New lid design...New “red sealing ring.”

“Why not make them pretty?” we said. “Quilted Crystal” resulted...and it reversed the trend of the industry.
T HIS, the twenty-ninth edition of the Ball Blue Book, brings to you the most reliable and up-to-date methods of home canning and freezing. New recipes have been added and old favorite recipes rewritten; the continuity rearranged and instructions simplified so all age homemakers may find it helpful.

The size of the book has been increased to include all the information needed to obtain the good results you have a right to expect when you preserve foods by methods based on scientific facts.

Perhaps you can for the convenience of a readily available food supply, fun or thrift; or for the joy of sharing with your friends and preparing colorful nutritious meals for your family. Whatever your reason for preserving foods, we trust this new Blue Book will assist you to produce the finest quality of canned and frozen foods.

contents

The Easy Way to Can .......................... 2, 3
Home Canning Vocabulary ...................... 4, 5
Molds, Yeast, Bacteria and Enzymes ......... 6-9
Types of Ball Jars and Fittings ............... 10, 11
How to Use Ball Jars and Fittings .......... 12, 13
Methods ........................................ 14
Food Chart ..................................... 15
Food Planning Guide ........................... 16
Jar Estimating .................................. 17
General Instructions ........................... 19
Canning Time Reference ....................... 20, 21
Steam Pressure Canning:
  Altitude Chart ................................ 20
  Canning Green Beans...Step by Step .... 22, 23
  Low Acid Vegetable Recipes ............... 24-28
  Meats, Poultry, Seafood (Preparation and Recipes) .......................... 29-33
  Soups and Sandwich Spreads .......... 35-37
Water Bath Canning:
  Acid Fruits and Vegetables
    (General Instructions) .................... 38, 40
  Altitude Chart ................................ 40
  Canning Time Reference .................... 41
  Canning Peaches...Step by Step .......... 42, 43
  Fruit Recipes ................................ 44-48
  Tomato Recipes ............................. 48-49
  Canning Tomatoes...Step by Step ....... 50-51
  Fruit Juices .................................. 52
  Pickles and Relishes ....................... 54-71
  Butters, Conserves, Jams, Marmalades and Preserves ......................... 72-84
  Canning Jelly...Step by Step ............ 85-93
  Jelly Recipes ................................ 90-93
  Freezing ....................................... 94-102
  Canning for Tots and Those
    on Special Diets ............................ 102, 103
  How to Check for Spoilage ............... 104, 107
  Index (alphabetical) ......................... 108-110
Home canning is a highly rewarding experience... It can be economical, creative 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.

New Revised Edition 29
Published by
BALL CORPORATION
Muncie, Indiana 47302
1. Start planning several weeks in advance of the canning season. Make a list of the kinds and amounts of canned foods you need and want in the months ahead. (See page 16 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 page 10 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, or other products, 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," or other unreliable methods. Follow up-to-date recipes.

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 water-bath 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 and rinse well. Treat caps and lids. See instructions on page 12. 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.
   f. Follow instructions in Blue Book for use of pressure-canner.

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. How to test for seal of two-piece cap:
   a. Press center of lid. If lid is down and will not move, jar is sealed...
   b. or tap center of lid with teaspoon. A clear ringing sound means a good seal...
   c. or tilt jar slightly. If there is no leakage, remove band and store.

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.
FRUIT JAR is the traditional name for a glass jar made for use in home canning. There are two 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.

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.

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

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

COLD or RAW PACK is a method of filling jars. The jars are filled with raw food, then the filled jars are processed.

HOT PACK is a method of filling jars. The jars are filled with hot food, then the filled jars are processed.

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.

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

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

VENTING or EXHAUSTING is forcing air to escape from a jar or permitting air to escape from a steam-pressure 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 zinc caps, keep air from going back into sealed jars.

**BACTERIA, MOLDS and YEASTS** are low forms of plant life known to scientists as microorganisms. These microorganisms are found in vegetable (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.

**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.
Here are some tips on destroying the MOLDS, YEAST, BACTERIA and ENZYMES that could spoil your canning and preserving

**WE ARE...** Microorganisms which are found in the soil, in the water, in the air and on all surfaces with which we come in contact. If we are not destroyed by heat during processing canned foods, we cause the food to spoil; and, if the jar is not sealed when stored away we sneak into the jar and cause spoilage.

We, the molds, form fuzzy patches on food. We the yeasts, cause food to ferment. BOTH of us thrive on fruits and tomatoes and also on jams, jellies and pickles. We are easily destroyed by heat so the acid foods can be processed at a temperature of 212°F. in a boiling water bath canner.

Our friends, the bacteria, give food an unnatural flavor called flat sour, and they cause food to become soft and slimy. Bacteria prefer the low acid foods—vegetables and meats. Some of them are very hard to destroy, so the low acid foods must be processed at 240°F. in a steam pressure canner.

**WHAT ARE ENZYMES?**

We are chemical substances found in all plants and animals. If uncooked foods are not used while fresh, we cause changes in color, texture and flavor. If we are NOT destroyed by heat during processing canned foods, we cause the same changes in canned foods.
MANY FACTORS AFFECT HOW LONG FOOD HAS TO BE PROCESSED IN ORDER TO...

DESTROY US

Not only the acidity of the food and the temperatures under which the foods are processed, but also how many of us microorganisms are present in the food and how quickly the heat penetrates to the center of the jar. Consequently, to insure we are destroyed, we suggest you follow the recommended methods and times for processing each food as found in the Blue Book. And please remember to check the jars you have sealed before storing them away in a cool dark place ready for use later in the year.
MAYBE THESE TWO CHARTS WILL POSITION IN RELATION TO HOW ACID THE AND WHY YOU SHOULD

<table>
<thead>
<tr>
<th>ACID STRENGTH</th>
<th>PH</th>
<th>APPROXIMATE POSITION OF VARIOUS FOOD PRODUCTS ON PH SCALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPROXIMATE GROWTH LIMIT FOR:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MOLDS</td>
<td>1</td>
<td>STRONG ACID</td>
</tr>
<tr>
<td>YEASTS</td>
<td>2</td>
<td>PLUMS, GOOSEBERRIES, PRUNES, APRICOTS, APPLES, BLACKBERRIES, SOUR CHERRIES, PEACHES, KRAUT, SWEET CHERRIES, PEARS, TOMATOES</td>
</tr>
<tr>
<td>BACTERIA</td>
<td>3</td>
<td>PROCESS AT 212°F. IN BOILING WATER BATH</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>OKRA, PUMPKIN, CARROTS, CABBAGE, TURNIPS, BEETS, STRING BEANS, SPINACH, ASPARAGUS, CAULIFLOWER</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>PROCESS AT 240°F. IN STEAM-PRESSURE CANNER</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>LIMA BEANS, PEAS, CORN, LYE HOMINY</td>
</tr>
<tr>
<td>NEUTRAL</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>STRONG ALKALI</td>
<td>14</td>
<td></td>
</tr>
</tbody>
</table>
CLARIFY THE MICROORGANISMS FOOD IS, HOW TEMPERATURES AFFECT US PROCESS AS RECOMMENDED.

**CHART II**

**GROWTH OF MICROORGANISMS**

- Certain bacteria known as thermophiles grow in this range
- Growth of most microorganisms ceases
- Active growing range molds, yeasts and bacteria
- Growth ceases

**TEMPERATURE (F.)**

- 250
- 240
- 230
- 220
- 212
- 200
- 190
- 180
- 170
- 160
- 150
- 140
- 130
- 120
- 110
- 100
- 90
- 80
- 70
- 60
- 50
- 40
- 32

**DESTRUCTION OF MICROORGANISMS**

- Bacteria spores destroyed by short heating periods
- Bacteria spores not destroyed except by long heating
- Growing cells of bacteria killed also molds and yeasts
1. Ball Can or Freeze Jars. Available in half-pint, pint and 1 1/2-pint sizes. Half-pints seal with Ball Mason Caps with Dome Lids. Pints and 1 1/2 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 Wide Mouth Mason Caps with Dome Lids and 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.

4. Quilted Crystal Jars. (See inside front cover.)

BALL FITTINGS

Ball Mason Caps with Dome Lids and Ball Mason Dome Lids. To be used with regular Mason jars and either Ball Mason Caps with Dome Lids or Ball Zinc Caps and rubber rings.

Ball Wide Mouth Mason Caps with Dome Lids and Ball Wide Mouth Mason Dome Lids. To be used with wide mouth Mason jars and 1 1/2-pint Can or Freeze jars.

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. 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. Available in Quilted Crystal, too.
how to use ball jars and fittings

**BALL MASON JARS**

1. Examine jars with fingertips for nicks, chips and cracks in sealing surface.
2. Discard ones unsuitable for canning.
3. Wash jars in hot soapy water and rinse well.
4. Do not use wire brushes, steel wool or washing soda for cleaning jars; they are apt to damage glass.
5. Place in hot water until ready to fill. It is not necessary to boil jars in which food is to be processed.
6. Seal with Ball Mason Dome Caps or zinc caps and rubber rings. Follow directions for filling and sealing according to fittings being used.
7. 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 FREEZ JARS**

1. To use for canning following step-by-step instructions for Ball Mason Jars.
2. For jellies, jams, conserves, marmalades, preserves, see instructions for each section. The sections are listed in table of contents and in the index.
3. Ball Can or Freez Jars may also be used for canning pickles or relishes.
4. Information for use in freezing, read instructions on page 95 at the beginning of the Freezer Section.
5. 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 ½-inch head space for juices, preserves, pickles and relishes; ¾-inch head space for jellies.
6. Remove air bubbles from fruit and vegetable packs by running table knife between food and jar.
7. Wipe top and screw threads of jar with clean, damp cloth. Put lid on jar, sealing compound next to glass.
8. Screw band tight but do not use force. Band must screw down evenly all the way around.
10. Remove jars from canner. Do not tighten bands after processing. Test for seal.
11. Store without bands.

**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.
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 ½-inch head space for juices, preserves, pickles and relishes; ¾-inch head space for jellies.
4. Remove air bubbles from fruit and vegetable packs by running table knife 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. Test for seal.
BALL ZINC CAPS

1. Use new rubber rings. Wash caps and rubbers in hot soapy water. Rinse. Keep rubbers 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 table knife 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 12-24 hours. Check seal. If top of cap is low in center, jar is sealed. Do not tighten cap after jar has cooled.

BALL QUILTED CRYSTAL JARS

CANNING

1. Quilted Crystal Jars may be used for canning. Follow directions for using Ball Mason Jars. For preparation of caps follow instructions for Ball Mason Dome Caps.

FREEZING

1. Quilted Crystal Jars may be used for freezing. Follow directions for preparing Ball Can or Freez Jars on page 95. Excellent for Freezer Jams.

BALL QUILTED CRYSTAL JELLY GLASSES

1. Follow instructions given for jelly glasses in Jelly Section, Sealing with Paraffin — use only for jelly. Do not try to process in canner. Lid is only cover and does not seal airtight to obtain vacuum seal.

HOW TO TEST SEALS OF TWO-PIECE CAP

When jars of food are thoroughly cool, 12-24 hours:
1. Press center of lid; if lid is down and will not move, jar is sealed. Remove band, wipe threads with damp cloth, store.
2. Or tap the center of the lid with a spoon. A clear ringing sound means a good seal. Remove band, wipe threads with damp cloth. Store in cool, dark, dry place.
3. Check for airtight seal by tilting the jar slightly. If there is no leakage, remove band, wipe jar clean and store in cool, dark, dry place.
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, pickles and relishes 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. Butters, conserves, jams and preserves should be processed at simmering (180°-185°F) for 10 to 20 minutes in a water-bath canner.

STEAM-PRESSURE METHOD

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

OPEN-KETTLE METHOD

Open-kettle method is recommended only for jellies. 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.

STEAM-PRESSURE CANNER

A steam-pressure canner is a heavy kettle with a cover which can be clamped or locked down to make the kettle steamtight.

WATER-BATH CANNER

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.

WATER-BATH CANNER

Water-bath canners are available on the market. Any big metal container may be used as a boiling-water-bath canner if it is deep enough so that the water is well over tops of jars and has space to boil freely. Allow 2 to 4 inches above jar tops for brisk boiling (see sketch). The canner must have a tight-fitting cover and a wire or wooden rack. If the rack has dividers, jars will not touch each other or fall against the sides of the canner during processing.

If a steam-pressure canner is deep enough, you can use it for a water bath. Cover, but do not fasten. Leave petcock wide open, so that steam escapes and pressure does not build up inside the canner.
If raising your own garden use this helpful chart.

### AMOUNT OF FOOD TO BE GROWN AND CANNED FOR A TYPICAL FAMILY OF 6 PERSONS

<table>
<thead>
<tr>
<th>Vegetables by Groups</th>
<th>Vitamin Value</th>
<th>Pounds to Raise For Canning</th>
<th>Quarts to Can</th>
<th>Yield Per 100 Ft. Row</th>
<th>Foot Row Needed</th>
<th>Seed or Plants Per 100 Ft. Row</th>
<th>Days to Maturity</th>
<th>Depth to Plant Seed</th>
<th>Distance Between Plants</th>
<th>Distance Between Rows</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High in Vitamin A &amp; C</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spinach</td>
<td></td>
<td>40</td>
<td>20</td>
<td>50</td>
<td>90</td>
<td>1 oz.</td>
<td>40-50</td>
<td>½&quot;</td>
<td>2-4&quot;</td>
<td>12-18&quot;</td>
</tr>
<tr>
<td>Turnip Greens</td>
<td></td>
<td>40</td>
<td>20</td>
<td>45</td>
<td>100</td>
<td>½ oz.</td>
<td>30</td>
<td>½&quot;</td>
<td>12-18&quot;</td>
<td>30-36&quot;</td>
</tr>
<tr>
<td>Broccoli</td>
<td></td>
<td>48</td>
<td>24</td>
<td>60</td>
<td>85</td>
<td>60 plants</td>
<td>80</td>
<td></td>
<td>12-18&quot;</td>
<td>30-36&quot;</td>
</tr>
</tbody>
</table>

| **High in Vitamin A** |
| Carrots              |               | 40                          | 20            | 75                    | 60              | ½ oz.                         | 55-75           | ½"                  | 2-3"                   | 12-18"                |
| Sweet Potato         |               | 48                          | 24            | 80                    | 60              | 100 plants                     | 120             | from plants         | 12-18"                 | 36-48"                |
| Winter Squash        |               | 40                          | 20            | 400                   | 10              | ½ oz. or 4-5 seeds per hill   | 60-110          | 1"                  | 9-12"                  | 84-120"               |

| **High in Vitamin C** |
| Tomato               | Whole         | 120                         | 60            | 380                   | 100             | 50 plants                      | 50 from plants | Not Staked          | 18-36"                 | 36-60"                |
|                      | Juice         | 240                         | 120           |                       | 100             | 50 plants                      | 70 from plants | 18-24"               | 18-24"                 |                      |
| Peppers              |               | 44                          | 22            | 60                    | 75              | 65 plants                      | 100             | plants              | 18-24"                 | 24-36"                |
| Cauliflower          |               | 72                          | 36            | 120                   | 60              | 60 plants                      | 18-24"         |                      |                        |                      |

| **Green Vegetables** |
| Peas                 |               | 48                          | 24            | 40 in pods            | 300             | 1 lb.                         | 50-60           | 2"                  | 2"                     | 18-24"                |
| Green Beans          |               | 120                         | 60            | 60                    | 200             | 1 lb.                         | 40-60           | 1-2"                | 4"                     | 18-24"                |
| Okra                 |               | 30                          | 15            | 65                    | 55              | 1 oz.                         | 1"              | 12"                 | 36"                    |                      |

| **Starchy Vegetables** |
| Sweet Corn           |               | 72                          | 36            | 85 ears               | 200             | 4 oz.                         | 60-90           | 1-2"                | 9-12"                  | 24-48"                |
| Lima Beans           |               | 48                          | 24            | 25 in pods            | 400             | 12 oz.                        | 60-75           | 1-2"                | 8-10"                  | 18-30"                |

| **Vegetables For Variety** |
| Beet Cucumbers       |               | 24                          | 12            | 60                    | 40              | 1 oz.                         | 50-70           | ½-1"                | 12" plants            | 40-72"                |
| Lettuce Leaf Onions  |               |                             |               | 15                    | 10              | 2 lbs. sets                    | ½"              | 8"                   | 18-24"                 |                      |
| Radish               |               | 24                          | 12            | 100                   | 10              | ½ oz.                         | 25-30           | ½"                  | 1-2"                   | 12-18"                |
| Turnips              |               | 24                          | 12            | 300                   | 10              | ½ oz.                         | 90-100          | 1"                  | 24" plants            | 84-120"               |

**Note:** Rows indicate planting distance, and hills for plants per hill.
This can be an excellent guide should you buy food for canning or in planting a small garden.

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>APPROX. 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</td>
<td>7 per week—36 weeks</td>
<td>1 cup</td>
<td>63 quarts</td>
<td>252 quarts</td>
</tr>
<tr>
<td>(Includes juices)</td>
<td></td>
<td></td>
<td></td>
<td></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>Broccoli, spinach and other greens, carrots, pumpkin, sweet potatoes, yellow winter squash</td>
<td></td>
<td></td>
<td></td>
<td></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>Apples, apricots, peaches, pears, asparagus, green beans, Lima beans, corn, green peas, summer squash, etc.</td>
<td></td>
<td></td>
<td></td>
<td></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></td>
<td>13 pints</td>
<td>52 pints</td>
</tr>
<tr>
<td>PICKLES, FRUIT</td>
<td>2 per week—52 weeks</td>
<td></td>
<td>13 quarts</td>
<td>52 quarts</td>
</tr>
</tbody>
</table>
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>2 1/2 to 3 lbs.</td>
</tr>
<tr>
<td>Applesauce</td>
<td>1 bu. (48 lbs.)</td>
<td>15-18</td>
<td>2 1/2 to 3 1/2 lbs.</td>
</tr>
<tr>
<td>Apricots</td>
<td>1 lug or 1 box (22 lbs.)</td>
<td>7-11</td>
<td>2 to 2 1/2 lbs.</td>
</tr>
<tr>
<td>Berries</td>
<td>24 quart crate</td>
<td>12-18</td>
<td>1 1/2 to 3 lbs.</td>
</tr>
<tr>
<td>Cherries</td>
<td>1 bu. (56 lbs.)</td>
<td>22-32 (unpitted)</td>
<td>2 to 2 1/2 lbs.</td>
</tr>
<tr>
<td></td>
<td>1 lug (22 lbs.)</td>
<td>9-11 (unpitted)</td>
<td>2 to 3 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>1 1/2 to 2 lbs.</td>
</tr>
<tr>
<td></td>
<td>1 lug (24 lbs.)</td>
<td>12</td>
<td>1 1/2 to 2 1/2 lbs.</td>
</tr>
<tr>
<td>Tomatoes</td>
<td>1 bu. (53 lbs.)</td>
<td>15-20</td>
<td>2 1/2 to 3 lbs.</td>
</tr>
<tr>
<td></td>
<td>1 lug (30 lbs.)</td>
<td>10</td>
<td>2 1/2 to 3 lbs.</td>
</tr>
<tr>
<td>Tomatoes (for juice)</td>
<td>1 bu. (53 lbs.)</td>
<td>12-16</td>
<td>3 to 3 1/2 lbs.</td>
</tr>
</tbody>
</table>

| **VEGETABLES** |                     |                                      |                                          |
|----------------|---------------------|--------------------------------------|                                          |
| Beans, Lima (in pods) | 1 bu. (32 lbs.) | 6-10                                 | 3 to 5 lbs.                             |
| Beans, Green or Wax | 1 bu. (30 lbs.) | 12-20                                | 1 1/2 to 2 1/2 lbs.                     |
| Beets (without tops) | 1 bu. (52 lbs.) | 15-24                                | 2 to 3 1/2 lbs.                         |
| Carrots (without tops) | 1 bu. (50 lbs.) | 16-25                                | 2 to 3 lbs.                             |
| Corn, Sweet (in husks) | 1 bu. (35 lbs.) | 6-10 (whole-kernel)                 | 3 to 6 lbs.                             |
| Okra           | 1 bu. (26 lbs.)     | 16-18                                | 1 1/2 lbs.                              |
| Peas, Green (in pods) | 1 bu. (30 lbs.) | 5-10                                 | 3 to 6 lbs.                             |
| Spinach and other greens | 1 bu. (18 lbs.) | 3-8                                  | 2 to 6 lbs.                             |
| Squash, Summer | 1 bu. (40 lbs.)    | 10-20                                | 2 to 4 lbs.                             |
| Sweet Potatoes | 1 bu. (50 lbs.)    | 16-25                                | 2 to 3 lbs.                             |

| **MEATS—POULTRY** |                     |                                      |                                          |
|-------------------|---------------------|--------------------------------------|                                          |
| Steer (prime quality) | 800 lbs.        | 175-200                              |                                           |
| Hog               | 300 lbs.            | 30                                   |                                           |
| Chicken (with bone) | 3-4 lbs.          | 1                                    |                                           |
WHEN CANNING LOW-ACID VEGETABLES

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 table 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.


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 table knife gently 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 20, 21.)

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, a few inches apart and out of drafts, to cool. About 24 hours later, test jar for seal. (See page 13.)

14. If for any reason a jar has failed to seal, use new lid, repack 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. 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.
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 pressure.

### STEAM-PRESSURE CANNER

<table>
<thead>
<tr>
<th>Altitude</th>
<th>Process at pressure of:</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,000-3,000 feet</td>
<td>11 1/2 pounds</td>
</tr>
<tr>
<td>3,000-4,000 feet</td>
<td>12 pounds</td>
</tr>
<tr>
<td>4,000-5,000 feet</td>
<td>12 1/2 pounds</td>
</tr>
<tr>
<td>5,000-6,000 feet</td>
<td>13 pounds</td>
</tr>
<tr>
<td>6,000-7,000 feet</td>
<td>13 1/2 pounds</td>
</tr>
<tr>
<td>7,000-8,000 feet</td>
<td>14 pounds</td>
</tr>
<tr>
<td>8,000-9,000 feet</td>
<td>14 1/2 pounds</td>
</tr>
<tr>
<td>9,000-10,000 feet</td>
<td>15 pounds</td>
</tr>
</tbody>
</table>

### CANNING TIME REFERENCE

<table>
<thead>
<tr>
<th>LOW-ACID VEGETABLES</th>
<th>TYPE PACK</th>
<th>STEAM-PRESSURE CANNER (240°F.) 10 POUNDS PRESSURE PROCESSING TIME IN MINUTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asparagus</td>
<td>Raw or Hot</td>
<td></td>
</tr>
<tr>
<td>Beans—Green, Snap, Wax</td>
<td>Raw or Hot</td>
<td>25 (1/2 Pints and Pints), 30 (1 1/2 Pints and Quarts)</td>
</tr>
<tr>
<td>Beans—Lima and Butter</td>
<td>Raw or Hot</td>
<td>20 (1/2 Pints and Pints), 25 (1 1/2 Pints and Quarts)</td>
</tr>
<tr>
<td>Beets</td>
<td>Hot</td>
<td>40 (1/2 Pints and Pints), 50 (1 1/2 Pints and Quarts)</td>
</tr>
<tr>
<td>Broccoli</td>
<td>Hot</td>
<td>30 (1/2 Pints and Pints), 35 (1 1/2 Pints and Quarts)</td>
</tr>
<tr>
<td>Brussels Sprouts</td>
<td>Hot</td>
<td>30 (1/2 Pints and Pints), 35 (1 1/2 Pints and Quarts)</td>
</tr>
<tr>
<td>Cabbage</td>
<td>Hot</td>
<td>30 (1/2 Pints and Pints), 35 (1 1/2 Pints and Quarts)</td>
</tr>
<tr>
<td>Carrots</td>
<td>Raw or Hot</td>
<td>25 (1/2 Pints and Pints), 30 (1 1/2 Pints and Quarts)</td>
</tr>
<tr>
<td>Cauliflower</td>
<td>Hot</td>
<td>30 (1/2 Pints and Pints), 35 (1 1/2 Pints and Quarts)</td>
</tr>
<tr>
<td>Celery</td>
<td>Hot</td>
<td>30 (1/2 Pints and Pints), 35 (1 1/2 Pints and Quarts)</td>
</tr>
<tr>
<td>Corn, Whole-kernel</td>
<td>Raw or Hot</td>
<td>55 (1 1/2 Pints and Quarts), Not recommended</td>
</tr>
<tr>
<td>Corn, Cream-style</td>
<td>Hot</td>
<td>85 (1 1/2 Pints and Quarts), Not recommended</td>
</tr>
<tr>
<td>Eggplant</td>
<td>Hot</td>
<td>30 (1/2 Pints and Pints), 40 (1 1/2 Pints and Quarts)</td>
</tr>
<tr>
<td>Greens (all kinds)</td>
<td>Hot</td>
<td>70 (1/2 Pints and Pints), 90 (1 1/2 Pints and Quarts)</td>
</tr>
<tr>
<td>Hominy</td>
<td>Hot</td>
<td>60 (1/2 Pints and Pints), 70 (1 1/2 Pints and Quarts)</td>
</tr>
<tr>
<td>Mixed Vegetables</td>
<td>Hot</td>
<td>Length of time needed for vegetable requiring longest processing time 30</td>
</tr>
<tr>
<td>Mushrooms</td>
<td>Hot</td>
<td>Not recommended</td>
</tr>
</tbody>
</table>

Length of time needed for vegetable requiring longest processing time 30
<table>
<thead>
<tr>
<th>LOW-ACID VEGETABLES</th>
<th>TYPE PACK</th>
<th>STEAM-PRESSURE CANNER (240°F.)</th>
<th>10 POUNDS PRESSURE</th>
<th>PROCESSING TIME IN MINUTES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>½ Pints and Pints</td>
<td>1½ Pints and Quarts</td>
</tr>
<tr>
<td>Okra</td>
<td>Hot</td>
<td></td>
<td>25</td>
<td>40</td>
</tr>
<tr>
<td>Parsnips</td>
<td>Hot</td>
<td></td>
<td>30</td>
<td>35</td>
</tr>
<tr>
<td>Peas—Blackeye, Crowder, Field</td>
<td>Raw or Hot</td>
<td></td>
<td>35</td>
<td>40</td>
</tr>
<tr>
<td>Peas—Green or “English”</td>
<td>Raw or Hot</td>
<td></td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>Peppers, Green</td>
<td>Hot</td>
<td></td>
<td>35</td>
<td>Not recommended</td>
</tr>
<tr>
<td>Pimientos</td>
<td>Hot</td>
<td></td>
<td>15</td>
<td>Not recommended</td>
</tr>
<tr>
<td>Potatoes, White</td>
<td>Hot</td>
<td></td>
<td>30</td>
<td>40</td>
</tr>
<tr>
<td>Potatoes, Sweet</td>
<td>Hot and Dry</td>
<td></td>
<td>65</td>
<td>95</td>
</tr>
<tr>
<td>Potatoes, Sweet</td>
<td>Hot and Wet</td>
<td></td>
<td>55</td>
<td>90</td>
</tr>
<tr>
<td>Pumpkin</td>
<td>Hot</td>
<td></td>
<td>65</td>
<td>80</td>
</tr>
<tr>
<td>Rutabagas</td>
<td>Hot</td>
<td></td>
<td>30</td>
<td>35</td>
</tr>
<tr>
<td>Salsify or Oyster Plant</td>
<td>Hot</td>
<td></td>
<td>25</td>
<td>35</td>
</tr>
<tr>
<td>Spinach</td>
<td>Hot</td>
<td>See Greens</td>
<td>70</td>
<td>90</td>
</tr>
<tr>
<td>Squash, Summer</td>
<td>Hot</td>
<td></td>
<td>30</td>
<td>40</td>
</tr>
<tr>
<td>Squash, Winter</td>
<td>Hot</td>
<td>See Pumpkin</td>
<td>65</td>
<td>80</td>
</tr>
<tr>
<td>Tomatoes with Okra</td>
<td>Hot</td>
<td></td>
<td>30</td>
<td>35</td>
</tr>
<tr>
<td>Tomatoes, stewed</td>
<td>Hot</td>
<td></td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>Turnips</td>
<td>Hot</td>
<td></td>
<td>30</td>
<td>35</td>
</tr>
<tr>
<td>MEATS, POULTRY, SEA FOODS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chili</td>
<td>Hot</td>
<td></td>
<td>75</td>
<td>90</td>
</tr>
<tr>
<td>Chopped Meat—Beef, Veal,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lamb, Mutton, Pork,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chevron, Venison</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Corned Beef</td>
<td>Hot</td>
<td></td>
<td>75</td>
<td>90</td>
</tr>
<tr>
<td>Cracklings and Ham</td>
<td>Raw</td>
<td></td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>Goulash, Meat Sauce, Stew</td>
<td>Hot</td>
<td></td>
<td>60</td>
<td>75</td>
</tr>
<tr>
<td>Headcheese, Pork Sausage</td>
<td>Hot</td>
<td></td>
<td>75</td>
<td>90</td>
</tr>
<tr>
<td>Pork Tenderloin</td>
<td>Hot or Raw</td>
<td></td>
<td>75</td>
<td>90</td>
</tr>
<tr>
<td>Roasts—Beef, Veal, Lamb,</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Mutton, Pork, Chevron,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Venison</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spareribs</td>
<td>Hot</td>
<td></td>
<td>75</td>
<td>90</td>
</tr>
<tr>
<td>Steaks and Chops—Beef, Veal,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lamb, Mutton, Pork,</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Chevron, Venison</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poultry, Rabbit and Squirrel—</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boned</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poultry and Rabbit—On Bone</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Chicken à la King</td>
<td>Hot</td>
<td></td>
<td>65</td>
<td>75</td>
</tr>
<tr>
<td>Roast Poultry</td>
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<td>75</td>
</tr>
<tr>
<td>Clams</td>
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</tr>
<tr>
<td>Crab Meat</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mackerel, Trout, Salmon,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shad, etc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shrimp</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smelt (in Tomato Sauce)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOUPS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bean and Split Pea</td>
<td>Hot</td>
<td></td>
<td>50</td>
<td>60</td>
</tr>
<tr>
<td>Chicken</td>
<td>Hot</td>
<td></td>
<td>30</td>
<td>45</td>
</tr>
<tr>
<td>Clam Chowder and Fish Chowder</td>
<td>Hot</td>
<td></td>
<td>100</td>
<td>Not recommended</td>
</tr>
<tr>
<td>Tomato</td>
<td>Hot</td>
<td></td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>Vegetable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Length of time needed for vegetable requiring longest processing time.
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.

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.

9. 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.

Beans may be raw (cold) packed. When using Ball Zinc Caps and Mason Jars, or Can or Freez Jars prepare, pack and process as shown here. Seal jars as instructed on pages 12, 13.

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.

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) 3 small onions, sliced ½ cup brown sugar, packed
2 teaspoons salt 2 teaspoons salt ½ pound salt pork, cut in pieces 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 "soup'y." 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—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 3 tablespoons sugar (about 2 pounds) 2 teaspoons salt
½ pound salt pork, cut in pieces 1 cup chopped onions ½ teaspoon cloves
1 quart tomato juice ½ teaspoon allspice

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**
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.

**CAULIFLOWER**
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. See note under Broccoli.

**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. See note under Broccoli.

**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.

**CORN—CREAM-STYLE**
**HOT PACK**... Husk corn; remove silk. Wash. Cut tip ends from kernels. Scrape out pulp. Measure. Add 1 teaspoon salt.
and 2½ cups boiling water to each quart of corn. Boil 3 minutes. Pour, boiling hot, into hot pint Ball jars, leaving 1-inch head space. Adjust caps. Process pints 1 hour and 25 minutes at 10 pounds pressure.

**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 ½ teaspoon salt to each pint. Cover with boiling hot water, leaving 1-inch head space. Adjust caps. Process pints 1 hour and 35 minutes at 10 pounds pressure.

**CORN—WHOLE-KERNEL**

**HOT PACK** Husk corn; remove silk. Wash. Cut corn from cob. Do not scrape. Measure. Add 1 teaspoon salt and 2 cups boiling water to each quart of corn. Pack, boiling hot, into hot Ball jars, leaving 1-inch head space. Adjust caps. Process pints 55 minutes, quarts 1 hour and 25 minutes, at 10 pounds pressure.

**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**


**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.

**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 10 minutes, quarts 1 hour and 30 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 20-21) at 10 pounds pressure.

**MUSHROOMS**

Use only edible fresh mushrooms.

Wash and trim mushrooms. Cover with cold water. Let stand 10 minutes. Drain. Wash again. 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 quart. Cover with boiling water, if needed, to cover mushrooms, leaving 1-inch head space. Adjust caps. Process half-pints and pints 30 minutes at 10 pounds pressure. Do not use quarts.

**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, 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.

**PEAS—BLACKEYE SNAP**
Follow recipe for canning Green Beans.

**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 pints and quarts 40 minutes at 10 pounds pressure.

**PEPPERS—GREEN**
Wash and drain sweet bell peppers, or "mangoes," which do not taste bitter when cooked. Boil 3 minutes. Pack, hot, into hot Ball jars, leaving 1-inch head space. Add 1 tablespoon vinegar and 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.

**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 and quarts 15 minutes at 10 pounds pressure.

**POTATOES—WHITE or IRISH**

**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 sirup, 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

Tomato recipes on this page must be processed in steam-pressure canner because of ingredients in recipes.

GREEN TOMATO Mincemeat

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Quantity</th>
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<tbody>
<tr>
<td>2 quarts cored and</td>
<td>1 1/2 cups chopped suet (about 6 ounces)</td>
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<tr>
<td>chopped green tomatoes (about 20 small)</td>
<td>3 1/2 cups brown sugar, packed</td>
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<tr>
<td>1 tablespoon salt</td>
<td>1/2 cup vinegar</td>
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<tr>
<td>1 orange</td>
<td>2 teaspoons cinnamon</td>
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<tr>
<td>2 1/2 quarts pared, chopped apples (about 12 medium)</td>
<td>1 teaspoon nutmeg</td>
</tr>
<tr>
<td>1 teaspoon cloves</td>
<td>1/2 teaspoon ginger</td>
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<tr>
<td>1 pound seeded raisins</td>
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SACRE—CREOLE

3 quarts peeled, cored, chopped tomatoes (about 1 1/2 dozen) | 1 hot red pepper |
2 cups chopped onions | 1 tablespoon chopped parsley |
1 cup chopped sweet red peppers (about 2 medium) | 2 teaspoons salt |
1 clove garlic, minced | 1/2 teaspoon marjoram |
                  | 1/4 teaspoon chili |
                  | powder |

Combine all ingredients and cook slowly until thick, about 1 1/2 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 1/2 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 50.

NOTE: Tomato recipes on this page must be processed in steam-pressure canner because of ingredients in recipes.

TOMATOES—STEWED

4 quarts peeled, cored, 1/2 cup chopped onion chopped tomatoes | 1/2 cup chopped green (about 2 dozen large) pepper |
                | 1/4 cup chopped green |
1 cup chopped celery | 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 1/2-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.
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 20 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. If you slaughter your own meat, contact your local County Agricultural Agent for complete information on slaughtering, chilling and aging the meat.
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.
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.
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 and set them on cloths, a few inches apart and out of drafts, to cool. About 12 hours later, test jars for seal. (See page 13.) Store jars in a dark, dry, reasonably cool place.
12. If for any reason a jar has failed to seal, repack, seal with new lid, process the full length of time or refrigerate and use immediately.
meats

CHILI
5 pounds ground beef  1⁄2 cup chili powder
2 cups chopped onions  1 1⁄2 tablespoons salt
1 clove garlic, minced  1 hot red pepper
6 cups cooked or canned tomatoes and juice

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. Yield: about 8 quarts.

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

CORNED BEEF
TO CORN
25 pounds beef (brisket, chuck, plate or rump)  1 pound sugar
2 pounds pickling, dairy or kosher salt  1 1⁄2 teaspoons baking soda

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 peter 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
1 1⁄2 cups flour
1 tablespoon salt
3 tablespoons paprika
2 teaspoons dry mustard
4 pounds boned chuck, cut in 1-inch pieces
1 1⁄2 cups oil
6 stalks celery, cut in half
1 cup water
1 tablespoon salt
3 tablespoons paprika
2 teaspoons dry mustard
4 pounds boned chuck, cut in 1-inch pieces
1 ounce salt peter

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.

MEAT SAUCE
For Spaghetti, Lasagne or Casseroles
5 pounds ground beef 2 tablespoons brown sugar
2 cups chopped onions 2 tablespoons minced parsley
1 cup chopped green peppers (about 2 medium) 1 1/2 tablespoons salt
9 cups cooked or canned tomatoes 1 tablespoon oregano
1/2 teaspoon pepper
4 6-ounce cans (2 1/2 cups) 1/2 teaspoon allspice
tomato paste 2 tablespoons vinegar

Brown meat; 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. Process pints 1 hour, quarts 1 hour and 15 minutes, at 10 pounds pressure.

PORK TENDERLOIN
HOT PACK... Cook 1/2 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 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. Cover with hot 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... 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 68), gravy or broth, leaving 1-inch head space. Adjust caps. Process pints 1 hour and 15 minutes, at 10 pounds pressure.

STEW MEAT
Use beef or any other meat suitable for stewing. Cut meat into 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. Process as above.

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. Process as above.

BEEF STEW with VEGETABLES

4 to 5 pounds beef stew meat
2 quarts sliced small carrots (about 12)
3 cups chopped celery
3 cups chopped onions
5 cups ground, cooked beef (about 2 pounds)
1 quart ground suet (about 1 pound)
1 12 medium apples
1 1/2-inch cubes
1 1/2 cups chopped orange peel
1 3 11-ounce packages currants
2 tablespoons salt
1 teaspoon thyme
1/2 teaspoon pepper
Salt and pepper to taste

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 pre-cooked.

CHICKEN A LA KING

7 to 8 pounds ready-to-cook stewing chickens, cut in pieces
5 cups chicken broth
1 1/2 cups chopped celery
1 1/2 cups chopped pimiento
1 1/2 cups chopped onions
1 1/2 cups chopped parsley
1 tablespoon chopped orange pulp
1 1 1/2-ounce packages currants
3 11-ounce packages orange peel
1 1 1/2 cups chopped orange pulp
3/4 cup lemon juice
1 1/2 cups chopped nuts
1 1/2 cups chopped citrus
1 1/2 cups chopped parsley
1 tablespoon salt
1 tablespoon pepper
1/2 cup flour

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. Adjust caps. Process pints 1 hour and 5 minutes, quarts 1 hour and 15 minutes, at 10 pounds pressure. Yield: about 4 pints.

To Serve: Brown mushrooms in butter; add to Chicken a 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 30 minutes, at 10 pounds pressure.

CHICKEN—ON BONE
Use for All Poultry
HOT PACK ... Boil, steam or bake chicken until about ¾ done. If uncut chickens were cooked, separate at joints as for frying. Pack into hot Ball jars, leaving 1-inch head space. Add 1 teaspoon salt to each quart. Cover with boiling hot chicken 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.
COLD or RAW PACK ... Separate chicken at joints. Pack into hot Ball jars, leaving 1-inch head space. Do not add liquid. Adjust caps. Process pints 1 hour and 5 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.

sea foods

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 for processing.

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 ½ 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.

CRAB MEAT
Add ¼ 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.
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 (½ cup salt to 1 gallon water). Boil 15 minutes. Remove jars and invert to drain 5 minutes. Adjust caps. Process 1 hour and 40 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


SMELT in TOMATO SAUCE

6 pounds cleaned smelt 2 cups Barbecue Sauce
(See page 68.) 1 ham hock or ¼ pound salt pork

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 6 pints.

CHICKEN SOUP

2 ready-to-cook stewing chickens, 1 medium onion 1 medium carrot
about 5 pounds each 4 to 6 peppercorns 2 to 3 teaspoons salt

To obtain more sea food recipes, we suggest you write Division of Fishery Industries, United States Department of Interior, Washington, D.C. or U. S. Department of Agriculture, Washington, D.C. for Home and Garden Bulletin No. 93, "Freezing Meat and Fish in the Home."

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

3/4 pound salt pork, diced
1 cup chopped onions
3 to 4 quarts chopped, cleaned clams with juice
5 pounds cleaned fish
3 quarts water
2 teaspoons salt
1/2 teaspoon pepper-corns
1/2 hot red pepper
2 quarts diced, pared potatoes (about 8 medium)
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 10 pints.

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
3 quarts water
2 teaspoons salt
1/2 teaspoon pepper-corns
1/2 hot red pepper
3/4 pound salt pork, diced
1 cup chopped onions
2 quarts diced, pared potatoes (about 8 medium)

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 1/2 cups dried split peas (1 pound)
2 1/2 quarts water
1 ham hock
2 cups chopped sweet red peppers (about 4 medium)
2 cups sliced carrots
2 cups chopped celery
1 cup sliced celery
1 cup sliced carrots
1 quart green Lima beans
Salt

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 6 pints.

TOMATO SOUP

4 quarts peeled, cored, chopped tomatoes (about 12 large)
2 cups chopped sweet red peppers (about 4 medium)
1 1/2 cups sliced carrots
3 cups chopped onions (about 3 medium)
2 cups chopped celery
2 teaspoons salt

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

1 1/2 quarts water
2 quarts peeled, cored, chopped tomatoes (about 12 large)
1 1/2 quarts cubed, pared potatoes (about 6 medium)
1 quart green Lima beans
1 quart cut corn, uncooked (about 9 ears)
1 1/2 quarts 1/2-inch slices carrots (about 12 medium)
2 cups 1-inch slices celery
2 cups chopped onions
Salt

Add water to vegetables; boil 5 minutes. Pour, hot, into hot Ball jars, leaving 1-inch head space. Add 1 1/2 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," at beginning of Low-Acid Section.

**CHICKEN SANDWICH SPREAD**

1½ cups ground cooked chicken (about 7 to 8 pounds ready-to-cook stewing chicken, cut in pieces)  
1 cup chicken broth  
¼ cup prepared mustard  
1 tablespoon grated onion  
1 tablespoon vinegar  
Salt and pepper

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**

1 quart chopped, cooked lean ham  
¼ cup pickle juice  
½ cup vinegar  
½ cup chili sauce  
½ cup chopped pickle  
2 tablespoons prepared horseradish  
1 tablespoon prepared mustard  
¼ teaspoon pepper

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.

**PEANUT BUTTER**

4 quarts skinned, shelled, roasted Virginia peanuts  
2 cups skinned, shelled, roasted Spanish peanuts  
2 tablespoons salt

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.

**LIVER PASTE**

3 pounds liver  
2 teaspoons salt  
¼ pound salt pork, sliced  
1 medium onion  
½ cup catchup  
2 cups meat stock or water  
½ teaspoon dry mustard  
¼ teaspoon Tabasco sauce

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.
Fruits, acid vegetables (rhubarb, sauerkraut and tomatoes), pickles and relishes—jams, conserves, marmalades, preserves must be processed in a water-bath canner to assure all spoilage micro-organisms 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 chart in this section 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 prepare fittings. (See pages 12, 13.)

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, boiling hot sirup, brine or pickling solution, leaving ½-inch head space.

9. Remove air bubbles by running table knife gently 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, a few inches apart, out of drafts, to cool. About 12-24 hours later, test jars for seal. (See pages 12, 13.) Remove bands and store.

13. If for any reason a jar has failed to seal, repack, use new lid 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, see chart, at beginning of this section.
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 1/4 teaspoon to each quart over the fruit just before capping the jar.

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.

Should you live in California or Minnesota check with your local Home Economics Extension Agent of the County in which you live for correct processing times for tomatoes for your state.

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. If you live in an altitude at 1,000 feet or above, adjust the processing time according to the chart below.

<table>
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<td>10,000 feet</td>
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Jams, Conserves, Marmalades, and Preserves should be processed at simmering temperatures in water-bath canner. For processing times check recipes for each item.
# Canning Time Reference

## FOR WATER-BATH CANNER

### Water-Bath (212°F.) Processing Time in Minutes

<table>
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### FRUIT JUICES

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### ACID VEGETABLES—Pickles—See Pickle Section—Pages 54 thru 71.

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<tr>
<td>Tomato Juice</td>
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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.

5. Cut peaches into halves, pit and peel. Drop halves into salt-vinegar water (2 tablespoons each to 1 gallon cold water). Rinse before packing.

6. Stand hot jar on rubber tray, wood or cloth. Pack peaches, cavity-side down, layers overlapping. Leave \( \frac{1}{2} \)-inch head space.

9. 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 jar top.

10. 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.
The raw (cold) pack is shown on these pages. When using Ball Zinc Caps and Mason Jars, prepare, pack and process as shown here.

3. 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.

4. Put peaches in wire basket or cheesecloth. Dip peaches into boiling water \( \frac{1}{2} \) to 1 minute to loosen skins. Dip into cold water. Drain.

7. Cover peaches with boiling hot sirup, leaving \( \frac{1}{2} \)-inch head space. It will take 1 to 1 \( \frac{1}{2} \) cups sirup for each quart jar.

8. Run table knife gently between fruit and jar to release air bubbles. Add more sirup, if needed.

11. 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.

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. Drain. Boil in sirup 5 minutes. Pack, hot, into hot Ball jars, leaving ½-inch head space. Cover with boiling sirup, leaving ½-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.

APPLE RINGS
Choose medium size, good shaped, just ripe, bright red apples which hold their shape when cooked (allow 1½ pounds of apples for each pint).
Wash the apples in cold water. Core, then slice into ¼-inch rings. To prevent discoloration, drop into salt-vinegar water or ascorbic acid water.
Dissolve four cups sugar in one quart water. Add food coloring for desired color. Place on the range, bring to a boil and boil five minutes. This helps firm the apples. Return to the range and bring to a rolling boil, then simmer 30 minutes or until apples are the desired color. Set the saucepan off the heat and allow the apple rings to cool in the sirup.
Drain off the sirup and bring to a boil. Pack the apple rings loosely in preheated jars, leaving ½-inch head space. Cover with the boiling sirup. Remove air bubbles and adjust lids. Process in the boiling water bath canner—15 minutes for pints and 20 minutes for quarts.

NOTE: Cinnamon or other spices can be added to the sirup for extra flavoring. Spiced apple rings can be prepared by using a spiced sirup.

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 ¼ cup sugar to 4 medium apples). Reheat to boiling. Pour, boiling hot, into hot Ball jars, leaving ½-inch head space. Stir with rubber bottle scraper or similar non-metal utensil to remove air bubbles. 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
HOT PACK
Make medium or heavy sirup. Wash and scald apricots. Remove pits and skins. Treat to prevent darkening. (See page 40.) Drain. Cook a few apricots 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.

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 ½ cup boiling sirup into hot Ball jar. Fill jar with berries. Shake jar to pack berries loosely without crushing, leaving ½-inch head space. Add more hot sirup, if needed, leaving ½-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 ¼ to ½ 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 ½-inch head space. If there is not enough sirup to cover berries, add boiling water, leaving ½-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 berries in square of cheesecloth. Hold cloth by corners and dip into boiling water until spots appear on cloth. Dip into cold water. Pack into hot Ball jars, leaving 1/2-inch head space. Add neither sugar nor liquid. Adjust caps. Process pints 15 minutes, quarts 20 minutes, in boiling-water bath.

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.

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

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.

MARASCHINO CHERRIES
Home Style
Wash, stem and pit Royal Anne or other light cherries. Save juice and pits. Place cherries in shallow pan and cover with sirup made with 3 parts sugar to 1 1/2 of cherry juice (add water if there is not enough juice). Add a few drops of red vegetable coloring. Boil gently 10 minutes. Remove from heat and let stand from 6 to 12 hours. Drain cherries and pack into hot pint Ball jars. Crush cherry pits (using 1/2 cup crushed pits to 1 quart sirup drained from cherries). Tie pits in cheesecloth and add to sirup. Boil 5 minutes or until the desired flavor is obtained. Remove pits. Pour boiling hot sirup over cherries; seal. Process in water bath canner for 20 min.
CRANBERRY SAUCE

WHOLE ... Wash, sort and stem berries. Boil 4 cups sugar and 4 cups water together 5 minutes. Add 8 cups berries (about 2 pounds). Boil, without stirring, until skins burst. Pour, boiling hot, into sterilized Ball jars, leaving ½-inch head space. Adjust caps and process 10 minutes. Yield: about 6 pints.

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 ⅓ cups berries and 1 ¾ cups water together until skins burst. Press through sieve or food mill. Add 2 cups sugar to pulp and juice. Boil almost to jelling point. (See page 88). Pour, boiling hot, into sterilized Ball jars, leaving ½-inch head space. Adjust caps and process 10 minutes.

Yield: about 2 pints.

CURRANTS
Follow recipes for Berries.

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 ½-inch head space. Make sirup of water and 2 tablespoons sugar for each quart of fruit. Pour hot sirup over fruit, leaving ½-inch head space. Adjust caps. Process pints 15 minutes, quarts 20 minutes, in boiling-water bath.

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 ½-inch head space. Cover with boiling sirup, leaving ½-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.

GUAVAS

LOQUATS

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 ½-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.

NECTARINES
Follow recipes for canning Apricots.

PEACHES
See pages 42-43 for the best way to handle evenly ripened peaches. 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.


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 1/2-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 1/4 orange with each quart of sirup. Remove orange peel before packing.

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.

PEAR and MELON BALLS
Make light sirup. Use equal measure of balls or cubes of firm-ripe fruit. Cover with boiling sirup. Let stand until cold. Drain. Pack fruit into hot Ball jars, leaving 1/2-inch head space. Add 1 tablespoon lemon juice to each quart. Heat sirup to boiling. Pour over fruit, leaving 1/2-inch head space. Adjust caps. Process pints and quarts 20 minutes in boiling-water bath.

PEAR MINCEMEAT
7 pounds ripe Bartlett pears
1 lemon
2 (1 pound) pkgs. seedless raisins
6 1/2 cups sugar
1 tablespoon cloves
1 tablespoon cinnamon
1 tablespoon nutmeg
1 tablespoon allspice
1 teaspoon ginger
1 cup vinegar

Core and quarter pears. Cut lemon into quarters, removing seeds. Put pears, lemon and raisins through food chopper. Combine remaining ingredients to large kettle. Add chopped fruit mixture. Bring to a boil over medium heat; simmer 40 minutes.


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 ½-inch head space. Cover with boiling sirup, leaving ½-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 ½-inch head space. Pour over plums, leaving 1½-inch head space. Adjust caps. Process pints 20 minutes, quarts 25 minutes, in boiling-water bath.

RHUBARB

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.

STATEMENT ON TOMATOES
Nationally accepted authorities on home canning procedures recommend jars of tomatoes, even those advertised as low-acid, or sub-acid, be processed in boiling water. Follow processing times as given in the Ball Blue Book, except for those homemakers who live in Minnesota and California. Follow the processing times in these two states. Information is available from the County Extension Home Economists or from the Foods and Nutrition Specialists, Extension Service of the land-grant Colleges in Minnesota and California.

COLD or RAW PACK . . . See pages 50, 51 for "how-to" picture series. Prepare as instructed. Pack into hot Ball jars, pressing tomatoes until spaces fill with juice, leaving ½-inch head space. Add 1 teaspoon salt to each quart, if desired. Adjust caps. Process pints 35 minutes, quarts 45 minutes, in boiling-water bath.

HOT PACK . . . Prepare as instructed. 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.

Other ideas for using home canned tomatoes, tomato sauce, salad tomatoes, tomato juice.
1. Chili—with your home canned tomatoes, tomato sauce
2. Chicken Gumbo
3. Vegetable Soup
4. Tomato Soup
5. Salad Tomatoes—in pepper steak
6. Tomato Juice—as an appetizer

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.

TOMATO PASTE

8 quarts peeled, cored, 2 bay leaves chopped tomatoes 1 tablespoon salt
(about 4 dozen large) 1 clove garlic (optional)
1½ cups chopped sweet red peppers (about 3)

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 2½ 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 PURÉE

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 PURÉE—SEASONED

4 quarts peeled, cored, 2 cups chopped celery chopped tomatoes 1½ cups chopped green
(about 2 dozen large) peppers (about)
3 cups chopped onions 3 medium
2 cups sliced carrots 1 tablespoon salt
(about 4 medium)

Combine all ingredients; cook until tender. Press through fine sieve. Cook pulp until thick, about 1½ 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.

SCALLOPED TOMATOES MADE WITH HOME CANNED TOMATOES

4 slices white toast 1 teaspoon grated onion
4 tablespoons oleo 1 teaspoon salt
or butter ½ teaspoon pepper
½ teaspoon garlic salt 2½ cups home canned tomatoes

Spread toast with 2 tablespoons oleo or butter; sprinkle with garlic salt and cut toast into cubes. Combine tomatoes, onion, salt and pepper. Place cubes in greased casserole; add tomatoes. Pour remaining melted butter over top. Bake in 375 degree oven for 20 minutes. Yield: 6 servings.

ORGANIC GARDENING

For those who grow their vegetables and fruits by the Organic Method process by the processing methods and times as given in your Blue Book.
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. 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.

5. Put tomatoes in wire basket or cheesecloth. Place in boiling water about 1/2 minute to loosen skins. Dip into cold water. Drain.

6. As each jar is filled, stand it on rack in canner of hot, not boiling, water. Water should cover jars 1 to 2 inches.
The raw (cold) pack is shown on these pages. For hot pack, see page 48. When using Ball Zinc Caps and Mason Jars, or Can or Freez Jars, prepare, pack and process as shown here. Seal jars as instructed on page 13.

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.

7. Pack tomatoes into hot jar. Cover with hot tomato juice or press tomatoes until spaces fill with juice. Leave ½-inch head space.

8. Add 1 teaspoon salt per quart. Run table knife between tomatoes and jar to release air bubbles.

11. 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.

12. 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 13.)
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 puree 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 1/4-inch head space. Adjust caps. Process half-pints and pints 15 minutes in boiling-water bath. (3 1/4 quarts prepared fruit and 3 1/4 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 1/4-inch head space. Adjust caps. Process pints and quarts 30 minutes at 190°F in boiling-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 1/2-inch head space. Adjust caps. Process 15 minutes in hot-water bath.

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 1/2-inch head space. Adjust cap. Process 15 minutes at 185°F in hot-water bath.

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.) Let stand 24 hours in refrigerator. Strain again. Add 1 to 2 cups sugar to each gallon juice. Reheat to 190°F. Pour, hot, into hot Ball jars, leaving 1/4-inch head space. Adjust caps. Process pints and quarts 15 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 1 1/2 to 1 cup sugar. Fill jar with boiling water, leaving 1/4-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 1/4-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.)
Processing for *All* pickle and relish products is recommended. Pickle and relish products are processed in the water-bath canner. Each recipe has a different processing time. Please read the general information under heading "Heat Treatment" and carefully read processing times for each recipe.

**CLASSES and CHARACTERISTICS**

Pickle products are classified on the basis of ingredients used and the method of preparation. There are four general classes.

**BRINED PICKLES**

*Brined pickles*, also called fermented pickles, go through a curing process of about 3 weeks. Dilled cucumbers and sauerkraut belong in this group. Other vegetables, such as green tomatoes, may also be cured in the same way as cucumbers. Curing changes cucumber color from a bright green to an olive or yellow green. The white interior of the fresh cucumber becomes uniformly translucent. A desirable flavor is developed during curing without being excessively sour, salty, or spicy. Cucumber dills may be flavored with garlic, if desired. The skin of the pickle is tender and firm, but not hard, rubbery, or shriveled. The inside is tender and firm, not soft or mushy.

Good sauerkraut (brined cabbage) has a pleasant tart and tangy flavor, and is free from any off-flavors or off-odors. It is crisp and firm in texture and has a bright, creamy-white color. The shreds are uniformly cut (about the thinness of a dime) and are free from large, coarse pieces of leaves or core.

**FRESH-PACK PICKLES**

Fresh-pack or quick-process pickles, such as crosscut cucumber slices and whole cucumber dills, sweet gherkins, and dilled green beans, are brined for several hours or overnight, then drained and combined.

**RELISHES**

Relishes are prepared from fruits and vegetables which are chopped, seasoned, and then cooked to desired consistency. Clear, bright color and uniformity in size of pieces make an attractive product. Relishes accent the flavor of other foods. They may be quite hot and spicy. Relishes include piccalilli, pepper-onion, tomato-apple chutney, tomato-pear chutney, horseradish, and corn relish.

**FRUIT PICKLES**

Fruit pickles are usually prepared from whole fruits and simmered in a spicy, sweet-sour sirup. They should be bright in color, of uniform size, and tender and firm without being watery. Pears, peaches, and watermelon rind are prepared this way.

**INGREDIENTS FOR SUCCESSFUL PICKLING**

Satisfactory pickle products can be obtained only when good-quality ingredients are used and proper procedures are followed. Correct proportions of fruit or vegetable, sugar, salt, vinegar, and spices are essential. Alum and lime are not needed to make pickles crisp and firm if good-quality ingredients and up-to-date procedures are used.

Use tested recipes. Read the complete recipe before starting preparation. Make sure necessary ingredients are on hand. Measure or weigh all ingredients carefully.

**FRUITS and VEGETABLES**

Selection. Select tender vegetables and firm fruit. Pears and peaches may be slightly underripe for pickling. Use unwaxed cucumbers for pickling whole. The brine cannot penetrate waxed cucumbers. Sort for uniform size and select the size best suited for the recipe being followed.

Use fruits and vegetables as soon as possible after gathering from the orchard or garden, or after purchasing from the market. If the fruits and vegetables cannot
be used immediately, refrigerate them, or spread them where they will be well ventilated and cool. This is particularly important for cucumbers because they deteriorate rapidly at room temperatures.

Do not use fruits or vegetables that show even slight evidence of mold. Proper processing kills potential spoilage organisms, but does not destroy the off-flavor that may be produced by mold growth in the tissue.

Preparation. Wash fruits and vegetables thoroughly in cold water, whether they are to be pared or left unpared. Use a brush and wash only a few at a time. Wash under running water or through several changes of water. Clinging soil may contain bacteria that are hard to destroy. Lift the fruits or vegetables out of the water each time, so soil that has been washed off will not be drained back over them. Rinse pan thoroughly between washings. Handle gently to avoid bruising.

Be sure to remove all blossoms from cucumbers. They may be a source of the enzymes responsible for softening of the cucumbers during fermentation.

SALT
Use pure granulated salt if available. Uniodized table salt can be used, but the materials added to the salt to prevent caking may make the brine cloudy. Do not use iodized table salt; it may darken pickles.

VINEGAR
Use a high-grade cider or white distilled vinegar of 4- to 6-percent acidity (40 to 60 grain). Vinegars of unknown acidity should not be used. Cider vinegar, with its mellow acid taste, gives a nice blending of flavors, but may darken white or light-colored fruits and vegetables. White distilled vinegar has a sharp, pungent, acetic acid taste and is desirable when light color is important, as with pickled pears, onions, and cauliflower.

Do not dilute the vinegar unless the recipe so specifies. If a less sour product is preferred, add sugar rather than decrease vinegar.

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

SPICES
Use fresh spices for best flavor in pickles. Spices deteriorate and quickly lose their pungency in heat and humidity. If they cannot be used immediately, they should be stored in an airtight container in a cool place.

SOFT WATER
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.

EQUIPMENT FOR SUCCESSFUL PICKLING
Equipment of the right kind, size, and amount saves time and energy. Read the complete recipe before you start preparation and make sure you have the utensils and tools you need ready for use.

UTENSILS
For heating pickling liquids, use utensils of unchipped enamelware, stainless steel, aluminum, or glass. Do not use copper, brass, galvanized, or iron utensils; these metals may react with acids or salts and cause undesirable color changes in the pickles or form undesirable compounds.

For fermenting or brining, use a crock or stone jar, unchipped enamel-lined pan, or large glass jar, bowl, or casserole. Use a heavy plate or large glass lid, which fits inside the container, to cover vegetables in the brine. Use a weight to hold the cover down and keep vegetables below the surface of the brine. A glass jar filled with water makes a good weight.

Small utensils that add ease and convenience to home pickling include: Measuring spoons, large wood or stainless-steel spoons for stirring, measuring cups, sharp knives, large trays, tongs, vegetable peelers, ladle with lip for pouring, slotted spoon, footed colander or wire basket, large-mouthed funnel, food chopper or grinder, and wooden cutting board.
WATER-BATH CANNER

Any large metal container may be used for a water-bath canner if it—
• Is deep enough to allow for 1 or 2 inches of water above the tops of the jars, plus a little extra space for boiling.
• Has a close-fitting cover.
• Is equipped with a wire rack with partitions to keep jars from touching each other and falling against the sides of the canner.

SCALES

Household scales will be needed if the recipes specify ingredients by weight. They are necessary in making sauerkraut to insure correct proportions of salt and shredded cabbage.

PROCEDURES FOR SUCCESSFUL PICKLING

To insure acceptable quality and bacteriological safety of the finished pickle product, you must follow recommended procedures. Ingredients, time, and money may be wasted if you use outdated or careless canning procedures.

FILLING JARS

Fill the jars firmly and uniformly with the pickle product. Avoid packing so tightly that the brine or sirup is prevented from filling around and over the product. Be sure to leave head space at the top of the jar, as recommended in recipe.

Wipe the rim and threads of the jar with a clean, hot cloth to remove any particles of food, seeds, or spices. Even a small particle may prevent an airtight seal.

When a porcelain-lined zinc cap with shoulder rubber ring is used, put the wet rubber ring on the jar shoulder before filling the jar. Do not stretch the rubber ring more than necessary. After filling the jar, wipe the rubber ring and jar rim and threads clean.

CLOSING JARS

The two-piece metal cap (fits metal lid and metal screw band) is the most commonly used closure. To use this type of closure, place the lid on the jar with the sealing compound next to the glass. Screw the metal band down tight by hand to hold the sealing compound against the glass. When band is screwed tight, this lid has enough “give” to let air escape during processing. Do not tighten screw band further after processing.

When using a porcelain-lined zinc cap with shoulder rubber ring, screw the cap down firmly against the wet rubber ring, then turn it back one-fourth inch. Immediately after processing and removal of the jar from the canner, screw the cap down tight to complete the seal.

If liquid has boiled out of a jar during processing, do not open it to add more liquid, because spoilage organisms may enter. Seal the jar just as it is.

HEAT TREATMENT

Pickle products require heat treatment to destroy organisms that cause spoilage, and to inactivate enzymes that may affect flavor, color, and texture. Adequate heating is best achieved by processing the filled jars in a boiling-water bath.

Heat processing is recommended for all pickle products. There is always danger of spoilage organisms entering the food when it is transferred from kettle to jar. This is true even when the utmost caution is observed and is the reason open kettle canning is not recommended.

Pack pickle products into glass jars according to directions given in the recipe. Adjust lids. Immerse the jars into actively boiling water in canner or deep kettle. Be sure the water comes an inch or two above the jars tops; add boiling water if necessary, but do not pour it directly on the jars. Cover the container with a close-fitting lid and bring the water back to boiling as quickly as possible. Start to count processing time when water returns to boiling, and continue to boil gently and steadily for the time recommended for the food being canned. Remove jars immediately and complete the seals if necessary. Set jars upright, several inches apart, on a wire rack to cool.

Processing procedures for fermented cucumbers and fresh-pack dills are slightly different from the usual water-bath procedures. For these products, start to count the processing time as soon as the
### Weight and Volume Equivalents

#### Common Units of Weight
- 1 gram = 0.035 ounces
- 1 kilogram = 2.21 pounds
- 1 ounce = 28.35 grams
- 1 pound = 453.59 grams

#### Common Units of Volume
- 1 bushel = 4 pecks
- 1 peck = 8 quarts
- 1 gallon = 4 quarts
- 1 quart = 2 pints
- 946.4 milliliters
- 1 pint = 2 cups
- 1 cup = 16 tablespoons
- 2 gills
- 8 fluid ounces
- 236.6 milliliters
- 1 tablespoon = 3 teaspoons
- ½ fluid ounce = 14.8 milliliters
- 1 teaspoon = 4.9 milliliters
- 1 liter = 1000 milliliters
- 1.06 quarts
"Dome" Lids
All the ease of "like it is".
All the charm of "like it was"!

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Charming jelly glasses. Jars with "Dome" lids that seal without paraffin. New 12-oz. Family Size jars, too. And there's a sheaf of self sticking labels in every storage tray.
filled jars are placed in the actively boiling water. This prevents development of a cooked flavor and a loss of crispness.

Processing times as given in the recipes are for altitudes less than 1,000 feet above sea level. At altitudes of 1,000 feet or above, you need to increase recommended processing times as follows:

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STORING THE CANNED PICKLES

Wipe the jars with a clean, damp cloth, and label with name of product and date. Store the canned pickles in a dark, dry, cool place where there is no danger of freezing. Freezing may crack the jars or break the seals, and let in bacteria that cause spoilage. Protect from light to prevent bleaching and possible deterioration of flavor.

Always be on the alert for signs of spoilage. Before opening a jar, examine it closely. A bulging lid or leakage may mean that the contents are spoiled. When a jar is opened, look for other signs of spoilage, such as spurring liquid, mold, disagreeable odor, change in color, or an unusual softness, mushiness, or slipperiness of the pickle product. If there is even the slightest indication of spoilage, do not eat or even taste the contents. Dispose of the contents so that they cannot be eaten by humans or animals.

After emptying the jar of spoiled food, wash the jar in hot, soapy water and rinse. Boil in clean water for 15 minutes.

BRINED CURED PICKLES

Pickle making begins with the brine and to carelessly make or carelessly maintain a brine is the reason for most of the soft and unfit pickles. Remember these key points: Use clean stone or glass jars, use only a recommended pickling variety of cucumbers, use only pure granulated salt, do not use hard water.
GENERAL DIRECTIONS

1. Wash cucumbers carefully. Use only freshly harvested, slightly immature pickling variety.

2. Weigh cucumbers, put in a clean crock or glass jar and cover with a 10 percent brine solution—made by dissolving one cup salt in two quarts water.

3. Weigh cucumbers down under brine with a clean plate or something similar. A polyethylene bag filled with water makes an excellent weight.

4. Store in a cool, dark place.

5. Next day, add salt at the rate of one cup for each five pounds of cucumbers. This is necessary to maintain a 10 percent brine solution. Salt should be added on top of plate or clean cloth to prevent its going to the bottom and forming too strong a brine there.

6. Remove scum when it forms on top of brine. This, if left on, will destroy the acidity of the brine and result in spoilage of the product.

7. At the end of the week and for four or five succeeding weeks, add ¼ cup salt for each five pounds of cucumbers. Add in same manner as in No. 5.

8. Fermentation resulting in bubble formation should continue about four weeks. Test for bubbles by tapping container on the side with your hand. As a second test, cut a cucumber in half; if it is the same color throughout and has no noticeable rings or white spots, fermentation is complete.

9. Cucumbers may be kept in this 10 percent brine solution—no more salt added after they are cured—until made into pickles. Pour a layer of paraffin (¼-inch thick) on top of cucumbers; cover with a lid and store in a dark, dry, cool place.

10. The best temperature for brining cucumbers is about 80-85 degrees.

11. To use brined cucumbers in pickle recipes, they need to be soaked in water to remove salt.

*Cucumbers may be added during the first day or two of curing process if enough brine is added to cover them and if salt is added in definite amounts to maintain a 10 percent brine.

DESALTING CURED CUCUMBERS

1. Cover cucumbers with hot water (180°F.) (at least three times as much water as cucumbers). Let stand about four hours. Stir occasionally.

2. Lift cucumbers out of water; pour out water; rinse container.

3. Cover cucumbers with hot water (180°F.). Let stand about four hours. Stir occasionally.

4. Repeat Step 2.

5. Repeat Step 3.

6. Repeat Step 2.

7. Prick the cucumbers through and through in several places to prevent shriveling, using silver fork.

8. Then let stand in a weak vinegar solution (one part water to three parts cider vinegar) for 12 hours.

9. Test to see if sufficient salt has been removed; if not, let stand 12 hours longer.

10. Immediately place the "desalted" cucumbers into your favorite pickling solution.

NOTE: If in no hurry, salted cucumbers can be soaked in cold water. Use three or four times as much water as cucumbers. Change the water every eight hours. Stir the cucumbers occasionally. The salt should be removed in a 24 hour period.

CURED or BRINED DILL PICKLES

40 to 50 medium-size cucumbers 2 to 3 bunches fresh vinegar or dried dill
¾ cup (2 oz.) whole mixed pickling spices
1 pint vinegar
1 pound (1½ cups) pure salt
2 gallons water

Wash and drain the cucumbers. Place half of pickling spices and a layer of dill in a 5-gallon clean crock. Add cucumbers to within 4 inches of top. Mix well vinegar, salt and water and pour over cucumbers. Place a layer of dill and other half of pickling spices over the top. Garlic may be added to recipe if desired.

Cover with a heavy clean plate or something similar to hold the cucumbers under
the brine. Use only enough brine to cover the plate, since the liquid drawn from the cucumbers may overflow the crock.

Keep container at about 70 degrees. Daily remove the scum that forms over the top. Let pickles ferment until well-flavored with dill and clear throughout, with no white spots when cut. In about 2 to 3 weeks the pickles should be ready to use.

Pack the cured pickles in hot quart canning jars. Strain the pickle brine, bring to a boil and pour over pickles, leaving 1\(\frac{1}{4}\)-inch head space. Adjust lids and process in hot water bath canner at simmering temperature for 15 minutes.

NOTE: You may use cured cucumbers in this recipe. If so, make these changes:
1. Use only \(\frac{1}{4}\) cup salt;
2. Let set in this pickling solution 3 weeks before sealing; and
3. Drain liquid off weekly, bring to a boil and pour over cucumbers.

**SWEET CUCUMBER PICKLES**

| 3 pounds cucumbers (brined) | 1 tablespoon whole mace |
| 3 pints vinegar | 1 tablespoon ginger root |
| 1\(\frac{1}{4}\) pounds sugar | 1 tablespoon whole cloves |
| 2 sticks cinnamon | |

Remove cucumbers from brine and desalt as above.

Dissolve sugar in vinegar; add spices tied loosely in cheesecloth. Bring to a boil, add drained cucumbers and boil 3 minutes. Pour into a container and allow to stand for 3 days. Each morning drain off liquid, bring to a boil and pour over cucumbers. Pack the cucumbers in preheated jars, leaving 1\(\frac{1}{2}\) inch head space. Heat vinegar solution to boiling and cover the cucumbers with this. (Throw away the spice bag.) Fill and close jars. Process for 15 minutes. Cool and store pickles.

Makes about 5 pints.

**SOUR CUCUMBER PICKLES**

May be made the same way except omit all or part of sugar.

**CUCUMBER RINGS**

| 3 pounds brined cucumbers | 1\(\frac{1}{2}\) teaspoons dried ginger root |
| 2 cups vinegar | 2 cups water |
| 2 pounds sugar | 1\(\frac{1}{2}\) teaspoons whole cloves |
| 1 lemon, sliced thin | 3 sticks cinnamon |

Remove cucumbers from brine and desalt. Drain cucumbers and slice 1\(\frac{1}{4}\) inch thick. Mix water and 1 cup vinegar, pour over cucumbers and let stand 2 hours. Add 1 cup vinegar and let stand 2 hours. Drain off solution, stir in sugar and add spices tied loosely in cheesecloth. Bring to a boil; add cucumbers. Cook until cucumbers are clear and transparent. Pour into a shallow container and let stand overnight so that the slices become plump. Drain off the sirup; bring to boil. Pack cucumbers in hot, preheated jars, leaving 1\(\frac{1}{2}\) inch head space. Pour strained boiling sirup over cucumbers; fill and close jars. Process for 15 minutes. Cool and store pickles.

Makes about 6 pints.

NOTE: The brined cucumbers could be cut into sticks or chunks, rather than rings.

**DILL PICKLES**

**Long Method**

| green or dry dill | 1\(\frac{1}{2}\) cups salt |
| 3 tablespoons mixed pickling spices | 2 cups vinegar |
| 35 to 40 cucumbers, about 4 to 6 inches long | 8 quarts hot water |

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 1\(\frac{1}{4}\)-inch head space. Prepare fresh, hot brine: combine \(\frac{3}{4}\) 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 1\(\frac{1}{4}\)-inch head space. Adjust caps. Process pints and quarts 10 minutes in boiling water bath. Yield: about 5 quarts.
Short Method

\[ \frac{3}{4} \text{ cup sugar} \quad 3 \text{ tablespoons mixed pickling spices} \\
\frac{1}{2} \text{ cup salt} \quad \text{spices} \\
1 \text{ quart vinegar} \quad 30 \text{ to } 40 \text{ medium cucumbers,} \\
1 \text{ quart water} \quad \text{cut in half lengthwise} \]

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 \( \frac{1}{4} \)-inch head space; put a head of dill in each jar. Heat brine to boiling. Pour boiling hot vinegar mixture over cucumbers, leaving \( \frac{1}{4} \)-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, \( \frac{1}{2} \) teaspoon mustard seed and 1 piece hot red pepper to each jar. Process as recommended in Dill Pickles—Long Method.

Kosher—Short Method

Follow recipe for Dill Pickles (Short Method). When packing cucumbers, add 1 clove garlic, 1 bay leaf, \( \frac{1}{2} \) teaspoon mustard seed and 1 piece hot red pepper to each jar. Process as recommended in Dill Pickle Recipe—Short Method.

Sweet

1 quart medium dill pickles \\
3 tablespoons mixed pickling spices

Cut pickles into \( \frac{1}{4} \)-inch slices; pack loosely into sterilized Ball jars. Tie spices in cheesecloth bag; add to sugar and vinegar. Bring mixture to boil; cool to room temperature. Remove spice bag. Pour sirup over pickle slices; adjust caps. To develop flavor, store in refrigerator one week before using. Yield: about 2 pints.

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

Green Tomato—Long Method

Green or dry dill \\
3 tablespoons mixed pickling spices \\
36 medium or 72 small green tomatoes

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. 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 tomatoes are cured when well-flavored and even in color. Drain. Pack tomatoes into hot Ball jars, leaving \( \frac{1}{4} \)-inch head space. Prepare fresh, hot brine: combine \( \frac{3}{4} \) cup 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 tomatoes, leaving \( \frac{1}{4} \)-inch head space. Adjust caps. Process pints and quarts 20 minutes in boiling-water bath. Yield: about 6 quarts.

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, \( \frac{1}{2} \) teaspoon mustard seed and 1 piece hot red pepper to each jar. Leave head space. Process pints and quarts for 15 minutes in boiling water.

CUCUMBER CHIPS

\( \frac{1}{2} \) cup salt \\
24 thin cucumbers, 4 to 5 inches long, cut into \( \frac{1}{8} \)-inch slices \\
1 tablespoon turmeric \\
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 hot Ball jars, leaving ½-inch head space. Heat sirup to boiling. Pour sirup, boiling hot, over cucumbers, leaving ½-inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 3 pints.

CUCUMBER CHUNKS

1½ cups salt 5 cups vinegar
4 quarts water 3 cups water
4 quarts 1-inch slices 2 tablespoons mixed small to medium cucumbers pickling spices
1 quart vinegar 2 to 3 cups sugar
2 cups sugar

Put cucumber slices in a stone jar, large glass container or stainless steel container. Dissolve salt in 4 quarts water. Pour over cucumber slices. Cover with dinner plate or glass pie plate. Fill Ball jar with water and use to hold plate under brine. Cover and let stand 36 hours in a cool place. Drain, discarding liquid. Pour 1 quart vinegar over cucumbers; add water to cover. Simmer 10 minutes. Drain, discarding liquid. Dissolve 2 cups sugar, 5 cups vinegar and 3 cups water. Tie spices in a cheesecloth bag; add to vinegar mixture. Simmer 10 minutes. Pour over cucumbers; cover and let stand 24 hours. Drain, reserving sirup; add remaining sugar to sirup; heat to boiling. Pour over cucumbers. Cover and let stand 24 hours. Drain, reserving sirup; add remaining sugar to sirup; heat to boiling. Pour over cucumbers. Cover and let stand 24 hours. Pack pickles into hot Ball jars, leaving ½-inch head space. Remove spice bag. Bring sirup to boiling. Pour, boiling hot, over pickles, leaving ½-inch head space. Adjust caps. Process pints and quarts 10 minutes in boiling-water bath. Yield: about 3 pints.

CUCUMBER SANDWICH PICKLES

1½ cups salt 1 stick cinnamon
½ cup vinegar 1 cup water
2 cups water 1 cup white sugar
2 dozen 3 to 4 inch cucumbers 1 cup light brown sugar, packed
Water ½ teaspoon mustard seed
3 cups vinegar ½ teaspoon celery seed
6 cups sugar 2 cups vinegar

Sprinkle salt over cucumbers; add 2 quarts cold 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, 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 hot Ball jars, leaving ½-inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 3 pints.
**SWEET ICICLE PICKLES**

- 1 cup salt
- 2 quarts water
- 20 cucumbers, 4 to 6 inches long, cut in quarters, lengthwise
- 1 1/2 tablespoons mixed pickling spices
- 5 cups sugar
- 5 cups vinegar
- 1 cup salt
- 2 quarts water

Put cucumber strips in stone jar, large glass container, or stainless steel container. Add salt to water and bring to boiling. Pour over cucumbers. Cover and let stand 1 week 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. Cover with boiling water. Cover; let stand 24 hours. Drain. Tie spices in a cheesecloth bag. Add to sugar and vinegar; bring to boiling. Pour over cucumbers; cover and let stand 24 hours. Drain sirup; bring sirup to boiling and pour over cucumbers. Repeat this step each day for 4 days. Pack pickles into hot 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. Process pints and quarts 10 minutes in boiling-water bath. **Yield: about 6 pints.**

**OLIVE OIL PICKLES**

- 1/2 cup salt
- 3 quarts 1/4-inch slices small cucumbers (about 100)
- 2 cups peeled pickling onions
- 2 tablespoons mustard seed
- 1/2 cup sugar
- 6 1/4 cups vinegar

Add salt to cucumbers and onions; let stand 3 to 4 hours. Drain. (Taste; if too salty, rinse with cold water and drain again.) Combine vinegar, water and spices; bring to boiling. Add vegetables and return to boiling. Return to boiling and pack, boiling hot, into hot Ball jars, leaving 3/4-inch head space. Adjust caps. Process 15 minutes in boiling-water bath. **Yield: about 6 pints.**

**MIXED PICKLES**

- 1 cup salt
- 4 quarts water
- 1 quart 1-inch slices small cucumbers (about 10)
- 2 cups 1 1/2-inch slices pared carrots (3 to 4)
- 2 cups 1 1/2-inch slices celery
- 2 sweet red peppers, cut in wide strips
- 1/2 cup mustard seed
- 2 tablespoons celery seed
- 1 hot red pepper
- 2 cups sugar
- 6 1/4 cups vinegar

Dissolve salt in cold 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 hot Ball jars, leaving 3/4-inch head space. Adjust caps. Process 15 minutes. **Yield: about 6 pints.**

NOTE: If more cucumbers are desired, increase cucumber measure to 1 1/2 quarts (6 cups) and reduce carrot and celery measures to 1 cup each.

**MUSTARD PICKLES**

- 1 cup salt
- 4 quarts water
- 1 quart 1 1/2-inch slices small cucumbers (36 1 1/2 to 2 1/2 inch cucumbers)
- 1 quart green tomato wedges (6 medium)
- 3 cups 1-inch slices cauliflower (1 small head)
- 3 medium sweet green peppers, cut in pieces
- 3 medium sweet red peppers, cut in pieces
- 1 1/2 cups sugar
- 1/2 cup flour
- 1 tablespoon turmeric
- 1/2 cup water
- 1/2 cup prepared mustard
- 5 cups vinegar
- 2 cups peeled pickling onions

Dissolve salt in 4 quarts water. Pour over prepared vegetables and let stand 12 to 18 hours in a cool place. Drain; rinse and drain thoroughly. Combine sugar, flour and turmeric; gradually add water, stirring until smooth. Add mustard and vinegar. Cook until sauce coats spoon and

**ONION PICKLES**

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, adding 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.
ZUCCHINI PICKLE

2 pounds fresh firm zucchini
2 cups white sugar
2 small (or medium) onions
1 teaspoon celery salt
1/4 cup salt (pickling salt is best)
1 teaspoon turmeric
2 teaspoons mustard seed
3 cups cider vinegar

Wash zucchini and cut in thin slices. Peel and cut onions in quarters, then slice very thin. Add to zucchini. Cover zucchini and onions with inch water and add salt. Let stand two hours. Drain thoroughly.

Bring remaining ingredients to boiling. Pour over zucchini and onions. Let stand two hours. Bring all ingredients to boiling point and heat five minutes.


SAUERKRAUT

About 50 pounds cabbage
1 pound (1 1/2 cups) salt, pure granulated

Remove the outer leaves and any undesirable portions from firm, mature, heads of cabbage; wash and drain. Cut into halves or quarters; remove the core. Use a shredder or sharp knife to cut the cabbage into thin shreds about the thickness of a dime.

In a large container, thoroughly mix 3 tablespoons salt with 5 pounds shredded cabbage. Let the salted cabbage stand for several minutes to wilt slightly; this allows packing without excessive breaking or bruising of the shreds.

Pack the salted cabbage firmly and evenly into a large clean crock or jar. Using a wooden spoon or tamper or the hands, press down firmly until the juice comes to the surface. Repeat the shredding, salting, and packing of cabbage until the crock is filled to within 3 or 4 inches of the top.

Cover cabbage with a clean, thin, white cloth (such as muslin) and tuck the edges down against the inside of the container. Cover with a plate or round paraffined board that just fits inside the container so that the cabbage is not exposed to the air. Put a weight on top of the cover so the brine comes to the cover but not over it. A glass jar filled with water makes a good weight.

A newer method of covering cabbage during fermentation consists of placing a plastic bag filled with water on top of the fermenting cabbage. The water-filled bag seals the surface from exposure to air, and prevents the growth of film yeast or molds. It also serves as a weight. For extra protection, the bag with the water in it can be placed inside another plastic bag.

Any bag used should be of heavyweight, watertight plastic and intended for use with foods.

The amount of water in the plastic bag can be adjusted to give just enough pressure to keep the fermenting cabbage covered with brine.

Formation of gas bubbles indicates fermentation is taking place. A room temperature of 68° to 72°F. is best for fermenting cabbage. Fermentation is usually completed in 5 to 6 weeks.

To Store: Heat sauerkraut to simmering (185° to 210°F.). Do not boil. Pack hot sauerkraut into clean, preheated jars and cover with hot juice to 1/2 inch of top of jar. Fill and close jars. Process 15 minutes for pints and 20 minutes for quarts. Cool, test for seal and store.

Makes about 18 quarts.

SOUR ONION PICKLES

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

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.
**PICKLED PEPPERS**

4 quarts long red, green or yellow peppers (Hungarian, Banana or other varieties)  
2 cloves garlic  
2 tablespoons prepared horseradish  
10 cups vinegar  
2 cups water  
½ cups salt  
¾ cup sugar

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. Remove garlic. Pack peppers into hot Ball jars, leaving ⅛-inch head space. Pour boiling hot pickling liquid over peppers, leaving ¼-inch head space. Adjust caps. Process half-pints and pints 10 minutes in boiling-water bath. Yield: about 8 pints.

**DILLY BEANS**

2 pounds green beans, trimmed  
4 heads dill  
1 teaspoon cayenne pepper  
2½ cups water  
4 cloves garlic  
2½ cups vinegar  
¾ cup salt

Pack beans, lengthwise, into hot Ball jars, leaving ⅛-inch head space. To each pint, add ⅛ teaspoon cayenne pepper, 1 clove garlic and 1 head dill. Combine remaining ingredients and bring to boiling. Pour boiling hot pickling liquid over peppers, leaving ¼-inch head space. Adjust caps. Process pints and quarts 10 minutes in boiling-water bath. Yield: about 4 pints.

**CRYSTAL PICKLES**

7 pounds green tomatoes  
6 sticks cinnamon (2 inches long)  
2 gallons water  
1 bottle lime (11½ grams)  
2 tablespoons salt  
2 quarts vinegar

Wash green tomatoes thoroughly; drain; slice ¼ inch thick; place in a large container. Dissolve lime in water and pour over tomato slices; let stand 24 hours, stirring occasionally. Remove, rinse well through several cold waters to remove all lime sediment; soak in cold water for 4 hours; change water each hour; drain. Dissolve sugar in vinegar, add spices tied loosely in cheesecloth, and bring to a boil. Pack tomato slices loosely in preheated jars, leaving ⅛-inch head space. Cover with boiling sirup. Fill and close jars. Process for 10 minutes. Cool and store. Yield: about 7 pints.

**OKRA PICKLE**

3½ pounds small okra pods  
1 pint distilled vinegar, if desired  
white garlic  
1 quart water  
2 teaspoons dill seed


**ARTICHOKE RELISH**

2 pounds artichokes  
1 pint ground sweet red or green peppers  
2 tablespoons white or green mustard seed  
1 pint ground onions  
1 tablespoon turmeric, if desired  
1 quart vinegar  
Salt


**BEET or RED RELISH**

1 quart chopped cooked beets  
1 tablespoon salt  
1 quart chopped cabbage (about 1 small head)  
1 cup chopped onions  
1 tablespoon salt  
1 tablespoon prepared horseradish  
1½ cups sugar  
3 cups vinegar  
1 cup chopped sweet red peppers (about 2 medium)

**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)
1 cup chopped sweet red peppers (about 2 medium)
1 cup chopped sweet red peppers (about 2 medium)
3 tablespoons salt
1 1/2 cups vinegar
1/2 cups sugar
2 teaspoons dry mustard
1 teaspoon turmeric
1/2 teaspoon ground ginger
2 teaspoons celery seed
1 teaspoon mustard seed


**CORN RELISH**

2 quarts cut corn (about 1 1/2 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)
1 cup chopped onions
1 tablespoon celery seed
1 tablespoon salt
1 tablespoon mustard
2 tablespoons dry mustard
1 tablespoon mustard seed
1 cup water
1 quart vinegar
1 to 2 cups sugar

To prepare corn, boil 5 minutes, cut from cob. Combine with remaining ingredients and simmer 20 minutes. Bring to boiling. Pack, boiling hot, into hot Ball jars, leaving 1/2-inch head space. Process 15 minutes. Yield: about 7 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 cup salt
3 tablespoons turmeric
1/2 cup sugar
2 teaspoons dry mustard
1 teaspoon turmeric
2 teaspoons whole cloves
2 teaspoons whole allspice
2 sticks cinnamon
2 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 well. Combine vinegar, sugar and spices; simmer 10 minutes. Add vegetables; simmer 10 minutes. Bring to boiling. Pack, boiling hot, into hot Ball jars, leaving 1/2-inch head space. Process 10 minutes. 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 chopped onions
1/2 cup salt
3/4 cup sugar
3 tablespoons mustard seed
2 tablespoons celery seed
1 quart vinegar

PEPPER-ONION 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


PICCALILLY or GREEN TOMATO RELISH

4 quarts cored, chopped green tomatoes (about 32 medium) 1 cup chopped onions 1/2 cup salt
2 quarts chopped cabbage (about 1 large head) 2 tablespoons mustard seed 1 tablespoon celery
2 cups chopped sweet red peppers (about 4 medium) 1 tablespoon prepared horseradish
4 1/2 cups vinegar


PEAR RELISH

1 peck pears 6 green sweet peppers
6 large onions 1 bunch celery
6 red sweet peppers

Wash the above ingredients in cold water. Peel and core the pears. Remove stem and seed from the peppers. Clean the celery, peel the onion, and put them through a food chopper. Then add:

3 cups sugar 5 cups vinegar
1 tablespoon salt 1 tablespoon allspice


RED PEPPER RELISH

Excellent sweet-sour accompaniment with meats.

7 cups finely chopped sweet red peppers (14 to 16 medium) 2 tablespoons salt
6 cups sugar
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 hot Ball jars, leaving 3/4-inch head space. Adjust caps. Process 10 minutes. Yield: about 6 half-pints.

RUMMAGE RELISH

2 quarts cored, chopped green tomatoes (about 16 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 small head) 1/2 cup salt
3 cups chopped onions 4 cups brown sugar, packed
2 cups chopped celery 1 tablespoon celery seed
1 cup chopped green peppers (about 2 medium) 1 tablespoon mustard seed
2 quarts vinegar 1 teaspoon ground cinnamon
2 cloves garlic, minced 1/2 teaspoon ground ginger

Combine vegetables; add salt and mix thoroughly. Let stand 12 to 18 hours in a cool place; drain thoroughly. Add sugar, spices and garlic to vinegar; simmer 10 minutes. Add vegetables; simmer 30 minutes. Bring to boiling. Pack, boiling hot, into hot Ball jars, leaving 3/4-inch head space. Adjust caps. Process 15 minutes. Yield: about 8 pints.
CURRY RELISH
Follow recipe for Rummage Relish. Add 2 cups raisins and 1 or 2 teaspoons curry powder when vegetables are added to pickling solution.

HORSERADISH RELISH
1 cup grated horseradish ½ cup white vinegar
¾ teaspoon salt
Wash horseradish roots thoroughly and remove the brown, outer skin. (A vegetable peeler is useful in removal of outer skin.) The roots may be grated, or cut into small cubes and put through a food chopper or a blender.

SPICY CHILI SAUCE
4 quarts peeled, cored, chopped, red-ripe tomatoes (about 24 large)
1 ½ cups chopped sweet green peppers (about 3 medium)
2 cups chopped onions
1 to 1 ½ cups vinegar
1 ½ cups sugar
1 tablespoon salt
1 tablespoon celery seed
1 teaspoon ground ginger
1 teaspoon ground cinnamon
1 teaspoon ground allspice
1 teaspoon ground cloves
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 hot Ball jars, leaving ¼-inch head space. Adjust caps. Process 15 minutes. Yield: about 8 pints.

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

PERUVIAN SAUCE
4 quarts peeled, cored, chopped, red-ripe tomatoes
3 cups brown sugar, packed
1 quart chopped onions
1 quart chopped, pared apples (4 to 5 medium)
1 ½ cups chopped sweet green peppers (about 3 medium)
2 hot red peppers
⅛ teaspoon cayenne pepper
1 hot red pepper
clove garlic, crushed
3 cups brown sugar, packed
tablespoon salt
tablespoon ground allspice
tablespoon mustard seed
tablespoon ground cinnamon
3 cups vinegar
Combine tomatoes, onions, apples, peppers, garlic and sugar. Cook slowly until thick, about 1 hour. As mixture thickens, stir frequently, to prevent sticking. Add salt, spices and vinegar. Cook until thick as wanted, 45 to 60 minutes. Pour, boiling hot, into hot Ball jars, leaving ¼-inch head space. Adjust caps. Process 15 minutes. Yield: about 6 pints.
RED HOT SAUCE
2 quarts peeled, cored, chopped, red-ripe tomatoes (about 12 large) 1 1/2 cups chopped, seeded, long, hot red peppers (about 24)
2 cups vinegar 1 cup sugar 1 tablespoon salt 2 tablespoons mixed pickling spices
2 cups vinegar

Use rubber gloves to prevent burning hands when seeding hot peppers. Combine tomatoes, peppers and 2 cups vinegar; cook until tomatoes are soft. Press through a sieve or food mill. Add sugar and salt. Tie spices in a cheesecloth bag and add to tomato mixture. Cook about 30 minutes or until thick. As mixture thickens, stir frequently to prevent sticking. Add remaining 2 cups vinegar. Cook until thick as wanted, about 20 to 30 minutes. Pour, boiling hot, into hot Ball jars, leaving 1/2-inch head space. Adjust caps. Process 10-15 minutes. Yield: about 4 half-pints.

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 2 1/2 cups vinegar
1 cup sugar 3 tablespoons salt 3 tablespoons mixed pickling spices 1 tablespoon mustard seed 1 tablespoon celery seed

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 hot Ball jars, leaving 1/2-inch head space. Adjust caps. Process 15 minutes. Yield: about 6 pints.

TOMATO CATCHUP
4 quarts peeled, cored, chopped, red-ripe tomatoes (about 24 large) 1 cup chopped onions 1/2 cup chopped sweet red peppers (about 1 medium) 1 1/2 teaspoons celery seed
1 teaspoon mustard seed 1 teaspoon whole allspice 1 stick cinnamon 1 teaspoon sugar 1 tablespoon salt 1 1/2 tablespoons paprika

Cook tomatoes, onions and pepper until soft. Press through a food mill or sieve. Cook rapidly until thick (volume is reduced about one-half), about 1 hour. Tie whole spices in a cheesecloth bag; add with sugar and salt to tomato mixture. Cook gently about 25 minutes, stirring frequently. Add vinegar and paprika; cook until thick. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into hot Ball jars, leaving 1/2-inch head space. Adjust caps. Process 10 minutes. Yield: about 3 pints.

TOMATO CATCHUP
Kitchenette Style
2 quarts seasoned tomato purée (See page 49.) 1 1/2 cups vinegar 1/2 cup sugar 2 teaspoons whole allspice
2 sticks cinnamon 1 teaspoon salt 1 teaspoon dry mustard 1/2 teaspoon paprika 1/2 cup sugar 1/2 teaspoon cayenne pepper 1 teaspoon whole cloves

Combine purée, 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 hot Ball jars, leaving 1/2-inch head space. Adjust caps. Process 15 minutes. Yield: 2 to 3 pints.

VICTORIA SAUCE (RHUBARB)
Excellent accompaniment with meats.
2 quarts chopped rhubarb 3/4 cup chopped onion 3/4 cups chopped, seedless raisins 3/4 cups brown sugar, packed
1/2 cup vinegar 1 teaspoon salt 1 teaspoon ground cinnamon 1 teaspoon ground ginger 1 teaspoon ground allspice

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
4 cups brown sugar, packed
1 quart vinegar
2 hot red peppers
3 tablespoons mustard seed
2 tablespoons ground ginger
2 teaspoons salt
1 1/2 cups chopped sweet red peppers (about 3 medium)

Combine all ingredients and cook slowly until thick, about 1 1/2 to 2 hours. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into hot Ball jars, leaving 1/4-inch head space. Adjust caps. Process 10 minutes. Yield: about 3 pints.

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

FRUIT PICKLES

CRAB APPLE PICKLES

2 quarts crab apples with stems (about 2 1/2 pounds)
6 cups sugar
3 1/2 tablespoons whole allspice
3 cups vinegar
6 cups sugar
3 cups water
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 1/4-inch head space. Adjust caps. Process pints and quarts 15 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
2 sticks cinnamon
3 cups vinegar
1 tablespoon whole allspice
1 tablespoon whole cloves
3 cups vinegar
1 tablespoon whole allspice

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 1/4-inch head space. Adjust caps. Process pints and quarts 15 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, leaving ¼-inch head space. Adjust caps. Process pints and quarts 15 minutes in boiling-water bath. Yield: about 6 pints.

NOTE: Prepare peaches as given in recipe below.

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

PEAR PICKLES

4 dozen firm-ripe Seckel pears
(about 3 pounds)
1 tablespoon mixed pickling spices
1 teaspoon whole cloves

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 ¼-inch head space. Remove spice bag. Heat sirup to boiling. Pour boiling sirup over pears, leaving ¼-inch head space. Adjust caps. Process pints and quarts 15 minutes in boiling-water bath. Yield: 3 to 4 pints.

NOTE: Other small firm-ripe pears may be used. If Kieffer or sand pears are used, they should be cored, covered with hot water, simmered for 10 to 15 minutes and then drained before they are added to the pickling sirup.

WATERMELON RIND PICKLES

4 quarts prepared watermelon rind
3 tablespoons slaked lime or 1 cup salt
2 quarts cold water
2 tablespoons whole cloves
1 lemon, thinly sliced
8 cups sugar
1 quart white vinegar
1 quart water

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 hot Ball jars, leaving ¼-inch head space. Adjust caps. Process 10 minutes. Yield: about 7 pints.
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, to any of the recipes.

Butters, Conserves, Jams and Preserves should be processed at simmering (180°-185°F) in water-bath canner for 10-20 minutes depending on product. See pages 40, 41 and 73 for these recommended methods for home canning of the above products.

GENERAL INSTRUCTIONS

1. 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.

2. 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.

3. Cane or beet sugar may be used. They give the same results. Up to ½ 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.

4. 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.

5. 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.

6. 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.

7. 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 88) 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.
8. 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 jelling point.

9. Process butters, conserves, jams and preserves 10 to 20 minutes at simmering (180°-185°F.) in a water-bath canner. Read each recipe for processing times.


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. 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.

12. Remove fruit mixture from heat. Seal all fruit products airtight. Process as recommended.

13. Test for seal. (See page 13.)

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

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**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.

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**APPLE BUTTER**

*Old-Fashioned Kind*

2 dozen medium apples, 3 cups sugar quartered (about 6 pounds) 1¼ teaspoons ground cinnamon 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 head space. Adjust caps. Process pints and quarts 10 minutes in boiling-water bath at simmering temperature (180°-185°F.). When cool, test for seal. Remove bands and store. Yield: about 5 pints.

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**APPLE BUTTER**

2 quarts cooked apple pulp 2 teaspoons ground cinnamon 4 cups sugar ¼ teaspoon ground cloves

Use apple pulp left from preparing apple juice for jelly. (See page 90.) 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 ¼-inch head space. Adjust caps. Process pints and quarts 10 minutes in boiling-water bath at simmering temperature (180°-185°F.). When cool, test for seal. Store. Yield: about 5 pints.
APRICOT BUTTER
1 1/2 quarts apricot pulp
2 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 at simmering temperature (180°-185°F). Yield: about 3 pints.

PEACH BUTTER
2 quarts peach pulp
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 at simmering temperature (180°-185°F). 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. Process pints and quarts 10 minutes in boiling-water bath at simmering temperature (180°-185°F).

PEAR BUTTER
2 quarts pear pulp
1 teaspoon grated orange rind
5/8 cup orange juice
3/4 cup 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 at simmering temperature (180°-185°F). Cool. Test for seal. Store. 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, 1 quart stemmed pared tart apples blueberries
(about 4 medium) 6 cups sugar
1/2 cup seedless raisins 1/4 cup lemon juice


APPLE-CHERRY-PINEAPPLE CONSERVE
1 quart pitted sweet cherries
5 cups sugar
5 cups sugar
1/2 cup chopped walnuts
or other nuts
1 1/2 cups chopped, cored, pared tart apples
1 cup finely chopped, cored, pared fresh pineapple

Combine fruit and sugar; let stand 1 hour.

NOTE: Canned pineapple may be used.

APRICOT-ORANGE CONSERVE

Apricots: 3 1/2 cups
Orange juice: 2 tablespoons
1 1/2 cups
Orange peel: 1/2 orange
Combine all ingredients except nuts in large kettle. Cook until thick, stirring constantly. Add nuts last five minutes of cooking; stir well.

Remove from heat; skim and stir alternately for 5 minutes. Pour into hot Ball jars. Seal. Process 10 minutes at simmering (180°-185°F.) in water-bath canner. Yield: 5-6 half-pints.

BLUEBERRY CONSERVE

2 cups water 1/2 orange, thinly sliced
4 cups sugar 1/2 cup seedless raisins
1/2 lemon, thinly sliced 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 hot Ball jars. Adjust caps. Process 10-15 minutes. Yield: about 4 half-pints.

BLUEBERRY-PINEAPPLE CONSERVE

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

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 hot Ball jars. Adjust caps. Process 10-15 minutes. Yield: about 4 half-pints.

APPLE-PINEAPPLE-COCONUT CONSERVE

1 quart chopped, cored, 1 1/4 cups chopped pared tart apples orange pulp (about (about 2 pounds) 2 large oranges)
1 quart chopped, cored, 2 cups water pared fresh pine-
apple (about 1 large) 1 1/2 cups (3/4-ounce can) flaked coconut
3/4 cup thinly sliced 6 cups sugar orange peel

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 hot Ball jars. Adjust caps. Process 10-15 minutes. Yield: about 8 half-pints.

NOTE: Canned pineapple may be used.

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 hot Ball jars. Adjust caps. Process 10-15 minutes. Yield: about 4 half-pints.
CRANBERRY CONSERVE

1 unpeeled orange, finely chopped
2 cups water
3 cups sugar
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. Stir frequently to prevent sticking. Add nuts the last 5 minutes of cooking. Pour, boiling hot, into hot Ball jars. Adjust caps. Process 10-15 minutes. Yield: about 4 half-pints.

GOOSEBERRY CONSERVE

1½ cups gooseberries, stem and blossom ends removed
1 medium unpeeled orange, chopped
3 cups sugar
Combine all ingredients; heat slowly to boiling, stirring occasionally until sugar dissolves. Cook until jellying point, about 20 minutes. Add mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into hot Ball jars. Adjust caps. Process 10-15 minutes. Yield: about 6 half-pints.

GRAPE CONSERVE

2 quarts stemmed grapes (about 4 pounds)
3 cups sugar
Separate pulp from skins of grapes. Cook skins 15 to 20 minutes, adding only enough water to prevent sticking (about 1½ 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 hot Ball jars. Adjust caps. Process 10-15 minutes. Yield: about 7 half-pints.

NOTE: If using Tokay or Malaga grapes, cook the whole grape.
RHUBARB-STRAWBERRY-ORANGE CONSERVE

2 cups ½-inch slices rhubarb 1 quart sliced
1 cup seedless raisins 4 cups strawberries
1 tablespoon grated orange peel 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 hot Ball jars. Adjust caps. Process 10-15 minutes. Yield: about 8 half-pints.

STRAWBERRY-RHUBARB CONSERVE

Rhubarb: 4 cups Strawberries: 4 cups Sugar: 7 cups

Wash and cut (about 2½ pounds) unpeeled rhubarb into ½-inch pieces. Wash and hull 1 quart of berries. Measure 4 cups of each into large kettle.


JAM RECIPES

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 ¾ 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 hot Ball jars. Adjust caps. Process 10-15 minutes. 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 hot Ball jars. Adjust caps. Process 10-15 minutes. 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 hot Ball jars. Adjust caps. Process 10-15 minutes. Yield: about 2 pints.

CARROT JAM

4 cups grated raw carrots ½ teaspoon ground cloves
3 cups sugar ½ teaspoon ground allspice
Juice and grated rind of 2 lemons ½ teaspoon ground cinnamon
Combine all ingredients. Bring to a slow boil, reduce heat, and simmer, stirring constantly, until thick. Pour into hot sterilized jars. Process 10 minutes in boiling-water bath at simmering temperature. This is excellent with meats or game fowl. Yield: about 6-7 half-pints.

DAMSON PLUM JAM
5 cups coarsely chopped Damson plums (about 2 pounds) 3 cups sugar ¾ cup water

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 hot Ball jars. Adjust caps. Process 10-15 minutes.

Yield: about 3 pints.

PEACH JAM
2 quarts crushed, peeled peaches 6 cups sugar ½ cup water

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 hot Ball jars. Adjust caps. Process 10-15 minutes.

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.

Yield: about 4 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 hot Ball jars. Adjust caps. Process 10-15 minutes.

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 hot Ball jars. Adjust caps. Process 10-15 minutes. 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 hot Ball jars. Adjust caps. Process 10-15 minutes. Yield: about 4 half-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, 4 cups pitted sweet finely chopped cherries 3 1/2 cups sugar ¼ 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 hot Ball jars. Adjust caps. Process 10-15 minutes. 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, 2 cups finely chopped, pitted tart red cored pared fresh cherries pineapple (about 1 medium)

CARROT and ORANGE MARMALADE
4 cups grated raw carrots 4 lemons 2 oranges Sugar Water, about 6 cups Pinch salt
Squeeze oranges and lemons and save the juice. Then grate the rinds of 1 orange and 2 lemons and cook until tender—about 30 minutes in 3 cups of water. Add the grated carrots and 3 cups of water and cook until tender—about 20 minutes. Add the orange and lemon juice. Measure the mixture. For each cup of this mixture add ½ cup sugar. Boil to the marmalade stage. This will require about an hour. Add pinch salt. Pour hot marmalade into hot Ball jars and seal. Process 10 minutes at simmering temperature. (180°-185°F.). Yield: about 10-11 half-pints.
CITRUS MARMALADE
(Asmber Jam or Marmalade)  
1 1/2 cups thinly sliced grapefruit peel (about 1)  
3/4 cup chopped orange pulp (about 1 medium)  
1/2 cup thinly sliced orange peel (about 1 medium)  
1 1/2 cups chopped grapefruit pulp (about 1)  
1 1/2 quarts water
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 slowly to boiling, stirring until sugar dissolves. Cook rapidly to jellying point, about 30 to 35 minutes. Stir occasionally to prevent sticking. Pour, boiling hot, into hot Ball jars. Adjust caps. Process 10 minutes. Yield: about 5 half-pints.

GRAPEFRUIT MARMALADE
3/4 cup thinly sliced grapefruit peel  
1 quart water  
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 hot Ball jars. Adjust caps. Process 10 minutes. Yield: about 3 half-pints.

GRAPE-CRANBERRY MARMALADE
2 cups Concord grape juice  
1/2 teaspoon grated orange peel  
2 cups stemmed cranberries  
3 cups sugar  
To prepare grape juice, see page 00. 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 hot Ball jars. Adjust caps. Process 10-15 minutes. Yield: about 4 half-pints.

GREEN GRAPE MARMALADE
2 quarters 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 hot Ball jars. Adjust caps. Process 10-15 minutes. Yield: about 10 half-pints.

NOTE: If seeds of grapes are not tender, cut grapes in half and remove seeds before cooking.
**ORANGE-LEMON MARMALADE**

1 1/2 quarts water  
3 cups thinly sliced orange peel (about 4 large)  
3 1/2 cups thinly sliced lemon  
3 1/2 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. Cook rapidly to jellying point, about 15 minutes. As mixture thickens, stir frequently to prevent sticking. Pour, boiling hot, into hot Ball jars. Adjust caps. Process 10 minutes. **Yield: about 6 half-pints.**

**PRICKLY PEAR MARMALADE**

2 lemons, thinly sliced  
1 quart water (about 1 cup)  
2 large unpeeled oranges, chopped (about 3 cups)  
Sugar, about 5 1/2 cups  

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 hot Ball jars. Adjust caps. Process 10-15 minutes. **Yield: about 6 half-pints.**

**QUINCE-APPLE MARMALADE**

3 cups chopped, cored quinces  
2 cups chopped, cored tart apples  
Sugar, about 2 1/2 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 3/4 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 hot Ball jars. Adjust caps. Process 15 minutes. **Yield: about 4 half-pints.**

**STRAWBERRY-PINEAPPLE MARMALADE**

2 1/2 cups finely chopped orange peel  
2 1/2 cups chopped pineapple (about 1 medium)  
1 teaspoon grated orange peel  

Combine pineapple, orange peel and pulp and sugar. 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 hot Ball jars. Adjust caps. Process 10-15 minutes. **Yield: about 6 half-pints.**
Preserve Recipes

Don’t forget to process in simmer temperatures in water-bath canner!

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.

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 4 cups sugar
(about 2 pounds) 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 hot Ball jars. Adjust caps. Process 10-15 minutes. Yield: about 4 half-pints.

BAR-LE-DUC (CURRANT) PRESERVES

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

To prepare juice, see page 87. 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 hot Ball jars. Adjust caps. Process 15 minutes. Yield: about 5 half-pints.

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 ¾ to 1 pound sugar for each pound berries. Process 10-15 minutes.

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 hot Ball jars. Adjust caps. Process 10-15 minutes. Yield: about 4 half-pints.

CITRON MELON PRESERVES

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 ¼-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 hot Ball jars; pour boiling sirup over melon. Adjust caps. Process 10-15 minutes. Yield: about 3 half-pints.

(Continued next page.)
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**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 cups sugar</td>
<td>2 quarts peeled, firm-ripe figs (about 1¼ cups lemon juice 1½ quarts hot water)</td>
</tr>
<tr>
<td></td>
<td>(4¼ pounds)</td>
</tr>
<tr>
<td>2 lemons, thinly sliced</td>
<td></td>
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</tbody>
</table>

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.

**PEACH PRESERVES**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>3½ cups sugar</td>
<td>5 cups sliced, peeled, hard-ripe peaches (about 6 large)</td>
</tr>
<tr>
<td>2 cups water</td>
<td></td>
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</tbody>
</table>

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.

**OLD-FASHIONED PEACH PRESERVES**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 quarts sliced, peeled, hard-ripe peaches (about 10 large)</td>
<td>6 cups sugar</td>
</tr>
</tbody>
</table>

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 hot Ball jars. Adjust caps. Process 15 minutes. Yield: about 7 half-pints.

**PEACH PRESERVES**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1½ cups sugar</td>
<td>1½ cups sugar</td>
</tr>
<tr>
<td>3 cups water</td>
<td>1 lemon, thinly sliced</td>
</tr>
<tr>
<td>6 medium cored, pared, hard-ripe pears, cut in halves or quarters (about 2 pounds before preparing)</td>
<td></td>
</tr>
</tbody>
</table>

Combine 1½ 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.

**PEAR PRESERVES**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 quarts sliced, peeled, hard-ripe peaches (about 6 large)</td>
<td>6 cups sugar</td>
</tr>
</tbody>
</table>

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 hot Ball jars. Adjust caps. Process 15 minutes. Yield: about 5 half-pints.

**PLUM PRESERVES**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 cups pitted, tart plums (about 2½ pounds)</td>
<td>4 cups sugar 1 cup water</td>
</tr>
</tbody>
</table>

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 hot Ball jars. Adjust caps. Process 15 minutes. Yield: about 5 half-pints.
QUINCE PRESERVES

3 cups sugar
2 quarts water

7 cups quartered, cored, pared quinces (about 3 pounds before preparing)

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 hot Ball jars. Adjust caps. Process 15 minutes. Yield: about 4 half-pints.

STRAWBERRY PRESERVES DELUXE

1 1/2 quarts stemmed, firm, red-ripe strawberries
5 cups sugar
1/4 cup lemon juice

Berries with hollow cores should not be used. Combine strawberries and sugar; let stand 3 to 4 hours. Bring slowly to boiling, stirring occasionally until sugar dissolves. Add lemon juice. Cook rapidly until berries are clear and sirup thick, about 10 to 12 minutes. Pour into a shallow pan. Let stand, uncovered, 12 to 24 hours in a cool place. Shake pan occasionally to distribute, berries through sirup. Pack 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.

GOURMET STRAWBERRY PRESERVES

1 quart stemmed, firm, red-ripe strawberries
5 cups sugar
1/2 cup lemon juice

Berries with hollow cores should not be used. Combine berries and sugar; let stand 3 to 4 hours. Bring slowly to boiling, stirring occasionally until sugar dissolves. Cook rapidly until thick, about 20 minutes. Add lemon juice and continue cooking 10 minutes longer. Pour, boiling hot, into hot Ball jars. Adjust caps. Process 15 minutes. Yield: about 4 half-pints.

WATERMELON RIND PRESERVES

1 1/2 quarts prepared watermelon rind
1 tablespoon ground ginger
4 tablespoons salt
4 cups sugar
2 quarts cold water
1/4 cup lemon juice

To prepare watermelon rind ... trim green skin and pink flesh from thick watermelon rind; cut into 1-inch pieces. Dissolve salt in 2 quarts water and pour over rind. Let stand 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.

WESTERN SPECIAL PRESERVES

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

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 hot Ball jars. Adjust caps. Process 10-15 minutes at 180°-185°F. in water-bath canner. Yield: about 5 half-pints.

TOMATO PRESERVES

1 tablespoon mixed pickling spices
1 piece ginger root
4 cups sugar
2 lemons, thinly sliced

Do not core tomatoes. Tie spices in a cheesecloth bag; add to sugar, lemon and water. Simmer 15 minutes. Add tomatoes and cook gently until tomatoes become clear, stirring occasionally to prevent sticking. Cover and let stand 12 to 18 hours in a cool place. Heat to boiling and pack tomatoes and lemon into hot Ball jars, leaving 1/4-inch head space. Remove spice bag. Boil sirup 2 to 3 minutes, or longer if too thin; pour, boiling hot, over tomatoes, 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 5 half-pints.
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.

GENERAL INSTRUCTIONS

1. Essential Ingredients for Making Jelly. Proper amounts of fruit, pectin, acid, and sugar are needed to make a jellied fruit product.

2. Fruits for Jelly Making. Fruit gives jelly its characteristic flavor and furnishes at least part of the pectin and acid required for successful jelly. In order to make a good jelly, a fruit juice must contain the right kind and quantity of acid and the right amount of pectin. Acid is the substance which makes the juice tart or sour. To make a good jelly, the juice should be about as tart as that of sour apples. For best results in making jelly without commercial pectin, use a fruit firm, and just ripe.

3. Pectin. Pectin is the substance which causes the fruit juice to "jell" and without pectin, no fruit jelly is possible. Some kinds of fruit such as tart apples and Concord grapes, have enough natural pectin to make jelly. Others, for example strawberries, require added pectin. Two tests may be used to determine the amount of pectin in fruit juice:
   a. Jelmeter: This is a graduated glass tube with an opening at each end. The rate of flow of the juice through this tube is used as a measure of the jellying power of the juice and, therefore, is an index to the amount of sugar to be used (see manufacturer's directions).
   b. Cooking: Cook ¾ cup juice with 2¾ tablespoons sugar to see if it will jell.

Commercial fruit pectins are in two forms—liquid and powdered. Either is satisfactory when used with the recipe developed by the manufacturer of the pectin. These pectins may be used with any fruit.

4. Acid. Acid is needed for flavor and for the gel formation. The acid content varies in different fruits. With fruits that are low in acid, lemon juice or citric acid is commonly added. If acid seems lacking, usually 1 tablespoon of strained lemon juice added to each standard measuring cup of fruit juice will supply the needed acid.

5. Sugar. Sugar helps in gel formation, contributes to flavor, and serves as a preserving agent.
   Beet and cane sugar may be used with equal success.
   In recipes without added pectin, light corn sirup can replace up to one-fourth of the granulated sugar. With powdered pectin, corn sirup can replace up to one-half of the sugar. With liquid pectin, corn sirup can replace up to 2 cups of the granulated sugar.

Where no added pectin is used, honey can replace up to one-half of the granulated sugar in the jelly recipe. With added pectin, 2 cups of honey can replace 2 cups of sugar in most recipes; ¾ to 1 cup of granulated sugar should be replaced by honey in small recipes (5-6 glasses). Light, mild-flavored honey generally is the best kind to use.

6. Suggested Equipment for Making Jelly. Large kettle is one of the essentials. We suggest an 8 to 10 quart kettle with a broad, flat bottom. This size kettle permits the jelly mixture to come to a full rolling boil without boiling over.

Jelly bag which may be made of several thicknesses of closely woven cheesecloth, or of cotton flannel with the napped side in. A jelly bag is needed for straining the pressed juice.
A colander or stand to hold the jelly bag.
A Jelmeter.
A thermometer, jelly, candy or deep-fat, is a great aid to success in making jelly without added pectin.
Standard measure, quart, liquid and dry measures, cup, spoons.
Paring knives.
Long-handled spoon for skimming jelly.
Ladle for pouring jelly.
Quilted Crystal Jelly Jars or Glasses.
A clock with second hand is essential for timing jelly made with added pectin.

7. Preparing Fruit for Jelly. For best results, prepare fruits in small lots. Increasing quantities in jelly recipes is not recommended.
   a. We suggest that one prepare only enough fruit for one recipe of jelly and follow through promptly.
   c. Cut fruit into small pieces. DO NOT remove cores.
   d. Wash berries quickly and carefully to prevent loss of juice. Lift berries from water instead of pouring the water off, as most of the dirt settles to the bottom of the container. Drain. Remove caps and stems.

8. Extracting the Juice. Boiling fruit is necessary to extract the pectin in the juice. Place prepared fruit into kettle, and add cold water.
   For apples and other hard fruits, add enough water to cover, and bring to a boil. Crush soft fruits, such as berries and grapes to start the flow of juice.
   For berries and grapes, use only enough water to prevent scorching. Excess boiling tends to destroy pectin, flavor and color. Stir to prevent scorching.
   Grapes and berries need about 10 minutes to cook soft; apples and other hard fruits need 20 to 25 minutes depending upon the firmness of the fruit.
   Pour the cooked product into a damp jelly bag which has been placed over a stand, or colander, so the juice may drain. Do not squeeze the bag if you want a clear jelly.
   If fruit press is used to extract juice, the juice should be restrained through a jelly bag; the jelly bag should not be squeezed.

9. Check for pectin as suggested on page 85.

10. The juice may now be made into jelly or canned or frozen and jelly made later.

PREPARING JELLY JARS and JELLY GLASSES

Jelly Jars
1. Examine tops and edges of jars—both must be smooth and even.
2. Wash jars, lids and caps in hot, soapy water. Rinse well in hot water. In deep container, place jars, cover with water, bring to boiling point. Boil 10 minutes. Remove from heat.
3. In small saucepan, cover lids and bands with water. Bring water to simmer temperature (180°-185°F.). Remove from heat and leave in water until ready to seal jars.
4. If recipe calls for pectin: Just before putting jelly on to cook, remove jars from hot water. Invert on clean towels. Keep out of draft.
5. If recipe does not use pectin: Leave jars and lids in water until jelly has cooked 5 or 10 minutes. Remove jars from water and invert on clean towels to drain. Keep out of draft.

Jelly Glasses
1. Wash glasses and lids in hot, soapy water. Rinse well in hot water. Place glasses in deep container. Cover with water. Bring water to boiling point and boil 10 minutes. Remove container from heat; leave jelly glasses in water.
2. In small saucepan, cover lids with water. Bring water to simmer temperature (180°-185°F.). Remove from heat and leave in water until ready to seal jars.
3. If recipe does not call for pectin: Leave glasses and lids in hot water until jelly has cooked 5 or 10 minutes. Remove glasses from water and invert on clean towels to drain. Keep out of draft.

TO MAKE JELLY WITHOUT ADDED PECTIN

Cook no more than 4 to 6 cups juice at a time.

1. Check recipe. Assemble equipment.
2. Prepare jelly glasses or jelly jars.
3. Measure juice and sugar. Put juice into large kettle. Bring to boiling. While juice is coming to a boil, remove jars and lids from hot water and invert on towels to drain.
4. Add sugar to juice. Stir until sugar dissolves. Boil rapidly to jellying point.
5. Test for jellying point.
6. Remove jelly from heat; quickly skim to remove foam.
7. If jelly glasses are used, fill and seal according to above directions.
8. If jelly jars are used, fill and seal according to above directions.

TESTS FOR JELLYING POINT
when Not Using Pectin

SHEET TEST

Jelly drops first are light and sirupy.

Then they become heavier and show signs of sheeting.

When jelly point is reached, the jelly breaks from spoon in a sheet or flake.

Dip a cool metal spoon into the boiling jelly mixture. When two drops form together and sheet off the spoon, the jelly should be done.

... OR USE THE TEMPERATURE TEST

The temperature test is probably more dependable for determining the jellying point.

TEMPERATURE TEST

Before cooking jelly, take the temperature of boiling water with a jelly or candy thermometer. It is necessary to find out at what temperature water boils in your locality because the boiling point differs at different altitudes and under different atmospheric conditions. Cook the jelly mixture to a temperature of 8°F higher than the boiling point of water in your locality. At that point, the concentration of sugar will be such that the mixture should form a satisfactory gel.
TO MAKE JELLY WITHOUT ADDED PECTIN...USING PARAFFIN

1. Use firm, tart apples. Takes about 3 pounds of apples for recipe. Select about one-fourth underripe apples, three-fourths ripe. Sort and wash apples. Remove stem and blossom ends. Do not pare or core. Cut into small pieces.

2. Put apples into large kettle. Add 1 cup water per pound of apples. Cover, bring to boil on high heat. Reduce heat and simmer until apples are tender, about 20 to 25 minutes depending on the firmness or ripeness of fruit.

3. Put cooked apples into a jelly bag which has been placed over a colander, so the juice may drain.

4. Measure 4 cups of the apple juice into large kettle. Add 3 cups of sugar. 2 tablespoons of lemon juice may also be added, if desired. Stir to dissolve sugar.

5. Place on high heat and boil rapidly to 8°F. above the boiling point of water, or until jelly mixture sheets from spoon. Remove from heat. Quickly skim off foam.

6. Pour jelly immediately into hot jelly glasses to within 1/2 inch of top of glass. Cover immediately with a 1/2 inch layer of hot, but not smoking, paraffin. To assure a good seal, paraffin must touch all sides of the glass. Prick any air bubbles that appear. Allow glasses to stand until paraffin hardens and jelly cools. Cover glasses with metal lids. Store in cool, dark, dry place.

If jelly jars are used, no paraffin is needed. Fill and seal according to instructions on page 88.
APPLE JELLY
4 cups apple juice (takes about 3 pounds apples and 3 cups water) 2 tablespoons strained lemon juice, if desired 3 cups sugar

To prepare juice. Select about one-fourth firm-ripe and three-fourths fully ripe tart apples. Sort, wash, and remove stem and blossom ends; do not pare or core. Cut apples into small pieces. Add water, cover and bring to boil on high heat. Reduce heat and simmer for 20 to 25 minutes, or until apples are soft. Extract juice.

To make jelly. Measure apple juice into a kettle. Add lemon juice and sugar and stir well. Boil over high heat to 8°F. above the boiling point of water, or until jelly mixture sheets from a spoon.

Remove from heat; skim off foam quickly. Pour jelly immediately into sterilized hot containers and seal.

Makes 3 to 4 eight-ounce glasses.

MINT JELLY
Pour 1 cup boiling water over 1 cup firmly packed mint leaves and let stand for 1 hour. Press the juice from the leaves. To each cup of apple juice, add 2 tablespoons of the mint extract and bring to a boil. Follow Apple Jelly recipe above. Just before pouring into jars or jelly glasses, tint the jelly with a few drops of green food coloring.

SPICED APPLE JELLY
Follow recipe for Apple Jelly, except tie a few whole spices in a cheesecloth bag and cook with the apples when preparing the juice.

BLACKBERRY JELLY
4 cups blackberry juice (takes about 2 1/2 quart boxes blackberries and 3/4 cup water) 3 cups sugar

To prepare juice. Select about one-fourth firm-ripe and three-fourths fully ripe berries. Sort and wash; remove any stems or caps. Crush the berries, add water, cover, and bring to boil on high heat. Reduce heat and simmer for 5 minutes. Extract juice.

To make jelly. Measure juice into a kettle. Add sugar and stir well. Boil over high heat to 8°F. above the boiling point of water, or until jelly mixture sheets from a spoon.

Remove from heat; skim off foam quickly. Pour jelly immediately into sterilized hot containers and seal. Makes 3 to 4 eight-ounce glasses.

CRABAPPLE JELLY
4 cups crabapple juice (takes about 3 pounds crabapples and 3 cups water) 4 cups sugar

To prepare juice. Select firm, crisp crabapples, about one-fourth firm-ripe, the rest fully ripe. Sort, wash, and remove stem and blossom ends; do not pare or core. Cut crabapples into small pieces. Add water, cover, and bring to boil on high heat. Reduce heat and simmer for 20 to 25 minutes, or until crabapples are soft. Extract juice.

To make jelly. Measure juice into a kettle. Add sugar and stir well. Boil over high heat to 8°F. above the boiling point of water, or until jelly mixture sheets from a spoon.

Remove from heat; skim off foam quickly. Pour jelly immediately into sterilized hot containers and seal.

Makes 5 to 6 eight-ounce glasses.

GRAPE JELLY
4 cups grape juice (takes about 3 1/2 pounds Concord grapes and 1/2 cup water) 3 cups sugar

To prepare juice. Select about one-fourth firm-ripe and three-fourths fully ripe grapes. Sort, wash, and remove grapes from stems. Crush grapes, add water, cover, and bring to boil on high heat. Reduce heat and simmer for 10 minutes. Extract juice. To prevent formation of tartrate crystals in the jelly, let juice stand in a cool place overnight, then strain through two thicknesses of damp cheesecloth to remove crystals that have formed.

To make jelly. Measure juice into a kettle. Add sugar and stir well. Boil over high heat to 8°F. above the boiling point of water, or until jelly mixture sheets from a spoon.

Remove from heat; skim off foam quickly. Pour jelly immediately into sterilized hot containers and seal. Makes 3 to 4 eight-ounce glasses.
CANNING JELLY...STEP BY STEP
Using Liquid Pectin

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. Take pan off heat. Leave jars and lids in water until ready to use.

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 hot 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 a few 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. Store in cool, dry place.
BLACKBERRY JELLY
4 cups blackberry juice  7  1/2 cups sugar
(takes about 3 quart  1 bottle liquid pectin
boxes berries)

To prepare juice. Sort and wash fully ripe
berries; remove any stems or caps. Crush
the berries and extract juice.

To make jelly. Measure juice into a kettle.
Stir in the sugar. Place on high heat and,
stirring constantly, bring quickly to a full
rolling boil that cannot be stirred down.
Add the pectin and heat again to a full
rolling boil. Boil hard for 1 minute.
Remove from heat; skim off foam quick-
ly. Pour jelly immediately into sterilized hot
containers and seal.

Makes 8 to 9 eight-ounce glasses.

CHERRY JELLY
3 cups cherry juice  7  1/2 cups sugar
(takes about 3 pounds or 2 quart
boxes sour cherries
and 1/2 cup water)

To prepare juice. Select fully ripe cherries.
Sort, wash, and remove stems; do not pit.
Crush the cherries, add water, cover, and
bring to boil on high heat. Reduce heat
and simmer 10 minutes. Extract juice.

To make jelly. Measure juice into a kettle.
Stir in the sugar. Place on high heat and,
stirring constantly, bring quickly to a full
rolling boil that cannot be stirred down.
Add the pectin and heat again to a full
rolling boil. Boil hard for 1 minute.
Remove from heat; skim off foam quickly.
Pour jelly immediately into sterilized hot
containers and seal.

Makes 7 to 8 eight-ounce glasses.

GRAPE JELLY
4 cups grape juice  7 cups sugar
(takes about 3 1/2 pounds Concord
grapes and 1/2 cup water)

To prepare juice. Sort, wash, and remove
stems from fully ripe grapes. Crush
grapes, add water, cover, and bring to boil
on high heat. Reduce heat and simmer for
10 minutes. Extract juice. To prevent for-
mation of tartrate crystals in the jelly, let
juice stand in a cool place overnight, then
strain through two thicknesses of damp
cheesecloth to remove crystals that have
formed.

To make jelly. Measure juice into a kettle.
Stir in the sugar. Place on high heat and,
stirring constantly, bring quickly to a full
rolling boil that cannot be stirred down.
Add the pectin and heat again to a full
rolling boil. Boil hard for 1 minute.
Remove from heat; skim off foam quickly.
Pour jelly immediately into sterilized hot
containers and seal.

Makes about 4 half-pints.

FRESH GRAPEFRUIT WINE JELLY
1 cup freshly squeezed, 3 1/2 cups sugar
strained grapefruit 1/2 bottle (3 ounces)
juice liquid pectin
1 cup claret or
ruby red port

In small heavy saucepan, combine grape-
fruit juice, wine and sugar; stir over very
low heat until well blended. Warm mixture
just until bubbles appear around edge of
pan and sugar is dissolved, about 5 to 6
minutes. Remove from heat and immedi-
ately stir in pectin. Skim off foam, if neces-
sary. Pour immediately into hot sterilized
jars and seal. Makes about 5 eight-ounce
jars.

GREEN PEPPER JELLY
(More the consistency of jam—delightful
and different. Serve with meats and fish.)
Use blender in preparation.

6 large green peppers, 6 cups sugar
cut in pieces 1/2 teaspoon salt
1 1/2 cups cider vinegar 1 teaspoon crushed
(4%-6% acid red pepper
strength) 1 bottle pectin
Green food coloring

Put half the green peppers and half the
vinegar into blender container, cover and
process at LIQUEFY until pepper is lique-
fied. Pour into a saucepan. Repeat with
remaining peppers and vinegar. Add the
red pepper, sugar and salt. Bring to a boil
and add pectin. Boil until it thickens when
dropped from spoon, about 20 minutes.
Add a few drops of green food coloring.
Pour into sterilized jars, leaving 1/4-inch
headspace, and seal. Makes about 4 half-
pints.
ORANGE SAUTERNE JELLY
“Tender Jelly, Delightful Gift”

1 teaspoon finely grated orange peel
1/2 cup fresh orange juice
2 tablespoons fresh lemon juice
1 1/2 cups dry sauterne
1/2 package powdered fruit pectin (about 3 tablespoons)
4 cups mild flavored honey

In a large saucepan, combine grated peel, juices, sauterne and pectin. Bring to full rolling boil. Stir in honey immediately. Return to rolling boil. Boil hard 3 minutes, stirring constantly. Remove from heat. Skim to remove foam. Pour into hot sterilized glasses, leaving 1/4-inch head space. Cover immediately with 1/4-inch hot paraffin. Cool undisturbed overnight. Cover glasses with metal lids. Makes about six 1/2 pint glasses.

GRAPE JELLY
Made from Frozen Concentrated Juice

6 1/2 cups sugar
2 1/2 cups water
1 bottle liquid pectin
3 6-ounce cans (2 1/4 cups) frozen concentrated grape juice

Stir the sugar into the water. Place on high heat and, stirring constantly, bring quickly to a full rolling boil that cannot be stirred down. Boil hard for 1 minute. Remove from heat. Stir in the pectin. Add thawed concentrated grape juice and mix well. Pour immediately into sterilized hot containers and seal. Makes 8 to 9 eight-ounce glasses.

STRAWBERRY JELLY

4 cups strawberry juice (takes about 3 quart boxes berries)
7 1/2 cups sugar
1 bottle liquid pectin

To prepare juice. Sort and wash fully ripe berries; remove any stems or caps. Crush the berries and extract juice.

To make jelly. Measure juice into a kettle. Stir in the sugar. Place on high heat and, stirring constantly, bring quickly to a full rolling boil that cannot be stirred down. Add the pectin and heat again to a full rolling boil. Boil hard for 1 minute. Remove from heat; skim off foam quickly. Pour jelly immediately into sterilized hot containers and seal. Makes 8 to 9 eight-ounce glasses.

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. If to be canned, reheat just to boiling. Pour, hot, into hot Ball jars, leaving 1/4-inch head space. Adjust caps. Process pints and quarts 10 minutes in boiling-water bath.

GRAPE JUICE for JELLY
Use fresh or can for future use.

Wash, stem, crush and measure fresh, firm-ripe Concord type grapes. Add 1 1/2 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. If to be canned, reheat to simmering. Pour, hot, into hot Ball jars, leaving 1/4-inch head space. Adjust caps. Process pints and quarts 10 minutes in boiling-water bath. Strain before using.

ORANGE-GRAPEFRUIT JELLY
Made from Frozen Concentrated Juice

3 1/4 cups sugar
1 cup water
3 tablespoons lemon juice
1/2 bottle liquid pectin
1 6-ounce can (3/4 cup) frozen concentrated orange-and-grapefruit juice

Stir the sugar into the water. Place on high heat and, stirring constantly, bring quickly to a full rolling boil that cannot be stirred down. Add lemon juice. Boil hard for 1 minute. Remove from heat. Stir in the pectin. Add thawed concentrated orange and grapefruit juice and mix well. Pour immediately into sterilized orange and grapefruit juice and mix well. Pour immediately into sterilized orange and grapefruit juice and mix well. Pour immediately into sterilized orange and grapefruit juice and mix well. Pour immediately into sterilized orange and grapefruit juice and mix well. Pour immediately into sterilized orange and grapefruit juice and mix well. Pour immediately into sterilized orange and grapefruit juice and mix well. Pour immediately into sterilized orange and grapefruit juice and mix well.
Quilted Crystal Jars may be used for freezing. Prepare as you would the Ball Can or Freez Jars. The Quilted Crystal Jars are excellent for frozen jams, frozen green peppers or to use in freezing small amounts of left-over fruits, vegetables or soup.
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 or slaughtering. 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, leakproof, 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 3 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 96.) 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. 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, liquidproof 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 ⅜-inch head space in 1⅛ 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.

**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>
</tr>
<tr>
<td>Lamb and Veal</td>
<td>6-9</td>
</tr>
<tr>
<td>Pork</td>
<td>1-3</td>
</tr>
<tr>
<td>Cured Pork</td>
<td>1-2</td>
</tr>
<tr>
<td>Sausage and Ground Meat</td>
<td>1-3</td>
</tr>
<tr>
<td>Cooked Meat (not covered with sauce)</td>
<td>1</td>
</tr>
<tr>
<td>Poultry:</td>
<td></td>
</tr>
<tr>
<td>Chickens</td>
<td>6-12</td>
</tr>
<tr>
<td>Giblets</td>
<td>3</td>
</tr>
<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 strawberries.
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 96.)

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 manufacturers' 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.

SIRUPS FOR FREEZING FRUITS

<table>
<thead>
<tr>
<th>Type of Sirup</th>
<th>Sugar</th>
<th>Water</th>
<th>Yield of Sirup</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 per cent</td>
<td>2 cups</td>
<td>4 cups</td>
<td>5 cups</td>
</tr>
<tr>
<td>35 per cent</td>
<td>2½ cups</td>
<td>4 cups</td>
<td>5½ cups</td>
</tr>
<tr>
<td>40 per cent</td>
<td>3 cups</td>
<td>4 cups</td>
<td>5½ cups</td>
</tr>
<tr>
<td>50 per cent</td>
<td>4 cups</td>
<td>4 cups</td>
<td>6 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>Type</td>
<td>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 cup</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>½ cup</td>
</tr>
<tr>
<td>Avocados</td>
<td>Peel, pit and mash soft-ripe fruit.</td>
<td></td>
<td></td>
<td></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></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></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>½ tsp.</td>
<td>¾ cup</td>
</tr>
<tr>
<td>Cranberries</td>
<td>Stem. Sort. Wash and drain.</td>
<td>50%</td>
<td>¾ cup</td>
<td></td>
</tr>
<tr>
<td>Currants</td>
<td>Wash. Remove stems. Drain.</td>
<td>50%</td>
<td>¾ cup</td>
<td></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></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. יצק町</td>
<td>50%</td>
<td></td>
<td></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></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>FRUIT</td>
<td>PREPARATION FOR FREEZING</td>
<td>SIRUP PACK</td>
<td>DRY SUGAR PACK</td>
<td>WITHOUT SUGAR</td>
</tr>
<tr>
<td>------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>------------</td>
<td>----------------</td>
<td>---------------</td>
</tr>
<tr>
<td></td>
<td>Type Sirup</td>
<td>Amount Ascorbic Acid</td>
<td>Amount Sugar to Each Quart Prepared Fruit</td>
<td>Amount Ascorbic Acid to Each Quart Prepared Fruit</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>⅛ 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>⅔ tsp.</td>
<td></td>
</tr>
<tr>
<td>Persimmons</td>
<td>Sort, wash, peel and press through sieve.</td>
<td>1 cup</td>
<td>½ tsp.</td>
<td>Yes</td>
</tr>
<tr>
<td>Pineapple</td>
<td>Pare. Remove core and eyes. Slice, dice, crush or cut into wedges or sticks.</td>
<td>30%</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Plums and Prunes</td>
<td>Sort and wash. Leave whole or cut in halves or quarters.</td>
<td>40-50%</td>
<td>½ tsp.</td>
<td>Yes</td>
</tr>
<tr>
<td>Raspberries</td>
<td>Sort, wash carefully in ice-cold water. Drain.</td>
<td>40%</td>
<td>¾ cup</td>
<td>Yes</td>
</tr>
<tr>
<td>Rhubarb</td>
<td>Wash, trim, cut into 1-2 inch pieces. Scald 1 minute in boiling water. Cool 1 minute in cold water. Drain.</td>
<td>40%</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Strawberries</td>
<td>Sort. Wash in ice-cold water. Drain. Hull (cap); slice or leave whole.</td>
<td>50%</td>
<td>¾ cup</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### 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 100. 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. 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.
<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>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>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 ⅜-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 into ⅜-inch cubes. Scald. Chill.</td>
<td>2</td>
</tr>
<tr>
<td>Rhubarb</td>
<td>See “Fruit” page 99.</td>
<td></td>
</tr>
<tr>
<td>Rutabagas and Turnips</td>
<td>Remove tops. Wash, peel, cut in ¼-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.
to freeze meats
poultry and game

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 95.) These jars are especially satisfactory for use in freezing stews and meats with gravy or sauce. (See "Storage Times," page 96.)

RAW MEATS . . . are prepared and packed for freezing just as they are for canning, except that no salt is used when meat is to be frozen. Leave recommended head space—seal.

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. Leave recommended head space. Seal. Store.

BEEF, LAMB or VEAL STEW

Use your favorite recipe or one given in Meat section for making the stew. Cool stew as quickly as possible, skim off fat. Pour into Can or Freez jars. Leave recommended head space. Seal.

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. Leave recommended head space. Seal.

CHICKEN and OTHER FOWL

Select and prepare poultry and fowl same as for canning (page 33). Pack. Leave recommended head space. Seal.

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, 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 33. 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.

FRESH PORK SAUSAGE

Sausage should be made from freshly slaughtered, thoroughly chilled hog meat. Grind meat as desired and season lightly, especially with salt and sage. Salt causes rancidity. The flavor of sage tends to become stronger during freezing; however, spices, other than cloves, seem to help preserve freshness of flavor. "Work" the ground meat well with hands, then form into patties or balls. Follow instructions under "Hamburgers" for packing into Can or Freez jars.

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 COOKED FOODS
See "How To Use Ball Can or Freez Jars," page 95 and "Storage Times" chart. 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.

canning for tots and those on special diets

STRAINED (PURÉED) FRUITS
Apples, Apricots, Peaches and Pears may be cooked and canned as a sauce or purée. When making sauce, follow recipe for "Applesauce" on page 44. Pack in ½ pints, or pints. Adjust caps and process as recommended.

For strained fruits, follow recipes for "Apricot or Peach Purée." page 52. Pack. Adjust caps and process as recommended. 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 (PURÉED) VEGETABLES
Asparagus, Carrots, Green Beans, Lima Beans, Green Peas, Spinach
(For Tomato Purée, see page 49.)

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 make 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 table knife 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 puree 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 in Low-Acid Vegetable Section.

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 1½ 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 ¼-inch head space. Add boiling water to cover, leaving ¼-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.)

special diet foods
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 for fruits on pages 19 thru 21. When canning low-acid vegetables, read the General Instructions. When canning meats, poultry and sea foods, read the General Instructions.
5. Flavor of vegetables can be easily improved. If there is no medical reason to prevent it, add ½ 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.
6. 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, firm fruit. Prepare fruit for canning as explained in the recipes found on pages 44 thru 49. 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 for meats, poultry and sea foods, 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.
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.

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>CAUSE</th>
<th>PREVENTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2. Food not processed long enough to destroy enzymes.</td>
<td>2. Process each food by recommended method and for recommended length of time.</td>
</tr>
<tr>
<td></td>
<td>3. Manner of packing and processing did not produce a high vacuum.</td>
<td>3. Pack and process as recommended.</td>
</tr>
<tr>
<td></td>
<td>4. Air was sealed in the jars either because head space was too large or air bubbles were not removed.</td>
<td>4. Use amount of head space as recommend ed 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.</td>
<td>1. Use freshly picked corn which has plump, shiny kernels filled with milk.</td>
</tr>
<tr>
<td></td>
<td>2. Liquid did not cover corn.</td>
<td>2. Cover corn with liquid before capping jar. (See &quot;Loss of liquid&quot; reference).</td>
</tr>
<tr>
<td></td>
<td>3. Jars were processed at too high a temperature.</td>
<td>3. Keep pressure in canner at recommended pounds; gauge may be faulty and it should be checked.</td>
</tr>
<tr>
<td></td>
<td>4. Variety of corn used.</td>
<td>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>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 enameled ware, also utensils from which tinplate has worn.</td>
</tr>
<tr>
<td>CONDITION (Product Usable Unless Spoilage Is Indicated)</td>
<td>CAUSE</td>
<td>PREVENTION</td>
</tr>
<tr>
<td>--------------------------------------------------------</td>
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<td>------------</td>
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</tbody>
</table>
| Green vegetables turn brown.                           | 1. Vegetables were overcooked.  
2. Vegetables were too mature for canning. | 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. |
| Crystals in grape products.                              | Tartaric acid which is naturally found in grapes. | In juice, carefully ladle juice into clean hot jars, cap and reprocess original length of time. In jelly, see “Jelly contains glass-like particles.” |
| Yellow crystals on canned green vegetables.             | Glucoside, natural and harmless substance, in vegetables. | None |
| White crystals on canned spinach.                       | Calcium and oxalic acid in spinach combine to form harmless calcium oxalate. | None |
| White sediment in bottom of jars of vegetables. May denote spoilage. | 1. Starch from the food.  
2. Minerals in water used.  
3. Bacterial spoilage . . . liquid is usually murky, food soft. (Do not use.) | 1. None  
2. Use soft water.  
3. Process each food by recommended method and for recommended length of time. |
| Fruit floats in jar.                                    | Fruit is lighter than the sirup. | Use firm, ripe fruit. Heat fruit before packing it. Use a light to medium sirup. Pack fruit as closely as possible without crushing it. |
| Cloudy liquids.                                           | 1. Spoilage. (Do not use.)  
3. Starch in vegetable.  
4. Fillers in table salt. | 1. Process each food by recommended method and for recommended length of time.  
2. Use soft water.  
3. None  
4. None, except by using a pure refined salt. |
| Loss of liquid during processing. (Food may darken, but will not spoil. Do not open jars to replace liquid.) | 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 water-bath canner.  
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 |
| Jar seals, then comes open. Spoilage evident. (Do not use.) | 1. Food spoilage from underprocessing.  
2. Disintegration of particles of food left on the sealing surface.  
3. Hairlike crack in the jar. | 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. |
| Jar of food fails to seal. (Correct cause and reprocess the full time or use the food immediately.) | 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. | Carefully follow methods and instructions for using jars and caps and for foods to be canned. For more information, write Consumer Service Department, Ball Corporation, Muncie, Indiana, and request the pamphlet “To Be a Successful Home Canner.” |
| Hollow pickles.                                          | 1. Faulty growth of cucumbers.  
2. Cucumbers were stale when pickling was begun. | 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. |
<table>
<thead>
<tr>
<th>CONDITION (Product Usable Unless Spoilage Is Indicated)</th>
<th>CAUSE</th>
<th>PREVENTION</th>
</tr>
</thead>
<tbody>
<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.)&lt;br&gt;2. Food spoils 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.&lt;br&gt;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>Soft or slippery pickles. Spoilage evident. (Do not use.)</td>
<td>1. Brine or vinegar used was too weak.&lt;br&gt;2. Pickles were not kept covered with liquid.&lt;br&gt;3. Scum was not kept removed from top of brine.&lt;br&gt;4. Pickles were not heated long enough to destroy spoilage microorganisms.&lt;br&gt;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.&lt;br&gt;2. Pickles should be covered with liquid at all times, during the brining process and when in the jar.&lt;br&gt;3. Scum should be removed daily during the brining process.&lt;br&gt;4. See “Pickles and Relishes.”&lt;br&gt;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.&lt;br&gt;2. Brass, iron, copper or zinc utensils were used in making the pickles.&lt;br&gt;3. Ground spices used.&lt;br&gt;4. Whole spices left in jars of pickles.</td>
<td>1. Use soft water.&lt;br&gt;2. Use enameled ware, glass, aluminum, stainless steel or stoneware utensils.&lt;br&gt;3. Use whole spices.&lt;br&gt;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>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>
<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>Jelly is tough or stiff.</td>
<td>1. Too much pectin in fruit.&lt;br&gt;2. Jelly was overcooked.&lt;br&gt;3. Too little sugar, so mixture had to be cooked too long to reach jellying stage.</td>
<td>1. Use fruit which is riper. If adding pectin, don’t add as much.&lt;br&gt;2. See jelly test.&lt;br&gt;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.</td>
</tr>
<tr>
<td>Jelly ferments. Spoilage evident. (Do not use.)</td>
<td>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.</td>
<td>Use vacuum sealing next time. Test for seal before storing jelly.</td>
</tr>
<tr>
<td>CONDITION</td>
<td>CAUSE</td>
<td>PREVENTION</td>
</tr>
<tr>
<td>-----------</td>
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</tr>
</tbody>
</table>
| 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.  
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. |
| 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.  
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 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. |
| Bubbles are in jelly.  May denote spoilage. | 1. If bubbles are moving, jelly is spoiling; 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. Be sure to test for seal before storing jars.  
2. Hold utensil close to top of jar and pour into jar quickly. |
| 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. |
Acid Foods ........................................ 4
Altitude Charts (Altitude changes) ............ 20, 40
Ampas Jars for Marmalade ...................... 80
Answers to Canning Questions
(See "Have Problems? Check these") .......... 104-107
Apples
Butter ............................................ 73
Butter, Old Fashioned ........................... 73
Canned .......................................... 44
Chutney .......................................... 70
For Pies, Canned .................................. 44
Frozen ........................................... 98
Jelly ............................................. 89, 90
Jelly, Spiced ...................................... 90
Juice for Jelly .................................... 93
Sauce, Canned ................................... 44
Sauce, Frozen .................................... 98
Strained or Puréed ............................... 102
and Blueberry Conserve ......................... 74
and Cherry-Pineapple Conserve ................. 74
and Pineapple-Coconut Conserve ............... 75
and Quince Marmalade ........................... 81
Apricots
Butter ............................................ 74
Canned .......................................... 44
Dried ............................................ 46
Frozen ........................................... 98
Jam ............................................... 77
Juice, Nectar or Puree ......................... 92
Preserves ........................................ 92
Strained or Puréed ............................... 102
Arthichoke Relish ................................ 65
Ascorbic Acid 40, 97, 98, 99
Ascorbic and Citric Acid Mixtures ........... 40, 97
Asparagus
Canned .......................................... 24
Frozen .......................................... 100
Strained or Puréed ............................... 102
Avocados, Frozen ............................... 98

Baby Foods
(See "Special Diet Foods") ...................... 103
Bacteria .......................................... 5-7
Ball Jars, Caps and Lids
Tips .............................................. 10, 11
How to Use
Can or Freeze Jars 3, 10, 12, 72, 87, 88, 91, 94-95, 96
Jelly Jars .......................................... 11, 87, 88
Mason Jars 3, 10, 11, 12
Mason Dome Caps 3, 11, 12
Zinc Caps and Rubbers 3, 11, 12
Barbecue Sauce ................................. 87, 88
Bar-Ie-Duc (Currant) Preserves ............... 82
Beans
Boston Baked Butter ................................ 24
Butter, Canned ................................... 24
Butter, Frozen ................................... 100
Dilly ............................................... 65
Dried Kidney, etc., Canned .................... 24
Green ............................................... 92
Green, Frozen ................................... 100
Green, Step-by-step Picture Series .......... 22, 23
Green, Strained or Puréed ...................... 102
Lima, Canned .................................... 24
Lima, Frozen ..................................... 100
Lima, Strained or Puréed ......................... 102
Snap, Canned .................................... 24
Snap, Frozen ..................................... 100
Soup .............................................. 35
Soy, Canned ...................................... 24
Wax, Canned ..................................... 24
Wax, Frozen ...................................... 100
With Pork and Tomato Sauce ................... 24
Beets
Canned ............................................ 31, 32
Corned .......................................... 31
Frozen .......................................... 101
Special Diet ...................................... 102
Stew ............................................. 33
Beets, Canned .................................... 25
Frozen .......................................... 100
Pickles .......................................... 63
Relish ............................................ 65
Tomato (See Greens) ........................... 26, 100
Berries
Canned ............................................ 44
For Pies, Canned ................................ 44
Frozen ........................................... 98, 99
Jelly .............................................. 90, 92, 93
Juice ............................................. 52
Preserves ......................................... 82, 84
Blackberries
Canned ............................................ 44
Cordial ........................................... 52
Frozen ........................................... 98
Jam ................................................ 77
Jelly ............................................. 90, 92
Juice ............................................. 52
Blanching .......................................... 49, 99
Blueberries
Canned ............................................ 45
Frozen ........................................... 100
Conserve ......................................... 75
Jam .............................................. 77
And Apple Conserve ............................. 74
And Currant Jam ................................ 77
And Pineapple Conserve ......................... 77
Boiling-Water Bath
(See "Water-bath Canner") ..................... 14
Bolus ............................................. 5
Boysenberries
Canned ............................................ 44
Frozen ........................................... 98
Jam .............................................. 77
Juice ............................................. 52
Broccoli
Canned .......................................... 25
Frozen .......................................... 100
Brussels Sprouts
Canned .......................................... 25
Frozen .......................................... 100
Butters (6 kinds) ................................. 73, 74
Cabbage
Canned ............................................ 25
Sauerkraut ....................................... 64
Can or Freeze Jars
For Canning ....................................... 12
For Freezing ..................................... 95, 96
For Jellies and other Spreads ................. 72, 88, 89, 91
Canadian Bacon, Canned (See Ham and other Cured Meats) ....................... 32
Canning
Altitude Changes ................................. 20, 40
Butter and Margarines ........................... 16
Methods ........................................... 14
Questions (See "Have Problems?") .......... 104-107
Time Table ....................................... 20, 41
Tips (See "The Easy Way to Can") ............ 2, 3
With Corn Sirup ................................ 40
With Honey ....................................... 40
With Sugar ....................................... 40
Without Salt ..................................... 103
Without Sugar .................................... 103
Canning, General Instructions
Butter, Conserves, Jams ......................... 72-84
Marmalades and Preserves ....................... 72-84
The Easy Way to Can ............................ 2, 3
Fruits and Acid Vegetables ..................... 38-51
Jelly ............................................. 85-93
Low-Acid Vegetables .............................. 19-28
Meat, Poultry, Sea Foods ....................... 29-35
Pickles and Relishes ............................ 54-68
Special Diet Foods ............................... 102, 103
Canning Time Reference (Chart) ............... 31, 41
Cantaloupe, Frozen ............................. 98
Carrots
Canned ............................................ 25
Frozen .......................................... 100
Jam .............................................. 77
Pickles .......................................... 63
Strained or Puréed .............................. 102
and Orange Marmalade ......................... 79
Catchups and Sauces ........................................... 68
Cauliflower
Canned ......................................................... 25
Frozen ......................................................... 100
Celery
Canned ......................................................... 25
and Tomatoes, Canned .................. 25
Chard (See "Greens") ....................... 26, 100
Chayote Squash
Canned ......................................................... 28
Cherries
Canned ......................................................... 45
Frozen ......................................................... 98
Jelly Marmalade ............................................. 79
Preserves ...................................................... 82
and Apple-Pineapple Conserve ....... 74
and Pineapple Marmalade .......... 74
and Raspberry Conserve .......... 74
Chevron, Canned ........................ 31, 32
Chicken (See "Poultry") .................. 33, 34, 101
Chow-Chow ..................................................... 56
Chops, Canned ................................................. 32
Chowder
Clam ............................................................. 36
Fish ............................................................... 36
Chutneys .......................................................... 70
Citron Melon Preserves ................. 82
CitraMarmalade (Amber Jam) ......... 80
Clams
Canned ......................................................... 34
Chowder ......................................................... 36
Coconut and Apple-Pineapple Conserve 75
Cold Pack ....................................................... 4
Conserves (13 kinds) .................... 75, 76
Cooked Foods, Frozen .................. 102
Corn
Cream-style Canned ......................... 25, 26
Cream-style Frozen ......................... 100
Lye Hominy .................................................. 26
On-the-cob, Frozen ......................... 100
Relish ............................................................. 56
Whole-kernel, Canned ................. 26
Whole-kernel, Frozen ................. 100
Corn Sirup
In Butters, Conserves, Jams, Marmalades and Preserves .... 72
In Canning ..................................................... 40
In Jelly ........................................................... 25
Corned Beef, Canned ..................... 31
Crab Meat
Canned ......................................................... 34
Crabapples
Jelly ............................................................. 90
Pickles ........................................................... 70
Crackling, Canned ......................... 31
 Cranberries
Conserve ....................................................... 76
Frozen ........................................................... 38
Juice .............................................................. 52
Sauce, Jellied ................................................. 46
Sauce, Whole ............................................... 46
Spiced ............................................................. 46
and Grape Marmalade .......... 80
Creole Sauce .................................................. 28
Crystal Pickles ............................................... 65
Cucumber Pickles .......................... 58-62
Cucumber Relish ........................................... 66
Currants
Bar-le-Duc Preserves ................. 82
Canned ......................................................... 46
Frozen ........................................................... 98
and Blueberry Jam .......... 77
and Raspberry Jam .......... 79
Curry Relish .................................................. 68
Damson Plum Jam .......................... 78
Dewberries
Canned ......................................................... 44
Frozen ........................................................... 98
Jam .............................................................. 77
Dilly Beans ................................................. 59, 60
Dill Pickles ...................................................... 65
Dixie Relish .................................................... 66
Dried Fruits
Canned ......................................................... 45
Conserve ...................................................... 76
Duck (See "Poultry") ................................. 33, 34, 101
Eggplant
Canned ......................................................... 26
Elderberries
Canned ......................................................... 45
Frozen ........................................................... 98
Jam .............................................................. 78
Enzymes ......................................................... 5, 6
Equipment and Utensils .................. 10-14
Fermentation .................................................. 5
Figs
Frozen ........................................................... 98
Jam .............................................................. 78
Pickles ........................................................... 79
Preserves ...................................................... 83
Fish (See "Sea Food") ........................................ 35
Chowder ......................................................... 36
Food Planning Guide (or Budget) .... 16
Fowl (See "Meats" and "Poultry") ....... 29-35
Frozen ........................................................... 101, 102
General Instructions for Canning (See "Canning" General Instructions)
General Instructions for Freezing (See "Freezing"
General Instructions)
Gherkins ......................................................... 63
Gooseberries
Canned ......................................................... 45
Conserve ....................................................... 76
Frozen ........................................................... 98
Goulash ......................................................... 31
Grapefruit
Canned ......................................................... 46
Frozen ........................................................... 98
Juice .............................................................. 52
Marmalade ..................................................... 80
and Orange Jelly ................. 53
Wine Jelly ............... 52
Grapes
Canned, Ripe ............................................... 46
Canned, Unripe ............................................. 46
Conserves ...................................................... 76
Frozen ........................................................... 98
Jam .............................................................. 78
Jelly ............................................................. 90, 92
Juice I and II ................................................. 52
Juice for Jelly ................. 53
Marmalade ..................................................... 80
and Cranberry Marmalade ....... 80
Gravy, To Use in Hot packing meat .......... 32
Greens (All kinds)
Canned ......................................................... 26
Frozen ........................................................... 100
Green Tomato Mincemeat .............. 28
Guavas
Canned ......................................................... 46
Ham
Canned ......................................................... 32
Frozen ........................................................... 101, 102
Sandwich Spread ................. 37
Hamburger
Frozen ........................................................... 101
Headcheese
Frozen ........................................................... 102
Hominy, Lye ................................................... 26
Honey
in Butters, Preserves, Jams, Marmalades and Conserves ........ 72
in Canning ..................................................... 60
in Jelly ........................................................... 85
Horseradish Relish .......................................... 68
Hot Fruit ......................................................... 4
How Much to Can (See "Food Planning Guide") .......................... 16
Puree, Seasoned, Canned ........................................ 49
Scalloped Tomatoes ............................................. 49
Soup ................................................................. 36
Step-by-Step Picture Series .................................. 50, 51
Stewed, Canned ..................................................... 28
and Celery, Canned .............................................. 25
with Okra, Canned ................................................ 28
Turkey (See "Poultry") ......................................... 33, 34

Turnip
Frozen ............................................................... 100
Greens (See "Greens") ............................................ 26

Vacuum Seal.............................................................. 4
Veal
Canned ............................................................. 31, 32
Frozen .............................................................. 101
Special Diet .......................................................... 103
Stew ................................................................. 101

Vegetables
Approximate Yields............................................ 17
Canned (Acid) ..................................................... 48-51
Canned (Low-Acid) .............................................. 19, 28
Frozen .............................................................. 100
Pickled ............................................................. 84-87
Soup ................................................................. 36
Special Diet ........................................................ 103

Venison
Canned ............................................................. 31
Frozen .............................................................. 102
Victoria Sauce (Rhubarb) ...................................... 69

Water Bath Canner
How to Use .......................................................... 38
Method ............................................................... 14

Watermelons
Frozen .............................................................. 99
Rind Pickles ........................................................ 71
Rind Preserves ..................................................... 84
Western Special Preserves ...................................... 84

What’s the Cause
(See Have Problems?) .......................................... 104-107

Whitefish, Canned .................................................... 35

Yeasts ................................................................. 5

Yields (See "Jar Estimating") .................................... 17
Youngberries
Canned ............................................................. 44
Frozen .............................................................. 98
Jam ................................................................. 77

Zucchini Squash
Canned ............................................................. 28
HOW TO PRESERVE A HUSBAND

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.