water bath. *Yield: about 4 pints.*

Spiced Peach Butter

Follow recipe for Peach Butter. Add 1/2 to 1 teaspoon each ground ginger and ground nutmeg with sugar to peach pulp.

Pear Butter

2 quarts pear pulp (about 20 medium, fully ripe pears)  5/3 cup orange juice  4 cups sugar  1/2 teaspoon ground nutmeg

To prepare pulp . . . quarter and core pears. Cook until soft, adding only enough water to prevent sticking. Press through a sieve or food mill. Measure pulp. Add remaining ingredients; cook until thick, about 15 minutes. As mixture thickens, stir frequently to prevent sticking. Pour, hot, into hot Ball jars, leaving 1/4-inch head space. Adjust caps. Process pints and quarts 10 minutes in boiling-water bath. *Yield: about 2 pints.*

Conserves are jam-like products made by cooking two or more fruits with sugar until the mixture will either round up in a spoon, like jam, or else flake from it as in the jelly test. A true conserve contains nuts and raisins, but they may be added to, or omitted from, any recipe. Conserves should be made in small batches; cooked rapidly after sugar has dissolved; and nuts, if used, should be added the last 5 minutes of cooking time.

Apple-Blueberry Conserve

1 quart chopped, cored, pared tart apples (about 4 medium)  1 quart stemmed blueberries  6 cups sugar  1/2 cup seedless raisins  1/4 cup lemon juice

Combine all ingredients; slowly bring to boiling, stirring occasionally until sugar dissolves. Cook rapidly until thick, about 20 minutes. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. *Yield: about 6 half-pints.*

Apple-Cherry-Pineapple Conserve

1 quart pitted sweet cherries (about 2 pounds)  1 1/2 cups chopped, cored, pared tart apples  1 cup finely chopped, cored, pared fresh pineapple  5 cups sugar  1/2 cup chopped walnuts or other nuts  1/4 cup lemon juice

Combine fruit and sugar; let stand 1 hour. Bring slowly to boiling, stirring occasionally until sugar dissolves. Cook rapidly until thick, about
25 minutes. As mixture thickens, stir frequently to prevent sticking. Add nuts and lemon juice the last 5 minutes of cooking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 6 half-pints.

NOTE: Canned pineapple may be used.

Apple-Pineapple-Coconut Conserve

1 quart chopped, cored, pared tart apples (about 2 pounds)
1 quart chopped, cored, pared fresh pineapple (about 1 large)
¾ cup thinly sliced orange peel
1¾ cups chopped orange pulp (about 2 large oranges)
2 cups water
1⅓ cups (3½-ounce can) flaked coconut
6 cups sugar

Combine apples, pineapple, orange peel and pulp and water. Cook until peel is tender, about 10 minutes. Add coconut and sugar. Bring slowly to boiling, stirring occasionally until sugar dissolves. Cook rapidly almost to jellying point, about 15 to 20 minutes. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 8 half-pints.

NOTE: Canned pineapple may be used.

Blueberry Conserve

2 cups water
4 cups sugar
½ lemon, thinly sliced
½ cup seedless raisins
1 quart stemmed blueberries

Bring water and sugar to boiling. Add lemon, orange and raisins; simmer 5 minutes. Add blueberries and cook rapidly until thick, about 30 minutes. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 4 half-pints.

Blueberry-Pineapple Conserve

1 quart stemmed blueberries
2 cups finely chopped, cored, pared fresh pineapple (about 1 small)
5 cups sugar

Combine fruit and sugar; slowly bring to boiling, stirring occasionally until sugar dissolves. Cook rapidly until thick, about 30 minutes. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 4 half-pints.

Cherry-Raspberry Conserve

3 cups raspberry pulp
4 cups sugar
3 cups pitted sweet cherries

To prepare raspberry pulp . . . press berries through a sieve or food mill to remove seeds. Simmer cherries until tender; add berry pulp and sugar. Cook slowly until sugar dissolves, stirring occasionally. Cook rapidly until thick, about 30 to 40 minutes. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 4 half-pints.

Cranberry Conserve

1 unpeeled orange, finely chopped
1 quart stemmed cranberries
⅛ cup seedless raisins
2 cups water
3 cups sugar
½ cup chopped walnuts or other nuts

Combine orange and water; cook rapidly until peel is tender, about 20 minutes. Add cranberries, sugar and raisins. Bring slowly to boiling, stirring occasionally until sugar dissolves. Cook rapidly almost to jellying point, about 8 minutes. As mixture thickens, stir frequently to prevent sticking. Add nuts the last 5 minutes of cooking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 4 half-pints.

Dried Fruit Conserve

1½ cups cut-up dried apricots (½ pound)
1½ cups cut-up dried peaches (½ pound)
1½ cups cut-up dried pears (½ pound)
1 medium unpeeled orange, chopped (about 1 cup)
3 cups water
2 cups sugar
½ cup seedless raisins
1 tablespoon lemon juice
½ teaspoon ground cinnamon (optional)
½ teaspoon ground cloves (optional)
½ cup chopped walnuts or other nuts

Combine first 5 ingredients; cover and cook until fruits are tender, about 15 to 20 minutes. Uncover and add remaining ingredients except nuts. Slowly bring to boiling, stirring occasionally until sugar dissolves. Cook rapidly, stirring frequently, until thick, about 15 minutes. Add nuts the last 5 minutes of cooking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 5 half-pints.

NOTE: Use scissors, dipping them into cold water occasionally, to cut up dried fruit.
Gooseberry Conserve

1 1/2 quarts gooseberries, 1 medium unpeeled orange, 4 cups sugar
stem and blossom ends removed 1 cup seedless raisins

Combine all ingredients; heat slowly to boiling, stirring occasionally until sugar dissolves. Cook almost to jellying point, about 30 minutes. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 6 half-pints.

Grape Conserve

2 quarts stemmed grapes (about 4 pounds) 1 cup chopped walnuts or other nuts
6 cups sugar

Separate pulp from skins of grapes. Cook skins 15 to 20 minutes, adding only enough water to prevent sticking (about 1/2 cup). Cook pulp without water until soft; press through a sieve or food mill to remove seeds. Combine skins, pulp and sugar. Bring slowly to boiling, stirring occasionally until sugar dissolves. Cook rapidly until thick, about 15 minutes. Stir frequently to prevent sticking. Add nuts the last 5 minutes of cooking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 7 half-pints.

Plum Conserve

2 1/2 quarts chopped, pitted plums (about 4 pounds) 2 cups seedless raisins
3/4 cup thinly sliced orange peel 6 cups sugar
1 1/3 cups chopped orange pulp (about 2 large) 2 cups broken pecans or other nuts

Combine plums, orange pulp and peel, raisins and sugar; slowly bring to boiling, stirring occasionally until sugar dissolves. Cook rapidly almost to jellying point, about 15 to 20 minutes. As mixture thickens, stir frequently to prevent sticking. Add nuts the last 5 minutes of cooking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 8 half-pints.

Rhubarb-Strawberry-Orange Conserve

2 cups 1/2-inch slices rhubarb 3 cups sugar
1 cup seedless raisins 1 quart sliced strawberries
1 tablespoon grated orange peel 1/4 cup chopped walnuts or other nuts
2 medium oranges, sectioned

Combine rhubarb, raisins, orange peel and sections with sugar. Let stand several hours or overnight in a cool place. Add strawberries and bring slowly to boiling, stirring occasionally until sugar dissolves. Cook rapidly until thick, about 25 minutes. As mixture thickens, stir frequently to prevent sticking. Add nuts the last 5 minutes of cooking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 8 half-pints.

Jams are made by cooking crushed or chopped fruits with sugar until the mixture will round up in a spoon. Jams should be made in small batches, and cooked rapidly after the sugar has dissolved.

Apricot Jam

2 quarts crushed peeled apricots 6 cups sugar
1/4 cup lemon juice

Combine all ingredients; slowly bring to boiling, stirring occasionally until sugar dissolves. Cook rapidly until thick, about 25 minutes. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 5 pints.
Berry Jams

Blackberry, Blueberry, Boysenberry, Dewberry, Gooseberry, Loganberry, Raspberry, Youngberry

9 cups crushed berries 6 cups sugar
Combine berries and sugar; bring slowly to boiling, stirring occasionally until sugar dissolves. Cook rapidly to, or almost to, jellying point, depending upon whether a firm or soft jam is desired. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: 3 to 4 pints.

NOTE: If seedless jam is preferred, crushed berries may be heated until soft and pressed through a sieve or food mill; then add sugar and proceed as above.

Blueberry-Currant Jam

1 quart stemmed blueberries 2 cups stemmed currants
1 cup water 1 cup water
3 cups sugar
Combine blueberries and 1 cup water; cook slowly 5 minutes. Combine currants and 1 cup water; cook slowly 10 minutes; press through a sieve or food mill to remove seeds. Combine blueberries and currant pulp; cook rapidly 5 minutes. Add sugar, stirring occasionally until sugar dissolves. Cook rapidly until thick, about 20 minutes. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 2 pints.

Damson Plum Jam

5 cups coarsely chopped Damson plums (about 2 pounds)
3 cups sugar
Combine all ingredients; bring slowly to boiling, stirring occasionally until sugar dissolves. Cook rapidly to, or almost to, jellying point. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 2 pints.

Elderberry Jam

2 quarts crushed elderberries 6 cups sugar
¾ cup vinegar
Combine berries, sugar and vinegar. Bring slowly to boiling, stirring occasionally until sugar dissolves. Cook rapidly until thick. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 3 pints.

Fig Jam

2 quarts chopped fresh figs (about 5 pounds)
¾ cup lemon juice
6 cups sugar
To prepare chopped figs . . . pour boiling water over figs; let stand 10 minutes. Drain, stem and chop figs. Measure and add ¾ cup water and sugar to figs. Slowly bring to boiling, stirring occasionally until sugar dissolves. Cook rapidly until thick. Stir frequently to prevent sticking. Add lemon juice and cook 1 minute longer. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 5 pints.

Grape Jam

2 quarts stemmed Concord grapes
6 cups sugar
Separate pulp from skins of grapes. If desired, chop skins in a food blender or chopper. Cook skins gently 15 to 20 minutes, adding only enough water to prevent sticking (about ½ cup). Cook pulp without water until soft; press through a sieve or food mill to remove seeds. Combine pulp, skins and sugar. Bring slowly to boiling, stirring occasionally until sugar dissolves. Cook rapidly almost to jellying point, about 10 minutes. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 3 pints.

Muscadine or Scuppernong Jam

Follow recipe for Grape Jam.

Peach Jam

2 quarts crushed, peeled peaches
½ cup water
6 cups sugar
Combine peaches and water; cook gently 10 minutes. Add sugar; slowly bring to boiling, stirring occasionally until sugar dissolves. Cook rapidly until thick, about 15 minutes, stirring frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 4 pints.

NOTE: For Spiced Peach Jam . . . add 1 teaspoon whole cloves, ½ teaspoon whole allspice and 1 stick cinnamon, tied in a cheesecloth bag, to jam during cooking. Remove spice bag before pouring jam into jars.
Pineapple Jam

1 quart finely chopped, cored, pared fresh pineapple (about 1 large)
2 1/2 cups sugar
1 cup water
1/2 lemon, thinly sliced

Combine all ingredients. Slowly bring to boiling, stirring occasionally until sugar dissolves. Cook rapidly until thick, about 30 minutes. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 3 half-pints.

Plum Jam

2 quarts chopped tart plums (about 4 pounds)
6 cups sugar
1/4 cup lemon juice
1 1/2 cups water

Combine all ingredients; bring slowly to boiling, stirring occasionally until sugar dissolves. Cook rapidly almost to jellying point, about 20 minutes. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 4 pints.

Raspberry-Currant Jam

2 cups currant pulp
2 cups crushed raspberries
3 cups sugar

To prepare currant pulp... cook currants until soft, press through a sieve or food mill. Measure pulp. Combine currant pulp, raspberries and sugar. Bring slowly to boiling, stirring occasionally until sugar dissolves. Cook rapidly almost to jellying point, about 30 minutes. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 2 pints.

Strawberry Jam

2 quarts crushed strawberries
6 cups sugar

Combine berries and sugar; bring slowly to boiling, stirring occasionally until sugar dissolves. Cook rapidly until thick, about 40 minutes. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 4 pints.

NOTE: The cooking time will be reduced and the jam a lighter color if 2 to 3 tablespoons of lemon juice are added to the above recipe.

Marmalade Recipes

Marmalades are soft fruit jellies containing small pieces of fruit or peel evenly suspended in the transparent jelly. They should be cooked in small batches, and after the sugar is added, cooked rapidly to, or almost to, the jellying point. In preparing the citrus fruit for marmalades, part of the white “rind” should be cooked for it contains most of the pectin found in oranges, lemons and grapefruit.

Cherry Marmalade

1 orange with peel, finely chopped
4 cups pitted sweet cherries
3 1/2 cups sugar
1/4 cup lemon juice

Cover chopped orange with water and boil until soft; cool. Add cherries, lemon juice and sugar to orange. Bring slowly to boiling, stirring until sugar is dissolved. Cook rapidly to jellying point, about 35 minutes, stirring frequently. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 4 half-pints.

NOTE: If sour cherries are to be used, reduce lemon juice to 2 tablespoons.

Cherry-Pineapple Marmalade

2 cups finely chopped, pitted tart red cherries
2 cups finely chopped, cored, pared fresh pineapple (about 1 medium)
2 cups sugar

Combine all ingredients. Bring slowly to boiling, stirring occasionally until sugar dissolves. Cook rapidly until thick, about 10 minutes. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 3 half-pints.
Citrus Marmalade

(Cherry Jam or Marmalade)

1 1/2 cups thinly sliced grapefruit peel (about 1)
1/2 cup thinly sliced orange peel
1 1/2 cups chopped grapefruit pulp (about 1)

Add 1 1/2 quarts water to fruit peel. Boil 5 minutes; drain. Repeat. To drained peel, add fruit pulp, lemon and 1 1/2 quarts water; boil 5 minutes. Cover and let stand 12 to 18 hours in a cool place. Bring to boiling and cook rapidly until peel is tender, about 35 to 40 minutes. Measure fruit and liquid. Add 1 cup sugar for each cup of fruit mixture. Bring rapidly to jellying point, about 30 minutes. Stir occasionally to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 5 half-pints.

Grapefruit Marmalade

3/4 cup thinly sliced grapefruit peel
1 1/2 cups chopped grapefruit pulp (about 1)

Cover grapefruit peel with water; boil 10 minutes and drain. Repeat 2 or 3 times. To drained peel, add chopped pulp and 1 quart water. Cover and let stand 12 to 18 hours in a cool place. Cook rapidly until peel is tender, about 40 minutes. Measure fruit and liquid. Add 1 cup sugar for each cup of fruit mixture. Bring slowly to boiling, stirring until sugar dissolves. Cook rapidly almost to jellying point, about 30 to 35 minutes. Stir occasionally to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 3 half-pints.

Grape-Cranberry Marmalade

2 cups Concord grape juice
2 cups stemmed cranberries
3/4 teaspoon grated orange peel
3 cups sugar

To prepare grape juice, see page 66. Combine juice, cranberries and orange peel; bring to boiling. Add sugar; bring slowly to boiling, stirring until sugar dissolves. Cook rapidly to jellying point, about 5 minutes. Stir occasionally to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 4 half-pints.

Green Grape Marmalade

2 quarts stemmed, young, green Concord grapes
2 cups water
8 cups sugar

Add water to grapes and cook until tender. Add sugar; bring slowly to boiling, stirring occasionally until sugar dissolves. Cook rapidly to jellying point, stirring frequently. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 10 half-pints.

NOTE: If seeds of grapes are not tender, cut grapes in half and remove seeds before cooking.

Orange Marmalade

1 quart orange peel, thinly sliced (about 6 large)
1 quart orange pulp, cut up (about 6 large)

Add water to fruit and simmer 5 minutes. Cover and let stand 12 to 18 hours in a cool place. Cook rapidly until peel is tender, about 1 hour. Measure fruit and liquid. Add 1 cup sugar for each cup of fruit mixture. Bring slowly to boiling, stirring until sugar dissolves. Cook rapidly to jellying point, about 25 minutes. Stir occasionally to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 7 half-pints.
Orange-Lemon Marmalade

1½ quarts water
3 cups thinly sliced orange peel (about 4 large)
3½ cups chopped orange pulp (about 4 large)

Add water to fruit and simmer 5 minutes. Cover and let stand 12 to 18 hours in a cool place. Cook rapidly until peel is tender, about 45 minutes. Measure fruit and liquid. Add 1 cup sugar for each cup of fruit mixture. Bring slowly to boiling, stirring until sugar dissolves. Cook rapidly to jellying point, about 25 minutes. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 6 half-pints.

Prickly Pear Marmalade

2 lemons, thinly sliced (about 1 quart water)
1 cup
2 large unpeeled oranges, chopped (about 3 cups)
6 cups sugar

Combine first 3 ingredients; cover and let stand 12 to 18 hours in a cool place. Cook rapidly until peel is tender, about 30 minutes. Cool; add pears and sugar. Bring slowly to boiling, stirring until sugar dissolves. Cook rapidly to jellying point, about 25 minutes. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 6 half-pints.

Orange-Pineapple Marmalade

1 quart water
6 oranges, thinly sliced
1 lemon, thinly sliced
Sugar, about 6½ cups

Add water to oranges and lemon. Cover and cook gently for 1 hour; let stand 12 to 18 hours in a cool place. Add pineapple and cook until pineapple is tender. Measure fruit and liquid. Add 1 cup sugar for each cup of fruit mixture. Bring slowly to boiling, stirring until sugar dissolves. Cook rapidly until thick. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 9 half-pints.

Quince-Apple Marmalade

3 cups chopped, cored, pared quinces (about 6 medium)
2 cups chopped, cored, pared tart apples (about 3 medium)
Sugar, about 2½ cups

When preparing quinces, discard all gritty parts. Add water to quinces just to cover; cook rapidly until tender. Add apples and cook 10 minutes. Measure fruit and liquid. Add ¾ cup sugar to each cup of fruit mixture. Bring slowly to boiling, stirring until sugar dissolves. Cook rapidly almost to jellying point, about 15 to 20 minutes. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 4 half-pints.

Peach-Orange Marmalade

2 quarts chopped, peeled, firm-ripe peaches (about 10 large)
¾ cup sliced orange peel
1½ cups chopped orange pulp (about 2 medium)
2 tablespoons lemon juice
5 cups sugar

Combine all ingredients; bring slowly to boiling, stirring occasionally until sugar dissolves. Cook rapidly until thick, about 20 minutes. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 8 half-pints.

Strawberry-Pineapple Marmalade

2½ cups finely chopped, cored, pared fresh pineapple (about 1 medium)
1 teaspoon grated orange peel
7 cups sugar
1½ quarts stemmed strawberries

Combine pineapple, orange peel and pulp and sugar. Bring slowly to boiling, stirring occasionally until sugar dissolves. Cook rapidly 15 minutes. Add strawberries and continue cooking rapidly until thick, about 20 to 30 minutes. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 6 half-pints.
Preserve Recipes

Preserves are fruits preserved with sugar so that the fruit retains its shape, is clear and shiny, tender and plump. The sirup is clear, and varies from the thickness of honey to that of soft jelly. Preserves should be cooked in small batches, and in fairly wide pans. They may be canned immediately after cooking, but most of them improve in color and texture if they are cooled quickly and left standing from 12 to 24 hours in the sirup before canning. If "plumped" and packed cold, preserves should be processed 20 minutes at simmering (180°–185°F.) in a water-bath canner.

If the sirup becomes too thick before the fruit is tender and clear, add boiling water (¼ cup at a time). If the fruit is clear and tender and the sirup too thin, the fruit should be removed and the sirup cooked rapidly to the desired consistency to, or almost to, the jellying point.

### Apricot Preserves

5 cups halved, peeled, hard-ripe apricots (about 2 pounds)  
4 cups sugar  
¼ cup lemon juice  

Thoroughly mix fruit with sugar and lemon juice. Cover tightly; let stand 4 to 5 hours in a cool place. Heat slowly to boiling, stirring occasionally until sugar dissolves. Cook rapidly until fruit is clear, about 30 minutes. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 4 half-pints.

### Cherry Preserves

2 pounds pitted tart red cherries  
4 cups sugar  

Drain juice from cherries. Add sugar to juice (if not enough juice to dissolve sugar, add a little water) and cook until sugar dissolves, stirring occasionally. Cool. Add cherries and cook rapidly until cherries become glossy, about 15 minutes. Cover and let stand 12 to 18 hours in a cool place. Bring to boiling and cook rapidly 1 minute. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 4 half-pints.

### Bar-le-Duc (Currant) Preserves

1 cup currant juice  
2 quarts stemmed currants  
4 cups sugar  
3 cups sugar  

To prepare juice, see "Berry Jellies" page 68. Combine currant juice and fruit in a flat pan; add 4 cups sugar and cook 5 minutes. Let stand 12 hours or overnight in a cool place. Add remaining sugar. Bring slowly to boiling, stirring until sugar dissolves. Cook rapidly to, or almost to, jellying point, about 30 minutes. Stir occasionally to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 5 half-pints.

### Citron Melon Preserves

1½ quarts prepared citron melon (about 2 pounds)  
2 cups sugar  
1 lemon, thinly sliced  
1 quart water  
2 cups sugar

Both inner and outer part of melon may be used, but should be prepared separately. To prepare melon . . . cut outer part into ½-inch slices, crosswise, trim off green rind. Cut into 1-inch pieces. Remove seeds from inner part; cut into 1-inch pieces. Add 2 cups sugar to water; bring to boil. Add citron and cook rapidly until tender, about 45 minutes. Cover and let stand 12 to 18 hours in a cool place. Add remaining sugar and lemon. Boil gently until clear, about 1 hour. (If sirup becomes too thick, add a small amount of boiling water. The amount of water depends upon the melon used. If sirup is too thin when citron is done, remove citron and boil sirup until thick.) Pack citron into sterilized Ball jars; pour boiling sirup over melon. Adjust caps. Yield: about 3 half-pints. (Cont’d next page.)

### Berry Preserves

Although blackberries and others which hold shape in cooking can be used for preserves, all, except strawberries, are more satisfactory for jam. If making preserves, use ⅜ to 1 pound sugar for each pound berries.
NOTE: This may be used as a substitute for commercial candied citron after draining thoroughly. Commercial citron is made from tree grown fruit. The citron melon is vine grown. The outer part is superior to the inner part for preserves.

### Fig Preserves

7 cups sugar  
¼ cup lemon juice  
1 ¼ quarts hot water  
2 lemons, thinly sliced

Add sugar and lemon juice to hot water. Cook until sugar dissolves. Add figs and cook rapidly 10 minutes. Stir occasionally to prevent sticking. Add sliced lemons and continue cooking rapidly until figs are clear, about 10 to 15 minutes. (If sirup becomes too thick before figs become clear, add boiling water, ¼ cup at a time.) Cover and let stand 12 to 24 hours in a cool place. Pack into hot Ball jars, leaving ¼-inch head space. Adjust caps. Process half-pints and pints 30 minutes at 180°-185°F. in hot-water bath. Yield: about 10 half-pints.

NOTE: Although the product will not be as high in quality, figs may be preserved without peeling. If unpeeled, figs should be covered with water and boiled 15 to 20 minutes and drained before adding to sirup.

### Peach Preserves

3½ cups sugar  
2 cups water  
5 cups sliced, peeled, hard-ripe peaches (about 5 large)

Combine sugar and water and cook until sugar dissolves. Add peaches and cook rapidly until fruit becomes clear, stirring occasionally. Cover and let stand 12 to 18 hours in a cool place. Drain fruit and pack into hot Ball jars, leaving ¼-inch head space. Cook sirup rapidly 2 to 3 minutes, or longer if too thin. Pour over fruit, leaving ¼-inch head space. Adjust caps. Process half-pints and pints 20 minutes at 180°-185°F. in hot-water bath. Yield: about 6 half-pints.

NOTE: If desired, one of the following may be added just before preserves are removed from heat:

- 2 cracked peach pits
- 2 drops almond extract
- ½ teaspoon ground ginger, nutmeg or cloves
- ¼ cup sliced maraschino cherries

### Old-Fashioned Peach Preserves

2 quarts sliced, peeled, hard-ripe peaches (about 10 large)  
6 cups sugar

Combine fruit and sugar; let stand 12 to 18 hours in a cool place. Bring slowly to boiling, stirring frequently. Boil gently until fruit becomes clear and sirup thick, about 40 minutes. As mixture thickens, stir frequently to prevent sticking. Skim, if necessary. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 7 half-pints.

### Pear Preserves

1 ½ cups sugar  
1 ½ cups sugar  
1 ½ cups sugar

Combine 1 ½ cups sugar and water; cook rapidly 2 minutes. Add pears and boil gently for 15 minutes. Add remaining sugar and lemon, stirring until sugar dissolves. Cook rapidly until fruit is clear, about 25 minutes. Cover and let stand 12 to 24 hours in a cool place. Pack fruit into hot Ball jars, leaving ¼-inch head space. Cook sirup 3 to 5 minutes, or longer if too thin. Pour, boiling hot, over fruit, leaving ¼-inch head space. Adjust caps. Process half-pints and pints 20 minutes at 180°-185°F. in hot-water bath. Yield: about 5 half-pints.

NOTE: If Seckel pears are used, preserve whole with stem intact. Kieffers should be stored in a cool, dry place from 3 to 5 weeks before using. A piece of preserved ginger may be added to each jar.

### Plum Preserves

5 cups pitted, tart plums  
4 cups sugar

Combine all ingredients. Bring slowly to boiling, stirring until sugar dissolves. Cook rapidly almost to jelling point, about 15 minutes, stirring frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 5 half-pints.
Quince Preserves

3 cups sugar  7 cups quartered, cored, pared quinces (about 3 pounds before preparing)
2 quarts water

When preparing quinces, discard all gritty parts. Combine sugar and water; boil 5 minutes. Add quinces and cook until fruit has a clear, red color and sirup is almost at jellying point, about 1 hour. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 4 half-pints.

Watermelon Rind Preserves

1½ quarts prepared watermelon rind
2 tablespoons slaked lime or 4 tablespoons salt
2 quarts cold water
1 lemon, thinly sliced

To prepare watermelon rind ... trim green skin and pink flesh from thick watermelon rind; cut into 1-inch pieces. Dissolve lime or salt in 2 quarts water and pour over rind. Let stand 2 to 3 hours if lime is used, or 5 to 6 hours if salt is used. Drain; rinse and drain again. Cover with cold water and let stand 30 minutes. Drain. Sprinkle ginger over rind; cover with water and cook until fork-tender. Drain. Combine sugar, lemon juice and 7 cups water. Boil 5 minutes; add rind and boil gently for 30 minutes. Add sliced lemon and cook until the melon rind is clear. Pack, boiling hot, into hot Ball jars, leaving 1/4-inch head space. Adjust caps. Process half-pints and pints 20 minutes at 180°-185°F. in hot-water bath. Yield: about 6 half-pints.

NOTE: If lime is used, the preserves will be crisper. Slaked lime (calcium-hydroxide) should be available at drugstores or farm seed stores. If a spicy preserve is preferred, tie 1 stick cinnamon and 1 tablespoon whole cloves in a cheesecloth bag and add to sugar mixture.

Western Special Preserves

1 cup stemmed currants
1 cup water
5 cups sugar
2 cups stemmed loganberries
2 cups stemmed raspberries
2 cups pitted sweet cherries

Crush currants; combine currants and water; cook until soft. Drain juice through jelly bag or 4 layers of cheesecloth. Add sugar to currant juice; bring slowly to boiling, stirring until sugar is dissolved. Cook rapidly 5 minutes. Add remaining fruit and cook rapidly to, or almost to, jellying point, about 30 minutes. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into sterilized Ball jars. Adjust caps. Yield: about 5 half-pints.
Commercially prepared special diet foods are often costly, thereby reducing the weekly food budget for the members of the family who are not required to eat specially prepared foods. Low-sugar, low-salt and baby foods may be canned at home by following the easy directions below.

**General Instructions**

1. Have your doctor give you a list of the foods permitted and needed for the member of your family on a special diet.

2. Half-pint and pint jars are usually the best size to use when canning special foods for one member of the family.

3. Use care in selecting, preparing, packing and processing all foods. Lose no time between these steps.

4. When canning fruits and acid vegetables, read the General Instructions, pages 20 and 21. When canning low-acid vegetables, read the General Instructions, pages 34 and 35. When canning meats, poultry and sea foods, read the General Instructions, page 43.

5. Sweetening agents such as soluble saccharin and cyclamates and salt substitutes should be used according to the manufacturer's instructions.

6. Flavor of vegetables can be easily improved. If there is no medical reason to prevent it, add $\frac{1}{2}$ to 1 tablespoon of lemon or orange juice and a tiny piece of peel to each pint of carrots, beets or asparagus. Green beans and peas are given a lift by adding a bit of mace, nutmeg or curry powder. Any green vegetable is improved by adding a spoonful of chopped celery and a sliver of pimiento to each jar.

7. If the amount of food in a jar is too much for one meal, remove the amount needed, and refrigerate the rest. The food should keep 2 or 3 days, depending upon the type of food and the temperature at which it is stored.

**To Can Without Sugar**

Use fully ripe, but not soft-ripe fruit. Prepare fruit for canning as explained in the recipes found on pages 24 to 28. Then add a little water and cook the fruit until it is boiling hot. Pack, hot, into hot Ball jars. If needed, add boiling water to cover. Adjust caps and process in a water-bath canner for the recommended time for the fruit being canned.

**To Can Without Salt**

Follow the recipes for canning low-acid vegetables, pages 38 to 42, and for meats, poultry and sea foods, pages 45 to 49, but omit salt. Canned meats and vegetables keep just as well without salt as with it. The amount called for in the recipes is too small to help prevent spoilage; it is there only for seasoning purposes.
Strained (Pureed) Fruits

Apples, apricots, peaches and pears may be cooked and canned as a sauce or purée. When making sauce, follow recipe for “Applesauce,” page 24. For strained fruits, follow recipe for “Apricot or Peach Purée,” page 32. Follow manufacturer’s instructions when using a blender to purée fruits. The sugar may be omitted. (3 quarts prepared fruit and 3 cups water yield about 8 half-pints.)

Strained (Pureed) Vegetables

Asparagus, Carrots, Green Beans, Lima Beans, Green Peas, Spinach
(For Tomato Purée, see page 29.)

Use fresh, tender vegetables. Prepare according to the recipe for regular canning. Steam until soft, or cook in the smallest amount of water. Press through fine sieve or food mill. Follow manufacturer’s instructions when using a blender to purée vegetables. Add boiling water, if needed, to the purée about as thick as whipping cream. Reheat to boiling. Pour, hot, into hot half-pint or pint Ball jars, leaving ½-inch head space. Stir with rubber bottle scraper or similar non-metal utensil to remove air bubbles. Adjust caps. Process: ASPARAGUS, CARROTS, GREEN BEANS... half-pints 30 minutes, pints 35 minutes, at 10 pounds pressure. GREEN PEAS, LIMA BEANS... half-pints 35 minutes, pints 40 minutes, at 10 pounds pressure. SPINACH... half-pints 45 minutes, pints 55 minutes, at 10 pounds pressure. (1 pound prepared vegetable yields about 2 half-pints.)

NOTE: Processing time for strained vegetables is longer than for those chopped or canned whole, because the thickness of the purée slows the rate of heat penetration.

Chopped Vegetables

Wash, drain and chop tender, fresh vegetables. Boil 3 minutes in just enough water to cover. Pack and process as instructed in the recipes found on pages 38 to 42.

Chopped Beef, Lamb, Liver, Veal

Trim fresh raw meat free of fat, gristle and heavy connective tissue. Chop meat. Pack into hot Ball jars, leaving ¼-inch head space. Add boiling water to cover, leaving ¾-inch head space. Adjust caps. Process half-pints 65 minutes, pints 75 minutes, at 10 pounds pressure. (3 pounds prepared meat yields about 6 half-pints.)

Stew

Use ½ cup each chopped green beans, carrots and potatoes to each cup chopped raw beef. Thoroughly wash and drain young, tender vegetables. Peel carrots and potatoes before chopping; mix vegetables with the meat. Pack loosely into hot Ball jars, leaving ¾-inch head space. Add boiling water to cover, leaving ¾-inch head space. Adjust caps. Process half-pints 50 minutes, pints 60 minutes, at 10 pounds pressure. (½ cup each chopped beans, carrots and potatoes and 1 cup chopped meat yield about 3 half-pints.)
Old Favorites

Fruit Pudding

3 eggs
1 cup brown sugar, packed
1 1/2 teaspoons salt
1 teaspoon cinnamon
1/2 teaspoon allspice
1/4 teaspoon cloves
1/2 cup fine, dry bread crumbs
1/2 cup all-purpose flour
1 cup water

Beat eggs well; add sugar, salt and spices and mix thoroughly. Mix bread crumbs and flour with nuts, fruit and suet; add alternately with water to egg mixture. Stir well. Pack into greased Ball Can or Freez Jars to within 1 1/2 to 2 inches from top. Adjust caps. Process 2 hours at 5 pounds pressure. Yield: about 4 pints.

To Serve: Puncture cap to let steam escape and heat pudding in jar in pan of hot water. Serve with hard sauce.

Green Tomato Mincemeat

2 quarts cored and chopped green tomatoes (about 20 small)
1 tablespoon salt
1 orange
2 1/2 quarts pared, chopped apples (about 12 medium)
1 pound seeded raisins
1 1/2 cups chopped suet (about 6 ounces)
3 1/2 cups brown sugar, packed
1/2 cup vinegar
2 teaspoons cinnamon
1 teaspoon nutmeg
1 teaspoon cloves
1/2 teaspoon ginger


NOTE: If desired, suet may be omitted from recipe. Then all ingredients are simmered together until tomatoes and apples are tender. Mincemeat is poured, boiling hot, into sterilized Ball jars, leaving 1-inch head space. Adjust caps. Process half-pints and pints 35 minutes in boiling-water bath. Yield: about 5 pints.

Old-Fashioned Salt Corn

Boil fresh, tender corn 5 minutes. Cut from cob. Do not scrape. Measure corn and mix with 1/4 its measure of dairy, pickling or kosher salt. Pack tightly to within 1/4 inch of top of sterilized Ball jars. Smooth a 1/4-inch layer of salt over the top of the corn. Adjust caps and store in cool, dry place. (4 quarts cut corn and 4 cups salt yield about 6 pints canned salt corn.)

To Serve: Parboil corn 2 or 3 times or until most of salt taste is removed. Then simmer with sweet milk, butter and pepper before serving.

Horseradish

Wash, scrape and grate fresh horseradish roots. Fill sterilized Ball jars 1/4 full with grated horseradish. Fill jars to top with white distilled vinegar. Adjust caps and store in cool, dry place. (6 pounds horseradish roots and 3 cups vinegar yield about 6 pints canned horseradish.)

Sauerkraut

Wash, quarter, core and shred sound, hard, fully matured cabbage. Weigh. Thoroughly mix 1/2 pound dairy, pickling or kosher salt with 20 pounds cabbage. Firmly pack into stone jar or tight keg. Cover with white cloth and dinner plate or glass pie plate. Fill Ball jar with water and use to hold plate under the brine, which forms as salt draws juice from cabbage. Start cabbage curing in a temperature of about 85°F. When fermentation begins, move to a cooler place (about 65°F.). Remove scum each day. Sauerkraut is cured and ready to can in 2 to 4 weeks, depending upon the temperature at which it is cured. When properly cured, sauerkraut is yellow-white and free of white spots. Pack sauerkraut into hot Ball jars, leaving 1/2-inch head space. If there is not enough juice to cover, add brine made by dissolving 2 teaspoons salt in 1 quart water, leaving 1/2-inch head space. Adjust caps. Process pints and quarts 30 minutes in boiling-water bath. Yield: 6 to 7 quarts.

Dried Fruit Spread

1 pound prunes
1 pound seedless raisins
1 pound dried figs
1 pound dried apricots
1 cup broken walnuts
2 1/2 cups grape juice
1 cup lemon juice
1/2 teaspoon salt

Finely chop fruits and nuts in a food chopper or blender. Add remaining ingredients to make a paste. Pack into hot Ball jars, leaving 1/2-inch head space. Adjust caps. Process half-pints and pints 35 minutes in boiling-water bath. Yield: about 5 pints.

NOTE: Use as a sandwich spread, cake or cookie filling.
Freezing preserves food because it delays or stops the growth of bacteria, molds and yeasts, and it retards the activity of enzymes. Freezing does not destroy microorganisms or enzymes, as canning does. The length of time frozen foods hold their fresh flavor and natural color depends upon the kind and variety of food used, its selection and preparation, the container in which it is frozen and the efficiency of the freezing unit.

**For Successful Freezing**

1. Some varieties of the same kind of fruit and vegetable freeze well, others do not. Check with your county home demonstration agent or your state college of agriculture; either one will supply you with a list of locally grown varieties of produce that give the highest quality when frozen.

2. The quality of the frozen food will be only as good as the quality of the food before freezing. Foods should be fresh and of the maturity you would select for immediate use. They should be prepared for packing as soon as possible after picking, slaughtering, etc. The food should be cold when it is packed. All foods should be packed tightly to exclude as much air as possible. Ample head space should be left because food expands as it freezes. Sealing edges should be clean in order to obtain an airtight seal. All jars should be labeled, indicating the type of pack and the date of freezing. Foods should be frozen at 0°F. or below as soon as possible after they are packed.

3. The container used must be airtight, leak-proof, moistureproof, odorproof and vaporproof if you want to retain the highest quality of the food to be frozen. It should be strong and easy to fill, close and empty.

4. Speed in the freezing process is important if you want to maintain the quality of the food. Only the amount of unfrozen food that will freeze within a 24-hour period should be put into the freezer at one time. Usually 2 to 6 pounds to a cubic foot of freezer space is the amount to prepare. The freezer should be at 0°F. or below, both during freezing and in storing. A uniform freezing temperature during the storage period will maintain the quality of the food.

5. Different foods require varying storage periods. For highest quality, these storage periods should be observed. (See page 87.) Food which is stored for a longer period of time will not be unsafe to eat, but the color, flavor and nutritive value will change, lowering the quality of the food.

6. In general, foods that have thawed completely should not be refrozen. This is particularly true with low-acid vegetables, meats, poultry and sea foods. Fruits may be refrozen, but you will probably notice texture and flavor changes when the fruits are eaten.

**Ball Can or Freez Jars**

Tapered Ball Can or Freez Jars meet all the requirements of a good container for fruits, vegetables and any other food suitable for freezing in 8, 16 and 24 ounce packages. The jars are made of clear, odorless, tasteless glass which has been annealed to withstand both the coldest and the hottest temperatures used in food preservation. They may be used interchangeably for freezing and canning. Neither heat nor cold, if properly applied, can damage them. The Ball Can or Freez Jars are easy to fill and close with dome caps. When closed they are airtight, liquid-proof and vaporproof. The jars are designed to be wider at the top than at the bottom, and without shoulders, to prevent breakage in freezing, to make it possible to stack one jar on top of another and to permit the removal of food before it is thawed.

**How To Use Ball Can or Freez Jars**

1. Wash jars in hot soapy water; rinse, drain and cool.

2. Wash and rinse dome caps. Dip the lids into boiling water or pour boiling water over them.

3. If food has no "free" liquid, fill jar almost to top. Liquid and wet packs require ½-inch head space in half-pints and pints and ¾-inch head space in 1½ pints.

4. Wipe top and threads of jar with clean, damp cloth.

5. Put dome lid on jar, sealing compound next to jar. Screw band tight.

6. Place jars upright in freezer until food is frozen. Then arrange them however you desire.
7. Leave screw bands on jars until you are ready to use the food. The bands must be left on because the jars, when used in freezing, are not sealed by vacuum.

To Remove Frozen Food From Can or Freez Jars

1. Fruits, sandwich fillings and other foods which require thawing, but not heating:
   (a) Place jar in refrigerator or on the kitchen counter several hours before contents are needed.
   (b) Do not open jar until ready to use the food.

2. Vegetables and other foods to be cooked or heated:
   (a) Let cool water run on cap 2 or 3 minutes . . . just until the surface of the food touching the glass thaws.
   (b) Remove cap, invert jar and let food slide out into the pan in which it is to be cooked or heated.

3. Salads and desserts to be served while frozen:
   (a) Let cool water run on cap 2 or 3 minutes . . . just until the surface of the food touching the glass thaws.
   (b) Remove cap, invert jar and empty frozen contents of the jar onto a chilled platter or into a chilled dish.

Freezing In Fruit Jars

Foods can be frozen in Ball Mason Jars. However, no fruit jar meets all the requirements of a good frozen food container. All regular fruit jars, regardless of who makes them, are wider at the bottom than at the top and have shoulders. Food pushes up as it freezes; the upward pressure against the narrowing shoulder can cause breakage unless a deep head space is left. Deep head space wastes both container and freezer space, and it holds a large amount of air in close contact with the food. Oxygen in the air causes the food to discolor and change flavor. Several hours are required for thawing the food, for a jar-size piece of frozen food cannot pass through the mouth of a fruit jar. Regular fruit jars cannot be stacked.

Storage Times For Frozen Foods At 0°F.

<table>
<thead>
<tr>
<th>FOOD</th>
<th>MAXIMUM STORAGE TIME (MONTHS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruits and Vegetables</td>
<td>8–12</td>
</tr>
<tr>
<td>Meats:</td>
<td></td>
</tr>
<tr>
<td>Beef</td>
<td>6–12</td>
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<tr>
<td>Lamb and Veal</td>
<td>6–9</td>
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<tr>
<td>Pork</td>
<td>1–3</td>
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<tr>
<td>Cured Pork</td>
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<tr>
<td>Sausage and Ground Meat</td>
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<td>Cooked Meat (not covered with sauce)</td>
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<td>Poultry:</td>
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<tr>
<td>Chickens</td>
<td>6–12</td>
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<tr>
<td>Giblets</td>
<td>3</td>
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<tr>
<td>Cooked Poultry (not covered with sauce)</td>
<td>1</td>
</tr>
<tr>
<td>Precooked Combination Dishes</td>
<td>2–6</td>
</tr>
<tr>
<td>Fish</td>
<td>1–3</td>
</tr>
</tbody>
</table>

To Freeze Fruits

General Instructions

1. Get ready Ball Can or Freez Jars, Ball Mason Dome Caps and all other equipment and utensils you will need.
2. Make and chill sirup. If using ascorbic acid or any other anti-browning agent, do not add it to sirup until just before using.
3. Use fully ripe, but not overripe, fruits of fine flavor and even color. Wash them in ice-cold water, lifting fruit from the water. Drain. Hull (cap), pit or peel. Fruits must be handled gently to prevent bruising. They should be kept as cool as possible from the moment they are taken from vine or tree until they are placed in the freezer.
4. Freeze fruits in sirup or dry sugar, or without sugar, depending upon the fruit being frozen and the use for which it is intended. Most fruits have better color, texture and flavor when they are frozen in sirup and are usually best for dessert. Fruits when packed in dry sugar or without sugar are best for most cooking purposes. Blackberries, blueberries, gooseberries, currants, cranberries, rhubarb, grapes, pineapple, plums and figs may be frozen without sugar. For fruits needed in low-sugar diets, it is better to can than
freeze all except red raspberries and straw-berries.

5. Work with only enough fruit to fill a few containers at one time. Two or three quarts of fruit are a good quantity with which to work.

6. To prevent certain fruits from browning use ascorbic acid or other anti-browning agents just before packing.

7. Pack fruits quickly and carefully, leaving the correct amount of head space. (See page 86.)

8. Wipe sealing surface with a clean, damp cloth. Screw cap on tight.

9. Put Ball Can or Freez Jar into freezer as soon as it is packed, or refrigerate and take to food locker as quickly as possible after packing.

To Prevent Browning

The flesh of raw apricots, nectarines, cherries and most varieties of peaches turns brown when exposed to air. These fruits usually retain their natural color when they are quickly prepared, placed directly into the sirup and frozen immediately. Fruits which have been treated with an anti-browning agent will hold their natural color longer after they have been thawed. Ascorbic acid or other anti-browning agents should be used when freezing light-colored fruits in dry sugar or without sugar.

ASCORBIC ACID MIXTURES should be used according to the manufacturer’s instructions.

ASCORBIC ACID should be used when freezing:

1. In Sirup . . . by dissolving the acid in a little cold water and adding it to the cold sirup just before packing the fruit.

2. In Dry Sugar . . . by dissolving the acid in cold water and sprinkling it over the fruit before adding the sugar.

3. Without Sugar . . . by dissolving the acid in cold water and sprinkling it over the fruit before packing.

STEAMING or SCALDING in boiling water until the fruit is hot through is recommended for apples and some other fruits. The fruit must be chilled in ice water and thoroughly drained before packing.

To Pack Fruit For Freezing

In Sirup . . . pour about ½ cup ice-cold sirup into Can or Freez jar. Fill jar half full with fruit; shake jar to pack fruit as closely as possible without crushing. Finish filling jar leaving head space, ½ inch for half-pints and pints, ⅔ inch for 1½ pints. Shake jar again. If needed, add more sirup to cover fruit. Place small piece of crumpled plastic wrap or aluminum foil on top of fruit, pressing down to hold fruit under sirup. Wipe top and threads of jar with clean, damp cloth. Screw cap tight.

In Dry Sugar . . . spread fruit in shallow pan. If using, sprinkle with dissolved ascorbic acid or other anti-browning agent. Cover with amount of sugar called for in chart. Gently turn fruit over and over until sugar dissolves and juice is formed. Fill Can or Freez jar; shake jar to pack fruit as closely as possible without crushing. If needed, add more fruit leaving head space, ½ inch for half-pints and pints, ⅔ inch for 1½ pints. Place small piece of crumpled plastic wrap or aluminum foil on top of fruit to hold it under the juice. Wipe top and threads of jar with clean, damp cloth. Screw cap tight.

Without Sugar . . . sprinkle with dissolved ascorbic acid or other anti-browning agent, if using. Fill Can or Freez jar. Shake jar to pack fruit closely. Wipe top and threads of jar with clean, damp cloth. Screw cap tight.

Sirups For Freezing Fruits

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<thead>
<tr>
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<th>SUGAR</th>
<th>WATER</th>
<th>YIELD OF SIRUP</th>
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<tr>
<td>30 per cent</td>
<td>2 cups</td>
<td>4 cups</td>
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<td>35 per cent</td>
<td>2½ cups</td>
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<tr>
<td>40 per cent</td>
<td>3 cups</td>
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<tr>
<td>50 per cent</td>
<td>4 cups</td>
<td>4 cups</td>
<td>6½ cups</td>
</tr>
<tr>
<td>60 per cent</td>
<td>7 cups</td>
<td>4 cups</td>
<td>7½ cups</td>
</tr>
</tbody>
</table>

Make sirup by boiling sugar with water until sugar dissolves. Refrigerate until sirup is ice cold. The sugar may be dissolved in cold water, but the sirup is clearer if it is cooked. When using corn sirup, follow the manufacturer’s directions.

A medium sirup (40%) is preferred for most fruits. A heavier sirup may be desired for very sour fruits. It takes ½ to ⅔ cup sirup for each pint container of fruit.
<table>
<thead>
<tr>
<th>FRUIT</th>
<th>PREPARATION FOR FREEZING</th>
<th>SIRUP PACK</th>
<th>DRY SUGAR PACK</th>
<th>WITHOUT SUGAR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Type Sirup</td>
<td>Amount Ascorbic Acid to Each Quart Sirup</td>
<td>Amount Sugar to Each Quart Prepared Fruit</td>
</tr>
<tr>
<td>Apples</td>
<td>Wash, core, pare. Slice directly into cold salt-water (2 tbsp. salt, 1 gallon water). Drain. Scald 2-3 minutes in boiling water. Cool 2-3 minutes in ice-cold water. Drain.</td>
<td>40%</td>
<td>½ tsp.</td>
<td>½ tsp.</td>
</tr>
<tr>
<td>Applesauce</td>
<td>Prepare favorite recipe. Chill.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apricots</td>
<td>Sort, wash, halve and pit. Scald ½ minute in boiling water. Cool ½ minute in ice-cold water. Drain.</td>
<td>40%</td>
<td>¾ tsp.</td>
<td>¾ tsp.</td>
</tr>
<tr>
<td>Avocados</td>
<td>Peel, pit and mash soft-ripe fruit.</td>
<td></td>
<td>1 cup</td>
<td>Yes</td>
</tr>
<tr>
<td>Blackberries</td>
<td>Sort. Remove leaves and stems. Wash and drain.</td>
<td>40-50%</td>
<td>¾ cup</td>
<td>Yes</td>
</tr>
<tr>
<td>Boysenberries</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dewberries</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loganberries</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Youngberries</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blueberries</td>
<td>Sort. Wash. Drain. Scald 1 minute in boiling water. Cool 1 minute in ice-cold water. Drain.</td>
<td>40%</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Elderberries</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Huckleberries</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cherries</td>
<td>Stem. Sort. Wash. Drain. Pit or leave whole.</td>
<td>40-60%</td>
<td>¾ cup</td>
<td>¾ tsp.</td>
</tr>
<tr>
<td>Cranberries</td>
<td>Stem. Sort. Wash and drain.</td>
<td>50%</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Currants</td>
<td>Wash. Remove stems. Drain.</td>
<td>50%</td>
<td>¾ cup</td>
<td>Yes</td>
</tr>
<tr>
<td>Figs</td>
<td>Wash. Sort. Remove stems. Drain. If preferred, use ½ cup lemon juice to each quart sirup instead of the ascorbic acid.</td>
<td>35%</td>
<td>¾ tsp.</td>
<td>Yes</td>
</tr>
<tr>
<td>Fruit Cocktail</td>
<td>Use any combination of fruit desired. Prepare each fruit. Mix.</td>
<td>30-40%</td>
<td>½ tsp.</td>
<td></td>
</tr>
<tr>
<td>Gooseberries</td>
<td>Sort. Remove stems and blossom ends. Wash. Drain.</td>
<td>50%</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Grapefruit or Oranges</td>
<td>Wash. Peel. Section fruit, removing all membranes and seeds.</td>
<td>40%</td>
<td>½ tsp.</td>
<td></td>
</tr>
<tr>
<td>Grapes</td>
<td>Wash and stem. Leave seedless grapes whole; halve and remove seeds from others.</td>
<td>40%</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Melons—Cantaloupe Crenshaw Honeydew Persian Watermelon</td>
<td>Cut in half. Remove seeds and peel. Cut into slices, cubes or balls.</td>
<td>30%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peaches and Nectarines</td>
<td>Sort, wash, pit and peel. Cut in halves or slices.</td>
<td>40%</td>
<td>½ tsp.</td>
<td>½ cup</td>
</tr>
<tr>
<td>Pears</td>
<td>Wash. Peel. Cut in halves or quarters and remove cores. Heat in boiling 40% sirup for 1-2 minutes. Drain and cool.</td>
<td>40%</td>
<td>¾ tsp.</td>
<td></td>
</tr>
</tbody>
</table>
### To Freeze Vegetables

#### General Instructions

1. Get ready Ball Can or Freez Jars, Ball Mason Dome Caps and all other equipment and utensils you will need.

2. Fill large kettle with water and place over high heat to bring to boil. Use one gallon of water for each quart of vegetables to be blanched. All vegetables need to be blanched (scalded) until they are hot through to destroy enzymes that cause undesirable changes in color, flavor and texture.

3. Have plenty of ice-cold water, also a large container, ready for chilling vegetables. Change water frequently if blanching and freezing a large quantity of vegetables.

4. Use garden-fresh vegetables, when they first reach their perfect stage for cooking. Sort vegetables for size, color and maturity. Discard all tough, wilted or over-mature pieces.

5. Wash vegetables, lifting them out of the water. Rinse, drain and then prepare vegetables as you would for canning or cooking. Place 2 or 3 pints of prepared vegetables in wire basket or cheesecloth bag. Place in large kettle containing rapidly boiling water. Cover and scald vegetables for number of minutes given in chart on page 91. If you live 5,000 feet or more above sea level, scald 1 minute longer than the time specified. Plunge vegetables into ice-cold water to cool them quickly and to stop them from cooking. Let vegetables remain in ice-cold water about as long as they were scalded. Drain thoroughly.

6. Pack quickly, leaving the correct amount of head space. (See page 86.) We recommend that all vegetables should be packed dry because it is easier both to prepare them for freezing and also to serve them.

7. Wipe sealing surface with a clean, damp cloth. Screw cap on tight.

8. Put Ball Can or Freez Jar into freezer as soon as it is packed, or refrigerate and take to food locker as quickly as possible after packing.

### Preparation for Freezing

<table>
<thead>
<tr>
<th>FRUIT</th>
<th>PREPARATION FOR FREEZING</th>
<th>SIRUP PACK</th>
<th>DRY SUGAR PACK</th>
<th>WITHOUT SUGAR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Type Sirup</td>
<td>Amount Ascorbic Acid to Each Quart Sirup</td>
<td>Amount Sugar to Each Quart Prepared Fruit</td>
<td>Amount Ascorbic Acid to Each Quart Prepared Fruit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 cup</td>
<td>½ tsp.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>30%</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40-50%</td>
<td>½ tsp.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40%</td>
<td>¾ cup</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40%</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50%</td>
<td>¾ cup</td>
<td>Yes</td>
</tr>
</tbody>
</table>

- Persimmons: Sort, wash, peel and press through sieve.
- Pineapple: Pare. Remove core and eyes. Slice, dice, crush or cut into wedges or sticks.
- Plums and Prunes: Sort and wash. Leave whole or cut in halves or quarters.
- Raspberries: Sort, wash carefully in ice-cold water. Drain.
- Rhubarb: Wash, trim, cut into 1-2 inch pieces. Scald 1 minute in boiling water. Cool 1 minute in cold water. Drain.
- Strawberries: Sort. Wash in ice-cold water. Drain. Hull (cap); slice or leave whole.
<table>
<thead>
<tr>
<th>VEGETABLE</th>
<th>PREPARATION FOR FREEZING</th>
<th>SCALDING TIME IN MINUTES*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asparagus</td>
<td>Sort stalks according to thickness. Wash thoroughly. Cut in jar-size or 2-inch lengths. Scald. Chill. Pack, leaving no head space.</td>
<td>Small 2; Medium 3; Large 4</td>
</tr>
<tr>
<td>Beans, Lima or Butter</td>
<td>Shell. Wash. Sort according to size. Scald. Chill.</td>
<td>Small 2; Medium 3; Large 4</td>
</tr>
<tr>
<td>Beans, Snap, Green or Wax</td>
<td>Wash. Remove ends. Cut as desired. Scald. Chill.</td>
<td>3</td>
</tr>
<tr>
<td>Beets</td>
<td>Wash and sort according to size. Trim tops, leave ½ inch of stems. Cook until tender. Chill. Peel and cut as desired.</td>
<td>Small 30; Medium 45</td>
</tr>
<tr>
<td>Broccoli</td>
<td>Wash, peel stalks and trim. To remove insects, soak for ½ hour in salt-water (4 tsp. salt, 1 gallon cold water). Split lengthwise. Scald. Chill. Pack, leaving no head space.</td>
<td>3</td>
</tr>
<tr>
<td>Brussels Sprouts</td>
<td>Trim, removing coarse outer leaves. Wash thoroughly. Sort. Scald. Chill. Pack, leaving no head space.</td>
<td>Small 3; Medium 4; Large 5</td>
</tr>
<tr>
<td>Carrots</td>
<td>Remove tops. Wash and peel. Leave small carrots whole. Cut others into slices or strips. Scald. Chill.</td>
<td>Whole 5; Cut 2</td>
</tr>
<tr>
<td>Cauliflower</td>
<td>Trim and cut in pieces 1-inch across. Wash well. To remove insects, soak for ½ hour in salt-water (4 tsp. salt, 1 gallon cold water). Drain. Scald in salt-water (4 tsp. salt, 1 gallon water). Chill. Pack, leaving no head space.</td>
<td>3</td>
</tr>
<tr>
<td>Corn, Whole-kernel</td>
<td>Husk, silk and wash. Scald. Chill. Cut kernels at about ½ the depth of the kernels.</td>
<td>4</td>
</tr>
<tr>
<td>Cream-style</td>
<td>Husk, silk and wash. Scald. Chill. Cut kernels at about the center of the kernels. Scrape cobs to remove juice and heart of the kernel.</td>
<td>4</td>
</tr>
<tr>
<td>On-the-cob</td>
<td>Husk, silk and wash. Sort according to size. Scald. Chill.</td>
<td>Small 7; Medium 9; Large 11</td>
</tr>
<tr>
<td>Greens, All Kinds</td>
<td>Wash thoroughly. Remove tough stems and imperfect leaves. Scald. Chill.</td>
<td>2-3</td>
</tr>
<tr>
<td>Kohlrabi</td>
<td>Remove tops and roots. Wash, peel, dice in ½-inch cubes. Scald. Chill.</td>
<td>1</td>
</tr>
<tr>
<td>Okra</td>
<td>Wash. Remove stems; do not break seed pod. Scald. Chill.</td>
<td>3-4</td>
</tr>
<tr>
<td>Parsnips</td>
<td>Remove tops. Wash, peel, cut in ½-inch cubes. Scald. Chill.</td>
<td>2</td>
</tr>
<tr>
<td>Rhubarb</td>
<td>See “Fruit,” page 90.</td>
<td></td>
</tr>
<tr>
<td>Rutabagas and Turnips</td>
<td>Remove tops. Wash, peel, cut into ½-inch cubes. Scald. Chill.</td>
<td>2</td>
</tr>
<tr>
<td>Sweet Potatoes</td>
<td>Freeze mature sweet potatoes, which have been cured. Wash. Cook until tender. Cool at room temperature. Peel; cut in halves or slices, or mash. To prevent darkening: dip halves or slices for 5 seconds in lemon-water (½ cup lemon juice, 1 quart water); mix 2 tablespoons orange or lemon juice with each quart of mashed.</td>
<td></td>
</tr>
</tbody>
</table>

*If you live 5,000 feet or more above sea level, scald 1 minute longer than time specified.
Any fresh raw, or freshly cooked, meat or fowl suitable for freezing in 16 and 24 ounce containers may be frozen, to an advantage, in Ball Can or Freez Jars. (See “How To Use Ball Can or Freez Jars,” page 86.) These jars are especially satisfactory for use in freezing stews and meats with gravy or sauce. (See “Storage Times,” page 87.)

RAW MEATS . . . are prepared and packed for freezing just as they are for canning (pages 45-47), except that no salt is used when meat is to be frozen.

COOKED MEATS . . . should be chilled, packed and frozen as quickly as possible after cooking. Cut meat into jar-size or serving-size pieces, slices or cubes before packing into Can or Freez jars. If to be kept several weeks or longer, remove all fat from gravy or broth.

1. FOR FRYING . . . Pack the meaty pieces as they fit best into Can or Freez jar.
2. FOR STEWS OR PIE . . . Cut the meat into serving-size pieces before packing into Can or Freez jar.
3. FOR SANDWICHES, SALADS, ETC . . . Steam or bake chicken, turkey, duck, etc., until tender. Chill, then cut into slices or cubes. Pack into Can or Freez jar.
4. CHICKEN À LA KING . . . Use your favorite recipe or the one on page 48. Chill as quickly as possible, pour into Can or Freez jars.
5. LEFTOVER ROAST OR BAKED FOWL may be cut into serving-size pieces and frozen in Can or Freez jars. Unless to be used in a few days, stuffing should not be frozen with the meat.

Hamburgers

Use freshly ground beef. Season lightly with salt and pepper. If to be kept several months it is best to leave out the salt. Make into patties and brown lightly, or pack raw. Place two layers of heavy waxed paper between each hamburger, and over the one at the top of Can or Freez jar.

Chicken and Other Fowl

Select and prepare poultry and game same as for canning (page 48).
NOTE: Fresh unseasoned sausage may be tightly packed into Can or Freez jars. When packed and frozen in this manner the sausage should be thawed in the jar and seasoned before using.

**Smoked Ham**
Cut ham as wanted and trim free of fat. Pack ham into Can or Freez jar.

**Smoked Sausage**
Season, "work," and pack fresh sausage into casing, jar-size cloth bags or corn shucks. Hang over hickory or other favorite wood smoke until thoroughly cured. Place in Can or Freez jar. Sausage usually keeps longer if smoked before freezing.

**Tenderloin**
Cut thoroughly chilled tenderloin into jar-length pieces or slice it crosswise. Pack into Can or Freez jar.

**Scrapple, Headcheese and Souse**
Use any favorite recipe. When product is ready for molding, pour into Can or Freez jar (leave about ½-inch head space). Let stand until cold, then put cap on jar and screw tight.

**Venison**
Follow instructions for freezing other meats. Also remember to check with your game warden or county sheriff if you do not know the length of time game may be legally stored.

## To Freeze Sea Foods

See “How To Use Ball Can or Freez Jars,” page 86, and “Storage Times,” page 87.

**Fish**
Clean and cut freshly caught fish, as for cooking. Drain well and pack into Can or Freez jar.

Salmon, Herring and Trout keep fresh flavor longer if dipped into ice-cold water containing ascorbic acid (use 1½ teaspoons acid to 1 quart water), packed into Can or Freez jars, sealed and frozen immediately.

**Crabs and Lobsters**
Prepare same as for cooking. Drain well and pack into Can or Freez jar. (Do not add salt or liquid.)

**Shrimp**
Wash freshly caught shrimp, then cook by boiling 10 minutes. Chill in cold water, remove shells and sand veins. Rinse in cold water. Drain. Pack into Can or Freez jar. Shrimp keeps somewhat longer if frozen raw. To freeze raw shrimp: wash, then remove heads. Rinse and drain shrimp before packing into Can or Freez jar.

## To Freeze Cooked Foods

See “How To Use Ball Can or Freez Jars,” page 86, and “Storage Times,” page 87. Baked beans, candied sweet potatoes, chili, hash, pie fillings, meat balls in tomato sauce, Spanish rice, soups and anything else suitable for freezing in 16 and 24 ounce containers may be frozen in Ball Can or Freez Jars.

**CAUTION:** Soups and dishes containing meats, meat products, milk, eggs or sea foods must be cooled and frozen as quickly as possible after cooking. To cool quickly, place pan of food in ice water and stir occasionally to hasten cooling.
Be careful in your selection. Do not choose too young. When selected, give your entire thoughts to preparation for domestic use. Some wives insist upon keeping them in a pickle, others are constantly getting them into hot water. This may make them sour, hard, and sometimes bitter; even poor varieties may be made sweet, tender and good, by garnishing them with patience, well sweetened with love and seasoned with kisses. Wrap them in a mantle of charity. Keep warm with a steady fire of domestic devotion and serve with peaches and cream. Thus prepared, they will keep for years.