

Ball

Blue Book[®]

The Guide to Home Canning and Freezing



Preserving a Tradition of Excellence...

The *Ball Blue Book*® guide to food preservation is one of the most recognized authorities on home canning and food preservation, and it's no wonder: across the nation and around the world it has served as a guide in millions of kitchens to help home canners like you safely preserve healthy and delicious foods.

This edition relies on years of testing and updating to bring you the latest in food preservation techniques—along with an abundance of new taste treats and old favorites for your family to enjoy.

You'll also find a variety of time-saving, helpful tips and special sections with step-by-step, illustrated instructions on home canning procedures. Of course, home food preservation goes beyond just canning, so we've included many convenient recipes for freezing and dehydration, too. With information on special diets, home canning for a few, gifts from the kitchen and more, there's sure to be something for everyone!

Whether you're new to home canning or are continuing your own long-standing tradition, we think you'll find this a kitchen helper you won't want to be without.



Edition 1

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LEARNING ABOUT CANNING

HOME CANNING SAFETY

For all home canners, some understanding of what canning is and why it works will be most helpful. Canning is a reliable method of preserving food, and the basics of canning are easy to learn. To help avoid problems, be sure to follow the basic safety precautions for handling home canning jars and for preserving the food.

First, for safety in handling the jars, take care to prevent sudden temperature changes that could crack the jars. Never pour boiling water or hot food into a room temperature jar; never place a room temperature jar into boiling water; and never place a hot processed jar on a cool or wet surface. Prepare the jars for canning by washing them in hot, soapy water and rinsing them well. Jars in which food will be processed for less than 10 minutes must be sterilized. To sterilize jars before filling, place them right side up on the rack in a boiling water bath canner. Fill the canner and jars with hot (not boiling) water to 1 inch above jar tops. Boil 10 minutes at altitudes of less than 1,000 feet above sea level. At higher elevations, boil 1 additional minute for each additional 1,000 foot elevation. Allow jars to remain in hot water until ready to use. Remove one at a time as needed. Retain water in canner for processing filled jars. Jars to be processed for 10 minutes and longer do not need to be sterilized, but

must be kept hot until ready to be filled.

A dishwasher may also be used to wash the jars and keep them warm, but cannot be used to sterilize jars. (Do not use an oven to warm the jars, as it may cause them to break.) To further reduce jar breakage, always use non-metallic utensils when filling the jars, removing air bubbles, or removing food from the jars. Never use metal knives to remove air bubbles, and never use steel wool to clean the jars. Always be careful when working with boiling liquids and filling the jars with hot foods.

Second, for safety in preserving the food, be sure to understand what causes food spoilage. In the air and all around us are invisible microorganisms such as molds, yeasts and bacteria. Many of these microorganisms are beneficial to us, while others can be harmful under certain conditions. All fruits, meats and vegetables in their natural state contain these microorganisms to some degree. They are the major cause of food spoilage. It is nature's way that food left unprotected will begin to change color and flavor as it spoils.

Canning interrupts this natural process through heating food in containers that seal. The heat destroys the potentially harmful microorganisms and enzymes, and at the same time, air is driven from the jar, a partial vacuum

is formed and the jar seals, preventing other microorganisms from entering and recontaminating the food.

TWO KINDS OF FOOD

For the purpose of canning, all foods are divided into two classifications (See Figure 1):

1. Acid
2. Low Acid

Acids—Acid foods are those which contain natural acid. Each food is different, and different varieties of the same food may vary in acidity. Generally, all fruits are acid foods. Tomatoes, which many of us think of as a vegetable, are technically a fruit and are treated as acids in canning. Sauerkraut, rhubarb and foods to which vinegar is added, such as certain pickles and relishes, are also treated as acids.

Low Acids—Low acids are foods which contain very little natural acid. Generally, all vegetables are low-acid. Meats, poultry, seafoods, mushrooms and soups are also in the low-acid group. Mixed canned foods which might contain part low acids (such as corn) and part acids (such as tomatoes) should be treated as low acids. Figure 1 lists common foods and gives their relative acidity.

The importance of acidity to the home canner is that molds and yeasts,

which exist in acids, are easily destroyed by heating filled canned jars in briskly boiling water for a period of time. Acid in food protects against the growth of bacteria. The harmful elements of certain bacteria, however, thrive in low acids and cannot readily be destroyed at the temperature of boiling water (212°F at sea level). Low acids therefore must be superheated to 240°F in a pressure canner.

The heating of the food within the canning containers is called processing. Unless canned food is thoroughly processed for the proper time and at the proper temperature, it is likely to spoil because all of the microorganisms may not be destroyed. In addition, lids may not seal allowing microorganisms to enter. If food is processed too long it will be overcooked and lose quality.

THE SPOILERS

Molds and Yeasts—Molds are fungi that grow as silken threads and appear as fuzz on food. Some molds can produce mycotoxins that are harmful to eat. Molds thrive on the acids that

are a protection against more dangerous bacteria. Yeasts, which are also fungi, cause food to ferment and can make it unfit to eat. Fortunately, molds and yeasts are easily destroyed at temperatures between 140° and 190°F (See Figure 2).

Enzymes—Enzymes are present in all living things. They promote the normal organic changes necessary to the life cycle. Their action can cause food to change flavor, texture and color and make it unappetizing. Enzymes are also easily destroyed by heat, at temperatures beginning around 140°F (See Figure 2).

Bacteria—Bacteria are not so easily destroyed, however. Certain bacteria actually thrive at temperatures that destroy molds, yeasts and enzymes (See Figure 2). Some bacteria thrive on foods with low acidity. *Salmonella* are destroyed when held at 140°F. *Staphylococcus aureus*, or "staph" bacteria, are destroyed if food is kept above 140°F. Staph produces a toxin that can be destroyed only by long

hours of boiling or by superheating to 240°F for a relatively short time.

Botulism is a food poisoning caused by the bacterium *Clostridium botulinum*. These bacteria are also readily destroyed by boiling, but they produce a spore that throws off a strong toxin and the spores cannot readily be destroyed at 212°F. Furthermore, the botulism causing bacteria thrive on low acids, in the absence of air and in moist environments — exactly the conditions inside a jar of canned meat or vegetables.

Because of bacterial spores, low-acid foods must be brought to 240°F, which is hotter than the boiling point of water. This can be done only with pressure canners.

While the effects of "the spoilers" can be serious, the home canner should not be unduly worried about them. It is helpful to understand what they are and how they affect acid and low-acid foods. Providing the directions and precautions outlined in this book are followed, food can be safely canned or frozen with little concern for spoilage.

FIGURE 1

RELATIVE POSITION OF VARIOUS FOODS ON pH (ACIDITY—ALKALINITY) SCALE

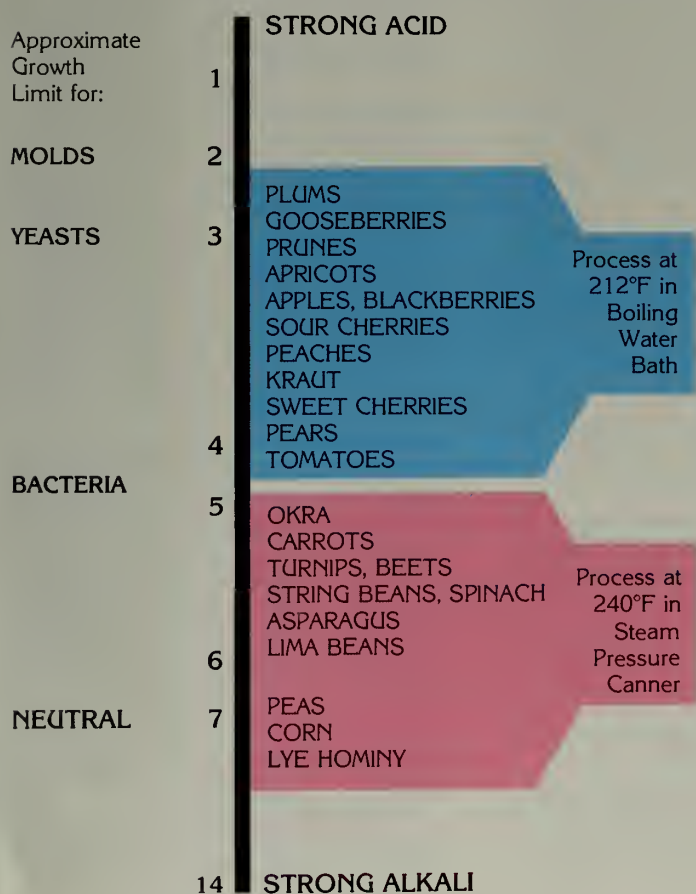
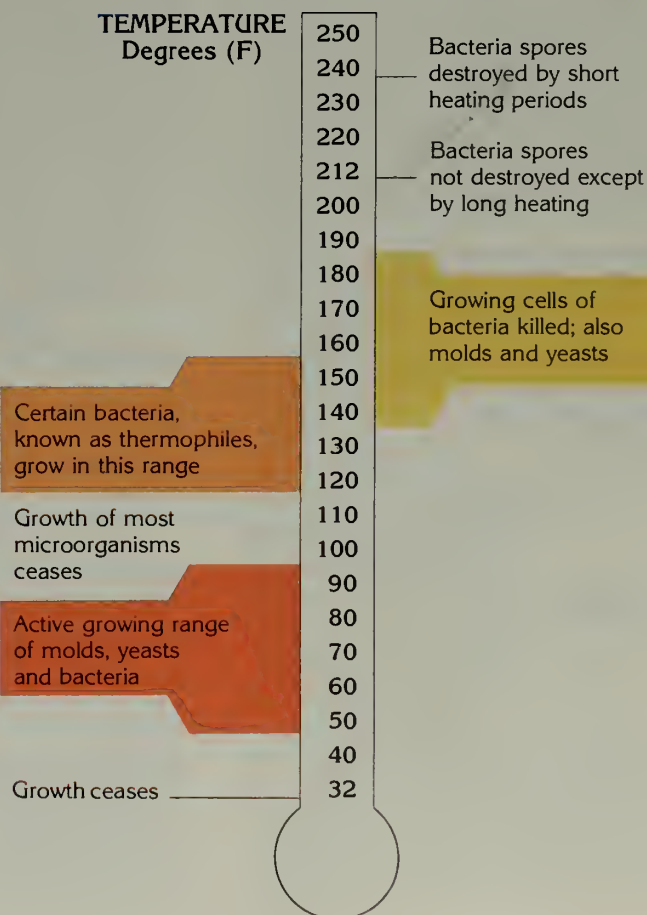


FIGURE 2

GROWTH AND DESTRUCTION OF MICROORGANISMS



TWO METHODS OF CANNING

Boiling Water Bath Method—High-acid foods can be processed in a boiling water bath canner, which is any kettle large enough for the canning jars to be fully surrounded in boiling water and completely immersed under 2 inches of water. Boiling water bath canners are commercially available (See Figure 3). Generally, they have a tight-fitting cover and a metal basket to hold the

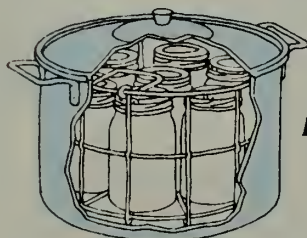


FIGURE 3

jars off the bottom of the kettle and to separate the jars from each other. The jars must be held off the bottom so the heat can penetrate properly. The jars are divided so they will not bump into each other or tip over in the boiling water. The jars must be covered by one to two inches of water when it is briskly boiling so the heat thoroughly penetrates the food at the top of the jar. An additional one to two inches of air space should be allowed between the top of the boiling water and the top of the kettle.

The boiling water bath method is recommended for canning fruits, tomatoes, foods with vinegar added and other acid foods. Butters, conserves, marmalades, jams, jellies and preserves are also processed (at boiling temperatures (212°F)) for 5 to 20 minutes in a boiling water bath canner.

Steam pressure method—Low-acid foods must be processed in a steam pressure canner, which is a heavy kettle with a lid which can be clamped or locked down to make a steam-tight seal (See Figure 4). The lid is fitted with a safety valve, a vent and a pressure gauge.

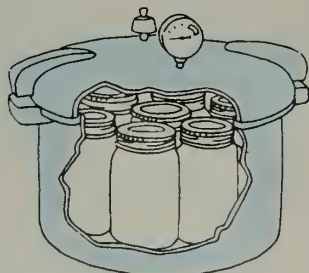


FIGURE 4

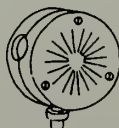
Two types of steam pressure canners are available commercially: those with dial gauges and those with weighted gauges (See Figure 5). Dial gauges must be checked periodically for accuracy according to the manufacturer's instructions, usually prior to

use each year. If the gauge is incorrect, the processing of canned goods will not be accurate and all bacteria, including botulinum spores, may not be killed. If your dial gauge reads more than one pound per square inch (psi) or more too high or too low, you need a new gauge. Your county extension agent or the manufacturer usually can tell you where to have dial gauges checked.



Dial Gauge

FIGURE 5



Weighted Gauge

The vent on your pressure canner allows steam to escape under a controlled pressure. Because the steam inside the kettle is pressurized, its temperature exceeds the boiling point of water, 212°F. At 10 pounds pressure, the temperature will reach 240°F, which is hot enough to kill bacterial spores. If the vent should inadvertently become plugged, the safety valve is designed to pop, releasing pressure and preventing the kettle from exploding.

Because of the twin dangers of under-processed food and steam under high pressure, it is imperative that all parts of the pressure canner be kept clean and in good working order. A string should be drawn through the vent and safety valve openings before the canner is used to make sure they are free of obstruction. Providing the canner is clean and working well and foods are processed for the prescribed times and temperatures, pressure canning is a reliable, efficient method for canning low-acid foods. If, for any reason, the pressure should drop during processing, the entire processing time must be repeated.

The manufacturer's directions should be followed for your own pressure canner. Generally, pressure canners have one or more racks for holding jars, and two to three inches of water are boiled in the canner to produce the steam. Jars may be stacked in a staggered fashion without a rack.

Pressure saucepans with smaller volume capacities are not recommended for use in canning. Smaller capacity pressure canners are treated in a similar manner as standard larger canners and should be vented using the typical venting procedures.

OTHER EQUIPMENT YOU'LL NEED

With the exception of the boiling water bath and steam pressure canners, most kitchens will already have much of the equipment needed for canning.

Some recipes call for specialized utensils, so the recipe should be checked in advance of canning day.

The boiling water bath and steam pressure canners are essential to canning. Any container that is large enough can be substituted for the boiling water bath canner when processing acid foods, but some means of keeping the jars separated from each other and off the bottom of the container are necessary.

A good selection of long-handled spoons and ladles is useful. Measuring cups and measuring spoons are necessary, since ingredients should be carefully measured. A kitchen scale helps to accurately weigh ingredients.

Sharp knives of various sizes speed the work. Kitchen scissors and a vegetable peeler are sometimes needed. A food brush to help in removing all dirt is necessary for cleaning fruits and vegetables.

A colander large enough to hold two quarts or more is a useful item. It should have legs to facilitate drainage. A one-quart sieve with brackets and a handle for holding over the edges of pans is often needed.

Certain recipes call for food choppers or grinders or a food mill. Sometimes a simple kitchen grater can be used in place of these items; sometimes the electric blender or food processor will work well. A juice extractor is sometimes helpful when canning juices and jellies.

Saucepans and sauce pots usually are necessary, depending upon the recipe. A dishpan or sink for washing and rinsing should be available. Of course, jars and closures appropriate for the recipe.

In the case of pickling, ceramic, stone, or glass jars or crocks are used and sometimes wooden kegs and barrels. Utensils made of copper, brass, iron and galvanized zinc should not be used for pickling. These metals may react with acids and salts in the food, causing disagreeable color and taste changes or, possibly, creating poisonous substances.

Jar lifters are especially made for home canners and are so helpful that they're a near-necessity, as are potholders, dishcloths and towels. A nonmetallic spatula should be on hand when jars are being packed. Metal implements should be avoided since they may damage the glass. Special funnels with wide mouths, large enough to hold a cup at a time, are made to fit inside the rims of common-sized jars. A candy thermometer is useful for checking the jelling point in jelly and soft spreads.

Some recipes require cheesecloth or a muslin bag for suspending spices, for straining and for blanching. Gummed

labels and a logbook are useful, but not necessary for record keeping.

Some method of timing accurately is essential. If a special cooking timer is used, it should be capable of being set for the time called for in the recipe. Alarm clocks can be used, although they are usually difficult to set accurately for periods of less than an hour. Many modern ranges have a built-in timer, but these should be checked for accuracy before starting to can. Darkroom timers can be used to good advantage since they are usually accurate down to the second.

All equipment should be assembled and checked for cleanliness and working order before starting to can. Read through the recipe ahead of time and decide in advance the equipment that will be needed. This way you'll avoid searching for a needed item during the critical time when the food is being prepared and processed.

CHOOSING THE RIGHT CONTAINERS AND CLOSURES

Home canning may never have achieved the popularity it enjoys today had it not been for a tinsmith named John Landis Mason. On November 30, 1858, nearly a half-century after Nicholas Appert discovered the principles of canning and shortly after Louis Pasteur discovered that microorganisms cause spoilage, Mason patented a glass canning jar with a threaded opening that could be sealed with a metal cap and a rubber ring for a gasket.

Until then, glass bottles and earthenware jugs sealed with cork stoppers and wax, or tin containers sealed with solder, were used. Mason's invention greatly simplified home canning and made it easy, economical and popular.

While the term "Mason" was once a trade name, the patent on the original jar has long since expired, and "Mason" jar is now a generic term, but the basic idea developed by John Mason is still used today.

CLOSURES

Two-piece Vacuum Caps and Lids— The only closure system recommended today is the two-piece vacuum lid and cap (See Figure 6). The set consists of a flat metal lid with a flanged edge, the underside of which has a rubber-like sealing compound, and a threaded



FIGURE 6

metal screw band which fits over the rim of the jar to hold the lid in place.

The lid is placed over the mouth of the jar so that the sealing compound rests on the rim. Screw the band down firmly so that it is hand tight. Do not use a jar wrench or other device to tighten the screw band.

During processing, there is enough "give" in the lid to allow air to exhaust from the jar. The screw band should not be tightened or loosened after processing. As the jar cools, a vacuum inside the jar will pull the lid down in the center so that it is slightly concave. A slight pinging sound may be heard as the seal is formed. After 12-24 hours the jars will be thoroughly cooled, and the screw bands should be removed since the lid will be held in place by the vacuum. The lid must be discarded after one use, but the screw bands are reusable. A good way to store the bands is in paper bags that are tightly sealed and kept in a dry place.

CONTAINERS

Glass Canning Jars—Glass canning jars, sometimes called mason jars, are the most popular containers for home canning. They come in a wide variety of sizes and styles (See Figure 7). The jars are carefully made so the home canning closures will seal well. The glass in the jars is tempered to withstand the heat of the steam pressure canner or the sub-zero temperatures of the food freezer. However, only can or freeze jars are shaped for use in the freezer. Some jars are designed for home canning and freezing. The shape of the jars and the tempered glass make them suitable for the sub-zero temperatures of the home freezer.



FIGURE 7

Wide-mouth jars are made to allow packing large pieces of food and to make them easier to clean. Some jars have measurement levels marked on them. Some of the fancier home canning jars add a nice touch to fruits, vegetables and jellies. Can or freeze jars can be used for either preservation method and are tapered so that partially frozen food can easily be removed.

Jars are available in sizes from four ounces to a half gallon. Most canners like to choose a size that fits in well with their meal planning. Remember, however, that processing times differ according to the size of the container.

See Figure 8 for estimating the number of jars that will be needed.

Tin Cans—Tin containers, of course, are still used for canning fruits, meats and vegetables, but almost entirely on a commercial basis. The processing times given in this book are for glass jars only and *Do Not Apply To Tin Cans*.

CONTAINERS TO AVOID

"One-trip" jars, like the ones in which you buy commercially canned mayonnaise, peanut butter, instant coffee or baby food, should not be used for home canning. Commercial jars are made to serve a single purpose only—to package commercial food products. They are not meant to be reused for home processing, and they are often made for a food product that is packed cold and, therefore, may not be made to withstand the temperatures used in home canning.

Because metal knives are commonly used to scrape out the last bit of peanut butter or mayonnaise, etc. from a commercial jar, these jars are often scratched on the inside. These invisible scratches weaken the jars and may cause them to break when exposed to heat during canning.

Some of the commercial jars have mouths and threads that appear to be the same as canning jars. In fact, canning lids and caps sometimes do seem to fit the threads of the commercial jars. However, the commercial jar mouth and sealing surface may vary in width, and the rim may have nearly invisible dips. This can prevent the home canning lids from sealing properly.

The commercial jars often do not come in exact pint and quart sizes but are in odd-ounce measures. If the jars are not exactly the size specified in the recipe, then the processing time given will be inaccurate.

Like commercial jars, commercial lids are designed for a single use only. Some of them are made for dry products. Some have treated paper gaskets which are not intended to be airtight. These lids may not seal when used for home canning, and the food may become spoiled.

Containers and closures made and sold especially for home canning should be used.

TWO WAYS TO FILL JARS

Food may be placed into jars while it is hot or cold. The "hot pack" method is usually preferred for nearly all vegetables and meats and for most fruits. "Cold pack," or "raw pack" as it's sometimes called, means placing the food in jars without any precooking, and sometimes is the better method. Either method can be used for most foods, and information throughout this book suggests which method is preferable for particular foods.

A GUIDE TO CANNING EQUIPMENT

Spoons—a necessity for stirring, spooning, packing and lifting. Use wooden spoons for stirring and packing; slotted spoons for lifting. Accurate measuring spoons are essential.



Knives—a variety of knives is necessary, including a good paring knife, a sharp chopping knife (butcher or French) and a vegetable peeler.



Food Brushes—food to be canned must be carefully washed. Food brushes with stiff bristles facilitate this work.



Saucepans—used for preparing recipes and for heating lids.



Measuring Cups—both dry and liquid measuring cups should be on hand.



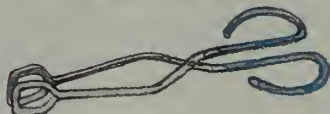
Jelly Bags—made from a thin fabric (usually cheesecloth) to help strain juice from softened fruit and pulp.



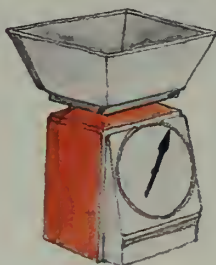
Colander or strainer—helps hold fruit or vegetables after washing. Excellent for draining.



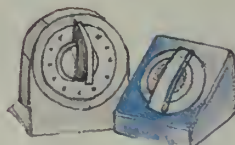
Tongs—kitchen tongs are used for removing home canning lids from hot water and placing the lids on jars as each jar is filled.



Scales—essential for following recipes where ingredients are given by weight. Scale with capacity up to 25 pounds is desirable.



Timer—necessary for measuring processing times accurately by the minute.



Pressure Canner—available in various sizes. Size should be related to needs of the family. Pressure canners may be obtained with either weighted or dial gauges.



Boiling Water Bath Canner—for processing acid foods. Height of kettle is important. Jars, when seated on rack, must be covered by 1 to 2 inches of water, with an additional 1 to 2 inches of air space above to permit boiling.



Crock—a needed item when fermenting food, as in pickling. Crock should be clean and free of cracks. Glaze should not be chipped.



Jar Funnel—commercially available funnels are made especially for canning. A funnel helps avoid getting particles of food on sealing surfaces of jar.



Jar Lifter—may be purchased where canning supplies are sold. Soft plastic coating prevents jars from slipping, and heat resistant handles protect the hand from heat.



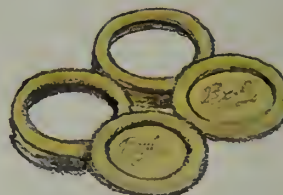
Nonmetallic Spatula—a wooden, plastic or nonmetallic spatula is required to run down sides of filled jars to release air bubbles without damaging interior of jar.



Jar—standard home canning jars should be used. The size of the jar is determined by the recipe.



Lids—standard two-piece vacuum caps and lids should be used. Directions should be followed carefully.



Hot Pack—The hot pack method is generally preferred where the food being canned is relatively firm and handles well. Precooking the food makes it more pliable, permits a tighter pack and requires fewer jars. Generally, the food is first cooked in water, a syrup or in the juice that is extracted. Fruit canned without sweetening is always hot packed.

In the boiling water bath method, food that is hot packed requires less processing time than raw packed, because it is already hot when it goes into the canner. With the steam pressure canner, however, there is no difference in processing time. This is because by the time the pressure reaches 10 pounds and you begin counting processing time, the raw packed food has become as hot as it would have been if it were packed hot to begin with.

Raw Pack—Foods that would be delicate after they are cooked, such as whole peaches, are usually easier to handle if they are raw packed. The food is placed into the jars while it is raw. It should be packed firmly but

should not be crushed. There usually will be some shrinkage when the food is processed, and some foods may float to the top of the jar. After packing, boiling syrup, juice or water is added to foods that require additional fluid. Whether the boiling water bath or the steam pressure method is to be used, the packed jars should not be put into boiling water in the canner. Since they are still cold, they may break.

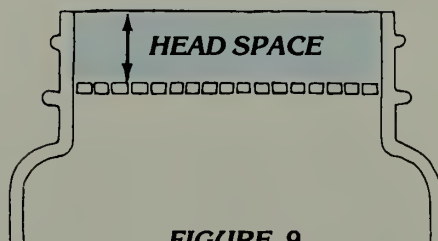


FIGURE 9

HEAD SPACE

Whether the boiling water bath or the steam pressure canner method is being used, a certain amount of "head space" must be allowed. This is the space in the jar between the inside of the lid and the top of the food or its liquid (See Figure 9). Some foods, espe-

cially those that are starchy, swell more in the canner than others and, therefore, require more head space.

If too little head space is allowed, the food may expand and bubble when air is being forced out from the lid during processing. The bubbling food may leave a deposit on the rim of the jar or the seal of the lid and prevent the jar from sealing properly.

If too much head space is allowed, the food at the top is likely to discolor. And, if there is too much head space, the jar may not seal properly because there will not be enough processing time to drive all the air out of the jar.

This book specifies the proper head space for each recipe. As a general rule, leave a 1-inch head space for low-acid foods, vegetables and meats; ½-inch head space for acid foods, fruits and tomatoes; ¼-inch head space for juices, jellies and semi-soft spreads, pickles and relishes.

STARTING TO CAN

For some, the canning season starts with the planting of a garden in the spring. They know what their family's likes and dislikes are, so they start plan-

FIGURE 8 JAR ESTIMATING

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.

Raw Produce	Measure and Weight	Approximate Number Quart Jars Needed	Approximate Amount Needed for 1 Quart Jar
Fruits			
Apples	1 bu (48 lb)	16-20	2½ to 3
Applesauce	1 bu (48 lb)	15-18	2½ to 3½
Apricots	1 lug (22 lb)	7-11	2 to 2½
Berries	24 quart crate	12-18	1½ to 3
Cherries	1 bu (56 lb)	22-32 (unpitted)	2 to 2½
	1 lug (22 lb)	9-11 (unpitted)	2 to 2½
Peaches	1 bu (48 lb)	18-24	2 to 3
	1 lug (22 lb)	8-12	2 to 3
Pears	1 bu (50 lb)	20-25	2 to 3
	1 box (35 lb)	14-17	2 to 3
Plums	1 bu (56 lb)	24-30	1½ to 2½
	1 lug (24 lb)	12	1½ to 2½
Tomatoes	1 bu (53 lb)	15-20	2½ to 3½
	1 lug (30 lb)	10	2½ to 3½
Tomatoes (for juice)	1 bu (53 lb)	12-16	3 to 3½
Vegetables			
Beans, Lima (in pods)	1 bu (32 lb)	6-10	3 to 5
Beans, Green or Wax	1 bu (30 lb)	12-20	1½ to 2½
Beets (without tops)	1 bu (52 lb)	15-24	2 to 3½
Carrots (without tops)	1 bu (50 lb)	16-25	2 to 3
Corn, Sweet (in husks)	1 bu (35 lb)	6-10 (whole-kernel)	3 to 6
Okra	1 bu (26 lb)	16-18	1½ to 2
Peas, Green (in pods)	1 bu (30 lb)	5-10	3 to 6
Spinach and other greens	1 bu (18 lb)	3-8	2 to 6
Squash, Summer	1 bu (40 lb)	10-20	2 to 4
Sweet Potatoes	1 bu (50 lb)	16-25	2 to 3
Meats — Poultry			
Steer (prime quality)	800 lb	175-200	2 to 3
Hog	300 lb	30	2 to 3
Chicken (with bone)	3-4 lb	1	3 to 4

ning what and how much to can when they put in their gardens.

For others, including those who plan to buy fresh produce, plans for canning should be made well in advance. Much of the success of canning depends on timing—being ready with containers, closures and equipment when produce reaches its prime condition. For help in planning, see Figures 10 and 11.

Determine ahead of time the varieties and amounts of canned food your family will want to eat in the months ahead. This way you will not end up with large amounts of one or two fruits and vegetables that your family will soon tire of. Properly canned food will keep indefinitely, but it is better to can just the amounts that will be needed until next canning season rolls around. The longer canned food is stored, the greater the opportunity for deterioration. Properly canned food has a **RECOMMENDED** shelf life of approximately one year.

It's more enjoyable to can a few jars a day for a period of days, than to devote a whole day to canning. Usually, fruits and vegetables should be canned when they reach their most perfect stage for table use, and rarely do all ripen on the same day.

Long before the produce is ready, you should decide the sizes and types of jars and closures you are going to need. Jars should be selected on the basis of the type of food being canned and the size of the family. If your family's appetite is small, plan to use the smaller size jars for most canning.

Check over your supply of jars and closures well ahead of time. Make sure you have the size of jars called for in the recipes. Visually examine jars and sealing surfaces for nicks, cracks and sharp edges. Discard any that are imperfect. Check to make sure screw bands are not bent.

Shop for any additional jars and closures that are needed well in advance of canning day. This way you will not be disappointed if you are unable to locate the supplies you need at the time fruits and vegetables are ready to can.

Check your canning equipment to make sure it is clean, is in good working order and that nothing is missing. Dial gauges on pressure canners especially should be checked in advance to make sure they are accurate.

Assemble all equipment and supplies in one place so everything is ready to use when you start to can. Nothing can be more disconcerting than looking for a mislaid box of lids or the rack for the boiling water bath canner at the last minute.

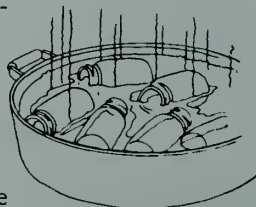
Wash jars in hot, soapy water and rinse well. If a dishwasher is used to clean the jars, leave jars in the machine

INSTRUCTIONS FOR USING TWO-PIECE VACUUM CAPS AND LIDS

1. Visually examine jars and sealing surfaces for nicks, cracks and sharp edges. Discard any damaged jars. Examine vacuum lids and screw bands and discard any that are bent, rusted or otherwise defective.



2. Follow manufacturer's directions for vacuum lids and screw bands. In general, jars, lids and screw bands should be washed in warm, soapy water and rinsed in hot water. Jars should be sterilized if food is to be processed for less than 10 minutes. Lids should be placed in water and brought to a simmer (180°F). Remove lids from heat. Allow jars and lids to remain in hot water until needed.



3. Pack food into jar, leaving head space recommended in recipe. Eliminate air bubbles with a nonmetallic spatula. Wipe away any food residue from top edge and threads of jar with a clean, damp cloth.



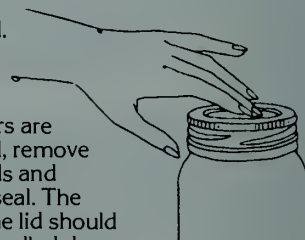
4. Place lid on mouth of jar so that sealing compound rests on top edge.



5. Screw the band down firmly, so that it is hand tight. Do not use jar wrench or other device to tighten the screw band.



6. Process jars of food as recommended in recipe. After processing, remove jars from canner. A slight ping-pong sound may be heard as jars cool, indicating that seal has formed.



7. When jars are fully cooled, remove screw bands and check the seal. The center of the lid should have been pulled down by vacuum and will be slightly concave. Wash outside jar surface. Store properly sealed jars in cool, dark, dry place.

8. To open, break the vacuum and lift lid off. Discard lid; it is not reusable.



until they are ready to be filled as long as sterilization is not required. Do not use wire brushes, steel wool, or abrasive materials for cleaning jars; they are likely to damage the glass.

Jars that will be processed for less than 10 minutes must be sterilized. To sterilize jars before filling, place them right side up on the rack in a boiling water bath canner. Fill the canner and jars with hot (not boiling) water to 1 inch above jar tops. Boil 10 minutes at altitudes of less than 1,000 feet above sea level. At higher elevations, boil 1 additional minute for each additional 1,000-foot elevation. Allow jars to remain in hot water until ready to use,

removing one at a time as needed. Retain water in canner for processing filled jars. Jars to be processed for 10 minutes and longer do not need to be sterilized, but must remain hot until ready to be filled.

In handling the jars, care should be taken that you do not crack or break them due to sudden changes of temperature.

Never put a hot jar on a cold or wet surface or in a draft. Never pour boiling water or other boiling liquids into a cool jar.

The manufacturer's directions for using vacuum lids and screw bands

must be followed closely. Generally, closures should also be washed in hot, soapy water and rinsed well. Vacuum lids are placed in water and brought to a simmer (180°F). Then the lids are removed from the heat and should remain in the water until ready for use to protect them from microorganisms.

When everything is ready, watch the garden or produce market for fruits and vegetables that are in top condition. All fruits or vegetables to be canned together should be of the same relative size so the heat will penetrate evenly. Any produce that is not completely ripe should be set aside for additional ripening. Badly blemished produce should not be canned at all because it may produce a product of very low quality or one that will easily spoil. Small blemishes should be carefully trimmed away.

Fruits and vegetables should be

washed well and drained before cutting or breaking the skin or before removing hulls (caps), cores, pits, seeds or skins. If necessary, use several rinses, lifting the produce out of the rinse water so the dirt that is washed off will remain in the water.

Only enough food for one canner load at a time should be prepared. Directions in the recipe should be followed closely. Special care should be taken in filling the jars. Special plastic jar funnels are available to help with packing. Head space must be carefully measured to achieve proper venting and sealing of the jar.

After the food has been packed in the jar, any air bubbles that are present must be removed. This can be done by running a nonmetallic spatula around between the food and the jar. **Do not use metal knives or other metal devices, since they may nick the bot-**

toms of the jars and cause breakage.

The tops of the jars should be wiped with a clean, damp cloth. Particles of food that remain on the tops of jars could prevent a tight seal.

Food should be processed immediately after the jars are closed to minimize the possibility of microorganisms entering the food. After processing, the jars should be removed promptly from the canner. Food allowed to remain in a boiling water bath canner for too long a period will be over-processed and will lose some of its nourishment. With a pressure canner, a cooling down period of 10 minutes should be allowed before removing the jars from the canner. If jars are lifted from the canner too soon, a cool draft can cause the glass to break. For safety, a commercially available jar lifter should be used to remove jars from the can-

FIGURE 10 GARDEN PLANNING GUIDE

AMOUNT OF FOOD TO BE GROWN AND PRESERVED FOR A FAMILY OF 6 PERSONS

Vegetables by Groups	Pounds to Raise for Preserving (lbs)	Quarts to Preserve	Yield Per 100 Ft. Row (lbs)	Foot Row Length Needed (ft)	Seed or Plants Per 100 Ft. Row (oz)	Days to Maturity	Depth to Plant Seed (in)	Distance Between Plants (in)	Distance Between Rows (in)
HIGH IN VITAMIN A & C									
Spinach	40	20	50	90	1	40-50	½	2-4	12-18
Turnip Greens	40	20	45	100	½	30	½		
Broccoli	48	24	60	85	60 plants	80		12-18	30-36
HIGH IN VITAMIN A									
Carrots	40	20	75	60	½	55-75	½	2-3	12-18
Sweet Potato	48	24	80	60	100 plants	120		12-18	36-48
Winter Squash	40	20	400	10	½ or 4-5 seeds per hill	from plants 60-110	1	9-12 3' hills	84-120
HIGH IN VITAMIN C									
Tomato — Whole	120	60	380	100	50 plants	50	Not Staked	18-36	36-60
Juice	240	120				from plants			
Peppers	44	22	60	75	65 plants	70		18-24	18-24
Cauliflower	72	36	120	60	60 plants	100	from plants	18-24	24-36
GREEN VEGETABLES									
Peas	48	24	40 in pods	300	16	50-60	2	2	18-24
Green Beans	120	60	60	200	16	40-60	½	4	18-24
Okra	30	15	65	55	1		1	12	36
STARCHY VEGETABLES									
Sweet Corn	72	36	85 ears	200	4	60-90	½	9-12	24-48
Lima Beans	48	24	25 in pods	400	12	60-75	½	8-10	18-30
VEGETABLES FOR VARIETY									
Beets	24	12	60	40	1	50-70	½-1	2-4	12-18
Cucumbers			100	20	½ or 4-5 per hill		½-1	12 plants 3' hills	40-72
Lettuce Leaf				15			½	8	18-24
Onions			100	10	32 sets				12-18
Radish			100	10		25-30	½	1-2	12-18
Turnips	24	12	100	25	½	50-60	½	6	12-18
Pumpkin	24	12	300	10	½ or 4-5 seeds per hill	90-100	1	24 plants 3' hills	84-120

ner. These tong-like devices often have heat resistant handles to protect against burns and soft plastic tips to protect the jars.

If food has boiled out of the tops of the jars during processing, do not attempt to readjust the lids, since this will probably break the seal. After the jars have cooled, wipe the residue away. If, for any reason, the jar obviously has failed to seal, use a new lid and reprocess for the full length of time called for in the recipe or refrigerate the food immediately.

Jars removed from the canner should be placed upright on cloths or wooden boards to cool. They should be kept out of drafts to avoid breakage. The jars should be placed a few inches apart to allow cooling. Jars should be allowed to cool for 12-24 hours before storing.

METHODS TO AVOID

Only the boiling water bath and the pressure canner methods are recommended for canning. Instructions in this book apply only to these two proven methods. Recently, with the back-to-earth movement, some older methods of preserving food are being revived. Some of these were unreliable to begin with and that's why they no longer are recommended. Conversely, with rapid advancements in technology, new gadgetry is being tried for

canning. These methods have not been proven and should be avoided by the home canner.

Open Kettle—Open kettle canning is not safe or recommended for home food preservation. In the open kettle method, food is first cooked in an open pan and then put into jars. The lids are quickly put in place with the hope that a proper seal will be achieved as the food cools. Jars are filled and capped one at a time.

The open kettle method is obviously *not safe*, because it is impossible for the food to reach the temperatures necessary for killing spoilage microorganisms. This may cause the lid to seal and later unseal as the under-processed food spoils, produces gas within the jar and forces up the lid. Also, a proper seal may not be obtained. There is also the possibility that organisms will enter the food while it is being transferred from kettle to jar, or that the jar and lid are not thoroughly sterilized.

Aspirin—Do not use aspirin as a substitute for processing. While aspirin contains a weak germicidal agent that acts as a preservative, it is not adequate for preventing spoilage. Other hazards:

—There is no evidence to indicate its acceptability for preventing spoilage.

—It has no effect on enzymatic reactions which cause deterioration.

—Because there is no heat treatment, no vacuum can form to seal the container, and so deterioration is accelerated.

Dishwasher—Since there is no way to control the temperature or the processing time, this method is unsafe.

Microwave Oven—Otherwise identical jars of canned food placed in a microwave oven for processing do not all reach the same temperatures. In order to measure internal temperatures, the lids must be left off and a thermometer inserted. With the lids off, contamination can enter, and canning containers and lids are made in such a way that they will not seal properly unless they are on the jars during processing.

Oven Canning—Oven canning is dangerous because jars may explode when the oven door is opened. Other than that, it is unsafe, even for acid foods, because the temperature of the food does not become hot enough to destroy bacteria.

Steam Canning—Not to be confused with pressure canning, steam canning is conducted in a covered cooker with a shallow bottom pan which allows steam to circulate around the filled

FIGURE 11 CANNER'S PLANNING GUIDE

This guide is based on the United States Department of Agriculture's Daily Food Guide. Only foods that may be canned are listed. It covers a one-year period. Few families serve canned meat at all meals, so we have allowed for four servings of canned

meat a week; in addition, 10 other servings of meat, poultry, seafood 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.

Product	Number Times Served	Approximate Size Serving	Amount Needed One Person	Amount Needed Family of 4
Citrus Fruit and Tomatoes (Includes juices)	7 per week - 36 weeks	1 cup	63 quarts	252 quarts
Dark Green and Yellow Vegetables Spinach and other greens, carrots, sweet potatoes, yellow winter squash	4 per week - 36 weeks	½ cup	18 quarts	72 quarts
Other Fruits and Vegetables Apples, apricots, peaches, pears, asparagus, green beans, Lima beans, corn, green peas, summer squash, etc.	17 per week - 36 weeks	½ cup	76 quarts	304 quarts
Meats, Poultry, Seafoods	4 per week - 36 weeks	½ cup (2-3 oz.)	18 quarts or 36 pints	72 quarts or 144 pints
Soups	2 per week - 36 weeks	1 cup	18 quarts	72 quarts
Jams, Jellies, Preserves	6 per week - 52 weeks	2 tablespoons	40 half pints	160 half pints
Relishes	3 per week - 52 weeks	1 tablespoon	5 pints	20 pints
Pickles, Vegetables	2 per week - 52 weeks		13 pints	52 pints
Pickles, Fruit	2 per week - 52 weeks		13 quarts	52 quarts

jars. Steam in this type of canner does not maintain a steady flow of even temperature, so it is impossible to know if the heat has penetrated properly.

ADJUSTMENTS FOR ALTITUDE

Because air is thinner at higher altitudes, both pressures and boiling points are affected. Water will boil furiously at temperatures well below 212°F at altitudes of 1,001 feet or more above sea level. That means that with both the boiling water bath and the pressure canner methods, adjustments in processing must be made. With the boiling water bath methods, additional processing time must be allowed. With the pressure canner method, additional pressure is required. Figure 12 shows the requirements for both methods at various altitudes.

If you do not know the altitude in which you live, contact your local county extension agent. An alternative source of information would be the district conservationist with the local Soil Conservation Service.

All of the water bath canner processing times given in the recipes in this book are for processing at or below 1,000 feet above sea level. If you can above this altitude, you must increase the processing time to correct for the lower boiling temperature. After determining your correct altitude, refer to the Boiling Water Bath Canner chart in Figure 12 to adjust the processing time for your location.

All of the pressure canner processing pressures given in the recipes in this book are given for processing at or below 1,000 feet above sea level. If you are canning above this altitude, the processing time stays the same for the recipe, but the pressure is increased as needed. Refer to the Steam Pressure Canner chart in Figure 12 to determine adjustments in processing pressure for your location. Do not raw pack vegetables at altitudes above 6,000 feet.

HOW TO COUNT PROCESSING TIME

It is necessary to process foods for the exact times given in recipes. Too little time may result in the food spoiling; too much time will cause the food to be overcooked.

Boiling Water Bath Method—In the boiling water bath method, jars are placed into the canner in hot water if they have been raw packed. If they have been hot packed, the water in the canner should be simmering. When the jars are placed in the canner, the

temperature of the water will be reduced. Add boiling water, if necessary, to bring the water an inch or two over tops of the jars. Do not pour the water directly onto glass jars, since they may break. Cover the canner and bring the water to a rolling boil. Start counting processing time at point the rolling boil begins. Allow the water to boil gently but steadily for the time required (See Figure 14). Add boiling water if needed to keep tops of jars covered. Remove the containers from the canner immediately when the processing time is up.

Steam Pressure Canner—In pressure canning, put two to three inches of hot water in the canner or the amount recommended by the manufacturer. Place the jars in the canner so that steam can flow freely around each container. Fasten the canner cover securely so that steam escapes only through the vent. Allow steam to vent steadily according to manufacturer's instructions, or for 10 minutes to drive all air from the canner. Otherwise, you will have air pressure as well as steam pressure, and you'll get a faulty pressure reading. If you are using a dial gauge, close the petcock at this point. If you are using a weighted gauge, put the weight in place. Bring to 10 pounds pressure. For either type of gauge, follow the manufacturer's directions to

determine when 10 pounds pressure have been reached, and start counting processing time at this point (See Figure 15). Use the manufacturer's instructions for opening the canner. A cooling down period should be allowed before removing the jars from the canner to avoid breakage.

PROPER PROCESSING METHODS

For your safety and convenience, recipes in this edition of the *Blue Book* have been marked with colored symbols indicating proper methods of processing. To help you remember, we've chosen blue for the boiling water bath method and red for the steam pressure method. The symbols and the processing method are:



boiling water bath method



steam pressure method

AFTER CANNING

After jars of food have thoroughly cooled, they should be checked to see if a proper seal has been obtained.

Modern two-piece vacuum lids with metal screw bands are easily checked for a proper seal, which helps account

FIGURE 12 ALTITUDE CHART

The processing times given in this book are for foods canned at altitudes of 1,000 feet or less above sea level when using the boiling water bath canner. At altitudes of 1,001 feet or above, adjust the processing time according to the Boiling Water Bath Canner chart.

When using the steam pressure canner, the pressure given is for weighted gauge canners at altitudes equal to or below 1,000 feet above sea level. At altitudes of 1,001 feet or above, adjust the processing pressure according to the Steam Pressure Canner chart and the type of canner being used.

BOILING WATER BATH CANNER

ALTITUDE (FEET)	INCREASE PROCESSING TIME
1,001- 3,000	5 minutes
3,001- 6,000	10 minutes
6,001- 8,000	15 minutes
8,001-10,000	20 minutes

STEAM PRESSURE CANNER

ALTITUDE (FEET)	DIAL GAUGE (PSI)	WEIGHTED GAUGE
0- 1,000	11	10
1,001- 2,000	11	15
2,001- 4,000	12	15
4,001- 6,000	13	15
6,001- 8,000	14	15
8,001-10,000	15	15

for their popularity. A slight pinging noise may be heard as the jar cools. This indicates that a vacuum has formed, sealing the food. The center of the lid is pulled down by the vacuum, creating a slightly concave surface. If you are not sure the surface of the lid is concave, remove screw band and push down in the center (See Figure 13).

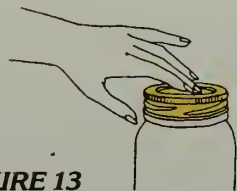


FIGURE 13

If it does not push down, the jar is sealed. If it pushes down but then springs up, the jar is not sealed, and the food has to be eaten or reprocessed promptly. If the lid is not concave, but pushes down and holds, the seal is questionable. In this case, remove the screw band and lift the jar by the edges of the lid. Care should be taken in doing this because the jar may break or spill. Hold over a padded surface and lift only

a fraction of an inch. If the lid comes off, the food should be eaten or reprocessed promptly, using a new lid. When it has been determined that a tight seal exists, the outside surface of each jar should be washed with warm, soapy water and thoroughly dried by hand before storing.

Sealed jars of food should be stored without the screw band. The purpose of the screw band is to merely hold the lid on the jar until the vacuum has formed and the lid has sealed. If the bands are stored on the sealed jars, they will become corroded and difficult to remove.

It is a good idea to label each jar of food. The date that the food was canned should be included. Food that has been properly canned will keep indefinitely, but after a year some chemical changes do occur. For this reason, food that has been canned the longest period of time should be used first. The label might also include information on the type and variety of food that was canned, the recipe used, whether the food was hot or cold packed and any additional information desired. This

kind of information can help in the future to duplicate successes and eliminate failures.

Canned food should be kept in a cool, dark, dry place. Even foods that are properly processed will lose some of their nourishing qualities over a period of time. This process is accelerated if the food is stored at temperatures above 50°F. On the other hand, the food should not be stored where it might be subject to freezing, since the food can expand and break the seal.

Light hastens the oxidation and destroys certain vitamins, so the food should be stored in a place that is dark most of the time. Light will also cause certain foods to fade in color. To protect canned food from the deteriorating effects of light, jars may be stored in the cardboard cartons in which they were purchased.

Jars of food should be arranged in their storage place so they are convenient to locate, and so the oldest jars can be used first. Canned food should be checked regularly for signs of spoilage. Any food that has spoiled should be carefully destroyed so that it cannot be eaten by humans or animals.

To open jars with vacuum lids, break the vacuum and lift off the lid. This method of removing lids will prevent damaging the jar mouth surface. The vacuum lids are not reusable.

SIGNS OF SPOILAGE

Before tasting, check the food for signs of spoilage. Indications that the food has spoiled include broken seals, seepage, mold, gassiness, spurting liquid when the jar is opened, sliminess, cloudiness and disagreeable odors.

Even if no signs of spoilage are obvious, canned meats and vegetables and other low acids must be boiled for 15 to 20 minutes before tasting. Fruits, which are acids, do not have the risk of botulism present as do low-acid meats and vegetables. Even though it is not practical to boil fruits, they should be carefully examined before eating. All spoiled food should be destroyed so that it cannot be eaten by humans or animals.

FIGURE 14 CANNING TIME REFERENCE FOR BOILING WATER BATH CANNER

		Boiling Water Bath (212°F) Processing Time in Minutes		
FRUITS	TYPE PACK	½ PINTS	PINTS	1 ½ PINTS AND QUARTS
Apples	Hot	15	20	20
Applesauce	Hot	15	20	20
Apricots	Raw	20	25	30
Apricots	Hot	15	20	25
Berries	Raw	10	15	20
Berries	Hot	10	10	15
Cherries	Raw	20	25	25
Cherries	Hot	10	15	20
Currants	Raw	10	15	20
Dried Fruits	Raw	10	15	20
Grapes, Ripe	Raw	10	15	20
Grapes, Unripe	Raw	15	20	25
Grapefruit	Raw	10	10	10
Guavas	Hot	10	15	20
Loquats	Hot	10	15	20
Mixed Fruits	Hot	15	20	25
Nectarines	Raw	20	25	30
Peaches	Raw	20	25	30
Peaches	Hot	15	20	25
Pears	Hot	15	20	25
Pineapple	Hot	10	15	20
Plums	Hot	15	20	25
FRUIT JUICES	Hot	See individual recipes, for processing temperatures vary according to fruit used.		
ACID VEGETABLES — Pickles — See Pickle Section				
Rhubarb	Hot	10	15	15
Sauerkraut	Hot	15	15	20
Tomatoes	Hot	40	40	45
Tomato Juice	Hot	40	40	45

FIGURE 15

CANNING TIME REFERENCE FOR STEAM PRESSURE CANNER

LOW-ACID VEGETABLES	TYPE PACK	Steam Pressure Canner (240°F) 10 Pounds Pressure Processing Time in Minutes	
		½ PINTS & PINTS	1 ½ PINTS & QUARTS
Asparagus	Raw or Hot	30	40
Beans** Green, Snap, Wax	Raw or Hot	20	25
Beans** Lima and Butter	Raw or Hot	40	50
Beets	Hot	30	35
Carrots	Raw or Hot	25	30
Corn, Whole-kernel	Raw or Hot	55	85
Corn, Cream-style	Hot	85	Not recommended
Greens (all kinds)	Hot	70	90
Hominy	Hot	60	70
Okra	Hot	25	40
Peas** Blackeye, Crowder, Field	Raw or Hot	35	40
Peas** Green or "English"	Raw or Hot	40	40
Peppers, Green	Hot	35	Not recommended
Potatoes, White	Hot	35	40
Potatoes, Sweet	Hot and Wet	55	90
Rutabagas	Hot	30	35
Salsify or Oyster Plant	Hot	25	35
Spinach	Hot (See Greens)	70	90
Squash, Summer	Hot	30	40
Tomatoes with Okra	Hot	30	35
Tomatoes, stewed	Hot	15	20
Turnips	Hot	30	35

MEATS, POULTRY, SEAFOODS

Chili	Hot	75	90
Chopped Meat** Beef, Veal, Lamb, Mutton, Pork, Venison	Hot	75	90
Corned Beef	Hot	75	90
Meat Sauce, Stew	Hot	75	90
Pork Sausage	Hot	75	90
Pork Tenderloin	Raw or Hot	75	90
Roasts** Beef, Veal, Lamb, Mutton, Pork, Venison	Hot	75	90
Spareribs	Hot	75	90
Steaks and Chops** Beef, Veal, Lamb, Mutton, Pork, Venison	Raw or Hot	75	90
Poultry, Rabbit and Squirrel** Boned	Hot	75	90
Poultry and Rabbit** On Bone	Raw or Hot	65	75
Chicken a la King	Hot	65	75
Clams	Hot	70	Not recommended
Crab Meat	Hot	80	Not recommended
Salmon, Shad	Raw	100	Not recommended
Shrimp	Raw	45	Not recommended
Smelt (in Tomato Sauce)	Raw	50	Not recommended

SOUPS

Bean	Hot	60	70
Clam Chowder	Hot	100	Not recommended
Vegetable	Hot	Length of time needed for vegetable requiring longest processing time	



ACID FOODS

Foods high in acidity are perhaps the easiest products to can. Fruits are fun to put up, convenient to have on hand and they add dessert excitement to family and party meals. Other acid foods are also easy for the home canner to preserve.

Tomatoes, which are botanically classified as fruits, are especially popular with home canners. Rhubarb, which is grown like a vegetable but usually is sweetened and used like a fruit in pies and other desserts, is relatively high in acidity and therefore is processed as an acid food. Sauerkraut, which is fermented cabbage, has higher acidity than raw cabbage and therefore falls into the acid group.

The soft spreads—jellies, jams, conserves, butters, marmalades and preserves—are made from fruit and also are acids; but because handling is somewhat different for these products, they are covered in a separate section.

Likewise, pickles and relishes, frequently made from low-acid ingredients, are treated as acids in canning because they contain vinegar, which is high in acidity. Here again, the handling is much different than for other acids; so, a special section is devoted to pickles and relishes.

Because heat resistant bacteria do not thrive in acids, the lower temperature of the boiling water bath canner (212°F) is adequate for processing acids. The times given in recipes in this book are for foods processed at altitudes under 1,000 feet above sea level. For higher altitude areas, adjustments in processing time must be made as in Figure 12.

TO PREVENT DARKENING

Apples, apricots, peaches, pears and some other fruits tend to darken while they are being prepared for canning or after they are in the jar. To prevent darkening, use a commercial mixture of ascorbic and citric acid according to manufacturer's instructions. Drop fruit into the solution as it is prepared. Do not leave the fruit in the solution longer than 20 minutes. Rinse thoroughly before packing. To prevent darkening in the jar, use a commercial mixture of ascorbic and citric acid according to manufacturer's instructions.

Fruits are canned with a syrup made ahead of time with sugar and sometimes corn syrup or honey and water or fruit juice (See Figure 16).

Measure sugar and liquid into a saucepan. Cook until sugar dissolves.

Keep syrup hot until needed, but do not let it boil down. Usually 1 to 1½ cups of syrup are needed for each quart of fruit.

STEP-BY-STEP CANNING OF ACID FOOD

1. Read "Learning about Canning" on pages 2-13.
2. Assemble all equipment and utensils. Make sure everything is clean.
3. Check jars for nicks and cracks. Wash jars and closures in hot, soapy water. Rinse. Keep jars in hot water until ready for use. Put lids in saucepan filled with water and place on stove to simmer (180°F). Remove saucepan from heat. Allow lids to remain in hot water until needed.
4. Select firm, ripe, unblemished produce. Prepare enough for one canner load at a time. Wash and rinse thoroughly before peeling.
5. Follow recipe closely.
6. Pack food in jars loosely enough for juice to circulate between pieces without wasting space.
7. Cover food with boiling water, boiling syrup, juice, brine or pickling solution as directed in recipe. Leave recommended head space.
8. Remove air bubbles.
9. Wipe top and threads of jar with clean, damp cloth. Adjust caps.
10. Place each jar as it is filled onto elevated rack over canner containing simmering water. When rack is filled, lower into canner and add simmering water to cover jars 1 to 2 inches. Cover canner and bring water to a boil. Adjust heat to hold water at a steady boil. Start counting processing time when water reaches a full boil. If, during processing time, water should boil away and the tops of jars become exposed, cover them with 1 to 2 inches of boiling water.
11. When processing time has been completed, remove jars from canner. Stand jars on a cloth, out of drafts and with space between.
12. After 12 to 24 hours, remove bands and test seals.
13. Wash outside jar surface. Store sealed jars in dark, dry, cool place.



boiling water bath method



steam pressure method

FRUITS



APPLES-HOT PACK

Make light or medium syrup. Wash, drain, core, pare and slice cooking apples (or cut into halves or quarters). Treat to prevent darkening. See instruction on this page. Drain, boil in syrup 5 minutes. Pack hot into hot jars, leaving ½-inch head space. Cover with boiling syrup, leaving ½-inch head space. Remove air bubbles. Adjust caps. Process pints and quarts 20 minutes in boiling water bath.



APPLES-FOR PIES

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



APPLE RINGS

Choose medium-sized, well-shaped, just-ripened, apples which hold their shape when cooked (allow 1½ pounds of apples for each pint).

Wash apples in cold water. Core, then slice into ¼-inch rings. Treat to prevent discoloration. See instructions on this page.

Dissolve 4 cups sugar in 1 quart water. Add food coloring for desired color. Place over heat, bring to a boil and boil 5 minutes. Remove from heat, add drained apple rings and allow to stand 10 minutes. This helps firm the apples. Return to heat, 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 syrup.

Drain off the syrup and bring to a boil. Pack apple rings loosely in hot jars, leaving ½-inch head space. Cover with the boiling syrup, leaving ½-inch head space. Remove air bubbles. Adjust caps. Process pints 15 minutes, quarts 20 minutes in boiling water bath.

NOTE: Cinnamon or other spices may be added to the syrup for extra

FIGURE 16 SYRUPS FOR CANNING

TYPE OF SYRUP	APPROX. % SUGAR	SUGAR	WATER	YIELD OF SYRUP
Extra Light	20	1¼ cups	5½ cups	6 cups
Light	30	2¼ cups	5¼ cups	6½ cups
Medium	40	3¼ cups	5 cups	7 cups
Heavy	50	4¼ cups	4¼ cups	7 cups

Medium with Corn Syrup: Use 1½ cups sugar, 1 cup corn syrup to 3 cups liquid.

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

flavoring. Spiced apple rings may be prepared by using a spiced syrup.

APPLE SAUCE

Wash, pare, 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 $\frac{1}{4}$ cup sugar to 4 medium apples). Reheat to a boil. Pour boiling hot into hot jars, leaving $\frac{1}{2}$ -inch head space. Remove air bubbles. Adjust caps. Process pints and quarts 20 minutes in a 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.

Raw Pack—Make medium or light syrup. Wash, drain and cut fruit into halves. Pit. Treat to prevent darkening (See page 15). Drain. Pack into hot jars, leaving $\frac{1}{2}$ -inch head space. Cover with boiling syrup, leaving $\frac{1}{2}$ -inch head space. Remove air bubbles. Adjust caps. Process pints 25 minutes, quarts 30 minutes in boiling water bath.

Hot Pack—Make medium or heavy syrup. Wash and scald apricots. Remove skins. Cut into halves and pit. Treat to prevent darkening (See page 15). Drain. Cook a few apricots at a time in syrup until hot through. Pack hot into hot jars, leaving $\frac{1}{2}$ -inch head space. Cover with boiling syrup, leaving $\frac{1}{2}$ -inch head space. Remove air bubbles. Adjust caps. Process pints 20 minutes, quarts 25 minutes in boiling water bath.

BERRIES

Raw Pack—Use for red raspberries and others (except strawberries) which do not hold shape well. Make light or medium syrup. Wash berries in cold or ice water to firm fruit. Drain. Pour about $\frac{1}{2}$ cup boiling syrup into hot jars. Fill jars with berries. Shake jar to pack berries closely without crushing, leaving $\frac{1}{2}$ -inch head space. Add more hot syrup, if needed, leaving $\frac{1}{2}$ -inch head space. Remove air bubbles. Adjust caps. 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 sauce pot; add $\frac{1}{4}$ to $\frac{1}{2}$ cup sugar for each quart berries. Let stand 2 hours. Cook until sugar dissolves and berries are hot through. Pour hot into hot jars, leaving $\frac{1}{2}$ -inch head

space. If there is not enough syrup to cover berries, add boiling water, leaving $\frac{1}{2}$ -inch head space. Remove air bubbles. Adjust caps. Process pints and 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 jars, leaving $\frac{1}{2}$ -inch head space. If there is not enough juice to cover berries, add boiling water, leaving $\frac{1}{2}$ -inch head space. Remove air bubbles. Adjust caps. Process pints and quarts 15 minutes in boiling water bath.

BLUEBERRIES AND HUCKLEBERRIES

These berries may be canned in syrup 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 jars, leaving $\frac{1}{2}$ -inch head space. Add neither sugar nor liquid. Adjust caps. Process pints 15 minutes, quarts 20 minutes in boiling water bath.

WHOLE CRANBERRY SAUCE

8 cups cranberries
4 cups sugar
4 cups water

Wash, sort and stem berries. Boil sugar and water together 5 minutes. Add berries. Boil, without stirring, until skins burst. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 6 pints.

JELLIED CRANBERRY SAUCE

4 $\frac{1}{4}$ cups cranberries
1 $\frac{3}{4}$ cups water
2 cups sugar

Wash, sort and stem berries. Boil berries and water together until skins burst. Press through sieve or food mill. Add sugar to pulp and juice. Boil almost to jelling point (See page 40). Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 2 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.

ELDERBERRIES

Follow any recipe for berries. You may add 1 to 2 tablespoons lemon juice to each quart to improve flavor.

GOOSEBERRIES

Make medium or heavy syrup. Wash and drain green berries. Use scissors to snip off "heads and tails." Pour $\frac{1}{2}$ cup boiling syrup into hot jar. Fill jar with berries. Shake jar to pack berries closely without crushing, leaving $\frac{1}{2}$ -inch head space. Add more boiling syrup, if needed, to cover berries, leaving $\frac{1}{2}$ -inch head space. Remove air bubbles. Adjust caps. Process pints 15 minutes, quarts 20 minutes in boiling water bath.

STRAWBERRIES

Use firm, red-ripe berries which have neither white nor hollow centers. Hull (cap), wash, drain and measure berries. Use $\frac{1}{2}$ to $\frac{3}{4}$ 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 jars, leaving $\frac{1}{2}$ -inch head space. Remove air bubbles. Adjust caps. Process pints 10 minutes, quarts 15 minutes in boiling water bath.

NOTE: Strawberries tend to fade and lose flavor when canned.

CHERRIES

Raw Pack—If cherries are sweet, make a light or medium syrup; if sour, use medium or heavy syrup. 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 sterilized needle to prevent bursting and shrinking. Pour about $\frac{1}{2}$ cup boiling syrup into hot jar. Fill jar with cherries. Shake jar to pack cherries closely without crushing, leaving $\frac{1}{2}$ -inch head space. Cover with boiling syrup or boiling water, leaving $\frac{1}{2}$ -inch head space. Remove air bubbles. Adjust caps. Process pints and quarts 25 minutes in boiling water bath.

Hot Pack—Prepare cherries as for Raw Pack. Measure after pitting. Mix $\frac{1}{2}$ to $\frac{3}{4}$ 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 jars, leaving $\frac{1}{2}$ -inch head space. If there is not enough syrup to cover cherries, add boiling water or light syrup, leaving $\frac{1}{2}$ -inch head space. Remove air bubbles. Adjust caps. Process pints 15 minutes, quarts 20 minutes in boiling water bath.

CURRENTS

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 jars, leaving 1/2-inch head space. Make syrup of water and 2 tablespoons sugar for each quart of fruit. Pour hot syrup over fruit, leaving 1/2-inch head space. Remove air bubbles. Adjust caps. Process pints 15 minutes, quarts 20 minutes in boiling water bath.

GRAPEFRUIT

Make light syrup. 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 jars, leaving 1/2-inch head space. Cover with boiling syrup, leaving 1/2-inch head space. Remove air bubbles. Adjust caps. Process pints and quarts 10 minutes in boiling water bath.

GRAPES-RIPE

Make light or medium syrup. Wash and drain grapes. Remove stems. Pour about 1/2 cup boiling syrup into hot jar. Fill jar with grapes. Shake jar to pack grapes closely without crushing, leaving 1/2-inch head space. Add more syrup, if needed, to cover grapes, leaving 1/2-inch head space. Remove air bubbles. Adjust caps. Process pints 15 minutes, quarts 20 minutes in boiling water bath.

GRAPES-UNRIPE

Green grapes, canned before the seeds harden, are used in pies. Make medium or heavy syrup. Wash, drain and stem grapes. Pack into hot jars, leaving 1/2-inch head space. Cover with boiling syrup, leaving 1/2-inch head space. Remove air bubbles. Adjust caps. Process pints and quarts 20 minutes in boiling water bath.

GUAVAS

Make light syrup. Wash, peel and cut guavas into halves. Remove seeds. Heat syrup to boiling. Pour over fruit; let stand 30 minutes. Pack fruit into hot jars, leaving 1/2-inch head space. Cover with boiling syrup, leaving 1/2-inch head space. Remove air bubbles. Adjust caps. Process pints 15 minutes, quarts 20 minutes in boiling water bath.

LOQUATS

Make light syrup. Wash and drain firm, ripe fruit. Remove stem and blossom ends; cut in half and remove seeds. Cook 3 to 5 minutes in syrup. Pack hot into hot jars, leaving 1/2-inch head space. Cover with boiling syrup, leav-

ing 1/2-inch head space. Remove air bubbles. Adjust caps. Process pints 15 minutes, quarts 20 minutes in boiling water bath.

MIXED FRUITS

Use three or more fruits, such as apricots, grapefruit, peaches, pears, green gage plums, pineapple, white cherries, white grapes. Make light syrup. 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 syrup until hot through. Pack hot into hot jars, leaving 1/2-inch head space. Cover with boiling syrup, leaving 1/2-inch head space. Remove air bubbles. Adjust caps. Process pints 20 minutes in boiling water bath.

NECTARINES

Follow recipes for canning Apricots.

SPICED NECTARINES IN NECTAR

2 to 3 pounds nectarines per quart jar

1/4 teaspoon nutmeg per quart jar
Peach nectar

Peel nectarines; cut into halves and remove pits. Treat to prevent darkening (See page 15). Rinse and drain. Cook a few nectarines at a time in water until heated through. Drain and pack into hot jars, leaving 1/2-inch head space. Heat nectar and nutmeg just to boiling. Pour over nectarines, leaving 1/2-inch head space. Remove air bubbles. Adjust caps. Process 25 minutes in boiling water bath.

PEACHES

See pages 18-19 for the best way to handle evenly ripened peaches.

Scrape cavities to remove pink or red fibers. The fibers are likely to turn a 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.

Raw Pack—See "Canning Peaches - Step by Step" picture series on pages 18 and 19. Make medium or light syrup. Wash and drain firm, ripe peaches. Scald. Cut into halves, pit and peel. Treat to prevent darkening (See page 15). Drain. Pack peaches, cavity side down, layers overlapping in hot jars, leaving 1/2-inch head space. Cover with boiling syrup, leaving 1/2-inch head space. Remove air bubbles. Adjust caps. Process pints 25 minutes, quarts 30 minutes in boiling water bath.

Hot Pack—Make medium or heavy syrup. Wash and scald peaches. Cut into halves, pit and peel. Treat to prevent darkening (See page 15). Drain. Cook a few peaches at a time in syrup until hot through. Pack hot into hot jars, leaving 1/2-inch head space. Cover with boiling syrup, leaving 1/2-inch head space. Remove air bubbles. Adjust caps. Process pints 20 minutes, quarts 25 minutes in boiling water bath.

NOTE: 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 syrup, add boiling water to cover peaches, leaving 1/2-inch head space.

BRANDIED PEACHES

4 pounds whole peeled peaches

3 pounds sugar

1 teaspoon salt

1 quart boiling water

3/4 cup peach brandy

Dissolve one half of the sugar and the salt in the boiling water. Add one layer of peaches at a time and boil gently for 6 minutes. Peaches will darken if not heated through, but should not be cooked until soft. Put heated peaches in deep bowl; boil syrup 5 minutes and pour over fruit. Cover bowl and let stand overnight. Drain syrup into sauce pot, add remaining sugar, boil 5 minutes and pour back over peaches. Next day, pack peaches into hot jars, leaving 1/2-inch head space. Add 3 or 4 tablespoons of brandy to each jar. Boil syrup until thick, like warm honey. Pour hot syrup over peaches, leaving 1/4-inch head space. Remove air bubbles. Adjust caps. Process 10 minutes in boiling water bath. Peaches should be ready to use in about a month. Yield: about 3 pints.

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.

Hot Pack—Make light syrup. Wash pears. Cut into halves or quarters, core and pare. Treat to prevent darkening (See page 15). Drain. Cook pears 5 to 6 minutes in hot syrup. Pack hot into hot jars, leaving 1/2-inch head space. Cover with boiling syrup, leaving 1/2-inch head space. Remove air bubbles. Adjust caps. Process pints 20 minutes, quarts 25 minutes in boiling water bath.

Cinnamon Pears—Add 2 sticks cinnamon and a few drops of red food coloring per quart syrup. Remove cinnamon before packing pears. Process pints 20 minutes, quarts 25 minutes in boiling water bath.

Mint Pears—Add oil of peppermint and green food coloring, a drop at a time, until syrup is flavored and colored as wanted. Cook pears in syrup 10 minutes before packing. Process pints 20 minutes, quarts 25 minutes in boiling water bath.

Orange Pears—Cook peel of $\frac{1}{4}$ orange with each quart of syrup. Remove orange peel before packing pears. Process pints 20 minutes, quarts 25 minutes in boiling water bath.

Pineapple Pears—Use unsweetened pineapple juice instead of water for making syrup. Process pints 20 minutes, quarts 25 minutes in boiling water bath.

Pear and Melon Balls—Make light syrup. Use equal measure of balls or cubes of firm, ripe fruit, using with the pears any combination of these varieties of melon: Cantaloupe, Casaba, Crenshaw, Honeydew or Persian. Cover with boiling syrup. Let stand until cold. Drain. Pack fruit into hot jars, leaving $\frac{1}{2}$ -inch head space. Add 1 teaspoon lemon juice to each quart, $\frac{1}{2}$ teaspoon to each pint. Bring syrup to a boil. Pour over fruit, leaving $\frac{1}{2}$ -inch head space. Remove air bubbles. Adjust caps. Process pints and quarts 20 minutes in boiling water bath.

PEAR MINCEMEAT

- 7 pounds ripe Bartlett pears
- 1 lemon
- 2 pounds raisins
- $6\frac{3}{4}$ 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 in a large sauce pot. Add chopped fruit mixture. Bring to a boil over medium heat; simmer 40 minutes. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 25 minutes in boiling water bath. Yield: about 9 pints.

BRANDIED PEARS

- 10 pounds ripe, unblemished pears
- 3 pounds sugar
- 4 cups water
- 3 cups brandy

Pare, halve and core pears. Combine sugar and water to make syrup. Cook

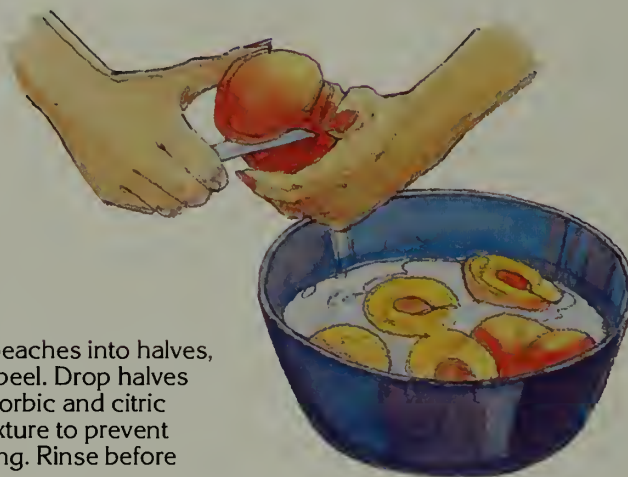


1. Visually examine jars and sealing surfaces for nicks, cracks or sharp edges.

CANNING PEACHES—STEP BY STEP



2. Wash jars and closures in hot, soapy water. Rinse. Leave jars in hot water until needed. Put lids in saucepan filled with water and place on stove to simmer (180°F). Remove saucepan from heat. Allow lids to remain in hot water until needed.



5. Cut peaches into halves, pit and peel. Drop halves into ascorbic and citric acid mixture to prevent darkening. Rinse before packing.



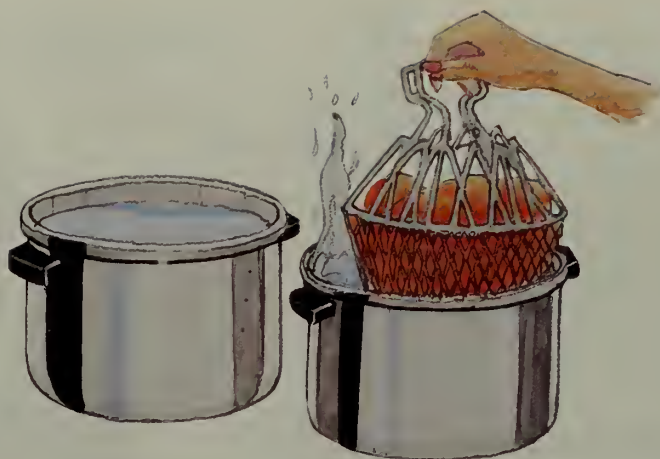
9. Wipe top and threads of jar with clean, damp cloth. Put lid on with sealing compound next to jar. Screw band down evenly and firmly.



10. As each jar is filled, stand it on rack in boiling water bath canner. Water in canner should be hot, but not boiling. If needed, add more hot water to cover jars 1 to 2 inches. Put cover on canner.



3. Select firm, ripe peaches. Sort, wash and drain just enough fruit for one canner load. Fill boiling water bath canner half full with hot water. Put canner on to heat. Prepare sugar syrup as described on page 15.



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.



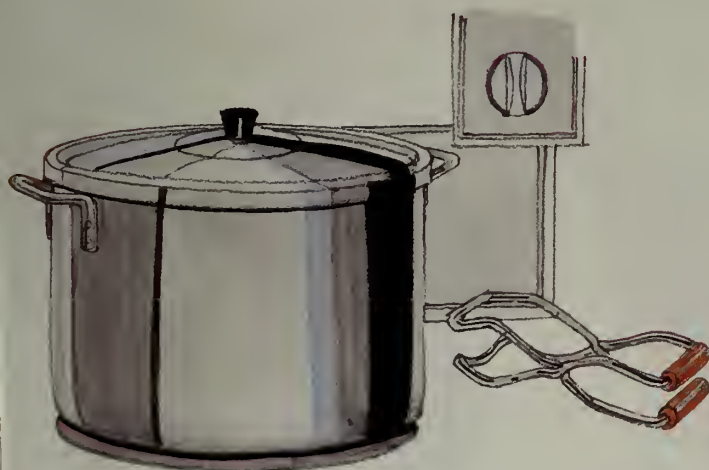
6. Stand hot jar on a wood or cloth surface. Pack peaches, cavity side down, layers overlapping. Leave $\frac{1}{2}$ -inch head space.



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

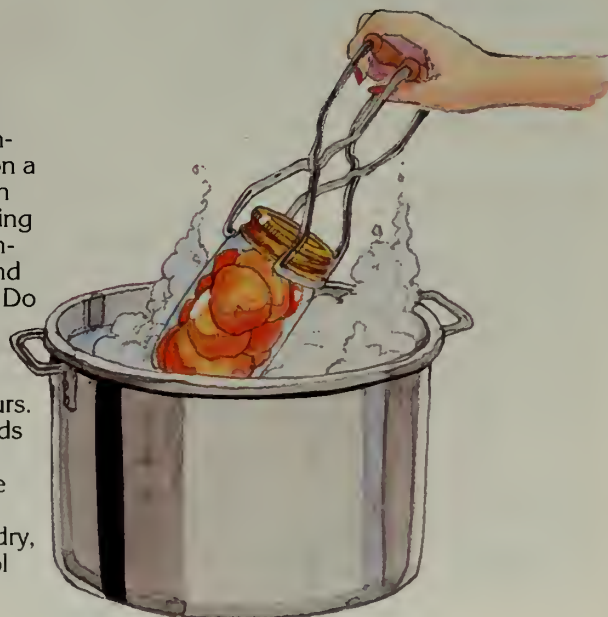


8. Run nonmetallic spatula gently between fruit and jar to release air bubbles. Add more syrup if needed.



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.

12. Remove jars from canner and set on a wood or cloth surface, placing jars several inches apart and out of drafts. Do not retighten bands. Allow jars to cool about 12 hours. Remove bands and test seal. Wash outside jar surface. Store jars in dry, dark and cool place.



pears in syrup on 1 layer at a time, until just tender, about 5 minutes. Place cooked pears in a large bowl; set aside. After all pears are cooked, continue cooking syrup until thickened, about 15 minutes. Remove from heat. Add brandy. Use white brandy for a clear syrup, but any brandy will flavor the fruit. Pack hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Pour hot syrup over pears, leaving $\frac{1}{4}$ -inch head space. Remove air bubbles. Adjust caps. Process 15 minutes in a boiling water bath. Yield: about 4 quarts.

PINEAPPLE

Make light syrup. Scrub firm, ripe pineapple. Cut thin slice from bottom, then cut fruit into $\frac{1}{2}$ -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-shaped slices, lengthwise; cut into halves, then quarters, etc. Simmer pineapple in syrup until tender. Pack hot into hot jars, leaving $\frac{1}{2}$ -inch head space. Cover with boiling syrup, leaving $\frac{1}{2}$ -inch head space. Remove air bubbles. 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 sterilized needle. Pricking does not prevent skins from cracking, but helps prevent fruit from bursting. Make medium or heavy syrup. Wash and drain plums. Bring syrup to a boil. Add plums (not more than two layers in pan). Remove pan from heat 2 minutes after adding fruit. Cover. Let stand 20 to 30 minutes. Pack plums into hot jars, leaving $\frac{1}{2}$ -inch head space. Reheat syrup to a boil. Pour hot over plums, leaving $\frac{1}{2}$ -inch head space. Remove air bubbles. Adjust caps. Process pints 20 minutes, quarts 25 minutes in boiling water bath.

RHUBARB

Wash and cut unpeeled stalks into 1-inch pieces. Measure. Add $\frac{1}{2}$ to 1 cup sugar for each quart rhubarb. Mix well. Let stand 3 to 4 hours. Bring slowly to a boil. Boil $\frac{1}{2}$ minute. Pack hot into hot jars, leaving $\frac{1}{2}$ -inch head space. Remove air bubbles. Adjust caps. Process pints and quarts 15 minutes in boiling water bath.

TOMATOES

Use fresh, firm red-ripe tomatoes which are free of decayed spots, cracks and fungus growths.

CANNING TOMATOES—STEP BY STEP



1. Visually examine jars and sealing surfaces for nicks, cracks and sharp edges. Fill boiling water bath canner $\frac{1}{2}$ full of hot water. Put canner on to heat.

4. Put tomatoes in wire basket and lower into boiling water in large saucepan. Remove after about 30 seconds or as soon as skin starts to crack. Dip into cold water.



5. Cut out core, remove skins and trim off any green spots. Leave tomatoes whole or cut in half. Place in a large sauce pot, add enough water to cover tomatoes. Boil gently 5 minutes. Remove one jar from hot water and drain. Add 2 tablespoons of bottled lemon juice or $\frac{1}{2}$ teaspoon of citric acid to each quart. Add 1 tablespoon of bottled lemon juice or $\frac{1}{4}$ teaspoon of citric acid to each pint.



8. Wipe top and threads of jar with clean, damp cloth. Remove one lid from simmering water with tongs, and place it flat on top of jar so sealing compound is against jar. Screw band down evenly and firmly.



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



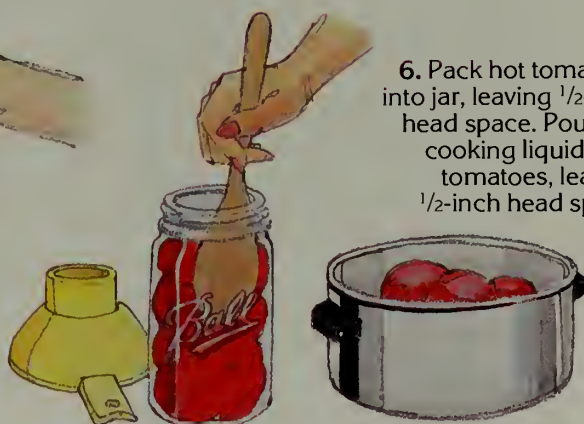
2. Wash jars and closures in hot, soapy water. Rinse. Leave jars in hot water until needed. Put lids in saucepan filled with water and place on stove to simmer (180°F). Remove saucepan from heat. Allow lids to remain in hot water until needed.



3. Select just enough tomatoes for one canner load. Make sure tomatoes are fresh, firm and red-ripe. Don't use any with spots, cracks or growths. Wash tomatoes carefully and drain.



6. Pack hot tomatoes into jar, leaving 1/2-inch head space. Pour hot cooking liquid over tomatoes, leaving 1/2-inch head space.



7. Add 1 teaspoon canning salt to each quart jar, 1/2 teaspoon to a pint jar. Run a nonmetallic spatula between tomatoes and jar to release any trapped air bubbles.



10. Put cover on canner. Bring water to a boil. Process quarts 45 minutes (pints 40 minutes) at a gentle but steady boil, at altitudes under 1,000 feet above sea level. For higher altitudes, see chart on page 11.

11. Remove jars from canner and set on a wood or cloth surface, placing jars several inches apart and out of drafts. Do not retighten bands. Allow jars to cool about 12 hours. Remove bands and test seal. Wash outside jar surface. Store jars in dry, dark, cool place.



TOMATOES

(packed in water)

Raw Pack—Wash tomatoes and dip in boiling water for 30 to 60 seconds or until skins split. Dip tomatoes in cold water; slip off skins; and remove cores. Leave whole or cut in half. Add 2 tablespoons of bottled lemon juice or ½ teaspoon of citric acid to each quart jar. Add 1 tablespoon of bottled lemon juice or ¼ teaspoon of citric acid to each pint jar. Pack tomatoes into jars, cover with hot water leaving ½-inch head space. Add 1 teaspoon salt to each quart jar, ½ teaspoon to each pint jar, if desired. Remove air bubbles. Adjust caps. Process pints 40 minutes, quarts 45 minutes in boiling water bath.

Hot Pack—Wash tomatoes and dip in boiling water for 30 to 60 seconds or until skins split. Dip tomatoes in cold water; slip off skins; and remove cores. Leave whole or cut in half. Place tomatoes in a large sauce pot; add enough water to cover tomatoes. Boil gently 5 minutes, stirring to prevent sticking. Add 2 tablespoons of bottled lemon juice or ½ teaspoon of citric acid to each quart jar. Add 1 tablespoon of bottled lemon juice or ¼ teaspoon of citric acid to each pint jar. Pack hot tomatoes into jars, leaving ½-inch head space. Cover with hot cooking liquid, leaving ½-inch head space. Add 1 teaspoon salt to each quart jar, ½ teaspoon to each pint jar, if desired. Remove air bubbles. Adjust caps. Process pints 40 minutes, quarts 45 minutes in boiling water bath.

TOMATOES (quartered)

Hot Pack—Wash tomatoes and dip in boiling water for 30 to 60 seconds or until skins split. Dip tomatoes in cold water; slip off skins; remove cores; and quarter. Place quartered tomatoes in a large sauce pot; add enough water to cover tomatoes. Boil gently 5 minutes, stirring to prevent sticking. Add 2 tablespoons of bottled lemon juice or ½ teaspoon of citric acid to each quart jar. Add 1 tablespoon of bottled lemon juice or ¼ teaspoon of citric acid to each pint jar. Pack hot quartered tomatoes into jars, leaving ½-inch head space. Add 1 teaspoon salt to each quart jar, ½ teaspoon to each pint jar, if desired. Remove air bubbles. Adjust caps. Process pints 40 minutes and quarts 45 minutes in boiling water bath.

TOMATO JUICE

Wash and drain firm, fresh, red-ripe tomatoes. Remove core and blossom ends. Leave tomatoes whole and bake in oven or cut into small pieces and simmer until soft, stirring to prevent sticking. Press through fine sieve or food mill. If desired, season to taste with salt, sugar or spices. Reheat almost

to boiling; simmer 5 minutes. Add 2 tablespoons of bottled lemon juice or ½ teaspoon of citric acid to each quart jar. Add 1 tablespoon of bottled lemon juice or ¼ teaspoon of citric acid to each pint jar. Pour hot juice into jars, leaving ¼-inch head space. Adjust caps. Process pints 40 minutes, quarts 45 minutes in boiling water bath.

TOMATO GARDEN JUICE BLEND

22 pounds tomatoes
¾ cup diced carrots (about 2 medium)
¾ cup chopped celery (about 1 stalk)
¾ cup chopped green pepper (about 1 medium)
½ cup chopped onion (about ½ medium)
¼ cup chopped parsley
1 tablespoon salt (optional)
Bottled lemon juice or citric acid
Wash and drain firm, fresh tomatoes. Remove core and blossom ends. Cut into quarters. Add vegetables and simmer 20 minutes. Press through fine sieve or food mill. If desired, season with salt. Add 2 tablespoons of bottled lemon juice or ½ teaspoon of citric acid to each quart jar. Add 1 tablespoon of bottled lemon juice or ¼ teaspoon of citric acid to each pint jar. Bring juice blend to a boil. Pour hot juice into jars, leaving ¼-inch head space. Adjust caps. Process pints 40 minutes and quarts 45 minutes in boiling water bath. Yield: about 7 quarts.

TOMATO SAUCE

45 pounds tomatoes
Bottled lemon juice or citric acid
Wash and drain fresh, firm tomatoes. Remove core and blossom ends. Cut into quarters. Simmer about 20 minutes, stirring occasionally. Press through fine sieve or food mill. Cook pulp over medium-high heat until it thickens. Reduce volume by one-half for a thick sauce. Stir frequently to prevent sticking. Add 2 tablespoons of bottled lemon juice or ½ teaspoon citric acid to each quart jar. Add 1 tablespoon bottled lemon juice or ¼ teaspoon citric acid to each pint jar. Pour hot sauce into hot jars, leaving ¼-inch head space. Adjust caps. Process pints 35 minutes and quarts 40 minutes in boiling water bath. Yield: about 7 quarts.

SEASONED TOMATO SAUCE

45 pounds tomatoes, peeled, cored and chopped
12 cloves garlic, minced
3 tablespoons olive oil
2 tablespoons oregano
6 bay leaves
¼ cup salt
1 tablespoon black pepper
2 teaspoons crushed red pepper
1½ tablespoons sugar
Bottled lemon juice or citric acid
Cook minced garlic in oil in a large sauce pot until tender. Add remaining ingredients and simmer about 20 minutes, stirring occasionally. Press through fine sieve or food mill; discard seeds. Cook pulp over medium-high heat until it thickens. Reduce volume by one-half for a thick sauce. Stir frequently to prevent sticking. Remove bay leaves. Add 1 tablespoon lemon juice or ¼ teaspoon citric acid to each pint jar. Pour hot into hot jars, leaving ¼-inch head space. Adjust caps. Process quarts 40 minutes in boiling water bath. Yield: about 7 quarts.

FRUIT JUICES

APRICOT OR PEACH JUICE, NECTAR OR PUREE

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

To Prepare: 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 desired. Reheat until sugar dissolves. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process half pints and pints 15 minutes in boiling water bath. ($3\frac{1}{4}$ quarts prepared fruit and $3\frac{1}{4}$ 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 a damp jelly bag or several 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 jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process pints and quarts 15 minutes 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, 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 hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process pints and quarts 15 minutes in boiling water bath.

CRANBERRY JUICE

Wash cranberries. Boil equal measure of berries and water together until berries burst. Strain juice through a damp jelly bag or several layers of cheesecloth. (For a greater yield of juice, twist the two ends of the bag in opposite direction until most of the juice is extracted.) Add sugar to taste. Boil 1 minute. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process pints and quarts 15 minutes in boiling 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 a damp jelly bag or several layers of cheesecloth. (For greater yield of juice, twist the two ends of the bag in opposite directions until most of the juice is extracted.) 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 jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process pints and quarts 15 minutes in boiling water bath.

GRAPE JUICE II

Wash and stem fresh, firm, ripe grapes. Combine $\frac{1}{2}$ to 1 cup sugar with 4 cups water. Bring sugar and water to a boil; boil 5 minutes. Put 1 cup grapes into a hot quart jar. Pour hot sugar syrup over grapes, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 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 jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process pints and quarts 15 minutes in boiling water bath. (Yield depends upon juiciness of fruit used.)

ORGANIC GARDENING

For those who grow their vegetables and fruits by the organic method, process by the processing methods and times as given in this book.



PICKLES & RELISHES

Pickles are one of the favorites of home canners, and pickling is among the oldest known methods of preserving food, dating back to Biblical times. In today's meals, pickles are great for snacks and are the perfect companion for sandwiches.

When we speak of pickles, many of us think only of cucumbers. But in canning terms, pickles mean any fruit, meat or vegetable prepared by a pickling process and include a wide variety of relishes.

Pickle products are either fermented in brine (salt) or packed in vinegar to aid preservation. Many older recipes called for pickles to be packed into jars and sealed without processing. This method is no longer recommended. There is always a danger of harmful microorganisms entering the food when it is transferred from pickling container to jar. Processing destroys organisms that can cause spoilage and inactivates enzymes that may affect flavor, color and texture.

Processing procedures for fermented cucumbers and fresh-pack dills are slightly different from the usual boiling water bath method. For these products, start to count processing time as soon as the filled jars are placed in boiling water. This reduces the development of a cooked flavor and a loss of crispness.

Pickle products are generally grouped into four classes:

Brined pickles—Also called fermented pickles. They are made from vegetables, usually cucumbers, and are submerged in a brine solution to ferment or cure for about six weeks. Dilled cucumbers and sauerkraut belong in this group, and green tomatoes may also be brined. Dill, garlic and other herbs and spices are often added to the solution for flavoring.

Fresh-pack pickles—Also called quick-process pickles. Sometimes fresh-pack pickles are canned in a spicy vinegar solution without brining, but usually they are brined for several hours overnight. Whole cucumber dills, sweet gherkins and dilled green beans are among products that may be prepared by this method.

Relishes—Relishes are prepared from fruits and/or vegetables which are chopped and cooked to desired consistency in a spicy vinegar solution. Sometimes sugar is added if a sweet relish is

desired, and sometimes hot peppers or other spices are added for a hot relish. Relishes include piccalilli, pepper-onion, chutney, horseradish and corn relish.

Fruit pickles—Fruit pickles are usually prepared from whole fruits and simmered in a spicy, sweet-sour syrup. Pears, peaches and watermelon rind are among the products prepared in this manner.

TOP QUALITY INGREDIENTS - THE KEY TO SUCCESSFUL PICKLING

Pickling is one area of canning where it is essential to have top quality ingredients and to follow proper procedures carefully to achieve satisfactory results. The ingredients and procedures may be right, but if the correct proportions of sugar, salt, vinegar and spices are not maintained, the quality and safety may be affected.

Fruits and vegetables—Ideally, fruits and vegetables should be fresh from the garden, hopefully gathered no more than 24 hours before pickling. If preparation is delayed, the produce should be kept refrigerated until ready for use. Cucumbers especially deteriorate rapidly at room temperatures.

Select tender vegetables and firm fruit. Unlike other areas of canning, some recipes call for slightly under-ripe fruits and vegetables for pickling, such as pears, peaches and green tomatoes. Do not use waxed cucumbers since the brine cannot penetrate wax. Produce should be of the ideal size for the recipe being followed, and each fruit or vegetable should be of uniform size.

Ingredients for relishes should be chopped into uniform pieces for an attractive product. Cabbage for sauerkraut should be uniformly cut (about the thickness of a dime), with all large, coarse pieces of leaves or core eliminated.

Fruits and vegetables should be washed thoroughly in cold water. Wash whole before paring. Use a brush if possible, and scrub under running water or through several rinses. Clinging soil may contain bacteria that are hard to destroy. Remove $\frac{1}{16}$ inch from blossom end of cucumbers, since they may be the source of enzymes which could soften the cucumbers during fermentation.

Salt—Brine solutions should be carefully prepared. Pure granulated or canning and pickling salt should be used if at all possible. Table salt can be used, but additives in the salt that prevent caking may make the brine cloudy. Iodized table salt should not be used; it may darken pickles. The salt acts as a preservative and adds flavor and crispness to pickles. Brine draws juices and sugar from foods and forms lactic acid, a preservative.

Vinegar—Vinegar gives pickles a tart taste and acts as a preservative. Use a high-grade cider or white distilled vinegar of five percent acidity (sometimes listed as 50 grain). Vinegars of unknown acidity should not be used since their preservative power is unknown. Cider vinegar, with its mellow acid taste, gives a nice blending of flavors, but may darken white or light-colored fruits and vegetables. Wherever color is important, such as in pickled pears, onions and cauliflower, white distilled vinegar should be used. It has a sharp, pungent, acetic acid taste. Vinegar must not be diluted unless the recipe so specifies. If a less sour product is preferred, add sugar rather than decrease vinegar because otherwise the preservative balance will be upset.

Sugar—Use white granulated sugar, cane or beet, unless the recipe calls for another sweetener. Brown sugar will darken the product. Honey and maple syrup are sometimes called for in a recipe and should be used if specified. Sugar substitutes should not be used unless the manufacturer's specific instructions for pickling are followed.

Spices and herbs—Spices and herbs readily flavor pickles, adding immeasurably to their tastiness. Only fresh spices and herbs should be used. Whole fresh spices are preferred—the dry, powdered and salt forms may cloud the pickling mixture. Spices and herbs lose their pungency readily in heat and humidity and therefore should be stored in airtight containers in a cool place. Seasoning can be added directly to pickling mixtures, but usually spices and herbs are tied in a bag of cheesecloth or muslin and held in the solution, just like a teabag.

Water—Soft water should be used for making brine. The minerals in hard water will have a definite negative effect on the quality of pickles. If soft tap

water is not available, the water can be softened by boiling it for 15 minutes and then letting it stand for 24 hours. A scum will likely appear on the top of the water and this should be carefully skimmed off. Then the water should be ladled from the container without disturbing the sediment on the bottom. Add 1 tablespoon of vinegar per gallon of boiled water before using. Distilled water, although it is relatively expensive, can be substituted in hard water areas.

Other ingredients—Some recipes call for the use of alum and/or lime to add crispness or firmness to pickles. When using crisping agents, follow the manufacturer's instructions.

EQUIPMENT AND UTENSILS

Very little specialized equipment is needed for pickling, and those who have done other types of canning will already have most of the needed utensils. There are some differences, however.

Utensils made of zinc, iron, brass, copper or galvanized metal should not be used. Enamelware with cracks or chips in the enamel also should not be used. The metal in these utensils may react with acids or salts and cause undesirable color and taste changes in pickles or make pickles unfit to eat.

For the fresh-pack method, where vinegar is the pickling ingredient, almost any large container of the proper material is suitable. Unchipped enamelware, stainless steel or glassware is best.

For fermenting and brining, a crock or stone jar, an unchipped enamel-lined pan, a large glass jar, a bowl or a casserole can be used for small quantities. Kegs and barrels can be used for large quantities; they should be of hardwood and either enamel, glass or paraffin lined.

The container used must be fitted with a flat dish sized to fit inside and cover the food in the brine. A weight is necessary to hold the dish down and to keep the food below the surface of the brine. A glass jar filled with water and closed with a cap makes a good weight.

Another method of covering fermenting products consists of placing a plastic bag filled with brine on top of the food. The brine-filled bag seals the surface from exposure to air and prevents the growth of film, yeast or molds. It also serves as a weight. The brine should be made of 1½ tablespoons salt per 1 quart water.

When using this method, the bag should be intended for use with foods. For extra protection, the brine-filled bag can be placed inside another plastic bag. The amount of brine in the plastic bag can be adjusted to give just

enough pressure to keep the fermenting product covered with brine.

Much of the rest of the equipment will be readily available in the kitchen.

STEP-BY-STEP PICKLING

1. Read "Learning About Canning" on pages 2-13.
2. Read recipe to determine equipment and ingredients necessary. Assemble all equipment and utensils. Make sure everything is clean.
3. Check jars for nicks and cracks. Wash jars and closures in hot, soapy water. Rinse. Keep jars in hot water until ready for use. Put lids in saucepan filled with water and place on stove to simmer (180°F). Remove saucepan from heat. Allow lids to remain in hot water until needed.
4. Remove pickle products from pickling solution and pack into jars according to directions in recipe. Use just enough for one canner load at a time.
5. Leave proper head space.
6. Remove air bubbles.
7. Wipe top and threads of jar with clean, damp cloth. Adjust caps.
8. Place each jar as it is filled onto elevated rack over canner containing simmering water. When rack is filled, lower into canner and add simmering water to cover jars 1 to 2 inches. Cover canner and bring water to a boil. Adjust heat to hold water at a steady boil. Start counting processing time when water reaches a full boil. If, during processing time, water should boil away and the tops of jars become exposed, cover them with 1 to 2 inches of boiling water.
9. When processing fermented cucumbers and fresh packed dills, start counting the processing time as soon as jars are placed in boiling water. Make certain the water level covers jars by 1 to 2 inches. Place lid on the canner. Adjust heat to hold water at a steady boil.
10. When processing time has been completed, remove jars from canner. Stand jars on cloths, out of drafts and with space between.
11. After 12 to 24 hours, remove bands and test seals. Wash outside jar surface.
12. Store sealed jars in dark, dry, cool place.

BRINED CURED PICKLES

Pickle making begins with the brine, and to make carelessly or to maintain carelessly 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 canning and pickling salt; and do not use hard water.

FERMENTED OR BRINED PICKLED VEGETABLES

Pickles must be placed in a brine and fermented for approximately 6 weeks before the addition of the final and last brine.

GENERAL DIRECTIONS

1. Wash cucumbers carefully. Use only freshly harvested, slightly immature pickling variety.
2. Weigh cucumbers. Put in a clean pickling container and cover with a 10 percent brine solution made by dissolving 1 cup salt in 2 quarts water. (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.)
3. Weight cucumbers under brine.
4. Store in a cool, dark place.
5. Next day, add 1 cup salt for each 5 pounds of cucumbers. This is necessary to maintain a 10 percent brine solution. Salt must be added on top of plate or clean cloth (and not directly on the cucumbers) for even distribution throughout the brine.
6. Remove scum when it forms on top of brine. The scum will destroy the acidity of the brine and result in spoilage of the product, if left on.
7. At the end of the week, and for 4 or 5 succeeding weeks, add ¼ cup salt for each 5 pounds of cucumbers. Add in same manner as in No. 5.
8. Fermentation resulting in bubble formation should continue about 4 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 additional salt is added after they are cured—until made into pickles. The best temperature for brining cucumbers is about 70°-75°F.
10. To use brined cucumbers in pickle recipes, they need to be soaked in water to remove salt.

DESALTING CURED CUCUMBERS

1. Cover cucumbers with hot water (180°F) (at least 3 times as much water as cucumbers). Let stand about 4 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 4 hours. Stir occasionally.
4. Lift cucumbers out of water; pour out water; rinse container.

5. Cover cucumbers with hot water (180°F). Let stand about 4 hours. Stir occasionally.
6. Lift cucumbers out of water; pour out water; rinse container.
7. Prick through the cucumbers in several places to prevent shriveling, using silver or stainless steel fork.
8. Let stand in a weak vinegar solution (1 part water to 3 parts cider vinegar) for 12 hours.
9. Taste to see if sufficient salt has been removed; if not, let stand 12 hours longer.
10. Place the "desalted" cucumbers into your favorite pickling solution.

NOTE: If in no hurry, salted cucumbers can be soaked in cold water. Use 3 or 4 times as much water as cucumbers. Change the water every 8 hours. Stir the cucumbers occasionally. The salt should be removed in a 24-hour period.



boiling water bath method



steam pressure method

CUCUMBER CHUNKS

- 5 pounds 3 to 4-inch cucumbers, cut into 1-inch slices
- 1 1/2 cups canning salt
- 4 quarts water
- 1 quart vinegar
- 2 cups sugar
- 5 cups vinegar
- 3 cups water
- 2 tablespoons mixed pickling spices
- 2 to 3 cups sugar

Put cucumber slices in a clean pickling container. Dissolve salt in 4 quarts water. Pour over cucumber slices. Weight cucumbers under brine. Cover container and let stand 36 hours in a cool place. Drain. Pour 1 quart vinegar over cucumbers; add water to cover. Simmer 10 minutes. Drain, discarding liquid. Combine 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 pickling liquid; add remaining 2 to 3 cups of sugar to pickling liquid according to taste; bring to a boil. Pour over cucumbers. Cover and let stand 24 hours. Pack pickles into hot jars, leaving 1/4-inch head space. Remove spice bag. Bring pickling liquid to a boil. Pour hot liquid over pickles, leaving 1/4-inch head space. Remove air bubbles. Adjust caps. Process pints 15 minutes in boiling water bath. Yield: about 8 pints.

CUCUMBER RINGS

- 3 pounds brined cucumbers, desalted
 - 2 cups vinegar
 - 2 cups water
 - 2 cups sugar
 - 3 sticks cinnamon
 - 1 lemon, sliced thin
 - 1 1/2 teaspoons whole cloves
 - 1 1/2 teaspoons dried ginger root
- Slice cucumbers 1/4-inch thick. Mix water and 1 cup vinegar, pour over cucumbers and let stand 2 hours. Add remaining vinegar; let stand 2 hours. Drain off pickling liquid, stir in sugar and add spices tied in a cheesecloth bag. Add cucumbers and cook until cucumbers are transparent. Pour into a shallow container and let stand overnight so that the slices become plump. Drain off the pickling liquid and strain; bring to a boil. Pack cucumbers in hot jars, leaving 1/4-inch head space. Pour hot liquid over cucumbers, leaving 1/4-inch head space. Remove air bubbles. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 6 pints.

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

CUCUMBER SANDWICH PICKLES

- 2 pounds 3 to 4-inch cucumbers, cut into 1/4-inch slices
- 1/2 cup canning salt
- 2 quarts cold water
- 3 cups vinegar
- 3 cups water
- 1 cup brown sugar
- 1 cup sugar
- 1/2 teaspoon celery seed
- 1/2 teaspoon mustard seed
- 1/2 teaspoon turmeric
- 2 cups vinegar
- 1 cup water

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 a boil. Add cucumbers, simmer about 8 minutes. (Cucumbers should not become soft.) Drain well, discarding liquid. Combine 2 cups vinegar and 1 cup water with remaining ingredients; simmer 10 minutes. Add drained cucumbers. Bring to a boil. Pack hot into hot jars, leaving 1/4-inch head space. Remove air bubbles. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 3 pints.

BRINED DILL PICKLES

- 10 pounds 4 to 6-inch cucumbers
- 1 1/2 cups canning salt
- 3/4 cup mixed pickling spices
- 2 to 3 bunches fresh or dried dill
- 2 cups vinegar
- 2 gallons water

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

Weight cucumbers under brine. Use only enough brine to cover the plate since the liquid drawn from the cucumbers may overflow the container.

Keep container at about 70°F. Each day remove the scum that forms over the top. Let pickles ferment until well flavored with dill and clear throughout. In about 2 to 3 weeks the pickles should be ready to use.

Pack pickles into hot jars, leaving 1/4-inch head space. Strain the pickle brine; bring to a boil. Pour hot liquid over pickles, leaving 1/4-inch head space. Remove air bubbles. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 6 quarts.

NOTE: You may use cured cucumbers in this recipe. If so, make these changes.

1. Use only 1/4 cup canning salt.
2. Let set in pickling brine 3 weeks before sealing.
3. Drain liquid off weekly, bring to a boil and pour over cucumbers.

SWEET CHUNK PICKLES

- 2 1/2 pounds 3 to 4-inch cucumbers
- 1/2 cup canning salt
- 1/2 cup vinegar
- 2 quarts water
- 6 cups sugar
- 1 stick cinnamon
- 1 1/2 teaspoons whole cloves
- 1 1/2 teaspoons mixed pickling spices
- 3 cups vinegar

Wash and dry cucumbers. Put cucumbers in a clean pickling container. Add salt and 1/2 cup vinegar to 2 quarts water. Bring to a boil; cool. Pour over cucumbers. Weight cucumbers under

brine. Cover and let stand 2 weeks in a cool place. (If scum forms, remove it each day.) Drain, discarding brine, and cut cucumbers into 1-inch chunks. Cover with cold water; let stand 24 hours. Rinse well and drain. Tie spices in a cheesecloth bag; add to remaining ingredients. Bring to a boil; pour over cucumbers. Let stand 24 hours. Drain, reserving pickling liquid. Bring pickling liquid to a boil and pour over pickles. Let stand 24 hours. Repeat the last step three times. Pack pickles into hot jars, leaving $\frac{1}{4}$ -inch head space. Remove spice bag. Bring pickling liquid to a boil. Pour hot liquid over pickles, leaving $\frac{1}{4}$ -inch head space. Remove air bubbles. Adjust caps. Process pints and quarts 15 minutes in boiling water bath. Yield: about 3 pints.

SWEET CUCUMBER PICKLES

- 3 pounds brined cucumbers, desalted
- $3\frac{1}{3}$ cups sugar
- 2 sticks cinnamon
- 1 tablespoon ginger root
- 1 tablespoon whole cloves
- 1 tablespoon mace
- 1 quart vinegar

Dissolve sugar in vinegar, add spices tied in a cheesecloth bag. Bring to a boil, add drained cucumbers and boil 3 minutes. Pour into a container and allow to stand for 3 days. Each day drain off liquid, bring to a boil and pour over cucumbers. Pack the cucumbers in hot jars, leaving $\frac{1}{4}$ -inch head space. Remove spice bag. Bring pickling liquid to a boil. Cover cucumbers with hot liquid, leaving $\frac{1}{4}$ -inch head space. Remove air bubbles. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 5 pints.

SOUR CUCUMBER PICKLES

May be made by following directions for Sweet Cucumber Pickles, except omit all or part of sugar.

SWEET ICICLE PICKLES

- 4 pounds 4 to 6-inch cucumbers, cut into quarters lengthwise
- 1 cup canning salt
- 2 quarts water
- $1\frac{1}{2}$ tablespoons mixed pickling spices
- 5 cups sugar
- 5 cups vinegar

Put cucumber strips in a clean pickling container. Add salt to water and bring to a boil. Pour over cucumbers. Weight cucumbers under brine. Cover container 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 a boil. Pour over cucumbers; cover and let stand 24 hours. Drain pickling liquid; bring liquid to a boil and pour over cucumbers. Repeat this step each day for 4 days. Pack pickles into hot jars, leaving $\frac{1}{4}$ -inch head space. Remove spice bag. Bring pickling liquid to a boil. Pour hot liquid over pickles, leaving $\frac{1}{4}$ -inch head space. Remove air bubbles. Adjust caps. Process pints and quarts 10 minutes in boiling water bath. Yield: about 6 pints.

FRESH PACK

The food product is placed in jars, brine is added and jars processed. It requires a time period of about 4 to 5 weeks for the food item to cure and develop a satisfactory flavor.

FRESH PACK PICKLED FOODS

DILLED GREEN TOMATOES

- 5 pounds small, firm green tomatoes
- $3\frac{1}{2}$ cups vinegar
- $3\frac{1}{2}$ cups water
- $\frac{1}{4}$ cup canning salt
- 6 or 7 garlic cloves
- Fresh dill or dill seeds
- 6 or 7 bay leaves

Wash and core tomatoes, cut into halves or quarters. Combine vinegar, water and salt in a large sauce pot. Bring to a boil. Pack tomatoes into hot jars, leaving $\frac{1}{4}$ -inch head space. Add 1 garlic clove, 1 head of dill or 2 teaspoons dill seeds, and 1 bay leaf to each jar. Pour hot liquid over tomatoes, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 6 pints.

CUCUMBER CHIPS

- 6 pounds 4 to 5-inch cucumbers, cut into thin slices
- $\frac{1}{2}$ cup canning salt
- 1 tablespoon turmeric
- 3 cups vinegar
- 1 quart water
- 2 cups sugar
- 2 sticks cinnamon
- 1 piece ginger root
- 1 tablespoon mustard seed
- 1 teaspoon whole cloves
- 1 quart vinegar
- 1 cup water
- 2 cups brown 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 a boil and pour over cucumbers. Let stand until cold; drain. (Taste cucumbers; if too salty, rinse thoroughly; drain.) Add sugar to 1 quart vinegar and 1 cup water. Tie spices in a cheesecloth bag. Add to pickling liquid and simmer 15 minutes; pour over cucumbers. Let stand 12 to 24 hours in a cool place. Pack cucumber chips into hot jars, leaving $\frac{1}{4}$ -inch head space. Remove spice bag. Combine pickling liquid and brown sugar; bring to a boil. Pour hot liquid over cucumbers, leaving $\frac{1}{4}$ -inch head space. Remove air bubbles. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 3 pints.

DILL PICKLES SHORT METHOD

- 8 pounds 4 to 6-inch cucumbers, cut into halves lengthwise
 - $\frac{3}{4}$ cup sugar
 - $\frac{1}{2}$ cup canning salt
 - 1 quart vinegar
 - 1 quart water
 - 3 tablespoons mixed pickling spices
 - Green or dry dill (1 head per jar)
- Combine sugar, salt, vinegar and water in a large sauce pot. Tie spices in a cheesecloth bag; add to vinegar mixture; simmer 15 minutes. Pack cucumbers into hot jars, leaving $\frac{1}{4}$ -inch head space; put a head of dill in each jar. Bring vinegar and water to a boil. Pour hot liquid 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.

DILL PICKLES KOSHER STYLE

Follow recipe for Dill Pickles - Short Method. When packing cucumbers, add to each jar:

- 1 bay leaf
- 1 clove garlic
- 1 piece hot red pepper
- $\frac{1}{2}$ teaspoon mustard seed

Process as recommended.

NOTE: When cutting or seeding hot peppers, wear rubber gloves to prevent hands from burning.

SWEET PICKLE SPEARS

- 4 pounds 3 to 4-inch cucumbers
- 4 cups sugar
- 3³/₄ cups vinegar
- 3 tablespoons canning salt
- 4 teaspoons celery seed
- 4 teaspoons turmeric
- 1¹/₂ teaspoons mustard seed

Slice ends from cucumbers and cut into spears. Cover cucumbers with boiling water; let stand 2 hours. Drain and pack into hot jars, leaving ¹/₄-inch head space. Bring remaining ingredients to a boil. Pour hot liquid over cucumbers, leaving ¹/₄-inch head space. Remove air bubbles. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 10 half pints.

MIXED PICKLES

- 1¹/₄ pounds 3 to 4-inch cucumbers, cut into 1-inch slices
- 2 cups 1¹/₂-inch pared carrot slices (about 3 medium)
- 2 cups 1¹/₂-inch celery slices (about 4 stalks)
- 2 cups peeled pickling onions
- 2 sweet red peppers, cut into wide strips
- 3 cups cauliflowerets (about 1 small head)
- 2 hot red peppers, seeded and cut into rings
- 1 cup canning salt
- 4 quarts water
- 2 cups sugar
- ¹/₄ cup mustard seed
- 2 tablespoons celery seed

6¹/₂ 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 and sugar to vinegar; boil 3 minutes. Add vegetables; simmer for 5 minutes. Pack hot into hot jars, leaving ¹/₄-inch head space. Remove air bubbles. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 6 pints.

NOTE: When cutting or seeding hot peppers, wear rubber gloves to prevent hands from burning.

MUSTARD PICKLES

- 1¹/₂ pounds 3 to 4-inch cucumbers, cut into ¹/₂-inch slices
- 1 quart green tomato wedges (about 6 medium)
- 3 cups cauliflowerets (about 1 small head)
- 3 cups chopped sweet green peppers (about 3 medium)
- 3 cups chopped sweet red peppers (about 3 medium)
- 2 cups peeled pickling onions
- 1 cup canning salt
- 4 quarts water
- 1¹/₂ cups sugar
- ¹/₂ cup flour
- 1 tablespoon turmeric
- 5 cups vinegar
- ¹/₂ cup prepared mustard
- ¹/₂ cup water

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 in a large sauce pot. Add water gradually, stirring until smooth. Add mustard and vinegar. Cook until sauce coats spoon and mixture thickens. Add vegetables. Simmer 15 minutes. Pack hot into hot jars, leaving ¹/₄-inch head space. Remove air bubbles. Adjust caps. Process pints and quarts 10 minutes in boiling water bath. Yield: about 8 pints.

BREAD AND BUTTER PICKLES

- 4 pounds 4 to 6-inch cucumbers, cut into thin slices
- 2 pounds thinly sliced onions (about 8 small)
- ¹/₃ cup canning salt
- 3 cups vinegar
- 2 cups sugar
- 2 tablespoons mustard seed
- 2 teaspoons turmeric
- 2 teaspoons celery seed
- 1 teaspoon ginger
- 1 teaspoon peppercorns

Combine cucumber and onion slices in large bowl. Layer with salt and cover with ice cubes. Let stand 1¹/₂ hours; drain and rinse. Place remaining ingredients in large sauce pot and bring to a boil. Add drained cucumbers and onions and return to a boil. Pack hot into hot jars, leaving ¹/₄-inch head space. Remove air bubbles. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 7 pints.

END of the GARDEN PICKLE

- 1 pound zucchini, cut into ¹/₄-inch slices
- 1 pound tender green beans, ends removed
- ¹/₂ pound carrots, cut into slices (about 3 medium)
- ¹/₂ pound small pickling onions, peeled and cut into ¹/₄-inch slices
- 2 large sweet green peppers, cut into ¹/₂-inch strips
- 1 large sweet red pepper, cut into ¹/₂-inch strips
- 3 cups cider vinegar
- 1 cup brown sugar
- 1 cup sugar
- 2 tablespoons dry mustard
- 2 tablespoons mustard seed
- 1¹/₂ tablespoons salt
- 1 teaspoon cinnamon
- 1 teaspoon ginger

Combine vinegar, sugars, spices and salt in a large sauce pot. Bring to a boil then add prepared vegetables. Return to a boil. Reduce heat and simmer 15 minutes. Pack hot into hot jars, leaving ¹/₄-inch head space. Remove air bubbles. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 5 pints.

CHUTNEYS

APPLE CHUTNEY

- 2 quarts chopped, cored, pared, tart apples (about 16 medium)
- 2 pounds raisins
- 1 cup chopped onions (about 1 medium)
- 1 cup chopped sweet red peppers (about 2 medium)
- 4 cups brown sugar
- 3 tablespoons mustard seed
- 2 tablespoons ginger
- 2 teaspoons allspice
- 2 teaspoons salt
- 2 hot red peppers, finely chopped
- 1 clove garlic, crushed
- 1 quart vinegar

Combine all ingredients in a large sauce pot. Simmer until thick, about 1 hour and 15 minutes. As mixture thickens, stir frequently to prevent sticking. Pour hot into hot jars, leaving ¹/₄-inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 10 pints.

NOTE: For a milder chutney, another quart of chopped apples may be used. Or, remove the seeds from hot pepper. When cutting or seeding hot peppers, wear rubber gloves to prevent hands from burning.

PEACH OR PEAR CHUTNEY

- 4 quarts finely chopped, peeled peaches or pears (about 20 medium)
- 1 cup raisins
- 1 cup chopped onions (about 1 medium)
- 2 to 3 cups brown sugar
- $\frac{1}{4}$ cup mustard seed
- 2 tablespoons ginger
- 2 teaspoons salt
- 1 clove garlic, minced (optional)
- 1 hot red pepper, finely chopped
- 5 cups vinegar

Combine all ingredients in a large sauce pot. Cook slowly until thick, about 40 minutes. Stir frequently to prevent sticking. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 7 pints.

NOTE: For a milder chutney, remove seeds from hot pepper. When cutting or seeding hot peppers, wear rubber gloves to prevent hands from burning.

TOMATO APPLE CHUTNEY

- $2\frac{1}{2}$ quarts peeled, cored, chopped ripe tomatoes (about 15 large)
- 1 quart chopped, cored, pared apples (about 5 medium)
- 2 cups chopped cucumber (about 1 large)
- $1\frac{1}{2}$ cups chopped onion (about $1\frac{1}{2}$ medium)
- $1\frac{1}{2}$ cups chopped sweet red peppers (about 2 medium)
- 1 cup raisins
- 3 cups brown sugar
- 1 hot red pepper, finely chopped
- 1 clove garlic, crushed
- 1 tablespoon ginger
- 1 teaspoon salt
- 1 teaspoon cinnamon
- 3 cups vinegar

Combine all ingredients in a large sauce pot. Cook slowly until thick, about $1\frac{1}{2}$ to 2 hours. As mixture thickens, stir frequently to prevent sticking. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 6 pints.

NOTE: For a milder chutney, remove seeds from hot pepper. When cutting or seeding hot peppers, wear rubber gloves to prevent hands from burning.

FRUIT PICKLES

CRAB APPLE PICKLES

- 2 quarts crab apples with stems (about $2\frac{1}{2}$ pounds)
- 6 cups sugar
- 2 sticks cinnamon
- $1\frac{1}{2}$ tablespoons whole allspice
- $1\frac{1}{2}$ tablespoons whole cloves
- 3 cups water
- 3 cups vinegar

To prevent apples from bursting, run a large sterilized needle through each. Tie spices in a cheesecloth bag. Combine remaining ingredients in a large sauce pot. 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 syrup over apples. Cover and let apples stand 12 to 18 hours in a cool place. Carefully pack apples into hot jars, leaving $\frac{1}{4}$ -inch head space. Remove spice bag. Bring pickling liquid to a boil. Pour hot liquid over apples, leaving $\frac{1}{4}$ -inch head space. Remove air bubbles. Adjust caps. Process pints and quarts 15 minutes in boiling water bath. Yield: about 6 pints.

FIG PICKLES

- 4 quarts firm, ripe figs (about 30 medium)
- 5 cups sugar, divided
- 2 quarts water
- 2 sticks cinnamon
- 1 tablespoon whole allspice
- 1 tablespoon whole cloves
- 3 cups vinegar

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 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. Bring to a simmer; pack hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Remove air bubbles. Adjust caps. Process pints and quarts 15 minutes in boiling water bath. Yield: about 8 pints.

PEACH PICKLES

- 8 pounds peeled peaches, small to medium sized
- 3 pounds sugar
- 4 sticks cinnamon
- 2 tablespoons whole cloves, crushed
- 1 tablespoon fresh ginger
- 1 quart vinegar

Wash and peel peaches. Treat to prevent darkening. Dissolve sugar in vinegar in large sauce pot and heat. Boil 5 minutes and skim. Add spices tied in a cheesecloth bag. Drop drained peaches into boiling syrup and cook until they can be pierced with

a fork, but not soft. Remove from heat and allow peaches to set in pickling liquid overnight to plump. Bring to a boil. Pack peaches into hot jars, leaving $\frac{1}{4}$ -inch head space. Pour hot liquid over peaches, leaving $\frac{1}{4}$ -inch head space. Remove air bubbles. Adjust caps. Process 20 minutes in boiling water bath. Yield: about 3 quarts.

WATERMELON RIND PICKLES

- 4 quarts cubed watermelon rind
- 1 gallon cold water
- 1 cup canning salt
- 2 cups vinegar
- 7 cups sugar
- 1 tablespoon whole cloves
- 1 tablespoon whole allspice
- $\frac{1}{4}$ teaspoon mustard seed
- 3 sticks cinnamon
- $\frac{1}{2}$ cup thinly sliced lemon (about 1 medium)

Pare watermelon rind, removing green and pink portions. Cut rind into 1-inch pieces. Dissolve salt in water; add rind and let stand 6 hours or overnight. Drain; rinse and cover with cold water in large sauce pot. Cook until tender, about 20 minutes; drain and set aside. Combine vinegar, lemon slices, sugar and spices tied in a cheesecloth bag in a large sauce pot. Bring to a boil and cook 10 minutes. Add rind, simmer until transparent. Remove spice bag. Pack rind into hot jars, leaving $\frac{1}{4}$ -inch head space. Pour hot liquid over rind, leaving $\frac{1}{4}$ -inch head space. Remove air bubbles. Adjust caps. Process pints 10 minutes in boiling water bath. Yield: about 6 pints.

PEAR PICKLES

- 12 pounds firm, ripe Seckel pears (about 48 medium)
- 3 cups sugar
- 1 tablespoon mixed pickling spices
- 1 teaspoon whole cloves
- 1 piece ginger root
- $\frac{1}{2}$ cup thinly sliced lemon (about $\frac{1}{2}$ medium)

- $2\frac{1}{2}$ cups water
- $1\frac{1}{2}$ cups vinegar

Peel 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 pickling liquid over pears.

Cover and let stand 12 to 18 hours in a cool place. Pack pears into hot jars, leaving $\frac{1}{4}$ -inch head space. Remove spice bag. Bring pickling liquid to a boil. Pour over pears, leaving $\frac{1}{4}$ -inch head space. Remove air bubbles. Adjust caps. Process pints and quarts 15 minutes in boiling water bath. Yield: about 3 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 liquid.

RELISHES

ARTICHOKE RELISH

2 pounds artichokes
1 cup salt
4 quarts water
2 cups ground sweet red or green peppers (about 3 medium)
2 cups ground onions (about 3 medium)
 $3\frac{1}{3}$ cups sugar
1 quart vinegar
2 tablespoons mustard seed
1 tablespoon turmeric
 $\frac{1}{4}$ teaspoon salt
Wash artichokes well and trim as needed. Dissolve salt in water. Add artichokes and soak overnight. Next morning drain dry. Using coarse blade, grind artichokes. Combine artichokes, onions and peppers, set aside. Dissolve sugar in vinegar and bring to a boil. Add vegetables and spices. Bring mixture to a boil. Pack hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 10 half pints.

INDIA RELISH

3 quarts peeled and chopped tomatoes (about 24 medium)
3 cups chopped celery (about 4 stalks)
2 cups chopped onions (about 2 medium)
 $\frac{1}{4}$ cup salt
1 quart vinegar
3 cups brown sugar
 $\frac{1}{3}$ cup mustard seed
2 cups chopped red peppers (about 2 medium)
1 teaspoon cinnamon
 $\frac{3}{4}$ teaspoon allspice
 $\frac{3}{4}$ teaspoon cloves
Allow the tomatoes, celery, onions and salt to stand for 2 hours. Drain thoroughly. Add remaining ingredients and cook until the mixture is thickened. Fill hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 10 pints.

BEET OR RED RELISH

1 quart chopped cooked beets (about 12 medium)
1 quart chopped cabbage (about 1 small head)
1 cup chopped onion (about 1 medium)
1 cup chopped sweet red peppers (about 2 small)
 $1\frac{1}{2}$ cups sugar
1 tablespoon prepared horseradish
1 tablespoon salt
3 cups vinegar
Combine all ingredients in a large sauce pot. Simmer 10 minutes. Bring to a boil. Pack hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 10 half pints.

CHOW-CHOW RELISH

1 quart chopped cabbage (about 1 small head)
3 cups chopped cauliflower (about 1 medium head)
2 cups chopped green tomatoes (about 4 medium)
2 cups chopped onions (about 2 medium)
2 cups chopped sweet green peppers (about 4 small)
1 cup chopped sweet red peppers (about 2 small)
3 tablespoons salt
 $1\frac{1}{2}$ cups sugar
2 teaspoons celery seed
2 teaspoons dry mustard
1 teaspoon mustard seed
1 teaspoon turmeric
 $\frac{1}{2}$ teaspoon ginger
 $2\frac{1}{2}$ cups vinegar
Combine chopped vegetables; sprinkle with salt. Let stand 4 to 6 hours in a cool place. Drain well.
Combine vinegar, sugar and spices in a large sauce pot. Simmer 10 minutes. Add vegetables; simmer 10 minutes. Bring to a boil. Pack hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 4 pints.

CORN RELISH

2 quarts cut corn (about 18 ears)
1 quart chopped cabbage (about 1 small head)
1 cup chopped onion (about 1 medium)
1 cup chopped sweet green peppers (about 2 small)
1 cup chopped sweet red peppers (about 2 small)
1 to 2 cups sugar
2 tablespoons dry mustard
1 tablespoon celery seed
1 tablespoon mustard seed
1 tablespoon salt
1 tablespoon turmeric
1 quart vinegar
1 cup water

To prepare corn: Boil corn 5 minutes, cut from cob. Combine with remaining ingredients in a large sauce pot. Bring to a boil; reduce heat and simmer 20 minutes. Pack hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 6 pints.

To make corn relish with frozen corn: Defrost overnight in refrigerator or for 2 to 3 hours at room temperature. Corn may be defrosted in microwave oven. Follow directions in recipe.

To make corn relish with vacuum packed canned whole kernel corn: Drain enough canned corn to measure 2 quarts and combine with ingredients listed. Follow directions in recipe.

To make corn relish without cabbage: Add 1 cup chopped celery and 1 minced garlic clove. Follow directions in recipe excluding cabbage.

CUCUMBER RELISH

2 quarts chopped cucumbers (about 8 medium)
2 cups chopped sweet green peppers (about 4 small)
2 cups chopped sweet red peppers (about 4 small)
1 cup chopped onion (about 1 medium)
 $\frac{1}{2}$ cup salt
2 quarts cold water
 $1\frac{1}{2}$ cups brown sugar
2 sticks cinnamon
1 tablespoon mustard seed
1 tablespoon turmeric
2 teaspoons whole allspice
2 teaspoons whole cloves
1 quart vinegar

Combine cucumbers, peppers and onion; sprinkle with turmeric. Dissolve salt in 2 quarts cold water and pour over vegetables; let stand 3 to 4 hours. Drain; cover vegetables with cold water and let stand 1 hour. Drain thoroughly. Tie spices in a cheesecloth bag; add to sugar and vinegar. Bring to a boil and pour over vegetables. Cover and let stand 12 to 18 hours in a cool place. Bring vegetables to a boil; simmer until hot. Pack hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 6 pints.

DIXIE RELISH

- 1 quart chopped cabbage (about 1 small head)
- 2 cups chopped onions (about 2 medium)
- 2 cups chopped sweet green peppers (about 4 small)
- 2 cups chopped sweet red peppers (about 4 small)
- $\frac{1}{2}$ cup salt
- 2 quarts cold water
- $\frac{3}{4}$ cup sugar
- 3 tablespoons mustard seed
- 2 tablespoons celery seed
- 1 quart vinegar

Dissolve salt in 2 quarts cold water. Pour over chopped vegetables and let stand 1 hour. Drain. (If too salty, rinse and drain again.) Add vegetables, sugar and spices to vinegar; simmer 20 minutes. Bring to a boil. Pack hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 7 half pints.

SWEET PICKLE RELISH

- 1 quart chopped cucumbers (about 4 medium)
- 2 cups chopped onions (about 2 medium)
- 1 cup chopped sweet green pepper (about 1 medium)
- 1 cup chopped sweet red pepper (about 1 medium)
- $\frac{1}{4}$ cup salt
- $3\frac{1}{2}$ cups sugar
- 2 cups cider vinegar
- 1 tablespoon celery seed
- 1 tablespoon mustard seed

Combine cucumbers, onions, green and red peppers in a large bowl; sprinkle with salt and cover with cold water. Let stand 2 hours. Drain thoroughly; press out excess liquid. Combine sugar, vinegar and spices in a large sauce pot. Bring to a boil. Add drained vegetables and simmer 10 minutes. Pack hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 8 half pints.

PEAR RELISH

- $10\frac{1}{2}$ pounds pears, peeled, cored and chopped
- 6 cups chopped onions (about 6 medium)
- 6 cups chopped sweet red peppers (about 6 medium)
- 6 cups chopped sweet green peppers (about 6 medium)
- 1 bunch celery, chopped, discard leaves and coarse stalk
- 3 cups sugar
- 1 tablespoon allspice
- 1 tablespoon salt
- 5 cups vinegar

Combine all ingredients and let stand overnight. Bring mixture to a boil. Pack into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 20 minutes in boiling water bath. Yield: about 9 pints.

PEPPER-ONION RELISH

- 2 quarts chopped sweet green peppers (about 10 medium)
- 2 quarts chopped sweet red peppers (about 10 medium)
- $1\frac{1}{2}$ cups chopped onions (about $1\frac{1}{2}$ medium)
- 4 teaspoons mixed pickling spices
- 2 hot red peppers, finely chopped
- $1\frac{1}{2}$ cups sugar
- 4 teaspoons salt
- $3\frac{1}{2}$ cups vinegar

Cover chopped vegetables with boiling water; let stand 5 minutes. Drain; cover again with boiling water and let stand 10 minutes. Drain. Tie pickling spices and hot red peppers in a cheesecloth bag. Add spice bag, sugar and salt to vinegar; simmer 15 minutes. Add drained vegetables and simmer 10 minutes. Remove spice bag. Bring to a boil. Pack hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 6 pints.

NOTE: When cutting or seeding hot peppers, wear rubber gloves to prevent hands from being burned.

PICCALILLI OR GREEN TOMATO RELISH

- 4 quarts peeled, cored, chopped green tomatoes (about 32 medium)
- 2 quarts chopped cabbage (about 1 large head)
- 2 cups chopped sweet green peppers (about 4 small)
- 1 cup chopped onion (about 1 medium)
- $1\frac{1}{2}$ cups brown sugar
- $\frac{1}{2}$ cup salt
- 2 tablespoons mustard seed
- 1 tablespoon celery seed
- 1 tablespoon prepared horseradish
- $4\frac{1}{2}$ cups vinegar

Sprinkle salt over vegetables and mix thoroughly; let stand 3 to 4 hours. Drain thoroughly. Press to remove free liquid. Add sugar, spices and horseradish to vinegar; simmer 15 minutes. Add vegetables and bring to a boil. Pack hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 7 pints.

RED PEPPER RELISH

- 2 quarts finely chopped sweet red peppers (about 8 small)
- 2 tablespoons salt
- 2 cups sugar
- 2 cups vinegar

Combine peppers and salt; let stand 3 to 4 hours. Add sugar and vinegar; cook, stirring frequently, about 45 minutes. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 6 half pints.

RUMMAGE RELISH

- 2 quarts cored, chopped green tomatoes (about 16 medium)
- 1 quart peeled, cored, chopped ripe tomatoes (about 8 medium)
- 1 quart chopped cabbage (about 1 small head)
- 3 cups chopped onions (about 3 medium)
- 2 cups chopped celery (about 3 stalks)
- 1 cup chopped cucumber (about 1 medium)
- 1 cup chopped sweet green peppers (about 2 small)
- 1 cup chopped sweet red peppers (about 2 small)
- $\frac{1}{2}$ cup salt
- 4 cups brown sugar
- 1 tablespoon celery seed
- 1 tablespoon cinnamon
- 1 tablespoon mustard seed
- 1 teaspoon ginger
- $\frac{1}{2}$ teaspoon cloves
- 2 cloves garlic, minced
- 2 quarts vinegar

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 a boil. Pack hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 8 pints.

NOTE: To prepare CURRY RELISH, follow recipe for Rummage Relish and add 2 cups raisins and $1\frac{1}{2}$ teaspoons curry powder when vegetables are added to pickling solution.

SAUCES

BARBECUE SAUCE

- 4 quarts peeled, cored, chopped red-ripe tomatoes (about 24 large)
- 2 cups chopped celery (about 3 stalks)
- 2 cups chopped onions (about 2 medium)
- $1\frac{1}{2}$ cups chopped sweet green or sweet red peppers (about 2 medium)
- 2 hot red peppers, finely chopped
- 1 teaspoon peppercorns
- 1 cup brown sugar
- 2 cloves garlic, minced
- 1 tablespoon dry mustard
- 1 tablespoon paprika
- 1 tablespoon salt
- 1 teaspoon hot pepper sauce
- $\frac{1}{8}$ teaspoon cayenne pepper
- 1 cup vinegar

Combine tomatoes, celery, onions and peppers in a large sauce pot. Cook until vegetables are soft, about 30 minutes. Press through a fine sieve or food mill. Cook until mixture is reduced to about one half, about 45 minutes. Tie peppercorns in a cheesecloth bag; add with remaining ingredients and cook slowly until mixture is the consistency of catsup, about $1\frac{1}{2}$ hours. As mixture thickens, stir frequently to prevent sticking. Remove spice bag. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process half pints and pints 20 minutes in boiling water bath. Yield: about 4 pints.

NOTE: When cutting or seeding hot peppers, wear rubber gloves to prevent hands from burning.

CHILI SAUCE

- 4 quarts peeled, cored, chopped, red-ripe tomatoes (about 24 large)
- 2 cups chopped onions (about 2 medium)
- 2 cups chopped sweet red peppers (about 4 medium)
- 1 hot red pepper, finely chopped
- 1 cup sugar
- 3 tablespoons salt
- 3 tablespoons mixed pickling spices
- 1 tablespoon celery seed
- 1 tablespoon mustard seed
- $2\frac{1}{2}$ cups vinegar

Combine tomatoes, onions, sweet and hot peppers, sugar and salt in a large sauce pot. Cook gently 45 minutes. Tie spices in a cheesecloth bag; add to tomato mixture; cook until mixture is reduced by one half, about 45 minutes. As mixture thickens, stir frequently to prevent sticking. Add vinegar and cook slowly until as thick as desired. Remove spice bag. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 6 pints.

NOTE: When cutting or seeding hot peppers, wear rubber gloves to prevent hands from burning.

PERUVIAN SAUCE

- 4 quarts peeled, cored, chopped, red-ripe tomatoes (about 24 large)
- 1 quart cored, pared, chopped apples (about 5 medium)
- 1 quart chopped onions (about 4 medium)
- $1\frac{1}{2}$ cups chopped sweet green peppers (about 2 medium)
- 1 hot red pepper, finely chopped
- 1 clove garlic, minced
- 3 cups brown sugar
- 1 tablespoon allspice
- 1 tablespoon mustard seed
- 1 tablespoon salt
- 1 teaspoon cinnamon
- 3 cups vinegar

Combine tomatoes, apples, onions, peppers, garlic and sugar in a large sauce pot. Cook slowly until thick, about 1 hour. As mixture thickens, stir frequently to prevent sticking. Add spices and vinegar. Cook until as thick as desired, 45 to 60 minutes. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 6 pints.

NOTE: When cutting or seeding hot peppers, wear rubber gloves to prevent hands from burning.

RED HOT SAUCE

- 2 quarts peeled, cored, chopped red-ripe tomatoes (about 12 large)
- $1\frac{1}{2}$ 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

Combine tomatoes, peppers and 2 cups vinegar in a large sauce pot. 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 as thick as desired, about 20 to 30 minutes. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 4 half pints.

NOTE: When cutting or seeding hot peppers, wear rubber gloves to prevent hands from burning.

TOMATO CATSUP Using Tomato Purée

- 2 quarts tomato purée
- $1\frac{1}{3}$ cups vinegar
- $\frac{1}{2}$ cup sugar
- 2 teaspoons whole allspice
- 2 sticks cinnamon
- 1 teaspoon whole cloves
- $1\frac{1}{2}$ teaspoons paprika
- 1 teaspoon dry mustard
- 1 teaspoon salt
- $\frac{1}{4}$ teaspoon cayenne pepper

Combine purée, vinegar and sugar in a large sauce pot. Tie whole spices in a cheesecloth bag. Add to tomato mixture; add remaining ingredients and cook slowly until as thick as desired, about 45 to 60 minutes. As mixture thickens, stir frequently to prevent sticking. Remove spice bag. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 2 pints.

TOMATO CATSUP

Using Whole Tomatoes

- 4 quarts peeled, cored, chopped, red-ripe tomatoes (about 24 large)
- 1 cup chopped onion (about 1 medium)
- 1/2 cup chopped sweet red pepper (about 1/2 medium)
- 1 1/2 teaspoon celery seed
- 1 teaspoon whole allspice
- 1 teaspoon mustard seed
- 1 stick cinnamon
- 1 cup sugar
- 1 tablespoon salt
- 1 1/2 cups vinegar
- 1 tablespoon 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. Remove spice bag. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 3 pints.

SPICY CHILI SAUCE

- 4 quarts peeled, cored, chopped, red-ripe tomatoes (about 24 large)
- 2 cups chopped onions (about 2 medium)
- 1 1/2 cups chopped sweet green peppers (about 1 1/2 medium)
- 1 1/2 cups sugar
- 1 tablespoon celery seed
- 1 tablespoon salt
- 1 teaspoon allspice
- 1 teaspoon cloves
- 1 teaspoon cinnamon
- 1 teaspoon ginger
- 1 1/2 cups vinegar

Combine all ingredients in a large sauce pot. Bring to a boil; simmer until as thick as desired, about 1 to 2 hours. Stir frequently to prevent sticking. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 8 pints.

VICTORIA SAUCE

(Rhubarb)

- 2 quarts chopped rhubarb (about 12 stalks)
- 1 1/2 cups chopped raisins
- 1/2 cup chopped onion (about 1/2 medium)
- 3 1/2 cups brown sugar
- 1 cup vinegar
- 1 teaspoon allspice
- 1 teaspoon cinnamon
- 1 teaspoon ginger
- 1 teaspoon salt

Combine rhubarb, raisins, onion, sugar and vinegar in a large sauce pot. Cook until thick, about 25 minutes. As mixture thickens, stir frequently to prevent sticking. Add spices; cook 5 minutes longer. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 4 pints.

OTHER VEGETABLES

BEEF PICKLES

- 3 quarts peeled, cooked beets (about 24 small)
- 2 cups sugar
- 2 sticks cinnamon
- 1 tablespoon whole allspice
- 1 1/2 teaspoons salt
- 3 1/2 cups vinegar
- 1 1/2 cups water

Combine all ingredients, except beets in a large sauce pot. Simmer 15 minutes. Pack beets into hot jars, leaving 1/4-inch head space. (Cut larger beets in half, if necessary.) Remove cinnamon. Bring pickling liquid to a boil. Pour hot liquid over beets, leaving 1/4-inch head space. Remove air bubbles. Adjust caps. Process pints and quarts 30 minutes in boiling water bath. Yield: about 6 pints.

SPICED RED CABBAGE

- 12 pounds red cabbage (about 3 large heads)

Salt

- 2 quarts wine vinegar
- 1 cup brown sugar
- 1/2 cup mustard seed
- 1/4 cup whole cloves
- 1/4 cup mace
- 1/4 cup whole allspice
- 1/4 cup peppercorns
- 1/4 cup celery seed
- 2 sticks cinnamon

Remove outer leaves, core and shred cabbage. Place in large bowl, salting each layer. Cover and stand in cool place 24 hours. Drain thoroughly on paper towel-lined trays or wooden boards about 6 hours. Combine vinegar, sugar and mustard seed in a large sauce pot. Tie remaining spices in a cheesecloth bag; add to vinegar mixture. Boil 5 minutes. Pack cabbage into hot jars, leaving 1/4-inch head space. Remove spice bag. Pour hot liquid over cabbage, leaving 1/4-inch head space. Adjust caps. Process quarts 20 minutes in boiling water bath. Yield: about 5 quarts.

CARROT PICKLES

- 2 to 3 pounds small carrots
- 2 cups vinegar
- 1 1/2 cups water
- 1 cup sugar
- 1 teaspoon salt
- 1 tablespoon mixed pickling spices
- 1 stick cinnamon

Wash, drain, and remove skins. Cook carrots until just tender. Leave small carrots whole; cut larger ones into pieces as desired. Combine vinegar, water, sugar and salt. Tie remaining spices in a cheesecloth bag; add to vinegar mixture. Boil 5 to 8 minutes. Pack carrots into hot jars, leaving 1/4-inch head space. Remove spice bag. Bring pickling liquid to a boil. Pour hot liquid over carrots, leaving 1/4-inch head space. Remove air bubbles. Adjust caps. Process pints and quarts 30 minutes in boiling water. Yield: about 3 pints.

PICKLED CAULIFLOWER

- 3 quarts cauliflowerets (about 2 large heads)
- 1 1/2 cups peeled pickling onions
- 1/4 cup canning salt
- 1 quart vinegar
- 2 cups sugar
- 2 tablespoons mustard seed
- 1 tablespoon celery seed
- 1 teaspoon turmeric
- 1 hot red pepper (optional)

Combine cauliflower, onions and salt. Cover with ice; let stand 2 to 3 hours. Drain thoroughly. Combine vinegar, sugar, mustard seed, celery seed and turmeric in a large sauce pot. Cut two small slits in hot red pepper. Add pepper to vinegar mixture. Bring to a boil. Add cauliflower and onions; return to a boil. Reduce heat and simmer 7 minutes. Remove hot red pepper. Pack hot into hot jars, leaving 1/4-inch head space. Remove air bubbles. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 5 pints.

NOTE: When cutting or seeding hot peppers, wear rubber gloves to prevent hands from burning.

CALICO CORN

- 1 quart cut cooked corn (about 9 ears)
- 1 cup chopped onion (about 1 medium)
- 1/2 cup diced sweet green pepper (about 1/2 medium)
- 1/2 cup diced sweet red pepper (about 1/2 medium)
- 2 cups vinegar
- 1 1/2 cups sugar
- 1 tablespoon salt
- 1 1/2 teaspoons celery seed
- 1 1/2 teaspoons mustard seed
- 1 tablespoon dry mustard
- 1/2 teaspoon turmeric

Combine all ingredients in a large sauce pot. Bring to a boil; simmer 20 minutes. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 6 half pints.

NOTE: Recipe may be prepared with vacuum packed canned whole kernel corn. Drain before measuring.

DILLY BEANS

- 2 pounds trimmed green beans
- 4 heads dill
- 4 cloves garlic
- 1 teaspoon cayenne pepper
- 2 1/2 cups vinegar
- 2 1/2 cups water
- 1/4 cup canning salt

Pack beans lengthwise into hot jars, leaving 1/4-inch head space. To each pint, add 1/4 teaspoon cayenne pepper, 1 clove garlic and 1 head dill. Combine remaining ingredients in a large sauce pot. Bring to a boil. Pour hot liquid over beans, leaving 1/4-inch head space. Remove air bubbles. Adjust caps. Process pints and quarts 10 minutes in boiling water bath. Yield: about 4 pints.

DILLED BRUSSELS SPROUTS

- 2 pounds Brussels sprouts
- 2 1/2 cups water
- 2 1/2 cups vinegar
- 3 tablespoons salt
- 1 teaspoon cayenne pepper
- 4 cloves garlic
- 4 heads dill

Cook Brussels sprouts until just tender, leaving whole. Combine water, vinegar, salt and pepper; boil 5 minutes. Pack Brussels sprouts into hot jars. To each pint add a clove of garlic and 1 head of dill. Pour hot liquid over Brussels sprouts, leaving 1/4-inch head space. Remove air bubbles. Adjust caps. Process pints 15 minutes in boiling water bath. Yield: about 4 pints.

OKRA PICKLES

- 3 1/2 pounds small okra pods
- 4 cloves garlic
- 2 small hot peppers, cut in half
- 3 cups water
- 3 cups vinegar
- 1/3 cup canning salt
- 2 teaspoons dill seed

Pack okra firmly into hot jars, leaving 1/4-inch head space. Put a garlic clove and half a pepper in each jar. Combine water, vinegar, salt and dill seed and bring to a boil. Pour hot liquid over okra, leaving 1/4-inch head space. Remove air bubbles. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 4 pints.

NOTE: When cutting or seeding hot peppers, wear rubber gloves to prevent hands from burning.

ONION PICKLES

- 4 quarts peeled pickling onions
- 1 cup canning salt
- 2 cups sugar
- 1/4 cup mustard seed
- 2 1/2 tablespoons prepared horseradish
- 2 quarts vinegar
- 7 bay leaves
- 7 small hot red peppers

To peel pickling onions: cover onions with boiling water; let stand 2 minutes. Drain; dip in cold water; peel.

Sprinkle onions with salt; add cold water to cover. Let stand 12 to 18 hours in a cool place. Drain, rinse and drain thoroughly. Combine sugar, mustard seed, horseradish and vinegar; simmer 15 minutes. Pack onions into hot jars, leaving 1/4-inch head space. Cut two small slits in hot red peppers. Add 1 pepper and 1 bay leaf to each jar. Bring pickling liquid to a boil. Pour hot liquid over onions, leaving 1/4-inch head space. Remove air bubbles. Adjust caps. Process half pints and pints 10 minutes in boiling water bath. Yield: about 7 pints.

NOTE: When cutting or seeding hot peppers, wear rubber gloves to prevent hands from burning.

PICKLED PEPPERS

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

Cut two small slits in each pepper. 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 in a large sauce pot. Simmer 15 minutes. Remove garlic. Pack peppers into hot jars, leaving 1/4-inch head space. Bring pickling liquid to a boil. Pour hot liquid over peppers, leaving 1/4-inch head space. Remove air bubbles. Adjust caps. Process half pints and pints 10 minutes in boiling water bath. Yield: about 8 pints.

NOTE: When cutting or seeding hot peppers, wear rubber gloves to prevent hands from burning.

STUFFED GREEN PEPPERS OR GREEN TOMATOES

- 12 medium green peppers or green tomatoes
- 4 quarts water
- 1 cup salt
- 1 quart shredded cabbage (about 1 medium head)
- 2 tablespoons mustard seed
- 1 teaspoon salt
- $\frac{1}{2}$ teaspoon white pepper
- 1 quart vinegar
- 2 cups water
- $\frac{1}{4}$ cup sugar

Cut tops off peppers or tomatoes; save. Scoop out centers. Dissolve 1 cup salt in 4 quarts cold water; pour over vegetable shells and tops; let stand 24 hours in a cool place. Drain; rinse and drain thoroughly. Combine cabbage, mustard seed, salt and pepper; press into shells. Replace tops and fasten with toothpicks or sew with coarse thread. Pack into hot jars, leaving $\frac{1}{4}$ -inch head space. Combine vinegar, water and sugar. Bring to a boil. Pour hot liquid over peppers or tomatoes, leaving $\frac{1}{4}$ -inch head space. Remove air bubbles. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 3 quarts.

SAUERKRAUT

- About 50 pounds cabbage
- 1 pound canning salt

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 pickling container. 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 container is filled to within 3 to 4 inches of the top. If juice does not cover cabbage, add boiled and cooled brine: 1 $\frac{1}{2}$ tablespoons salt to 1 quart water.

Cover cabbage with a clean, thin, white cloth (such as muslin) and tuck the edges down against the inside of the container. Weight cabbage under brine.

Formation of gas bubbles indicates fermentation is taking place. Remove and discard scum formation each day. A room temperature of 68°-72°F is best for fermenting cabbage. Fermentation is usually completed in 5 to 6 weeks. **To Can:** Bring sauerkraut to a simmer (185°-210°F). Do not boil. Pack hot into hot jars, leaving $\frac{1}{2}$ -inch head space. Cover with hot liquid, leaving $\frac{1}{2}$ -inch head space. Remove air bubbles. Adjust caps. Process pints 15 minutes and quarts 20 minutes in boiling water bath. Yield: about 18 quarts.

SOUR ONION PICKLES

- 1 quart peeled, pickling onions
- $\frac{1}{4}$ cup canning salt
- 3 cups vinegar
- 3 tablespoons sugar
- 1 tablespoon mustard seed
- 2 teaspoons prepared horseradish
- 4 small hot red peppers

To Peel Pickling Onions: cover onions with boiling water; let stand 2 minutes. Drain; dip in cold water; peel.

Sprinkle onions with salt; add cold water to cover. Let stand 12 to 18 hours in a cool place. Drain, rinse and drain thoroughly. Combine vinegar, sugar, mustard seed and horseradish; simmer 15 minutes. Pack onions into hot jars, leaving $\frac{1}{4}$ -inch head space. Cut two small slits in hot red peppers. Add 1 hot red pepper to each jar. Bring pickling liquid to a boil. Pour hot liquid over onions, leaving $\frac{1}{4}$ -inch head space. Remove air bubbles. Adjust caps. Process half pints and pints 10 minutes in boiling water bath. Yield: about 4 half pints.

NOTE: When cutting or seeding hot peppers, wear rubber gloves to prevent hands from burning.

HOT PICKLE MIX

- 1 $\frac{1}{2}$ quarts pickling cucumbers, cut into $\frac{1}{2}$ -inch slices
- 2 medium sweet green peppers, seeded and cut into strips
- 2 medium sweet red peppers, seeded and cut into strips
- 1 $\frac{1}{2}$ cups sliced carrots (about 3 medium)
- 3 cups cauliflowerets (about 1 small head)
- 1 cup peeled, pickling onions
- 1 $\frac{1}{2}$ quarts long red, green or yellow peppers
- 3 or 4 fresh jalapeno peppers or dried red pepper pods
- 1 $\frac{1}{2}$ cups canning salt
- 4 quarts water
- $\frac{1}{4}$ cup sugar
- 2 tablespoons prepared horseradish
- 2 cloves garlic
- 10 cups vinegar
- 2 cups water

Prepare cucumbers, sweet green and red peppers, carrots, cauliflower and onions. Dissolve salt in 4 quarts water. Pour over vegetables; let stand 1 hour. With rubber gloves, remove seeds from hot peppers; cut into 1 1/2-inch pieces. Combine remaining ingredients; simmer 15 minutes. Remove garlic. Drain vegetables. Pack vegetables and peppers except jalapeno into hot jars, leaving 1/4-inch head space. Add a piece of jalapeno or red pepper pod to each jar. Pour hot liquid over mix, leaving 1/4-inch head space. Remove air bubbles. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 7 pints.

ZUCCHINI PICKLES

- 2 pounds zucchini (about 8 small)
- 1/3 pound onion (about 1 small)
- 1/4 cup canning salt
- 2 cups sugar
- 2 teaspoons mustard seed
- 1 teaspoon celery salt
- 1 teaspoon turmeric
- 3 cups vinegar

Wash zucchini and cut in thin slices. Peel and cut onions in quarters, then slice very thin. Add to zucchini. Sprinkle zucchini and onion with salt; add cold water to cover. Let stand 2 hours.

Drain thoroughly. Bring remaining ingredients to a boil. Pour over zucchini and onions. Let stand 2 hours. Bring all ingredients to boiling point and heat 5 minutes. Pack hot into hot jars, leaving 1/4-inch head space. Remove air bubbles. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 4 half pints.

SQUASH PICKLES

- 2 pounds summer squash (about 4 medium)
- 2 cups water
- 1 1/4 cups sugar
- 1 cup vinegar
- 1/2 teaspoon turmeric
- 1/2 teaspoon ginger
- 1 teaspoon salt
- 1 teaspoon dry mustard
- 1 1/3 cup sliced onion (about 1 small)

Peel, seed and cut squash into 1/2-inch cubes. Combine water, sugar, vinegar, turmeric, ginger, salt and dry mustard in a large sauce pot. Bring mixture to a boil. Add squash and onions; boil 10 minutes. Pack hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 4 half pints.



JELLIES & SEMI-SOFT SPREADS

Jellies and related semi-soft spreads — jams, preserves, preserves, marmalades and butters — are particularly fun to make and add a special touch to any meal. These popular spreads, put up in jars with decorator lids, make excellent gifts.

Actually there is very little difference between the various spreads. They are all made of fruit and sugar and are jellied to various degrees. They differ mostly in consistency.

Jelly—Just the strained juice from fruit is used to make jelly. It is usually prepared in a way that keeps it crystal clear and shimmering. It is gelatinized enough to make it firm and capable of holding its shape outside the jar, yet it is soft enough to spread easily.

Butters—Butters are made by cooking fruit pulp and sugar to a thick consistency that will spread easily. Spices may be added; the amount and variety depend upon personal taste. After sugar is added, butters should be cooked slowly and stirred frequently to prevent scorching. If a fine-textured butter is desired, the pulp can be processed through a food mill and then strained through a fine-meshed sieve.

Conserves—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 like jelly. A true conserve contains nuts and raisins, but recipes may be varied according to personal taste by either adding or omitting these two ingredients. Conserves should be made in small batches and cooked rapidly after the sugar has dissolved. Nuts, if used, should be added during the last five minutes of cooking time.

Jams—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.

Marmalades—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, brought rapidly to, or almost to, the jelling point. In preparing oranges, lemons and grapefruit for marmalade, part of the white rind

should be cooked, for it contains most of the pectin found in citrus fruits.

Preserves—Preserves are fruits preserved with sugar so that the fruit retains its shape, is clear and shiny, tender and plump. The syrup is clear and varies from the thickness of honey to that of soft jelly. Preserves should be cooked in small batches and in wide pans. If the syrup becomes too thick before the fruit is tender and clear, boiling water ($\frac{1}{4}$ cup at a time) should be added. If the fruit is clear and tender but the syrup is too thin, the fruit should be removed and the syrup cooked rapidly to the desired consistency (to, or almost to, the jelling point).

INGREDIENTS

Proper amounts of four ingredients—fruit, pectin, acid and sugar—are needed to make a jellied fruit product.

Fruit—Fruit provides the flavoring for soft spreads. As in other canning, the selection and handling of fruit are critical to success. Only top-quality fruit, slightly underripe or barely ripe, is best for these products.

Pectin—Pectin is a natural substance of high molecular weight found in varying amounts in fruits. It is pectin that causes jelly to gel. Fruit that is slightly underripe contains more pectin than fully ripe fruit. Overripe fruit used in spreads will likely cause a runny final product. Many recipes call for the skins and cores of various fruit to be included in preparing fruit for juice or pulp. This is because the pectin is concentrated in these areas.

Tart apples, concord grapes, sour blackberries, cranberries, currants, gooseberries, quinces and sour plums are examples of fruits which contain considerable natural pectin. Apricots, blueberries, cherries, peaches, pineapple, rhubarb and strawberries are low in pectin.

Many recipes call for the addition of pectin. It is available commercially, either in liquid or powdered form. The two forms are not interchangeable, so the type called for in the recipe must be used. Recipes made without commercial pectin require less sugar and a longer boiling time to reach the jelling point. The yield from the "long boil" type of recipe is smaller than the yield of recipes with added pectin.

Acid—Acid adds to the flavor and helps with the gel formation in spreads. Like pectin, the acid content varies in different fruits, but is higher in slightly underripe fruit than in fruit that is fully ripe. To test for acid content, mix a teaspoon of lemon juice, 3 tablespoons of water and $\frac{1}{2}$ teaspoon of sugar. Taste this mixture and the fruit juice you're planning to use. Unless your juice tastes as tart as the lemon juice mixture, it does not have enough acid to gel properly. Citric acid, available commercially, or lemon juice can be added to fruits low in natural acid. One tablespoon of strained lemon juice to 1 cup of fruit juice usually will supply the acid needed.

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.

Light corn syrup can be used to replace part of the sugar in recipes. In recipes without added pectin, one fourth of the sugar can be replaced with syrup. Where powdered pectin is used, corn syrup can replace one half the sugar.

Honey can also be used to replace sugar. Light, mild-flavored honey generally is the best kind to use. In recipes without added pectin, honey can replace one half the sugar. When pectin is added, 2 cups of honey can replace 2 cups of sugar in most recipes; $\frac{3}{4}$ to 1 cup of sugar can be replaced by honey in small recipes (5 to 6 half-pint jars).

JELLY

A large sauce pot is essential for making jelly. A sauce pot of 8 to 10 quarts capacity with a broad flat bottom is ideal for most recipes. This size permits the jelly mixture to come to a rolling boil without boiling over.

A jelly bag is another necessity. It is used for straining juice from the fruit pulp. An adequate bag can be made of several thicknesses of closely woven cheesecloth or of cotton flannel with the napped side in.

A clock or watch with a second hand is invaluable for timing jelly made with pectin added. A thermometer—the jelly, candy or deep-fat type—is a great aid in making jelly without pectin.

Increasing the size of jelly recipes is not recommended. Better success is obtained, for example, by making two separate batches of a recipe rather than doubling the size. Only enough fruit for one batch should be prepared

at a time, since the fruit will deteriorate rapidly.

The fruit selected should include some that is underripe, but not green, for added pectin and acid and some that is firm ripe for flavor. It should be washed and rinsed thoroughly, either under cold running water or with several complete rinses in a pan. Lift fruit from the rinse water instead of pouring the water off, since most of the dirt settles to the bottom.

All damaged parts of the fruit should be discarded. Caps, stems and blossom ends should be removed, but fruits should not be peeled or cored. Larger fruit should be cut into small pieces. Berries should be handled carefully to prevent loss of juice.

The fruit is boiled in water to extract the juice. For apples and other hard fruits, add enough cold water to cover the fruit in the sauce pot. For berries and grapes, use only enough water to prevent scorching. Soft fruits, such as berries and grapes, should be crushed to start the flow of juice. Bring the water to a boil. 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 fruit 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 above a stand or colander to allow the juice to drain. Do not squeeze the bag; a cloudy jelly will result. If a fruit press is used to extract the juice, the juice should be strained through a jelly bag. The jelly bag should not be squeezed.

The techniques for jelly making vary slightly, depending upon whether pectin is added or not.

To test pectin, cook $\frac{1}{4}$ cup juice with $2\frac{1}{2}$ tablespoons sugar to see if it jells. At this point, the juice is ready and can be used immediately or can be canned or frozen for making jelly at a later time.

In making jelly without pectin added, the jelling point must be determined. First put the juice into a large sauce pot and bring to boiling. With juice boiling, add sugar and stir until it dissolves. Boil rapidly to jelling point using the thermometer or sheet test to determine jelling point.

Jars should be examined for nicks and cracks. Jars, lids and bands should be washed in hot, soapy water and rinsed well in hot water. Jars should be placed in a deep container, covered with water and boiled for 10 minutes to sterilize them. Jars should remain in hot water until ready to use, removing one at a time as needed. Lids should be covered with water in a small saucepan and brought to a simmer (180°F).

The pan should be removed from heat and the lids allowed to remain in the hot water until ready for use.

JELLYING POINT

The jelling point can be tested using the sheet test (See Figure 17). Dip a cool metal spoon into the boiling jelly mixture. Lift out a spoonful of the mixture and tip the spoon so the juice will drop into the kettle. When the mixture first starts to boil, the drops will be light and syrupy. Later, the drops will become larger and will drop off the spoon two at a time. When two drops form together and run off the spoon like a sheet or flake, the jelling point has been reached.

The jelling point can also be tested by thermometer, a more dependable method (See Figure 18).

TEST FOR JELLYING POINT

without pectin added



Jelly drops at first are light and syrupy



Then they become larger and show signs of sheeting



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

FIGURE 17

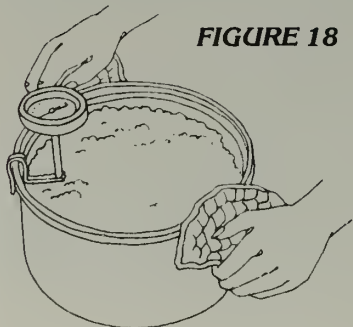


FIGURE 18

Differences in altitude and barometric pressure will cause the jelly mixture to boil at different temperatures. Before cooking the jelly, test the candy or jelly thermometer in boiling water to find out what the boiling point of water is in your area. Cook the jelly to a temperature 8°F higher than the boiling point of water for your area. At that point, a satisfactory gel should be achieved.

For an accurate thermometer reading, hold the thermometer in a vertical position in the sauce pot and read it at eye level. The bulb of the thermometer must be completely covered with the jelly mixture but must not touch the bottom of the sauce pot.

Remove sauce pot from heat; skim foam if necessary. Pour hot jelly into hot sterilized jar, holding ladle close to the top of the jar. This prevents air bubbles from forming.

Quickly fill jar to within $\frac{1}{4}$ inch of the top. Wipe top and threads with clean, damp cloth. Put hot lid on with sealing compound next to jar. Screw band on evenly and firmly.

Place each jar as it is filled onto elevated rack over canner containing simmering water. When rack is filled with jars, lower into canner. Add simmering water to cover jars by 1 to 2 inches. Cover canner and bring water to a boil. Reduce heat to hold water at a steady boil. Start counting processing time when water reaches a rolling boil.

When processing time has been completed, remove jars from canner. Stand jars upright to cool on a cloth, out of drafts and with space between them.



boiling water bath method



steam pressure method

MICROWAVE JAM, JELLY RECIPES

Don't forget to process in boiling water bath canner!

Special jam and jelly recipes developed for cooking in the microwave oven will result in quick, fresh-tasting products. Microwave ovens cannot replace processing of jams and spreads, but can be used to shorten their preparation time. The proportions of fruit, liquid and pectin differ from conventional recipes because of the short cooking time which results in less evaporation. After preparing the spreads in the microwave oven, they must be processed in a boiling water bath canner. **Do not process any foods in the microwave oven.**

MICROWAVE CHERRY PRESERVES

- 3 cups pitted red cherries
- 1 cup water
- 2 teaspoons lemon juice
- 3 cups sugar
- $\frac{1}{4}$ cup powdered pectin
- $\frac{1}{2}$ teaspoon almond extract

Combine cherries, water, lemon juice and pectin in a 3-quart, microwave-safe bowl. Cover with plastic wrap or waxed paper and bring to a boil in the microwave oven on high setting (about 8 minutes). Remove from the oven and stir in remaining ingredients. Cover; place in the microwave oven; and return to a boil on high setting (about 6 minutes). Stir and return to microwave oven, uncovered. Cook 3 minutes. Stir and return to microwave oven, uncovered. Cook 3 minutes or until preserves sheet from spoon. Remove from oven; skim foam if necessary. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Do not attempt to process in microwave oven. Yield: about 3 half pints.

MICROWAVE GRAPE JELLY

- $1\frac{1}{2}$ cups grape juice
- 2 teaspoons lemon juice
- 1 tablespoon powdered pectin
- $1\frac{3}{4}$ cups sugar

Combine grape juice, lemon juice and pectin in a 3-quart, microwave-safe bowl. Cover with plastic wrap or waxed paper and bring to a boil in the microwave oven on high setting (about 5 minutes). Remove from oven and add sugar. Stir until sugar dissolves; then return to oven. Bring mixture to a boil on high setting (about 4 minutes). Remove from the oven and stir. Return the uncovered mixture to the oven and

cook until jelly sheets from a spoon (about 1 minute). Remove from oven; skim foam if necessary. Pour hot into hot, sterilized jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 5 minutes in boiling water bath. Do not attempt to process in microwave oven. Yield: about 2 half pints.

MICROWAVE RED HOT APPLE JELLY

- 4 cups bottled apple juice
- 1 package powdered pectin
- 4 cups sugar
- $\frac{1}{4}$ cup red hot cinnamon candies

Combine apple juice and pectin in a 3-quart, microwave-safe bowl. Cover with plastic wrap or waxed paper and bring to a boil in the microwave oven on high setting (about 12 to 14 minutes). Stir twice. Remove from oven; add sugar and cinnamon candies, stirring well. Return to microwave; cook until mixture returns to a rolling boil, about 10 to 12 minutes, stirring occasionally. Boil hard 1 minute. Remove from oven. Skim foam if necessary. Pour hot into hot, sterilized jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 5 minutes in boiling water bath. Do not attempt to process in microwave oven. Yield: about 6 half pints.

MICROWAVE STRAWBERRY JAM

- 4 cups crushed strawberries
- 1 tablespoon lemon juice
- $\frac{1}{4}$ cup powdered pectin
- 3 cups sugar
- $\frac{1}{2}$ teaspoon coriander (optional)

Combine strawberries, lemon juice and pectin in a 3-quart, microwave-safe bowl. Cover with plastic wrap or waxed paper and bring to a boil in the microwave oven on high setting (about 7 minutes). Remove from oven and stir. Cover and cook 3 minutes in microwave oven. Add remaining ingredients. Return uncovered mixture to oven and cook until jam sheets from spoon (about 1 minute). Remove from oven; skim foam if necessary. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Do not attempt to process in microwave oven. Yield: about 4 half pints.

JELLY RECIPES

Don't forget to process in boiling water bath canner!

APPLE JELLY

- 4 cups apple juice (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 a boil on high heat. Reduce heat and simmer for 20 to 25 minutes, or until apples are soft. Extract juice.

To make jelly: Measure juice into a large sauce pot. 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 foam if necessary. Pour hot into hot, sterilized jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 5 minutes in boiling water bath. Yield: about 4 half pints.

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.

CHERRY BOURBON JELLY

- 2 cans (16 ounces each) water packed sour red cherries
- 1 package powdered pectin
- $2\frac{1}{2}$ cups sugar
- $\frac{1}{2}$ cup bourbon

Drain cherries, reserving $1\frac{1}{2}$ cups juice. Combine reserved juice and pectin in a large sauce pot. Bring mixture to a rolling boil. Add sugar and return to a rolling boil. Boil hard for 1 minute, stirring constantly. Remove from heat. Skim foam if necessary. Stir in bourbon. Pour hot into hot, sterilized jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 5 minutes in boiling water bath. Yield: about 4 half pints.

NOTE: Cherries may be reserved for baking.

CRAB APPLE JELLY

- 4 cups crab apple juice
(about 3 pounds crab apples
and 3 cups water)
- 4 cups sugar

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

To make jelly: Measure juice into a large sauce pot. 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 foam if necessary. Pour hot into hot, sterilized jars, leaving 1/4-inch head space. Adjust caps. Process 5 minutes in boiling water bath. Yield: about 6 half pints.

GRAPE JELLY (no pectin)

- 4 cups grape juice (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 full ripe grapes. Sort; wash; and remove grapes from stems. Crush grapes; and add water; cover; and bring to a 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 several thicknesses of damp cheesecloth to remove crystals that have formed.

To make jelly: Measure juice into a large sauce pot. 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 foam if necessary. Pour hot into hot, sterilized jars, leaving 1/4-inch head space. Adjust caps. Process 5 minutes in boiling water bath. Yield: about 4 half pints.

GRAPE JELLY (with pectin)

- 5 cups grape juice (about 4 1/2
pounds Concord grapes
and 1/2 cup water)
- 5 cups sugar
- 1 package powdered pectin

To prepare juice: Sort; wash; and remove stems from fully ripe grapes. Crush grapes; add water; cover; and bring to a 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 several thicknesses of damp cheesecloth to remove crystals that have formed.

To make jelly: Measure juice into a large sauce pot. Stir in pectin. Bring to a rolling boil over high heat, stirring constantly. Add sugar; return to a rolling boil. Boil hard for 1 minute, stirring constantly. Skim foam if necessary. Pour hot into hot, sterilized jars, leaving 1/4-inch head space. Adjust caps. Process 5 minutes in boiling water bath. Yield: about 6 half pints.

GREEN PEPPER JELLY

- 7 sweet green peppers
- 1 jalapeno pepper
- 1 1/2 cups vinegar
- 1 1/2 cups apple juice
- 1/2 teaspoon salt
- 5 cups sugar
- 1 package powdered pectin
- Green food coloring

Wash peppers; remove stems and seeds; and cut into 1/2-inch squares. Puree half of peppers and 3/4 cup vinegar in blender or food processor. Puree remaining peppers and vinegar. Pour into a large bowl and add apple juice. Cover and refrigerate overnight.

Strain pureed mixture through several thicknesses of damp cheesecloth. Measure 4 cups juice into a large sauce pot. If necessary, add water to make 4 cups. Stir salt and pectin into juice. Bring to a rolling boil over high heat, stirring constantly. Add sugar and return to a rolling boil. Boil hard for 1 minute, stirring constantly. Remove from heat. Skim foam if necessary. Add a few drops of green food coloring. Pour hot into hot, sterilized jars, leaving 1/4-inch head space. Adjust caps. Process 5 minutes in boiling water bath. Yield: about 6 half pints.

NOTE: When cutting or seeding hot peppers, wear rubber gloves to prevent hands from burning.

LEMON MINT JELLY

- 1 1/2 cups fresh lemon juice, strained
- 1 1/2 cups water
- 1 1/2 teaspoons mint extract
- 1 package powdered pectin
- 4 1/2 cups sugar

Combine lemon juice, water and mint extract in a medium sauce pot. Stir in pectin; bring to a rolling boil over high heat. Add sugar and return to a rolling boil. Boil hard 1 minute, stirring constantly. Remove from heat. Skim foam if necessary. Pour hot into hot, sterilized jars, leaving 1/4-inch head space. Adjust caps. Process 5 minutes in boiling water bath. Yield about 4 half pints.

MINT JELLY

- 1 cup firmly packed mint leaves
- 1 cup boiling water

Pour the boiling water over the firmly packed mint leaves and let stand for 1 hour. Press the juice from the leaves.

Using Apple Juice portion of Apple Jelly recipe, to each cup of apple juice add 2 tablespoons of the mint extract and bring to a boil. Follow Apple Jelly recipe. Just before pouring into jars, tint the jelly with a few drops of green food coloring.

ORANGE SAUTERNE JELLY

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

Combine sauterne, juices, grated peel and pectin in a large sauce pot. Bring to rolling boil. Stir in honey. Return to rolling boil. Boil hard 3 minutes, stirring constantly. Remove from heat. Skim foam if necessary. Pour hot into hot, sterilized jars, leaving 1/4-inch head space. Adjust caps. Process 5 minutes in boiling water bath. Yield: about 6 half pints.

PLUM JELLY

5½ cups prepared juice

1 package powdered pectin

7½ cups sugar

Combine juice and pectin in a large sauce pot. Bring to a rolling boil. Add sugar. Return to a rolling boil; boil hard 1 minute, stirring constantly. Remove from heat. Skim foam if necessary. Pour hot into hot, sterilized jars, leaving ¼-inch head space. Adjust caps. Process 5 minutes in boiling water bath. Yield: about 10 half pints.

JELLY from CANNED or FROZEN FRUIT JUICES

Unsweetened canned or frozen fruit juices are excellent for making jelly. Commercial canned or frozen juices make excellent jelly; however, commercial pectin will be needed.

DOUBLE BERRY APPLE JELLY

3 cups bottled cranraspberry juice

1 cup bottled apple juice

¼ cup lemon juice

1 package powdered pectin

3 cups sugar

Combine cranraspberry juice, apple juice, lemon juice and pectin in a large sauce pot. Stir over medium-high heat until pectin dissolves and mixture comes to a rolling boil. Stir in sugar and return to a rolling boil. Boil hard for 1 minute, stirring constantly. Remove from heat. Skim foam if necessary. Pour hot into hot, sterilized jars, leaving ¼-inch head space. Adjust caps. Process 5 minutes in boiling water bath. Yield: about 5 half pints.

GRAPE JELLY

3 cups bottled grape juice

1 package powdered pectin

4 cups sugar

Combine grape juice and pectin in a large sauce pot. Bring mixture to a rolling boil. Stir in sugar and return to a rolling boil. Boil hard for 1 minute, stirring constantly. Remove from heat. Skim foam if necessary. Pour hot into hot, sterilized jars, leaving ¼-inch head space. Adjust caps. Process 5 minutes in boiling water bath. Yield: about 5 half pints.

APPLE JUICE for JELLY

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 a damp jelly bag or several thicknesses of cheesecloth. Juice may be used fresh or canned for later use.

If to be canned, bring to a boil. Pour hot into hot jars, leaving ¼-inch head space. Adjust caps. Process pints and quarts 10 minutes in boiling water bath.

GRAPE JUICE for JELLY

Wash, stem, crush and measure fresh, firm, ripe Concord-type grapes. Add ½ cup water to 4 quarts prepared grapes. Heat 10 minutes at simmering. Do not boil. Drain through a damp jelly bag or several thicknesses of cheesecloth. If to be used fresh, let juice stand in refrigerator from 12 to 24 hours. Then, strain through damp cheesecloth. If to be canned, bring to a simmer. Pour hot into hot jars, leaving ¼-inch head space. Adjust caps. Process pints and quarts 10 minutes in boiling water bath. Strain before using.

UNCOOKED JELLIES

Uncooked berry jellies can be made from fresh red raspberries, boysenberries or loganberries. Jellies can be made from frozen concentrated juice of these berries or from frozen orange or grape juice concentrates.

To prepare juice from fresh berries, sort and wash fully ripe berries; remove any stems and caps. Wash in cold running water, or wash them in several changes of cold water, lifting them out of the water each time. Do not let fruit stand in water.

Put the fruit in a damp jelly bag or fruit press to extract juice. Pressed juice should be strained through several thicknesses of damp cheesecloth or a damp jelly bag; the cloth or bag should not be squeezed.

SEMI-SOFT SPREADS

The fun foods in home canning, and often the ones that produce the most satisfaction, are the butters, conserves, jams, marmalades and preserves.

Canning these soft spreads is similar to making jelly. But there is one essential difference. Processing time varies from 10 to 20 minutes, depending upon the product, size of container, altitude and the recipe.

Each of the various soft spreads is distinctive, and each requires techniques that vary slightly.

A kitchen scale is a useful investment for serious "jam-makers." For best results, sugar and fruits should be accurately weighed to achieve the proportions outlined in the recipe. Butters take ½ pound of sugar for each pound of fruit; conserves, jams and marmalades, ¾ pound of sugar to each pound of fruit; preserves, 1 pound of sugar to each pound of fruit.

Corn syrup or honey may be substituted for cane or beet sugar in

making soft spreads. Up to one third of the granulated sugar may be replaced with corn syrup; up to one half of the sugar may be replaced with honey. Honey changes the fruit flavor and may mask it.

A heavy, 8 to 10-quart sauce pot with a broad, flat bottom is essential in making conserves, jams, preserves and marmalades. The fruit and sugar mixture must bubble and cook rapidly without boiling over the sides of the sauce pot. A light, thin sauce pot will likely cause scorching. These products should be cooked in small batches. Do not double the recipes, since double-size mixtures will not cook in the same manner as smaller ones. The sugar and juice mixtures should be stirred over low heat until the sugar dissolves. Then the mixture should be boiled rapidly for a bright and sparkling finished product. The fruit-sugar mixture should be stirred frequently as it thickens.

Butters are cooked slowly for long periods of time. They will stick and scorch unless stirred regularly. For this reason, a heavy sauce pot is preferable to a light, thin one.

The soft spreads continue to thicken as they cool. How thick the finished product will be is hard to judge when it is still hot. Jams, conserves, marmalades and preserves should be boiled until the temperature is 8°F above the boiling point of water. (See instructions in jelly section for determining boiling point of water in your area.) A firm product will result when cooked to this temperature. For a softer product, shorten the cooking time; for a firmer product, lengthen it. The jelling point test and the thermometer test, as explained in the section on jellies, can be used for the other soft spreads. **Cooking times in the recipes in this book are intended as a guide only since the actual time will vary according to the sauce pot used, the humidity and the altitude.**

If pectin is used for jams or marmalades, the manufacturer's directions should be followed exactly. Generally, powdered pectin is added to the fruit before heating.

Directions given in the section on jelly should be followed for the other soft spreads for preparing the fruit, handling and checking containers, sealing, testing the seal and storing.

JAM MAKING TIPS

1. Always use the full amount of sugar called for in a recipe. Reducing the amount of sugar may prevent the jam from setting up.

2. Always prepare only one batch of jam at a time. Doubling the recipe also may prevent the jam from setting up.

3. Always use fresh, ripe fruit. As fruit becomes overripe, its natural pectin content decreases and the gelling ability of the fruit is reduced.
4. Finely chop all fruits used for making jams, but do not puree. Pureed fruit will add too much liquid and too much fruit for a good gel.
5. Use only the type of pectin called for in a recipe. Liquid or powdered pectin can not be substituted for each other.

BUTTER RECIPES

Don't forget to process in boiling water bath canner!

APPLE BUTTER Old-Fashioned Kind Using Whole Apples

- 2 dozen, medium apples, quartered (about 6 pounds)
- 2 cups sweet cider
- 3 cups sugar
- 1 1/2 teaspoons cinnamon
- 1/2 teaspoon 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. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process pints and quarts 10 minutes in boiling water bath. Yield: about 3 pints.

APPLE BUTTER Using Apple Pulp

- 2 quarts cooked apple pulp
- 4 cups sugar
- 2 teaspoons cinnamon
- 1/4 teaspoon cloves

Use apple pulp left from preparing apple juice for jelly (See page 43). Press through a sieve or food mill. Measure pulp. Add sugar and spices. Cook pulp until thick enough to round up in a spoon. As pulp thickens, stir frequently to prevent sticking. (If too thick, add a small amount of water for desired consistency.) Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process pints and quarts 10 minutes in boiling water bath. Yield: about 5 pints.

APRICOT BUTTER

- 1 1/2 quarts apricot pulp (about 24 medium)
- 3 cups sugar
- 2 tablespoons lemon juice

To prepare pulp: Cook pitted apricot halves until soft, adding only enough water to prevent sticking. Press through a sieve or food mill. Measure pulp.

Add sugar; cook until thick, about 30 minutes. As mixture thickens, stir frequently to prevent sticking. Add lemon juice. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process pints and quarts 10 minutes in boiling water bath. Yield: about 3 pints.

PEACH BUTTER

- 2 quarts peach pulp (about 18 medium)
- 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 jars, leaving 1/4-inch head space. Adjust caps. Process pints and quarts 10 minutes in boiling water bath. Yield: about 4 pints.

SPICED PEACH BUTTER

Follow recipe for Peach Butter. Add 1/2 to 1 teaspoon each ginger and nutmeg with sugar to peach pulp. Process pints and quarts 10 minutes in boiling water bath.

PEAR BUTTER

- 2 quarts pear pulp (about 20 medium)
- 4 cups sugar
- 1/3 cup orange juice
- 1 teaspoon grated orange rind
- 1/2 teaspoon 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 35 minutes. As mixture thickens, stir frequently to prevent sticking. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process pints and quarts 10 minutes in boiling water bath. Yield: about 4 pints.

CONSERVE RECIPES

Don't forget to process in boiling water bath canner!

AMBROSIA CONSERVE

- 1 fresh pineapple (about 5 pounds)
- 1 cup orange juice (about 2 medium)
- 1/3 cup grated orange peel (about 2 medium)
- 5 cups sugar
- 1 cup coconut
- 1 cup chopped maraschino cherries
- 1/2 cup slivered almonds

Peel pineapple; remove eyes; core; and chop. Combine pineapple, orange juice and peel in a large sauce pot.

Simmer 10 minutes. Add sugar and cook to jelling point. Remove from heat; stir in coconut, cherries and almonds. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 6 half pints.

APPLE-BLUEBERRY CONSERVE

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

Combine all ingredients in a large sauce pot. Bring slowly to a boil, stirring until sugar dissolves. Cook rapidly until thick, about 20 minutes. As mixture thickens, stir frequently to prevent sticking. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 6 half pints.

APPLE-PINEAPPLE-COCONUT CONSERVE

- 1 quart chopped, cored, pared tart apples (about 2 pounds)
- 1 quart chopped, cored, pared fresh pineapple (about 5 pounds)
- 1 3/4 cups chopped orange pulp (about 2 large oranges)
- 3/4 cup thinly sliced orange peel
- 2 cups water
- 6 cups sugar
- 1 1/3 cups coconut

Combine apples, pineapple, orange pulp, orange peel and water in a large sauce pot. Cook until peel is tender, about 10 minutes. Add sugar and coconut. Bring slowly to a boil, stirring until sugar dissolves. Cook rapidly almost to jelling point, about 15 to 20 minutes. As mixture thickens, stir frequently to prevent sticking. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 8 half pints.

NOTE: Canned pineapple may be used.

APRICOT-ORANGE CONSERVE

- 3 1/2 cups peeled, pitted and chopped apricots (about 12 medium)
- 1 1/2 cups orange juice (about 3 medium)
- 2 tablespoons finely shredded orange peel (about 1/2 orange)
- 2 tablespoons lemon juice
- 3 1/2 cups sugar
- 1/2 cup chopped nuts

Combine all ingredients, except nuts, in a large sauce pot. Cook until thick, stirring constantly. Add nuts last 5 minutes of cooking; stir well. Remove

from heat. Skim foam and stir alternately for 5 minutes. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 6 half pints.

BLUEBERRY CONSERVE

- 2 cups water
- 4 cups sugar
- $\frac{1}{3}$ cup thinly sliced lemon (about $\frac{1}{2}$ large)
- $\frac{1}{2}$ cup thinly sliced orange (about $\frac{1}{2}$ medium)
- $\frac{1}{2}$ cup raisins

1 quart stemmed blueberries

Bring water and sugar to a boil. 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 hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 4 half pints.

BLUEBERRY-PINEAPPLE CONSERVE

- 1 quart stemmed blueberries
- 2 cups finely chopped, cored, pared fresh pineapple (about 3 pounds)
- 5 cups sugar

Combine fruit and sugar in a large sauce pot. Bring slowly to a boil, stirring until sugar dissolves. Cook rapidly until thick, about 30 minutes. As mixture thickens, stir frequently to prevent sticking. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 4 half pints.

CHERRY-RASPBERRY CONSERVE

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

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 hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 4 half pints.

CRANBERRY CONSERVE

- $\frac{3}{4}$ cup seeded and chopped orange (about 1 medium)
- 2 cups water
- 1 quart stemmed cranberries
- $\frac{1}{2}$ cup raisins
- 3 cups sugar
- $\frac{1}{2}$ cup chopped walnuts or other nuts

Combine orange and water in a large sauce pot. Cook rapidly until peel is tender, about 20 minutes. Add cranberries, raisins and sugar. Bring slowly to a boil, stirring until sugar dissolves. Cook rapidly almost to jellying point, about 8 minutes. As mixture thickens, stir frequently to prevent sticking. Add nuts the last 5 minutes of cooking. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 4 half pints.

DRIED FRUIT CONSERVE

- $1\frac{1}{2}$ cups cut-up dried apricots (about $\frac{1}{2}$ pound)
- $1\frac{1}{3}$ cups cut-up dried peaches (about $\frac{1}{2}$ pound)
- $1\frac{1}{3}$ cups cut-up dried pears (about $\frac{1}{2}$ pound)
- 1 cup seeded and chopped orange (about 1 large)
- 3 cups water
- 2 cups sugar
- $\frac{1}{2}$ cup raisins
- 1 tablespoon lemon juice
- $\frac{1}{2}$ teaspoon cinnamon (optional)
- $\frac{1}{8}$ teaspoon cloves (optional)
- $\frac{1}{2}$ cup chopped walnuts or other nuts

Combine first 5 ingredients in a large sauce pot. Cover and cook until fruits are tender, about 15 to 20 minutes. Uncover and add remaining ingredients except nuts. Bring slowly to a boil, stirring until sugar dissolves. Cook rapidly, until thick, about 15 minutes, stirring frequently. Add nuts the last 5 minutes of cooking. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 5 half pints.

GOOSEBERRY CONSERVE

- $1\frac{1}{2}$ quarts gooseberries, stem and blossom ends removed
- 1 cup raisins
- $\frac{3}{4}$ cup seeded and chopped orange (about 1 medium)
- 4 cups sugar

Combine all ingredients in a large sauce pot. Bring slowly to a boil, stirring until sugar dissolves. Cook almost to jellying point, about 30 minutes. As mixture thickens, stir frequently to prevent sticking. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 6 half pints.

GRAPE CONSERVE

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

If using Tokay or Malaga grapes, cook grapes whole. Otherwise, separate pulp from skins of grapes. Cook skins 15 to

20 minutes, adding only enough water to prevent sticking (about $\frac{1}{2}$ cup). Cook pulp without water until soft; press through a sieve or food mill to remove seeds. Combine skins, pulp and sugar in a large sauce pot. Bring slowly to a boil, stirring until sugar dissolves. Cook rapidly until thick, about 15 minutes. Stir frequently to prevent sticking. Add nuts the last 5 minutes of cooking. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 7 half pints.

PEACH CONSERVE WITH RUM

- 3 tablespoons grated orange peel
- $\frac{2}{3}$ cup seeded and chopped orange pulp (about 1 medium)
- $\frac{1}{2}$ cup light rum
- 2 cups peeled, pitted and chopped peaches (about 3 large)
- $\frac{3}{4}$ cup crushed pineapple
- $\frac{1}{4}$ to $\frac{1}{2}$ cup chopped maraschino cherries
- 3 tablespoons lime juice
- $6\frac{1}{2}$ cups sugar
- $\frac{1}{2}$ teaspoon salt
- $\frac{1}{2}$ teaspoon ginger
- $\frac{1}{4}$ teaspoon mace

Combine orange peel and pulp with water to cover in a small sauce pan. Cook until peel is tender; set aside. Put opened container of rum in hot water. Combine reserved orange mixture with remaining ingredients, except rum, in a large sauce pot. Cook almost to jellying point. Remove from heat. Skim foam if necessary. Stir in hot rum. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 2 pints.

PLUM CONSERVE

- $2\frac{1}{2}$ quarts chopped, pitted plums (about 4 pounds)
- 2 cups raisins
- $1\frac{3}{4}$ cups chopped orange pulp (about 2 large)
- $\frac{3}{4}$ cup thinly sliced orange peel
- 6 cups sugar
- 2 cups chopped pecans or other nuts

Combine plums, raisins, orange pulp, orange peel and sugar in a large sauce pot. Bring slowly to a boil, stirring until sugar dissolves. Cook rapidly almost to jellying point, about 15 to 20 minutes. As mixture thickens, stir frequently to prevent sticking. Add nuts the last 5 minutes of cooking. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 5 pints.

RHUBARB-STRAWBERRY-ORANGE CONSERVE

- 1 cup seeded and chopped orange (about 1 large)
- 1 cup water
- 3 cups $\frac{1}{4}$ -inch sliced rhubarb (about 5 stalks)
- 3 cups crushed strawberries
- 1 cup raisins
- 5 cups sugar
- $\frac{1}{2}$ teaspoon salt
- $\frac{1}{2}$ cup chopped filberts, pecans or walnuts

Combine chopped orange and 1 cup water and cook until peel is tender. Combine all ingredients, except the nuts, in a large sauce pot. Boil until mixture begins to thicken. Add nuts the last 5 minutes. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 7 half pints.

JAM RECIPES

Don't forget to process in boiling water bath canner!

APRICOT JAM

- 2 quarts crushed, peeled apricots
- 6 cups sugar
- $\frac{1}{4}$ cup lemon juice

Combine all ingredients in a large sauce pot. Bring slowly to a boil, stirring until sugar dissolves. Cook rapidly until thick, about 25 minutes. As mixture thickens, stir frequently to prevent sticking. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. 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 in a large sauce pot. Bring slowly to a boil, stirring until sugar dissolves. Cook rapidly to jellying point. As mixture thickens, stir frequently to prevent sticking. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 3 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.

BING CHERRY JAM

- 1 quart pitted, chopped bing cherries
- 1 package powdered pectin
- $\frac{1}{4}$ cup lemon juice
- $\frac{1}{4}$ cup almond liqueur

$\frac{1}{2}$ teaspoon cinnamon

$\frac{1}{2}$ teaspoon cloves

4 $\frac{1}{2}$ cups sugar

Combine all ingredients, except sugar, in a large sauce pot. Bring to a rolling boil, stirring constantly. Add sugar; return to a rolling boil. Boil 2 minutes, stirring constantly. Remove from heat. Skim foam if necessary. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 6 half pints.

BLUEBERRY-CURRANT JAM

- 1 quart stemmed blueberries
- 1 cup water
- 2 cups stemmed currants
- 1 cup water
- 3 cups sugar

Combine blueberries and 1 cup water in a large sauce pot. Cook slowly 5 minutes. Combine currants and 1 cup water; cook slowly 10 minutes; press through a sieve or food mill to remove seeds. Add currant pulp to blueberry mixture; cook rapidly 5 minutes. Add sugar, stirring until sugar dissolves. Cook rapidly until thick, about 20 minutes stirring frequently. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 2 pints.

BLUEBERRY LIME JAM

- 4 $\frac{1}{2}$ cups blueberries, washed and drained
- 1 package powdered pectin
- $\frac{1}{3}$ cup lime juice
- 1 tablespoon grated lime peel
- 5 cups sugar

Crush berries, one layer at a time in a large sauce pot. Combine crushed berries and pectin. Bring to a rolling boil, stirring frequently. Add lime juice, grated lime peel and sugar. Return to a rolling boil; boil hard for 1 minute, stirring constantly. Remove from heat. Skim foam if necessary. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 6 half pints.

CARROT JAM

- 1 quart grated raw carrots
- $\frac{2}{3}$ cup lemon juice
- $\frac{1}{3}$ cup grated lemon peel
- 3 cups sugar
- $\frac{1}{2}$ teaspoon cloves
- $\frac{1}{2}$ teaspoon allspice
- $\frac{1}{2}$ teaspoon cinnamon

Combine all ingredients in a large sauce pot. Bring slowly to a boil. Reduce heat; and simmer, stirring constantly until thick. Pour hot into hot

jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 3 half pints.

CHERRY JAM

- 1 quart pitted, chopped sweet or sour cherries
- 1 package powdered pectin
- $\frac{1}{4}$ cup lemon juice (use only with sweet cherries)
- 5 cups sugar

Combine cherries, pectin and lemon juice (if needed) in a large sauce pot. Bring to a rolling boil over high heat, stirring constantly. Add sugar. Bring to a rolling boil; boil hard 1 minute, stirring constantly. Remove from heat. Skim foam if necessary. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 6 half pints.

DAMSON PLUM JAM

- 5 cups coarsely chopped Damson plums (about 2 pounds)
- 3 cups sugar
- $\frac{3}{4}$ cup water

Combine all ingredients in a large sauce pot. Bring slowly to a boil, stirring until sugar dissolves. Cook rapidly to jellying point. As mixture thickens, stir frequently to prevent sticking. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 3 pints.

ELDERBERRY JAM

- 2 quarts crushed elderberries
- 6 cups sugar
- $\frac{1}{4}$ cup vinegar

Combine berries, sugar and vinegar in a large sauce pot. Bring slowly to a boil, stirring until sugar dissolves. Cook rapidly until thick. As mixture thickens, stir frequently to prevent sticking. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 3 pints.

FIG JAM

- 2 quarts chopped fresh figs (about 5 pounds)
- 6 cups sugar
- $\frac{3}{4}$ cup water

To prepare chopped figs: Cover figs with boiling water. Let stand 10 minutes. Drain, stem and chop figs.

Combine figs, sugar, and $\frac{3}{4}$ cup water in a large sauce pot. Bring slowly to a boil, stirring until sugar dissolves. Cook rapidly until thick. Stir frequently to prevent sticking. Add lemon juice and cook 1 minute longer. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 5 pints.

GRAPE JAM

- 2 quarts stemmed Concord grapes
- 6 cups sugar

Separate pulp from skins of grapes. If desired, chop skins. Cook skins gently 15 to 20 minutes, adding only enough water to prevent sticking (about $\frac{1}{2}$ cup). Cook pulp without water until soft; press through a sieve or food mill to remove seeds. Combine pulp, skins and sugar in a large sauce pot. Bring slowly to a boil, stirring until sugar dissolves. Cook rapidly almost to jellying point, about 10 minutes. As mixture thickens, stir frequently to prevent sticking. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 3 pints.

MUSCADINE OR SCUPPERNONG JAM

Follow recipe for Grape Jam above.

NECTARINE PLUM JAM

- $1\frac{1}{2}$ pounds nectarines
- $1\frac{1}{2}$ pounds plums
- 2 tablespoons lemon juice
- 1 package powdered pectin
- 7 cups sugar

Peel and pit nectarines. Pit plums. Coarsely chop both fruits. Place chopped fruit in a large sauce pot. Stir in lemon juice and pectin. Place over high heat and bring to a rolling boil, stirring occasionally. Add sugar and return to a rolling boil. Boil hard 1 minute, stirring constantly. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Process 10 minutes in boiling water bath. Adjust caps. Yield: about 8 half pints.

PEACH JAM

- 2 quarts peeled and crushed peaches
- $\frac{1}{2}$ cup water
- 6 cups sugar

Combine peaches and water in a large sauce pot. Cook gently 10 minutes. Add sugar. Bring slowly to a boil, stirring until sugar dissolves. Cook rapidly until thick, about 15 minutes, stirring frequently. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 4 pints.

NOTE: For Spiced Peach Jam, follow Peach Jam recipe above except add to jam during cooking a spice bag containing the following ingredients:

- 1 teaspoon whole cloves
- $\frac{1}{2}$ teaspoon whole allspice
- 1 stick cinnamon

Remove spice bag before pouring jam into jars. Process as shown above.

BRANDIED PEACH JAM

- 4 cups frozen peaches, thawed
- 2 tablespoons lemon juice
- 1 cup brandy
- 1 package powdered pectin
- 5 cups sugar

Drain thawed peaches and coarsely chop. Combine peaches, lemon juice and brandy in a large sauce pot. Place over medium heat and simmer 5 minutes, stirring frequently. Stir in pectin and cook over high heat until mixture comes to a rolling boil. Add the sugar and return to a rolling boil. Boil hard 1 minute, stirring constantly. Stir to distribute fruit, 3 minutes. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 7 half pints.

PINEAPPLE JAM

- 1 quart pared, cored and finely chopped pineapple (about 5 pounds)
- $2\frac{1}{2}$ cups sugar
- 1 cup water
- $\frac{1}{2}$ thinly sliced lemon

Combine all ingredients in a large sauce pot. Bring slowly to a boil, stirring until sugar dissolves. Cook rapidly until thick, about 30 minutes. As mixture thickens, stir frequently to prevent sticking. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 3 half pints.

PLUM JAM

- 6 cups plums pitted and chopped (about 4 pounds)
- $\frac{3}{4}$ cup water
- 1 tablespoon lemon juice
- 1 package powdered pectin
- 7 cups sugar

Combine plums, water, lemon juice and pectin in a large sauce pot. Bring to a rolling boil over high heat, stirring frequently. Add sugar; return to a rolling boil. Boil hard 1 minute, stirring constantly. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 8 half pints.

RASPBERRY JAM

- 2 quarts raspberries, washed and drained
- $\frac{1}{3}$ cup water
- 2 tablespoons lemon juice
- 1 tablespoon grated lemon peel
- 1 package powdered pectin
- 6 cups sugar

Combine raspberries, water, lemon juice, lemon peel and pectin in a large sauce pot. Bring to a rolling boil over high heat, stirring frequently. Add sugar; return to a rolling boil. Boil hard 1 minute, stirring constantly. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head

space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 5 half 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 in a large sauce pot. Bring slowly to a boil, stirring until sugar dissolves. Cook rapidly almost to jellying point, about 30 minutes. As mixture thickens, stir frequently to prevent sticking. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 2 pints.

STRAWBERRY JAM

- 2 quarts strawberries, crushed
- 6 cups sugar

Combine berries and sugar in a large sauce pot. Bring slowly to a boil, stirring until sugar dissolves. Cook rapidly until thick, about 40 minutes. As mixture thickens, stir frequently to prevent sticking. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 4 pints.

QUICK STRAWBERRY JAM

- 2 quarts strawberries
- 2 teaspoons grated orange peel
- 1 package powdered pectin
- 7 cups sugar

Crush strawberries one layer at a time. Measure $4\frac{1}{2}$ cups berries and grated orange peel into a large sauce pot. Add pectin and place over high heat. Stir until mixture comes to a rolling boil. Add the sugar; return to a rolling boil. Boil hard 1 minute, stirring constantly. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 8 half pints.

STRAWBERRY-RHUBARB JAM

- 4 cups strawberries, washed and stemmed
- 2 cups chopped rhubarb (about 4 stalks)
- $\frac{1}{4}$ cup lemon juice
- 1 package powdered pectin
- $5\frac{1}{2}$ cups sugar

Crush strawberries; place in a large sauce pot. Combine chopped rhubarb with strawberries. Add lemon juice and pectin. Bring to a rolling boil over high heat. Add sugar; return to a rolling boil.

Boil hard 1 minute, stirring constantly. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 6 half pints.

MARMALADE RECIPES

Don't forget to process in boiling water bath canner!

APPLE AND RAISIN MARMALADE

- 2 quarts peeled, cored, diced apples
- 6 cups sugar
- 3 cups water
- 2 cups raisins
- $\frac{2}{3}$ cup freshly squeezed lemon juice (about 2 large)
- $\frac{1}{3}$ cup grated lemon peel (about 2 large)
- 1 teaspoon cinnamon

Combine all ingredients in a large sauce pot. Bring slowly to a boil. Reduce heat; simmer 45 minutes or until thick. As mixture thickens, stir to prevent sticking. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 4 pints.

CHERRY MARMALADE

- $\frac{2}{3}$ cup seeded and chopped orange (about 1 medium)
- 1 quart pitted sweet cherries
- $\frac{1}{4}$ cup lemon juice
- $3\frac{1}{2}$ cups sugar

Cover chopped orange with water and boil in a large sauce pot until soft; cool. Add cherries, lemon juice and sugar to orange. Bring slowly to a boil, stirring until sugar dissolves. Cook rapidly to jellying point, about 35 minutes, stirring frequently. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 4 half pints.

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

CHERRY-PINEAPPLE MARMALADE

- 2 cups finely chopped, pitted, tart red cherries
- 2 cups sugar
- 2 cups finely chopped, cored, pared, fresh pineapple (about 3 pounds)

Combine all ingredients in a large sauce pot. Bring slowly to a boil, stirring until sugar dissolves. Cook rapidly until thick, about 10 minutes. As mixture thickens, stir frequently to prevent sticking. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 3 half pints.

CITRUS MARMALADE

- $1\frac{1}{2}$ cups thinly sliced grapefruit peel (about 1 medium)
- $\frac{1}{2}$ cup thinly sliced orange peel (about 1 medium)
- $1\frac{1}{2}$ cups chopped grapefruit pulp (about 1 medium)
- $\frac{3}{4}$ cup chopped orange pulp (about 1 medium)
- $\frac{1}{2}$ cup thinly sliced lemon (about 1 medium)
- $4\frac{1}{2}$ quarts water, divided

Sugar (about $6\frac{1}{2}$ cups)

Add $1\frac{1}{2}$ quarts water to fruit peel. Boil 5 minutes; drain. Repeat. To drained peel, add fruit pulp, lemon and $1\frac{1}{2}$ quarts water; boil 5 minutes. Cover and let stand 12 to 18 hours in a cool place. Bring to a boil 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 a boil, stirring until sugar dissolves. Cook rapidly to jellying point, about 30 minutes, stirring frequently. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 5 half pints.

GRAPE-CRANBERRY MARMALADE

- 2 cups Concord grape juice
- 2 cups stemmed cranberries
- $\frac{1}{2}$ teaspoon grated orange peel
- 3 cups sugar

To prepare juice (See page 43): Combine juice, cranberries and orange peel in a large sauce pot. Bring to a boil. Add sugar; bring slowly to a boil, stirring until sugar dissolves. Cook rapidly to jellying point, about 5 minutes. Stir occasionally to prevent sticking. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 4 half pints.

GRAPEFRUIT MARMALADE

- $\frac{2}{3}$ cup thinly sliced grapefruit peel (about 1 medium)
- $1\frac{1}{3}$ cups chopped grapefruit pulp (about 1 medium)
- 1 quart water

Sugar (about 4 cups)

Cover grapefruit peel with water; boil 10 minutes; and drain. Repeat 2 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 a boil, stirring until sugar dissolves. Cook rapidly almost to jellying point, about 30 to 35 minutes. Stir occasionally to prevent sticking.

Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 3 half pints.

GREEN GRAPE MARMALADE

- 1 quart stemmed, green Concord grapes
- 1 cup water
- 4 cups sugar

Add water to grapes and cook until tender. (If seeds of grapes are not tender, cut grapes in half and remove seeds before cooking.) Add sugar; bring slowly to a boil, stirring until sugar dissolves. Cook rapidly to jellying point, stirring frequently. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 5 half pints.

KUMQUAT MARMALADE

- $1\frac{1}{2}$ quarts water
- 2 cups thinly sliced kumquats (about 24)
- $1\frac{1}{2}$ cups sliced orange peel (about 2 medium)
- $1\frac{1}{2}$ cups chopped orange pulp (about 2 medium)
- $\frac{1}{3}$ cup lemon juice

Sugar (about 9 cups)

Add water to fruit; cover and let stand in a cool place overnight. Bring to a boil and cook until peel is tender. To each cup of fruit mixture, add 1 cup sugar. Stir until sugar dissolves. Cook rapidly to jellying point, about 45 minutes. Stir occasionally to prevent sticking. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 8 half pints.

ORANGE MARMALADE

- 2 cups thinly sliced orange peel (about 10 medium)
- 1 quart chopped orange pulp (about 10 medium)
- 1 cup thinly sliced lemon (about 2 medium)
- $1\frac{1}{2}$ quarts water

Sugar (about 6 cups)

Add water to fruit and simmer 5 minutes. Cover and let stand 12 to 18 hours in a cool place. Cook rapidly until peel is tender, about 1 hour. Measure fruit and liquid. Add 1 cup sugar for each cup of fruit mixture. Bring slowly to a boil, stirring until sugar dissolves. Cook rapidly to jellying point, about 25 minutes. As mixture thickens, stir occasionally to prevent sticking. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 7 half pints.

ORANGE MARMALADE WITH PECTIN

- 3 cups thinly sliced orange peel (about 4 large)
- 1/2 cup thinly sliced lemon peel (about 1 medium)
- 1/2 cup seeded and chopped lemon pulp (about 2 medium)
- 3 1/2 cups seeded and chopped orange pulp (about 4 medium)
- 2 1/2 cups water
- 1/8 teaspoon baking soda
- 1 package powdered pectin
- 6 cups sugar
- 1/4 teaspoon nutmeg

Combine citrus peel, water and baking soda in a saucepan. Bring to a boil; reduce heat; and simmer, covered, 20 minutes. Add chopped fruit to peels and return to boil. Reduce heat and simmer, covered, 10 minutes.

Measure 5 cups of prepared fruit and pectin into a large sauce pot. Bring to a rolling boil; stir in sugar and nutmeg. Return to a rolling boil; boil hard 1 minute, stirring constantly. Remove from heat. Skim foam and stir alternately 5 minutes. Pour hot into hot jars, leaving 1/4-inch head space. Process 10 minutes in boiling water bath. Adjust caps. Yield: about 6 half pints.

ORANGE-LEMON MARMALADE

- 1 1/2 quarts water
- 3 cups thinly sliced orange peel (about 4 large)
- 3 1/2 cups chopped orange pulp (about 4 large)
- 3 1/2 cups thinly sliced lemon (about 4 large)

Sugar (about 5 1/2 cups)

Add water to fruit and simmer 5 minutes. Cover and let stand 12 to 18 hours in a cool place. Cook rapidly until peel is tender, about 45 minutes. Measure fruit and liquid. Add 1 cup sugar for each cup of fruit mixture. Bring slowly to a boil, stirring until sugar dissolves. Cook rapidly to jellying point, about 15 minutes. As mixture thickens, stir frequently to prevent sticking. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 6 half pints.

PEACH-ORANGE MARMALADE

- 2 quarts peeled, chopped, firm, ripe peaches (about 10 large)
- 3/4 cup sliced orange peel (about 2 medium)
- 1 1/2 cups chopped orange pulp (about 2 medium)
- 2 tablespoons lemon juice
- 5 cups sugar

Combine all ingredients in a large sauce pot. Bring slowly to a boil, stirring until sugar dissolves. Cook rapidly until thick, about 20 minutes. As mixture

thickens, stir frequently to prevent sticking. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 8 half pints.

PRICKLY PEAR MARMALADE

- 1 cup thinly sliced lemon (about 2 medium)
- 3 cups seeded and chopped oranges (about 2 large)
- 1 quart water
- 1 quart peeled, seeded and chopped prickly pears (about 9 medium)
- 6 cups sugar

Combine first 3 ingredients in a large sauce pot. Cover and let stand 12 to 18 hours in a cool place. Cook rapidly until peel is tender, about 30 minutes. Cook; add pears and sugar. Bring slowly to a boil, stirring until sugar dissolves. Cook rapidly to jellying point, about 25 minutes. As mixture thickens, stir frequently to prevent sticking. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 6 half pints.

STRAWBERRY-PINEAPPLE MARMALADE

- 2 1/2 cups pared, cored and finely chopped, fresh pineapple (about 4 pounds)
- 1 teaspoon grated orange peel
- 2 1/2 cups chopped orange pulp (about 4 medium)
- 7 cups sugar

1 1/2 quarts stemmed strawberries
Combine pineapple, orange peel, orange pulp and sugar in a large sauce pot. Bring slowly to a boil, stirring until sugar dissolves. Cook rapidly 15 minutes. Add strawberries and continue cooking rapidly until thick, about 20 to 30 minutes. As mixture thickens, stir frequently to prevent sticking. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 6 half pints.

PRESERVE RECIPES

Don't forget to process in boiling water bath canner!

APRICOT PRESERVES

- 5 cups peeled, pitted and halved, hard, ripe apricots (about 2 pounds)
- 4 cups sugar
- 1/4 cup lemon juice

Thoroughly mix fruit with sugar and lemon juice. Cover tightly; let stand 4 to 5 hours in a cool place. Bring slowly to a boil, stirring until sugar dissolves. Cook rapidly until fruit is clear, about 30 minutes. As mixture thickens, stir

frequently to prevent sticking. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 4 half pints.

APPLE PRESERVES

- 6 cups peeled, cored, sliced apples
- 1 cup water
- 1 tablespoon lemon juice
- 1 package powdered pectin
- 1/2 cup thinly sliced lemon (about 1 medium)
- 4 cups sugar
- 2 teaspoons nutmeg

Combine apples, water and lemon juice in a large sauce pot. Simmer, covered, 10 minutes. Stir in pectin and bring to a rolling boil, stirring frequently. Add lemon slices and sugar. Return to a rolling boil. Boil hard 1 minute, stirring frequently. Remove from heat; add nutmeg. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 6 half pints.

BAR-LE-DUC (CURRANT) PRESERVES

- 1 cup currant juice
- 2 quarts stemmed currants
- 7 cups sugar, divided

To prepare juice (See page 40): 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 a boil, stirring until sugar dissolves. Cook rapidly almost to jellying point, about 30 minutes. Stir occasionally to prevent sticking. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 5 half pints.

BERRY PRESERVES

Blackberries and others which hold shape in cooking can be used for preserves, although strawberries are more satisfactory for jam. If making preserves, use 3/4 to 1 pound sugar for each pound berries. Bring slowly to a boil, stirring until sugar dissolves. Cook rapidly almost to jellying point. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 15 minutes in boiling water bath. Process in half pints or pints.

CHERRY PRESERVES

- 2 pounds pitted, tart, red cherries
- 4 cups sugar

Drain juice from cherries. Add sugar to juice (if not enough juice to dissolve sugar, add a little water); 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 a boil;

boil hard 1 minute. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 4 half pints.

SOUR CHERRY PRESERVES

- 3 pounds pitted, sour red cherries
- 1 package powdered pectin
- 5 cups sugar

Combine cherries and pectin in a large sauce pot. Bring to a rolling boil, stirring frequently. Add sugar. Bring to a rolling boil; boil hard 1 minute, stirring constantly. Remove from heat. Skim foam and stir alternately for 5 minutes. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 6 half pints.

CITRON MELON PRESERVES

- $1\frac{1}{2}$ quarts prepared citron melon (about 2 pounds)
- 4 cups sugar, divided
- 1 quart water
- $\frac{1}{2}$ cup thinly sliced lemon (about 1 medium)

Both inner and outer part of melon may be used but should be prepared separately. To prepare melon: Cut outer part into $\frac{3}{4}$ -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 a 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 syrup becomes too thick, add a small amount of boiling water. The amount of water depends upon the melon used. If syrup is too thin when citron is done, remove citron and boil syrup until thick.) Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 3 half pints.

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.

PEACH PRESERVES

- 8 cups peeled, pitted and sliced peaches (about 4 pounds)
- 2 tablespoons lemon juice
- 1 package powdered pectin
- 7 cups sugar

Combine peaches, lemon juice and pectin in a large sauce pot. Bring to a rolling boil, stirring gently. Add sugar. Return to rolling boil. Boil hard 1 minute, stirring constantly. Remove from heat. Skim foam if necessary. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch

head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about six 12-ounce jars.

HONEYED PEACH PRESERVES

- 4 cups peeled, pitted and sliced peaches (about 2 pounds)
- 4 cups sugar
- 1 cup light honey
- $\frac{1}{3}$ cup seeded and ground orange (about $\frac{1}{2}$ medium)
- $\frac{1}{3}$ cup water
- $\frac{1}{4}$ teaspoon pure almond extract

Mix sugar and honey with the peaches. Set aside. Cover ground orange with water and cook until the peel is soft. If more water is needed to finish cooking the orange peel, add just enough to prevent sticking. Cook peaches over low heat until the sugar dissolves. Increase heat and boil about 15 minutes; add orange mixture; and boil until peaches are transparent and syrup is as thick as honey.

Stir almond extract into peach preserves. Remove from heat. Skim foam if necessary. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process for 15 minutes in boiling water bath. Yield: about 5 half pints.

PEAR PRESERVES

- 3 cups sugar, divided
- 3 cups water
- 6 medium cored, pared, hard, ripe pears, cut in halves or quarters (about 2 pounds)
- $\frac{1}{2}$ cup thinly sliced lemon (about 1 medium)

Combine $1\frac{1}{2}$ cups sugar and water in a large sauce pot. 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 transparent, about 25 minutes. Cover and let stand 12 to 24 hours in a cool place. Pack fruit into hot jars, leaving $\frac{1}{4}$ -inch head space. Cook syrup 3 to 5 minutes, or longer if too thin. Pour hot over fruit, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 20 minutes in boiling water bath. Yield: about 5 half pints.

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

PLUM PRESERVES

- 5 cups pitted, tart plums (about $2\frac{1}{2}$ pounds)
- 4 cups sugar
- 1 cup water

Combine all ingredients in a large sauce pot. Bring slowly to a boil, stirring until sugar dissolves. Cook rapidly

almost to jelling point, about 15 minutes, stirring frequently to prevent sticking. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 5 half pints.

QUINCE PRESERVES

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

When preparing quinces, discard all gritty parts. Combine sugar and water in a large sauce pot. Boil 5 minutes. Add quinces and cook until fruit is transparent and syrup is almost to jelling point, about 1 hour. As mixture thickens, stir frequently to prevent sticking. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 4 half pints.

STRAWBERRY PRESERVES DELUXE

- $1\frac{1}{2}$ quarts stemmed, firm, red, ripe strawberries
- 5 cups sugar
- $\frac{1}{3}$ cup lemon juice

Berries with hollow cores should not be used. Combine strawberries and sugar in a large sauce pot. Let stand 3 to 4 hours. Bring slowly to a boil, stirring until sugar dissolves. Add lemon juice. Cook rapidly until berries are transparent and syrup is thick, about 10 to 12 minutes. Remove from heat. Skim foam if necessary. Pour into a shallow pan. Let stand uncovered, 12 to 24 hours in a cool place. Shake pan occasionally to distribute berries through syrup. Pour into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 20 minutes in boiling water bath. Yield: about 4 half pints.

STRAWBERRY PRESERVES

- 2 quarts stemmed firm, red, ripe strawberries
- $\frac{1}{4}$ cup seeded and ground lemon (about 1 medium)
- 1 package powdered pectin
- $\frac{1}{4}$ cup water

6 $\frac{1}{2}$ cups sugar

Berries with hollow cores should not be used. Combine berries, lemon, pectin and water in a large sauce pot. Bring to a rolling boil, stirring gently. Add sugar. Return to a rolling boil. Boil hard 1 minute, stirring frequently. Remove from heat, stir gently 3 minutes to distribute fruit. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about five 12-ounce jars.

TOMATO PRESERVES

- 1 tablespoon mixed pickling spices
- 1 piece ginger root
- 4 cups sugar
- 1 cup thinly sliced lemon (about 2 medium)
- ³/₄ cup water
- 1 ¹/₂ quarts small, firm, yellow, green or red peeled tomatoes (about 2 pounds)

Do not core tomatoes. Tie spices in a cheesecloth bag; add to sugar, lemon and water in a large sauce pot. Simmer 15 minutes. Add tomatoes and cook gently until tomatoes become transparent, stirring occasionally to prevent sticking. Cover and let stand 12 to 18 hours in a cool place. Remove spice bag. Drain; reserving syrup. Boil syrup 2 to 3 minutes or longer if too thin. Add tomatoes and lemon; boil 1 minute. Pour hot into hot jars, leaving ¹/₄-inch head space. Adjust caps. Process 20 minutes in boiling water bath. Yield: about 6 half pints.

WATERMELON RIND PRESERVES

- 1 ¹/₂ quarts prepared watermelon rind
- 4 tablespoons salt
- 2 quarts cold water
- 1 tablespoon ginger
- 4 cups sugar
- ¹/₄ cup lemon juice
- 1 ¹/₂ quarts water
- ¹/₂ cup thinly sliced lemon (about 1 medium)

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. 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 1 ¹/₂ quarts water in a large sauce pot. Boil 5 minutes; add rind and boil gently for 30 minutes or until syrup thickens. Add sliced lemon and cook until the melon rind is transparent. Pack hot into hot jars, leaving ¹/₄-inch head space. Remove air bubbles. Adjust caps. Process 20 minutes in boiling water bath. Yield: about 6 half pints.

WESTERN SPECIAL PRESERVES

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

Crush currants; combine currants and water in a large sauce pot. Cook until soft. Drain juice through jelly bag or several thicknesses of cheesecloth. Add sugar to currant juice; bring slowly to a boil, stirring until sugar dissolves. Cook rapidly 5 minutes. Add remaining fruit and cook almost to jellying point, about 30 minutes. As mixture thickens, stir frequently to prevent sticking. Pour hot into hot jars, leaving ¹/₄-inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 5 half pints.



LOW-ACID FOODS

Low-acid foods, while they require a little more care than acids, can easily and safely be canned at home. Vegetables especially, picked fresh from the garden or purchased at the peak of their perfection for canning, are a delicious, wholesome and economical addition to family meals.

Included in the low-acid group are vegetables, meats, poultry, seafood, mushrooms and soup. Tomatoes, rhubarb and sauerkraut are considered as acids. Mixed vegetable recipes which include tomatoes should be processed as low acids. To assure that all spoilage microorganisms are destroyed, low acids **MUST** be processed in a pressure canner at 240°F for the times given in individual recipes.

The times given in recipes for low acids in this book are for foods processed at altitudes of 1,000 feet or less. For higher altitude areas, adjustments in pressure must be made as in Figure 12.

STEP-BY-STEP CANNING OF LOW ACIDS

1. Read "Learning About Canning" on pages 2-13.
2. Assemble all equipment and utensils. Make sure everything is clean. Clean petcock and safety valve of pressure canner by drawing a string through openings. Determine that pressure gauge is accurate.
3. Check jars for nicks and cracks. Wash jars and closures in hot, soapy water. Rinse. Keep jars and closures in hot water until ready for use.
4. For meats, poultry, seafoods and soups, see special instructions in this section.
5. For vegetables, select only the best produce and just enough for one canner load at a time. Wash and rinse thoroughly before breaking the skin.
6. Follow recipe closely. To can low-acid foods without salt (except wild game and seafood) see page 65.
7. Pack vegetables in jars loosely enough for water to circulate between pieces without wasting space.
8. Cover vegetables with fresh boiling water or with water in which they were heated for packing, leaving 1-inch head space.
9. Remove air bubbles.
10. Wipe top and threads of jar with clean, damp cloth. Adjust caps.
11. Place jars in pressure canner and fasten cover, closely following manufacturer's instructions. Heat, allowing steam to escape steadily for 10

minutes. Close vent and bring pressure to 10 pounds. Start counting processing time. Keep pressure constant for entire length of processing time specified in recipe or in manufacturer's directions.

12. Remove canner from heat. Let pressure fall to zero naturally. Wait 2 minutes. Open vent. Unfasten cover; raise opposite side, allowing steam to escape away from you or according to manufacturer's instructions. Lift cover. Then let stand 10 minutes and remove jars. Stand jars on cloths, out of drafts and with space between. Do not tighten bands on jars after processing.

13. After 12 to 24 hours, remove bands and test seals. Wash outside jar surface.

14. Store sealed jars in dark, dry, cool place. Jars with unsealed lids must be reprocessed for the full length of time or refrigerated.

15. Boil low-acid foods for 15 minutes, adjusting for altitude, before serving.

MEATS, POULTRY, SEAFOODS, SOUPS & OTHER MIXTURES (SMORGASBORD)

In addition to vegetables, many other low acids can be preserved by canning to supplement the family diet. Canning is an excellent way to preserve the game caught by hunters and fishermen.

The step-by-step instructions for canning low acids at the beginning of this section should be followed for canning meats, poultry, seafoods, soups and other mixtures. In addition, other special handling tips and instructions are outlined below.

Meats—The flavor and texture of canned meats depend upon the breed, feed and manner of handling the meat at the time of and immediately after slaughtering. If you slaughter your own meat, contact your local county agricultural agent for complete information on slaughtering, chilling and aging the meat.

To prepare the meat, cut into pieces suitable for cooking or canning. Cut slices across the grain about 1-inch thick. Then cut with the grain into jar-size pieces. For stew, cut into uniform cubes.

Trim away gristle, bruised spots and fat. Too much fat is likely to cause the meat to have a strong flavor, may damage the sealing compound used in the lids and may also cause seal failure.

Do not let meat stand in water. Strong-flavored game, however, should be soaked in salt water before canning. Prepare and pack meat according to the recipe and process for the prescribed time.

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

Seafoods—Prepare freshly caught, thoroughly bled fish as for cooking. Leave backbone in small fish, remove it from large ones. Fish should be soaked in salt water before canning. Fish should not be canned in jars larger than pints because seafood is very low in acidity, and heat penetration in larger jars may be inadequate for destroying bacterial spores. The seafood recipes in this book are based on information supplied by the Division of Fishery Industries, United States Department of Interior. For additional seafood recipes, write to that department in Washington, D.C. or write to the U.S. Department of Agriculture, Washington, D.C.

Soups—Ingredients should be cut to uniform size for even processing. For soups containing vegetables and meat, the length of processing time should be for the vegetable or meat requiring the longest processing (See Figure 15).



boiling water bath method



steam pressure method

MEATS



CHOPPED MEAT

Beef, Veal, Lamb, Mutton, Pork, Venison

Put meat through food chopper; measure. Cook it in hot skillet until seared. Add 1 to 1½ cups boiling water, meat stock or tomato juice, and 1 teaspoon salt for each quart ground meat. Pack hot into hot jars, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints 1 hour and 15 minutes, quarts 1 hour and 30

minutes at 10 pounds pressure.

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

CORNED BEEF

25 pounds beef (brisket, chuck, plate or rump)

2 pounds pickling, dairy or kosher salt

1 pound sugar

1 1/2 teaspoons baking soda

1 ounce saltpeter
(potassium nitrate)

To Corn: Cut meat into pieces 3 to 6 inches thick. Put thin layer of salt in bottom of pickling container. 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 saltpeter in a quart of lukewarm water; mix with 3 quarts cool water; pour over meat. Weight meat under brine (see page 26). Scum should be removed each day. (If brine ferments, drain and wash meat; scald container and prepare new brine. Put meat back into container and add fresh brine.) The meat should be ready to can in 3 or 4 weeks; it will be a bright red color.

To Can: Cover corned beef with cold water. Bring to a boil. Simmer 1 hour. Remove meat. Cut into pieces suitable for packing. Skim broth. If desired, add 2 tablespoons whole cloves, 3 bay leaves and 1 teaspoon black peppercorns, tied in a cheesecloth bag. Bring to a boil. Remove spices. Pack hot into hot jars, leaving 1-inch head space. Cover with hot broth, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints 1 hour and 15 minutes, quarts 1 hour and 30 minutes at 10 pounds pressure.
Yield: about 8 quarts.

GRAVY TO USE IN HOT PACKING

Remove meat from cooking pan. Add 1 cup boiling water, or broth, for each 1 to 2 tablespoons fat in pan. Boil 2 or 3 minutes. **DO NOT THICKEN.**

PORK SAUSAGE

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

PORK TENDERLOIN

Hot Pack—Cook 1/3 to 1/2 done. Slice.

Add 1/2 teaspoon salt per pint or 1 teaspoon salt per quart. Pack hot into hot jars, leaving 1-inch head space. Cover with hot broth or gravy, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints 1 hour and 15 minutes, quarts 1 hour and 30 minutes at 10 pounds pressure.

Raw Pack—Slice or leave in jar-length pieces. Pack meat into hot jars, leaving 1-inch head space. Add 1/2 teaspoon salt per pint or 1 teaspoon salt per quart. Remove air bubbles. 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, Venison

Cut meat into jar-size chunks. Bake or roast meat until well browned, but not done, or brown in small amount of fat. Add 1/2 teaspoon salt per pint or 1 teaspoon salt per quart. Pack hot into hot jars, leaving 1-inch head space. Cover with hot gravy or broth, leaving 1-inch head space. Remove air bubbles. 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. Add 1/2 teaspoon salt per pint or 1 teaspoon salt per quart. Pack hot into hot jars, leaving 1-inch head space. Cover with hot barbecue sauce (see page 33), gravy or broth, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints 1 hour and 15 minutes, quarts 1 hour and 30 minutes at 10 pounds pressure.

STEW MEAT

Use beef or other meat suitable for stewing. Cut into 1 1/2 to 2-inch cubes. Remove fat and gristle. Simmer meat until hot through in water to cover. Add 1/2 teaspoon salt per pint or 1 teaspoon salt per quart. Pack hot into hot jars, leaving 1-inch head space. Cover with water in which cooked, 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, Venison

Hot Pack—Cut meat into 1-inch slices. Remove large bones. Quickly brown in small amount of fat. Add 1/2 teaspoon salt per pint or 1 teaspoon salt per quart. Pack hot into hot jars, leaving 1-inch head space. Cover with hot

gravy, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints 1 hour and 15 minutes, quarts 1 hour and 30 minutes at 10 pounds pressure.

Raw Pack—Cut meat into 1-inch slices. Remove large bones. Pack meat into hot jars, leaving 1-inch head space. Add 1/2 teaspoon salt per pint or 1 teaspoon salt per quart. Cover with hot gravy, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints 1 hour and 15 minutes, quarts 1 hour and 30 minutes at 10 pounds pressure.

WILD RABBIT and SQUIRREL

Soak the meat 1 hour in brine made by dissolving 1 tablespoon salt per quart water. Rinse. Use either recipe on following page for canning chicken, omitting salt.

NOTE: In most states the length of time for storage of game is controlled by law. Conservation officials can supply information on this subject.

POULTRY

CHICKEN—BONED

Use for All Poultry

Steam or boil chicken until about 2/3 done. Remove skin and bones. Pack meat into hot jars, leaving 1-inch head space. Add 1/2 teaspoon salt per pint or 1 teaspoon salt per quart. Skim fat from broth. Bring broth to a boil. Pour over chicken, leaving 1-inch head space. Remove air bubbles. 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 2/3 done. If uncut chickens were cooked, separate at joints as for frying. Pack hot into hot jars, leaving 1-inch head space. Add 1/2 teaspoon salt per pint or 1 teaspoon salt per quart. Cover with boiling hot chicken broth, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints 1 hour and 5 minutes, quarts 1 hour and 15 minutes at 10 pounds pressure.

Raw Pack—Separate chicken at joints. Pack meat into hot jars, leaving 1-inch head space. Add 1/2 teaspoon salt per pint or 1 teaspoon salt per quart. Do not add liquid. Adjust caps. Process pints 1 hour and 5 minutes, quarts 1 hour and 15 minutes at 10 pounds pressure.

SEAFOODS

Prepare freshly caught, thoroughly bled fish as for cooking. Leave back-bone in small fish; remove it from large ones. **Use only 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 $\frac{1}{2}$ teaspoon citric acid. Boil 2 minutes. Drain. Pack hot into hot jars, leaving 1-inch head space. Only process in half pint or pints. Pour juice over clams. Add boiling water, if needed, to cover, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process 1 hour and 10 minutes at 10 pounds pressure.

CRAB MEAT

Add $\frac{1}{4}$ cup lemon juice or white vinegar and 2 tablespoons 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. Drain cooked crabs. Remove meat from body and claws. Rinse in cool acid-brine, 2 tablespoons salt, 2 cups lemon juice or distilled vinegar to 1 gallon cool water. Squeeze meat to remove some of the liquid. Pack 6-ounces crab meat into hot half-pint jars, or 12-ounces crab meat into pint jars, leaving 1-inch head space. Only process in half-pints or pints. Add $\frac{1}{2}$ teaspoon of citric acid to each half-pint or 1 teaspoon per pint of crab, cover with boiling water, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process half-pints and pints for 1 hour and 20 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 fish into hot jars, skin side next to glass, leaving 1-inch head space. Only process in half pints or pints. Adjust caps. Process 1 hour and 40 minutes at 10 pounds pressure.

SHRIMP

Add 1 cup salt and 1 cup vinegar to each gallon boiling water needed for cooking shrimp. Wash and drain freshly caught shrimp. Drop into boiling brine. Boil 10 minutes. Drop into cold

water. Drain and peel. Remove sand vein. Rinse in cool water. Pack shrimp into hot jars, leaving 1-inch head space. Only process in half pints or pints. Cover with boiling water, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process 45 minutes at 10 pounds pressure.

SMELT in TOMATO SAUCE

- 6 pounds cleaned smelt
- 2 cups tomato sauce
- $\frac{3}{4}$ cup oil
- $\frac{1}{4}$ cup vinegar
- 2 teaspoons salt

Pack fish into hot jars, leaving 1-inch head space. Combine remaining ingredients and pour over fish; add water, if necessary to cover fish, leaving 1-inch head space. Only process in half pints or pints. Remove air bubbles. Adjust caps. Process pints 50 minutes at 10 pounds pressure. Yield: about 7 pints.

TUNA

Hot Pack—Place cleaned tuna on a rack in a large baking pan. Bake at 350°F for 1 hour or until done. The internal temperature of the tuna must be 165° to 175°F. Refrigerate overnight. Remove skin and lightly scrape surface to remove blood vessels and any discolored flesh. Cut fish into quarters, removing all bones. Discard all dark flesh. Cut quarters crosswise into jar-length pieces. Pack fish into hot jars, leaving 1-inch head space. Add $\frac{1}{2}$ teaspoon salt and 1 tablespoon vegetable oil or water to each half-pint jar. Add 1 teaspoon salt and 2 tablespoons vegetable oil or water to each pint jar. Only process in half-pints or pints. Remove air bubbles. Adjust caps. Process 1 hour and 40 minutes at 10 pounds pressure.

Raw Pack—Filet raw tuna. Remove skin and lightly scrape surface to remove blood vessels and any discolored flesh. Cut fish into quarters, removing all bones. Discard all dark flesh. Cut quarters crosswise into jar-length pieces. Pack fish into hot jars, leaving 1-inch head space. Add $\frac{1}{2}$ teaspoon salt to each half-pint jar. Add 1 teaspoon salt to each pint jar. Only process in half pints or pints. Adjust caps. Process 1 hour and 40 minutes at 10 pounds pressure.

NOTE: To obtain more seafood 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.

SMORGASBORD

BEAN SOUP

- 2 cups dried navy beans (1 pound)
- 1 ham hock or $\frac{1}{4}$ pound salt pork
- $\frac{1}{2}$ cup chopped onion (about $\frac{1}{2}$ medium)
- $\frac{1}{2}$ hot red pepper, finely chopped
- Salt to taste

Cover beans with cold water and soak 12 to 18 hours in a cool place. Drain. Cover beans with water by 2 inches. Add meat, onion and pepper; bring to a boil. Cover and simmer 2 to 3 hours or until beans are tender. 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 jars, leaving 1-inch head space. Adjust caps. Process pints 1 hour and 15 minutes at 10 pounds pressure. Yield: about 5 pints.

NOTE: When cutting or seeding hot peppers, wear rubber gloves to prevent hands from being burned.

BEEF STEW WITH VEGETABLES

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

NOTE: Vegetables do not need to be precooked.

Cut meat into $1\frac{1}{2}$ -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 jars, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints 1 hour, quarts 1 hour and 15 minutes at 10 pounds pressure. Yield: about 7 quarts.

BEEF STOCK

- 4 pounds meaty beef bones
- 2 quarts water
- 1 medium onion, finely chopped
- 1 carrot, pared and sliced
- 1 stalk celery, sliced
- 1 bay leaf

Salt to taste

Beef bouillon cubes or granules
Bring beef bones and water to a boil over high heat; skim foam. Reduce heat and add onions, carrots, celery, bay leaf, and salt. Simmer, covered, 2 to 3 hours. If more flavor is needed, simmer longer or add beef bouillon cubes or granules to stock. Remove beef bones. Strain liquid; skim excess

fat from top of stock. Pour hot strained stock into hot jars, leaving 1-inch head space. Adjust caps. Process pints 20 minutes, quarts 25 minutes at 10 pounds pressure. Yield: about 2 quarts.

BEEF IN WINE SAUCE

- 2 pounds round steak, cut into 1-inch cubes
- 1 tablespoon oil
- 1 cup shredded apple (about 1 large)
- 1 cup shredded carrots (about 1/2 large)
- 3/4 cup sliced onion (about 1/2 large)
- 1/2 cup water
- 1/2 cup red cooking wine
- 1 teaspoon salt
- 2 cloves garlic, minced
- 2 beef bouillon cubes
- 2 bay leaves
- 5 teaspoons cornstarch
- 1/4 cup water
- 1/2 teaspoon browning and seasoning sauce

Brown meat in oil. Add apple, carrots, onion, water, wine, salt, garlic, bouillon cubes and bay leaves. Simmer 1 hour. Combine cornstarch and water; stir into beef mixture. Cook until mixture begins to thicken. Add browning and seasoning sauce. Pack hot into hot jars, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints 1 hour and 15 minutes, quarts 1 hour and 30 minutes at 10 pounds pressure. Yield: about 3 pints.

SEASONED GROUND BEEF

- 4 pounds lean ground beef
- 1 1/2 cups chopped onions (about 2 medium)
- 2 cloves garlic, minced
- 2 cups tomato juice
- 1 1/2 cups beef broth
- 1 teaspoon seasoned salt
- 1/2 teaspoon pepper

Brown meat; add onions and garlic and cook slowly until tender. Skim off excess fat if needed. Add remaining ingredients and simmer 15 to 20 minutes or until very hot. Pack hot into hot 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 5 pints.

CHICKEN A LA KING

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

- 7 to 8 pounds stewing chickens, cut in pieces
- 2 stalks celery, quartered
- 1 onion, quartered
- 1 carrot, quartered
- 4 peppercorns
- 2 whole allspice
- 1 bay leaf
- 2 teaspoons salt
- 1/4 cup chicken fat or butter
- 1/2 cup flour
- 5 cups chicken broth
- 1/2 cup chopped celery (about 1 stalk)
- 1/4 cup chopped pimento
- 1 tablespoon chopped parsley

Salt and pepper to taste

To Prepare Chicken: Cook chicken in water to cover. Add celery, onion, carrot, peppercorns, allspice, bay leaf and salt. Bring to a boil, 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 jars, leaving 1-inch head space. Remove air bubbles. 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 SOUP

- 4 quarts chicken stock
- 3 cups diced chicken (one 3-pound chicken)
- 1 1/2 cups diced celery (about 2 stalks)
- 1 1/2 cups sliced carrots
- 1 cup diced onion (about 1 medium)

Salt and pepper to taste

3 chicken bouillon cubes (optional)

Combine chicken stock, chicken, celery, carrots and onion. Bring mixture to a boil; reduce heat, simmer 30 minutes. Season to taste, add bouillon cubes (optional). Pour hot into hot 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 4 quarts.

CHICKEN STOCK

- 3-4 pounds chicken, cut up
- 4 quarts water
- 2 stalks celery
- 2 medium onions, quartered
- 1 tablespoon salt
- 10 peppercorns
- 2 bay leaves

Bring chicken and water to a boil. Add remaining ingredients. Reduce heat, simmer 2 hours or until chicken is tender. Remove from heat; skim off foam. Remove chicken from stock. Strain stock through a sieve or cheesecloth. Allow stock to cool several hours or until fat solidifies; skim off fat. Bring broth to a boil. Pour hot strained broth into hot jars, leaving 1-inch head space. Adjust caps. Process pints 20 minutes, quarts 25 minutes at 10 pounds pressure. Yield: about 4 quarts.

CHILI

- 5 pounds ground beef
- 2 cups chopped onions (about 2 medium)
- 1 clove garlic, minced
- 6 cups cooked or canned tomatoes and juice
- 1/2 cup chili powder
- 1 1/2 tablespoons salt
- 1 hot red pepper, finely chopped
- 1 teaspoon cumin seed

Brown meat; add onions and garlic and cook slowly until tender. Add remaining ingredients and simmer 20 minutes. If meat is fat, skim off excess fat before canning. Pour hot into hot jars, leaving 1-inch head space. Remove air bubbles. 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.

NOTE: When cutting hot pepper or seeding, use rubber gloves to prevent burning hands.

CLAM CHOWDER

$\frac{1}{2}$ pound diced salt pork
1 cup chopped onion (about 1 medium)
3 to 4 quarts chopped, cleaned clams with juice
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 jars, leaving 1-inch head space. Only process in half pints or pints. Adjust caps. Process pints and half pints 1 hour and 40 minutes at 10 pounds pressure. Yield: about 10 pints.

For Manhattan Chowder, add to above ingredients before canning:

- $\frac{1}{2}$ bay leaf
- $\frac{1}{2}$ teaspoon thyme
- $\frac{1}{2}$ cup chopped celery (about $\frac{1}{2}$ stalk)

2 cups cooked tomatoes
For New England Chowder, after canning, immediately before heating for serving, add to each jar:

- 2 tablespoons butter
- 2 cups milk

GOULASH

- 1 tablespoon salt
- 3 tablespoons paprika
- 2 teaspoons dry mustard
- 4 pounds boned chuck, cut in 1-inch pieces
- $\frac{1}{3}$ cup oil
- 6 stalks celery, cut in half
- 1 cup water
- $\frac{1}{3}$ cup vinegar
- 3 bay leaves
- 20 peppercorns
- 2 teaspoons caraway seeds
- 3 medium onions, cut in half
- 4 large carrots, cut in half

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

MEAT SAUCE

For Spaghetti, Lasagna or Casseroles

- 5 pounds ground beef
- 2 cups chopped onions (about 2 medium)
- 1 cup chopped green peppers (about 2 medium)
- 9 cups cooked or canned tomatoes and juice
- $2\frac{2}{3}$ cups tomato paste (about 24 ounces)
- 2 tablespoons brown sugar
- 2 tablespoons minced parsley
- $1\frac{1}{2}$ tablespoons salt
- 1 tablespoon oregano
- $\frac{1}{2}$ teaspoon pepper
- $\frac{1}{2}$ teaspoon ginger
- $\frac{1}{2}$ teaspoon allspice
- 2 tablespoons vinegar

Brown beef; add onions and green peppers and cook slowly until tender. Add remaining ingredients and simmer until thick enough for serving. If the meat is fat, skim off excess fat before canning. Pour hot into hot 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.

SPLIT PEA SOUP

- 1 16 ounce package dried split peas
- 2 quarts water
- 1 cup chopped onion (about 1 medium)
- $1\frac{1}{2}$ cups pared and sliced carrots (about 3 medium)
- 1 cup cooked ham
- 1 bay leaf
- 1 teaspoon salt, or to taste
- $\frac{1}{4}$ teaspoon pepper
- $\frac{1}{4}$ teaspoon allspice

Combine dried peas and water; bring to a boil, reduce heat and simmer, covered, about 1 hour or until peas are soft. If a smooth soup is desired, press peas through a sieve, return to sauce pot. Add remaining ingredients and simmer gently about 30 minutes. If mixture is too thick, more water may be added. Pour hot into hot 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 5 pints.

VEGETABLE SOUP

- $1\frac{1}{2}$ quarts water
- 2 quarts peeled, cored, chopped tomatoes (about 12 large)
- $1\frac{1}{2}$ quarts cubed, pared potatoes (about 6 medium)
- 1 quart green lima beans
- 1 quart cut corn, uncooked (about 9 ears)
- $1\frac{1}{2}$ quarts $\frac{3}{4}$ -inch sliced carrots (about 12 medium)
- 2 cups 1-inch sliced celery (about 4 stalks)
- 2 cups chopped onions (about 2 medium)

Salt

Add water to vegetables; boil 5 minutes. Pour hot into hot jars, leaving 1-inch head space. Add $\frac{1}{4}$ teaspoon salt to each pint or $\frac{1}{2}$ teaspoon salt to each quart. Adjust caps. Process pints 1 hour, quarts 1 hour and 15 minutes at 10 pounds pressure. Yield: about 7 quarts.

NOTE: Or use any mixture of vegetables preferred in soup. Process the length of time needed for vegetable requiring longest processing time (See Figure 15).

MINCEMEAT

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

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

VEGETABLES

ASPARAGUS

Hot Pack—Wash and drain tender, tight-tipped asparagus. Remove tough ends and scales. Wash again. Cut into 1-inch pieces. Boil 3 minutes. Pack hot into hot jars, leaving 1-inch head space. Add $\frac{1}{2}$ teaspoon salt to each pint or 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints 30 minutes, quarts 40 minutes at 10 pounds pressure.

Raw Pack—Prepare as for Hot Pack. Pack as tightly as possible without crushing into hot jars, leaving 1-inch head space. Add $\frac{1}{2}$ teaspoon salt to each pint or 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints 30 minutes, quarts 40 minutes at 10 pounds pressure.

BEANS-BOSTON BAKED

- 1 quart dried navy beans (about 2 pounds)
 - 2 teaspoons salt
 - $\frac{1}{2}$ pound salt pork, cut in pieces
 - 1 cup sliced onion (about 3 large)
 - $\frac{2}{3}$ cup brown sugar, packed
 - 2 teaspoons salt
 - 2 teaspoons dry mustard
 - $\frac{2}{3}$ 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 3 $\frac{1}{2}$ hours. Add water, if necessary, as beans should be "soupy." Pack hot into hot jars, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints 1 hour and 20 minutes, quarts 1 hour and 35 minutes at 10 pounds pressure. Yield: about 6 pints.

BEANS-DRIED KIDNEY, ETC.

Use kidney or any other variety of dried beans or dried peas. Cover beans or peas with cold water. Let stand 12 to 18 hours in a cool place. Boil 30 minutes. Pack hot into hot jars, leaving 1-inch head space. Add $\frac{1}{2}$ teaspoon salt to each pint or 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints 1 hour and 15 minutes, quarts 1 hour and 30 minutes at 10 pounds pressure.

BEANS-GREEN, SNAP AND WAX

Hot Pack—See pages 60-61 for "Canning Green Beans. . . Step by Step" sketches. Wash, drain, string, trim ends and break or cut freshly gathered beans into 2-inch pieces. Boil 5 minutes. Pack hot into hot jars, leaving 1-inch head space. Add $\frac{1}{2}$ teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints 20 minutes, quarts 25 minutes, at 10 pounds pressure.

NOTE: The processing time given applies only to young, tender pods. Beans that have almost reached the "shell out" stage require a longer processing time. Add 15 minutes for pints, 20 minutes for quarts.

Raw Pack—Wash, drain, string, trim ends and break or cut freshly gathered beans into 2-inch pieces. Pack tightly into hot jars, leaving 1-inch head space. Add $\frac{1}{2}$ teaspoon salt to each pint or 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints 20 minutes, quarts 25 minutes, at 10 pounds pressure.

BEANS-LIMA AND BUTTER

Hot Pack—Wash, drain and shell tender young beans. Wash again. Boil 3 minutes. Pack hot into hot jars, leaving 1-inch head space. Add $\frac{1}{2}$ teaspoon salt to each pint or 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints 40 minutes, quarts 50 minutes, at 10 pounds pressure. If beans are large ($\frac{3}{4}$ " or more), process 10 minutes longer for pints and quarts.

Raw Pack—Wash, drain and shell tender young beans. Wash again. Pack loosely into hot jars, leaving 1-inch head space. Do not press or shake down. Add $\frac{1}{2}$ teaspoon salt to each pint or 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints 40 minutes, quarts 50 minutes, at 10 pounds pressure. If beans are large ($\frac{3}{4}$ " or more), process 10 minutes longer for pints and quarts.

BEANS-WITH PORK and TOMATO SAUCE

- 1 quart dried navy beans (about 2 pounds)
- $\frac{1}{4}$ pound salt pork, cut in pieces
- 1 quart tomato juice
- 3 tablespoons sugar
- 2 teaspoons salt
- 1 cup chopped onion (about 1 medium)
- $\frac{1}{4}$ teaspoon cloves
- $\frac{1}{4}$ 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. Combine tomato juice, sugar, salt, onions and spices; heat to boiling. Pack 1 cup of beans into hot jar. Top with piece of pork and fill jar about $\frac{3}{4}$ full with beans. Pour hot tomato sauce to within 1 inch of top of jar. Adjust caps. Process pints 1 hour and 5 minutes, quarts 1 hour and 15 minutes at 10 pounds pressure. Yield: about 3 quarts.

BEETS

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

CARROTS

Select carrots that are 1 to $1\frac{1}{4}$ inches in diameter.

Hot Pack—Wash and scrape carrots. Wash again. Slice or dice. Bring to boiling, reduce heat and simmer 5 minutes. Pack hot into hot jars, leaving 1-inch head space. Add $\frac{1}{2}$ teaspoon salt to each pint or 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints 25 minutes, quarts 30 minutes at 10 pounds pressure.

Cold or Raw Pack—Wash and scrape carrots. Wash again. Slice, dice or leave whole. Pack tightly into hot jars, leaving 1-inch head space. Add $\frac{1}{2}$ teaspoon salt to each pint or 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints 25 minutes, quarts 30 minutes at 10 pounds pressure.

CELERY and TOMATOES

Use equal parts celery and peeled, cored, chopped tomatoes. Mix and boil 5 minutes (no water needed). Pack hot into hot jars, leaving 1-inch head space. Add $\frac{1}{2}$ teaspoon salt to each pint or 1 teaspoon salt to each quart, if needed. Cover with boiling water, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints 30 minutes, quarts 35 minutes at 10 pounds pressure.

CORN-CREAM STYLE

Hot Pack—Husk corn; remove silk. Wash. Cut tip ends from kernels. Scrape out pulp. Measure. Add $\frac{1}{2}$ teaspoon salt and $1\frac{1}{4}$ cups boiling water to each pint of corn. Boil 3 minutes. Pour hot into hot jars, leaving 1-inch head space. Only process in pint jars. Adjust caps. Process pints 1 hour and 25 minutes at 10 pounds pressure.

Raw Pack—Husk corn; remove silk. Wash. Cut tip ends from kernels. Scrape out pulp. Pack corn loosely into hot pint jars, leaving 1-inch head space. Do not shake or press down. Add $\frac{1}{2}$ 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. Add $\frac{1}{2}$ teaspoon salt and 1 cup boiling water to each pint of corn or 1 teaspoon salt and 2 cups boiling water to each quart of corn. Bring to a boil, reduce heat and simmer 5 minutes. Pack hot into hot jars, leaving 1-inch head space. Remove air bubbles. 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 jars, leaving 1-inch head space. Do not shake or press down. Add $\frac{1}{2}$ teaspoon salt to each pint or 1 teaspoon salt to each quart. Cover with boiling hot water, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints 55 minutes, quarts 1 hour and 25 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 jars, leaving 1-inch head space. Add $\frac{1}{2}$ teaspoon salt to each pint or 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints 1 hour and 10 minutes, quarts 1 hour and 30 minutes at 10 pounds pressure.

MIXED VEGETABLES

- 7 cups peeled, sliced carrots
- 7 cups cut, whole kernel corn
- 7 cups shelled lima beans
- 6 cups cubed zucchini
- 1 cup chopped sweet red pepper

Wash and prepare vegetables. Combine vegetables in a large sauce pot; add water to cover. Boil vegetables 5 minutes. Pack hot vegetables and liquid into hot jars, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints 55 minutes, quarts 85 minutes at 10 pounds pressure.

MUSHROOMS

Use only edible fresh mushrooms. Freezing results in a better product than canning. See page 88 for proper instructions on freezing mushrooms.

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 jars, leaving 1-inch head space. Add 1/2 teaspoon salt to each pint or 1 teaspoon salt to each quart. If needed, add boiling water to cover, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints 25 minutes, quarts 40 minutes at 10 pounds pressure.

PEAS—BLACK-EYED, CROWDER and FIELD

Hot Pack—Shell and wash freshly gathered green peas. Boil 3 minutes. Pour hot into hot jars, leaving 1-inch head space. Add 1/2 teaspoon salt to each pint or 1 teaspoon salt to each quart. Add boiling water, if needed to cover, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints 35 minutes, quarts 40 minutes at 10 pounds pressure.

CANNING GREEN BEANS—STEP BY STEP

Green beans may be hot packed as shown here or raw (cold) packed as described on page 58.

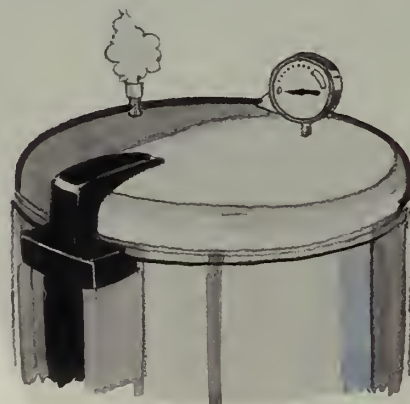
1. Visually examine jars for nicks, cracks and sharp edges on sealing surfaces. Wash jars and closures in hot, soapy water. Rinse. Leave jars in hot water until needed. Put lids in saucepan filled with water and place on stove to simmer. Remove from heat. Allow lids to remain in hot water until needed.



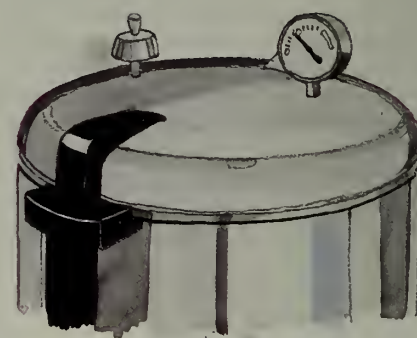
5. Stand hot jar on wood or cloth. Add 1 teaspoon salt per quart, 1/2 teaspoon per pint. Pack beans, leaving 1-inch head space, and cover with boiling water. Eliminate air bubbles with non-metallic kitchen utensil.



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



9a. Leave vent open until steam has escaped steadily for 10 minutes.



9b. Close vent. At altitudes less than 1,000 feet above sea level, bring pressure to 10 pounds (see Figure 12 for altitude adjustments). Keep pressure steady for 20 minutes for pints, 25 minutes for quarts.



2. Use freshly gathered beans which are young, tender and crisp. Wash beans thoroughly and rinse carefully. Lift beans out of water and drain.



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 five minutes. Drain.



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

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



10. Remove canner from heat. Let pressure fall to zero naturally. Wait 2 minutes then open vent. Unfasten cover; raise opposite side, allowing steam to escape away from you, or according to manufacturer's instructions. Lift cover. Let set 10 minutes and remove jars, placing jars on cloths, out of drafts with space between jars. Do not tighten bands on jars after processing.



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



12. Test seal by pressing center of lid. If dome is down or stays down when pressed, jar is sealed. Remove metal screw bands and store jars in dry, dark, cool place.

Raw Pack—Shell and wash freshly gathered green peas. Pack loosely into hot jars, leaving 1-inch head space. Do not shake or press down. Add $\frac{1}{2}$ teaspoon salt to each pint or 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Remove air bubbles. 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 (less than $\frac{1}{4}$ ") 3 minutes; larger ones ($\frac{1}{4}$ " to $\frac{1}{3}$ ") 5 minutes. Drain, rinse in hot water, drain, pack hot into hot jars, leaving 1-inch head space. Add $\frac{1}{2}$ teaspoon salt to each pint or 1 teaspoon salt to each quart. Add boiling water to cover, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints and quarts 40 minutes at 10 pounds pressure. If peas are large ($\frac{1}{3}$ "), process 10 minutes longer.

Raw Pack—Wash, drain and shell freshly gathered peas. Wash again. Pack loosely into hot jars, leaving 1-inch head space. Do not shake or press down. Add $\frac{1}{2}$ teaspoon salt to each pint or 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints and quarts 40 minutes at 10 pounds pressure.

PEPPERS-GREEN

Wash and drain sweet bell peppers. (These do not taste bitter when cooked.) Remove stems and seeds. Boil 3 minutes. Drain. Pack hot into hot jars, leaving 1-inch head space. Add 1 tablespoon vinegar and $\frac{1}{2}$ teaspoon salt to each pint or $\frac{1}{2}$ tablespoon vinegar and $\frac{1}{4}$ teaspoon salt to each half pint. If needed, add boiling water to cover, leaving 1-inch head space. Only process in half pints or pints. Remove air bubbles. Adjust caps. Process half pints and pints 35 minutes at 10 pounds pressure.

PIMIENTOS

Freezing results in better product than canning. See page 89 for proper instructions on freezing pimientos.

POTATOES-WHITE or IRISH

Wash and scrape freshly dug potatoes. Wash again. Boil 10 minutes. Drain. Pack hot into hot jars, leaving 1-inch head space. Add $\frac{1}{2}$ teaspoon salt to each pint or 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints 35 minutes, quarts 40 minutes at 10 pounds pressure.

POTATOES-SWEET

Wet Pack—Use freshly dug potatoes of uniform size and color. Wash. Boil or steam slowly until skins can be rubbed off. Pack hot into hot jars, leaving 1-inch head space. Cover with boiling water or medium or light syrup, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints 1 hour and 5 minutes, quarts 1 hour and 30 minutes at 10 pounds pressure.

PUMPKIN and WINTER SQUASH

Freezing results in a better product than canning. See page 89 for proper instructions on freezing pumpkin and winter squash.

PARSNIPS, RUTABAGAS, TURNIPS

Wash and prepare as for cooking. Cut into desired size pieces. Boil 3 minutes. Pack hot into hot jars, leaving 1-inch head space. Cover with boiling water, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints 30 minutes, quarts 35 minutes at 10 pounds pressure.

NOTE: Rutabagas usually discolor when canned and also develop a strong flavor.

SUCCOTASH

Boil fresh corn 5 minutes. Cut from cob. Do not scrape. Mix with $\frac{1}{2}$ to equal measure of green string, or green lima beans, which have been boiled 3 minutes. Pack hot into hot jars, leaving 1-inch head space. Add $\frac{1}{2}$ teaspoon salt to each pint or 1 teaspoon salt to each quart. Cover with boiling water, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints 1 hour, quarts 1 hour and 25 minutes at 10 pounds pressure.

SUMMER SQUASH

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

TOMATOES

See Pages 20-22

NOTE: The following four tomato recipes **must** be processed in a steam pressure canner because of ingredients in recipes.

CREOLE SAUCE

- 3 quarts peeled, cored, chopped tomatoes (about 18 medium)
- 2 cups chopped onions (about 2 medium)
- 1 cup chopped sweet red peppers (about 2 medium)
- 1 clove garlic, minced
- 1 hot red pepper, finely chopped
- 1 tablespoon chopped parsley
- 1 tablespoon sugar
- 2 teaspoons salt
- $\frac{1}{2}$ teaspoon marjoram
- $\frac{1}{4}$ teaspoon chili powder

Combine all ingredients in a large sauce pot. Cook slowly until thick, about $1\frac{1}{2}$ hours. Stir frequently to prevent sticking. Pour hot into hot 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 small amount of chopped celery in oil, add Creole Sauce and heat to blend. Serve over rice, meatballs or shrimp.

NOTE: When cutting or seeding hot peppers, wear rubber gloves to prevent hands from burning.

GREEN TOMATO MINCEMEAT

- 2 quarts cored and chopped green tomatoes (about 20 small)
- 1 tablespoon salt
- 3 tablespoons grated orange peel (about 1 medium)
- $\frac{2}{3}$ cup peeled, seeded and chopped orange (about 1 medium)
- $2\frac{1}{2}$ quarts pared, chopped apples (about 12 medium)
- 1 pound raisins
- $1\frac{1}{2}$ cups chopped suet (about 6 ounces)
- $3\frac{1}{2}$ cups brown sugar, packed
- $\frac{1}{2}$ cup vinegar
- 2 teaspoons cinnamon
- 1 teaspoon nutmeg
- 1 teaspoon cloves
- $\frac{1}{2}$ teaspoon ginger

Sprinkle salt over tomatoes; let stand 1 hour. Drain. Cover tomatoes with boiling water; let stand 5 minutes. Drain well. Combine all ingredients in a large sauce pot. Bring to a boil. Pour hot into hot jars, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints and quarts 25 minutes at 10 pounds pressure. Yield: about 10 pints.

TOMATOES with OKRA

Use equal measure of sliced okra and peeled, cored and chopped tomatoes. Cook tomatoes 20 minutes. Add okra. Boil 5 minutes. Pour hot into hot jars, leaving 1-inch head space. Add $\frac{1}{2}$ teaspoon salt to each pint or 1 teaspoon salt to each quart. Remove air bubbles. Adjust caps. Process pints 30 minutes, quarts 35 minutes at 10 pounds pressure.

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

STEWED TOMATOES

- 4 quarts peeled, cored, chopped tomatoes (about 24 large)
- 1 cup chopped celery (about 1 stalk)
- $\frac{1}{2}$ cup chopped onion (about $\frac{1}{2}$ medium)
- $\frac{1}{4}$ cup chopped green pepper (about $\frac{1}{4}$ medium)
- 1 tablespoon sugar
- 2 teaspoons salt

Combine all ingredients in a large sauce pot. Cover and cook 10 minutes, stirring to prevent sticking. Pour hot into hot jars, leaving $\frac{1}{2}$ -inch head space. Adjust caps. Process pints 15 minutes, quarts 20 minutes at 10 pounds pressure. Yield: about 7 pints. **To Serve:** Add 1 tablespoon butter, cubes of bread and cornstarch or flour to thicken before heating.



SPECIAL DIET

SPECIAL DIET FOODS

Whether the result of a need to meet special dietary requirements or a desire to make healthy eating choices, individuals today want control over the quality of foods they eat. Specialty diet foods and health foods are often costly. An alternative to the high price of commercially prepared foods is home canning. Low-sugar, low-salt and preservative-free 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 pages 15 through 23. When canning low-acid vegetables, read pages 53 through 63. When canning meats, poultry and seafoods, read pages 53 through 63. When canning jellies and semi-soft spreads, read pages 39 through 51.
5. Flavor of vegetables can be easily improved. If there is no medical reason to prevent it, add $\frac{1}{2}$ to 1 tablespoon of lemon or orange juice and a tiny piece of peel to each pint of carrots, beets or asparagus. Green beans and peas are given a lift by adding a bit of mace, nutmeg or curry powder. Any green vegetable may be improved by adding a spoonful of chopped celery and a sliver of pimento 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 FRUITS WITHOUT SUGAR

Use fully ripe, firm fruit. Prepare fruit for canning as explained in the recipes found on pages 15 through 23. Then add a little water and cook the fruit until it is boiling. Pack hot into hot jars. If needed, add boiling water to cover. Unsweetened fruit juice may be used in place of water. Adjust caps and process in a boiling water bath canner for the recommended time for the fruit being canned.

TO CAN LOW-ACID FOODS WITHOUT SALT

Follow the recipes for canning low-acid vegetables for meats and poultry, but omit salt. Do not omit salt from seafoods. Canned meats and vegetables keep just as well without salt as with it. The amount called for in those recipes is too small to help prevent spoilage; it is there only for seasoning purposes.

APPLE JELLY

- 2 packages or 2 tablespoons unflavored gelatin
- 1 quart unsweetened apple juice
- 2 tablespoons lemon juice
- 2 tablespoons liquid artificial sweetener

Food coloring, if desired

In a saucepan, soften gelatin in apple juice and lemon juice. Bring to a rolling boil, dissolving gelatin; boil 1 minute. Remove from heat. Stir in liquid artificial sweetener and food coloring. Pour hot into hot jars. Adjust caps. Store in refrigerator up to three weeks. Yield: about 2 pints. 1 tablespoon = 8 calories.

GRAPE JELLY

- 2 packages or 2 tablespoons unflavored gelatin
- 1 bottle (24 ounces) unsweetened grape juice
- 2 tablespoons lemon juice
- 2 tablespoons liquid artificial sweetener

In a saucepan, soften gelatin in grape juice and lemon juice. Bring to a rolling boil, dissolving gelatin; boil 1 minute. Remove from heat. Stir in liquid artificial sweetener. Pour hot into hot jars. Adjust caps. Store in refrigerator up to three weeks. Yield: about 1 pint. 1 tablespoon = 11 calories.

BLACKBERRY JAM

(Long-Boil Method)

- 4 cups crushed blackberries
- 8 tablespoons liquid artificial sweetener

Measure crushed blackberries into a sauce pot. Add sweetener and stir well. Bring to a boil, stirring constantly until the mixture thickens. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 1 pint. 1 tablespoon = 10 calories.

PEACH FREEZER JAM

- 4 cups peeled, sliced peaches
- 3 to 4 teaspoons liquid artificial sweetener
- 1 teaspoon unsweetened lemon juice
- $\frac{1}{2}$ teaspoon ascorbic acid
- 1 package powdered pectin

Crush peaches in saucepan. Stir in sweetener, pectin, lemon juice and ascorbic acid. Bring to a boil; boil 1 minute. Remove from heat. Continue to stir 2 minutes. Pour into can or freeze jars, leaving $\frac{1}{2}$ -inch head space. Adjust caps. Freeze. Yield: about 1 pint. 1 tablespoon = 10 calories.



boiling water bath method



steam pressure method

RASPBERRY JAM

- 1 quart cleaned raspberries
- 3 to 4 teaspoons liquid artificial sweetener
- 1 package powdered pectin
- 1 tablespoon lemon juice

Crush raspberries in saucepan. Stir in artificial sweetener, pectin and lemon juice. Bring to a boil; boil 1 minute. Remove from heat. Continue to stir 2 minutes. Pour into can or freeze jars. Adjust caps. Freeze. Yield: about $2\frac{2}{3}$ cups. 1 tablespoon = 5 calories.

STRAWBERRY JAM

- 1 quart cleaned strawberries
- 3 to 4 teaspoons liquid artificial sweetener
- 1 package powdered pectin
- 1 tablespoon lemon juice

Red food coloring if desired

Crush strawberries in saucepan. Stir in artificial sweetener, food coloring, pectin and lemon juice. Bring to a boil; boil 1 minute. Remove from heat. Continue to stir 2 minutes. Pour into can or freeze jars. Adjust caps. Freeze. Yield: about $2\frac{2}{3}$ cups. 1 tablespoon = 5 calories.

PEACH LITE SPREAD

- 2 cups dried peaches
- 1 1/2 cups unsweetened crushed pineapple
- 2/3 cup peeled, seeded and chopped orange (about 1 medium)
- 2 tablespoons lemon juice
- 3 1/2 cups sugar

Cover peaches with cold water and let soak overnight. The next day, simmer peaches, uncovered, in soaking water until tender. Mash with potato masher or in a food processor. Add pineapple, orange, lemon juice and sugar. Simmer until sugar has dissolved, stirring frequently; then cook over high heat until thick, about 20 to 30 minutes. Pour hot into hot jars, leaving 1/2-inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 6 half pints. 1 tablespoon = 37 calories.

APPLE CINNAMON CONSERVE

- 4 cups unsweetened applesauce
- 1 cup dried apples, chopped
- 1 can (20 ounces) unsweetened crushed pineapple, drained
- 1/2 teaspoon cinnamon
- 2 tablespoons lemon juice
- 3/4 cup raisins

Combine all ingredients in a large sauce pot. Simmer for 30 minutes, stirring frequently. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 6 half pints. 1 tablespoon = 14 calories.

PINEAPPLE APRICOT CONSERVE

- 2 cups dried apricots
- 2 cups water
- 4 cups unsweetened crushed pineapple, drained
- 1 cup golden raisins
- 4 teaspoons lemon juice
- 1 teaspoon ginger

Boil apricots in water until tender (about 25 minutes). Puree apricot mixture; add lemon juice. Return to saucepan; stir in pineapple, raisins and ginger. Simmer until thickened, stirring frequently. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 5 half pints. 1 tablespoon = 40 calories.

CHILI SAUCE

- 3 quarts peeled, chopped tomatoes (about 18 medium)
- 2 cups chopped green peppers (about 2 medium)
- 2 cups chopped onions (about 2 medium)
- 2 teaspoons salt
- 3/4 teaspoon cinnamon
- 3/4 teaspoon cloves
- 2 cups vinegar
- 3 tablespoons liquid artificial sweetener

Combine all ingredients in a large sauce pot. Bring to a simmer. It may require 3 to 4 hours of cooking time. When the mixture reaches the desired thickness, pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 6 half pints. 1 tablespoon = 6 calories.

PEPPER-ONION RELISH

- 4 cups chopped onions (about 4 medium)
- 1 1/2 cups chopped red peppers (about 1 1/2 medium)
- 1 1/2 cups chopped green peppers (about 1 1/2 medium)
- 3 teaspoons salt
- 1 quart vinegar
- 2 tablespoons liquid artificial sweetener

Combine all ingredients in a large sauce pot. Bring to a boil. Cook until vegetables are tender and the mixture is slightly thickened. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 10 minutes in a boiling water bath. Yield: about 5 pints. 1 tablespoon = 4 calories.

APPLE JUICE

- 24 pounds firm, ripe apples
- 2 quarts water

Wash apples; remove stem and blossom ends. Chop apples and place in large kettle. Add water and cook until tender, stirring to prevent sticking. Press through food mill and strain through cheesecloth. Heat just to a boil. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 6 quarts. 53 calories per 1/2-cup serving.

HERBED TOMATO JUICE

25 pounds ripe tomatoes
3/4 cup lemon juice
Fresh dill, parsley or basil
Wash and drain tomatoes. Peel, core and cut into small pieces; simmer in a large sauce pot until soft. Press tomatoes through a food mill. Reheat almost to a boil; simmer 5 minutes. Pour hot into hot jars, leaving 1/4-inch head space. Add two tablespoons lemon juice to each quart. Add a sprig of fresh herbs to each jar. Adjust caps. Process 45 minutes in boiling water bath. Yield: about 6 quarts. 22 calories per 1/2-cup serving.

STRAINED (PUREÉD) FRUITS

Apples, apricots, peaches and pears may be cooked and canned as a sauce or puree. When making sauce, follow recipe for Applesauce on page 16. Pack in half pints or pints. Adjust caps and process as recommended.

For strained fruits, follow recipes for Apricot or Peach Purée, page 22. Pack, adjust caps and process as recommended. Follow manufacturer's instructions when using a blender to puree fruits. The sugar may be omitted. 3 quarts prepared fruit and 3 cups water yield about 8 half pints.

APRICOTS IN PINEAPPLE JUICE

2 to 2 1/2 pounds apricots per quart
Unsweetened pineapple juice
Wash, drain and cut apricots into halves. Pit. Treat to prevent darkening. Drain, rinse and drain again. Cook a few apricots at a time in water until hot. Drain. Pack hot into hot jars, leaving 1/2-inch head space. Heat pineapple juice. Pour hot juice over apricots, leaving 1/2-inch head space. Remove air bubbles. Adjust caps. Process pints 20 minutes, quarts 25 minutes in boiling water bath. 60 calories per 1/2-cup serving.

CINNAMON PEARS IN APPLE JUICE

1 to 1½ pounds pears per pint
Cinnamon sticks

Unsweetened apple juice

Peel pears; cut into halves and core. Treat to prevent darkening. Rinse and drain. Cook a few pears at a time in water until heated through. Drain. Pack hot into hot jars, leaving ½-inch head space. Place 1 cinnamon stick in each jar. Heat apple juice just to a boil. Pour hot over pears, leaving ½-inch head space. Remove air bubbles. Adjust caps. Process pints 20 minutes in boiling water bath.

GRAPES, PINEAPPLE AND PEACHES IN WHITE GRAPE JUICE

½ to 1 pound grapes per quart

¾ to 1 pound peaches per quart

½ to 1 pineapple per quart

(about 5 pounds)

White grape juice

Wash and drain grapes. Remove stems. Pare pineapple, remove eyes and core. Cut into 1-inch chunks. Peel peaches, cut into halves and remove pits. Place peach halves in soaking solution to prevent darkening. Rinse and drain. Cook a small amount of each fruit at a time in water until heated through. Drain. Pack hot into hot jars, leaving ½-inch head space. Heat white grape juice just to a boil. Pour over fruit, leaving ½-inch head space. Remove air bubbles. Adjust caps. Process 25 minutes in boiling water bath. 67 calories per ½-cup serving.

PEACHES IN APPLE JUICE

12 pounds firm, ripe peaches

2½ cups unsweetened apple juice

Wash and drain peaches. Cut into halves, pit and peel. Treat to prevent darkening. Cook a few peaches at a time in water until heated through. Drain. Pack hot into hot jars, leaving ½-inch head space. Heat apple juice and pour over peaches, leaving ½-inch head space. Remove air bubbles. Adjust caps. Process pints 20 minutes, quarts 25 minutes in boiling water bath. Yield: about 5 quarts. 52 calories per ½-cup serving.

PEACHES AND PEARS IN PINEAPPLE JUICE

½ to ¾ pounds peaches per pint

½ to ¾ pounds pears per pint

Unsweetened pineapple juice

Peel, halve and core pears. Peel, halve and pit peaches. Treat fruit to prevent darkening. Rinse and drain. Cook a few peaches and pears at a time in water until heated through. Drain. Pack hot into hot jars, leaving ½-inch head space. Heat pineapple juice just to a boil. Pour over fruit, leaving ½-inch head space. Remove air bubbles. Adjust caps. Process pints 25 minutes in boiling water bath.

PEARS AND NECTARINES IN WHITE GRAPE JUICE

4 pounds pears

4 pounds nectarines

1½ cups unsweetened white
grape juice

Peel and core pears and nectarines; cut into halves and place in soaking solution to prevent darkening. Rinse and drain. Cook a few pears and nectarines at a time in water until heated through. Drain. Pack hot into hot jars, leaving ½-inch head space. Heat grape juice just to a boil. Pour over fruit leaving ½-inch head space. Remove air bubbles. Adjust caps. Process 25 minutes in boiling water bath. Yield: about 3 quarts. 32 calories per ½-cup serving.

SPICED PINEAPPLE IN PINEAPPLE JUICE

1 fresh pineapple per pint jar
(about 5 pounds)

Cinnamon sticks

Unsweetened pineapple juice

Pare pineapple, remove eyes and core. Cut into 1-inch chunks. Cook pineapple in water until heated through. Drain. Pack hot into hot jars, leaving ½-inch head space. Add 1 cinnamon stick per jar. Heat pineapple juice just to a boil. Pour juice over pineapple, leaving ½-inch head space. Remove air bubbles. Adjust caps. Process 15 minutes in boiling water bath. 66 calories per ½-cup serving.

CHOPPED BEEF, LAMB, LIVER, VEAL

Trim fresh raw meat free of fat, gristle and heavy connective tissue. Chop meat. Pack into hot jars, leaving 1-inch head space. Add boiling water to cover, leaving 1-inch head space. Adjust caps. Process half pints 1 hour and 15 minutes, pints 1 hour and 30 minutes at 10 pounds pressure. Yield: 3 pounds prepared meat yields about 6 half pints. 203 calories per ½-cup serving.

CORN AND RED PEPPERS WITH BASIL

15 pounds corn

3 red peppers (about 1 pound)

Basil

Cut corn from cob. Cut red peppers into strips. Pack corn loosely into hot jars, leaving 1-inch head space. Place 3 or 4 strips of red pepper in jars of corn. Add ½ teaspoon basil to each jar. Cover with boiling water, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process 55 minutes at 10 pounds pressure. Yield: about 5 pints. 90 calories per ½-cup serving.

DILLED CARROTS AND CELERY

6 pounds carrots

1½ cups diced celery (about 2 stalks)
Fresh dill or dill seed

Wash and scrape carrots. Wash again. Slice, dice or leave whole. Place carrots and celery in a saucepan and cover with water; boil 3 minutes or until vegetables are heated through. Pack hot into hot jars, leaving 1-inch head space. Place 1 head of fresh dill or 2 tablespoons dill seed in each jar. Cover with boiling water, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process 30 minutes at 10 pounds pressure. Yield: about 6 pints. 22 calories per ½-cup serving.

GLAZED CARROTS

6½ to 7 pounds carrots

2 cups brown sugar

2 cups water

1 cup orange juice

Prepare syrup by combining brown sugar, water and orange juice. Cook over medium heat until sugar is dissolved. Keep syrup hot. Wash and scrape carrots. Wash again. Cut carrots into 3-inch pieces. Slice thicker ends in half lengthwise. Pack carrots tightly into hot jars, leaving 1-inch head space. Pour syrup over carrots, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process 30 minutes at 10 pounds pressure. Yield: about 3 quarts. 69 calories per ½-cup serving.

GREEN BEANS WITH LEMON RIND

10 pounds fresh green beans

1 lemon

Wash, drain, string, trim ends and break or cut beans into pieces. Cut yellow peel from lemon into narrow strips; set aside. Boil beans 5 minutes. Pack hot into hot jars, leaving 1-inch head space. Add 1 or 2 pieces of lemon rind to beans. Cover with boiling water, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints 20 minutes, quarts 25 minutes at 10 pounds pressure. Yield: about 5 quarts. 32 calories per ½-cup serving.

HERBED PEAS

Freshly gathered peas, 1½ to 3 pounds per pint

Chervil

Thyme

Wash, drain and shell peas. Wash again. Boil small peas (less than ¼") 3 minutes; larger ones (¼" to ⅓") 5 minutes. Drain; rinse in hot water; drain. Pack hot into hot jars, leaving 1-inch head space. Add ¼ teaspoon chervil and ¼ teaspoon thyme to each pint or ½ teaspoon chervil and ½ teaspoon thyme to each quart. Cover with boiling water leaving 1-inch head space. Remove air bubbles. Adjust caps. Process pints and quarts 40 minutes at 10 pounds pressure. If peas are large, process 10 minutes longer. 53 calories per ½-cup serving.

ITALIAN STEWED TOMATOES

4 quarts peeled, cored, chopped tomatoes (about 24 large)

1 cup chopped celery (about 2 stalks)

½ cup chopped onion (about ½ medium)

¼ cup chopped green pepper (about ¼ medium)

1 tablespoon sugar

2 teaspoons basil

Combine all ingredients in a large sauce pot. Cover and cook 10 minutes, stirring occasionally to prevent sticking. Pour hot into hot jars, leaving 1-inch head space. Adjust caps. Process 15 minutes at 10 pounds pressure. Yield: about 7 pints. 30 calories per ½-cup serving.

STEW

Use ½ cup each chopped green beans, carrots and potatoes to each cup chopped raw beef. Thoroughly wash and drain young, tender vegetables. Peel carrots and potatoes before chopping; mix vegetables with the meat. Pack loosely into hot jars, leaving 1-inch head space. Cover with boiling water, leaving 1-inch head space. Adjust caps. Process half pints and pints 1 hour, quarts 1 hour and 15 minutes at 10 pounds pressure. Yield: about 3 half pints. 89 calories per ½-cup serving.

THE PROBLEM SOLVER

This guide 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. Spoiled food must never be served or eaten. Signs of spoilage include 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 must be boiled for 15 minutes before tasting. If the liquid foams or the food has an unnatural odor when heated, spoilage is indicated.

CONDITION (Product Usable Unless Spoilage Is Indicated)	CAUSE	PREVENTION
Foods darken in top of jar.	<ol style="list-style-type: none"> 1. Liquid did not cover food product. 2. Food not processed long enough to destroy enzymes. 3. Manner of packing and processing did not produce a high vacuum. 4. Air was sealed in the jars either because head space was too large or air bubbles were not removed. 	<ol style="list-style-type: none"> 1. Cover food product with liquid before capping jar. (See "Loss of liquid" reference.) 2. Process each food by recommended length of time. 3. Pack and process as recommended. 4. Use head space recommended in Blue Book. Remove air bubbles by running nonmetallic kitchen utensil between food and jar.
Fruits darken after they have been removed from jar.	Fruits have not been processed long enough to destroy enzymes.	Process each fruit by recommended method and for recommended length of time. Time is counted when water reaches a full boil in the canner.
Corn is brown.	<ol style="list-style-type: none"> 1. Corn was too mature for canning. 2. Liquid did not cover corn. 3. Jars were processed at too high a temperature. 4. Variety of corn used. 	<ol style="list-style-type: none"> 1. Use freshly picked corn which has plump, shiny kernels filled with milk. 2. Cover corn with liquid before capping jar. (See "Loss of liquid" reference.) 3. Keep pressure in canner at recommended pounds; gauge may be faulty and it should be checked. 4. Use different variety next time.
Pink, red, blue or purple color in canned apples, pears, peaches and quinces.	A natural chemical change which occurs in cooking the fruit.	None
Green vegetables lose their bright green color.	Heat breaks down chlorophyll, the green coloring matter in plants.	None
Some foods become black, brown or gray.	Natural chemical substances (tannins, sulfur compounds and acids) in food react with minerals in water or with metal utensils used in preparing food.	Use soft water. Avoid using copper, iron or chipped enameled ware, also utensils from which tinplate has worn.
Green vegetables turn brown.	<ol style="list-style-type: none"> 1. Vegetables were overcooked. 2. Vegetables were too mature for canning. 	<ol style="list-style-type: none"> 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.	<ol style="list-style-type: none"> 1. Starch from the food. 2. Minerals in water used. 3. Bacterial spoilage... liquid is usually murky, food soft. (Do not use.) 	<ol style="list-style-type: none"> 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 syrup.	Use firm, ripe fruit. Heat fruit before packing it. Use a light to medium syrup. Pack fruit as closely as possible without crushing it.

CONDITION (Product Usable Unless Spoilage Is Indicated)	CAUSE	PREVENTION
Cloudy liquids. May denote spoilage.	<ol style="list-style-type: none"> 1. Spoilage. (Do not use.) 2. Minerals in water. 3. Starch in vegetable. 4. Fillers in table salt. 	<ol style="list-style-type: none"> 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.)	<ol style="list-style-type: none"> 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 boiling water bath canner. 6. Starchy foods absorbed liquid. 	<ol style="list-style-type: none"> 1. Heat food before packing. 2. Pack food more loosely. 3. Remove air bubbles by running nonmetallic kitchen utensil 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.)	<ol style="list-style-type: none"> 1. Food spoilage from underprocessing. 2. Disintegration of particles of food left on the sealing surface. 3. Hairline crack in the jar. 	<ol style="list-style-type: none"> 1. Process each food by recommended method and for recommended length of time. 2. Wipe sealing surface and threads of jar. 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.
Hollow pickles	<ol style="list-style-type: none"> 1. Faulty growth of cucumbers. 	<ol style="list-style-type: none"> 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.
Black spots on underside of metal lid. (If jar has been sealed and then comes open, spoilage is evident. Do not use.)	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.	None
Soft or slippery pickles. Spoilage evident. (Do not use.)	<ol style="list-style-type: none"> 1. Brine or vinegar used was too weak. 2. Pickles were not kept covered with liquid. 3. Scum was not kept removed from top of brine. 4. Pickles were not heated long enough to destroy spoilage microorganisms. 5. Jars were not sealed airtight while boiling hot. 	<ol style="list-style-type: none"> 1. Use pure refined salt. Use vinegar of 5% acidity. Use a recipe developed for modern day use. 2. Pickles should be covered with liquid at all times during the brining process and when in the jar. 3. Scum should be removed daily during the brining process. 4. See "Pickles and Relishes." 5. Each jar should be filled boiling hot and capped immediately before filling next jar.
Darkened and discolored pickles.	<ol style="list-style-type: none"> 1. Minerals present in hard water used in making the pickles. 2. Brass, iron, copper, aluminum or zinc utensils were used in making the pickles. 3. Ground spices used. 4. Whole spices left in jars of pickles. 	<ol style="list-style-type: none"> 1. Use soft water. 2. Use enameled ware, glass, stainless steel or stoneware utensils. 3. Use whole spices. 4. Whole cloves, stick cinnamon and other whole spices should be used only to flavor the pickling liquid; they should not be packed in the jars.
White sediment in bottom of jars of firm pickles. (If pickles are soft, spoilage is evident. Do not use.)	Harmless yeasts have grown on the surface and then settled.	None. The presence of a small amount of white sediment is normal.
Shriveled pickles.	Too much salt, sugar or vinegar was added to the cucumbers at one time.	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.

CONDITION (Product Usable Unless Spoilage Is Indicated)	CAUSE	PREVENTION
Jelly is tough or stiff.	<ol style="list-style-type: none"> 1. Too much pectin in fruit. 2. Jelly was overcooked. 3. Too little sugar so mixture had to be cooked too long to reach jelling stage. 	<ol style="list-style-type: none"> 1. Use fruit which is riper. If adding pectin, don't add as much. 2. See jelly test. 3. When pectin is not added, $\frac{3}{4}$ cup sugar to 1 cup juice is the right amount for most fruits. When measuring, use graduated dry measuring cups; level off sugar with straight edge of a knife.
Jelly ferments. Spoilage evident. (Do not use.)	Yeast grows on jelly when seal is not airtight (usually noticeable on jars sealed with paraffin causing the jelly to break through paraffin and to weep).	Process jelly 5 minutes in boiling water bath. Test for seal before storing jelly.
Jelly contains glass-like particles.	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 1. See 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	<ol style="list-style-type: none"> 1. Fruit used had little flavor. 2. Jelly stored too long. 3. Storage area too warm. 	<ol style="list-style-type: none"> 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."	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 1. None 2. Store in cool, dark and dry place.
Jelly is too soft.	<ol style="list-style-type: none"> 1. Proportions of sugar and juice not correct. 2. Too large a batch made at one time. 	<ol style="list-style-type: none"> 1. See 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.	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 1. Fruit should be firm and 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 jelling point, pour into jars and seal.
Bubbles are in jelly. May denote spoilage.	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 1. Use vacuum sealing with two-piece 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. (Do not use.)	Jar was not sealed properly, allowing mold to grow on surface of jelly.	Process jelly 5 minutes in boiling water bath. Test for seal before storing jelly.

QUESTIONS & ANSWERS

Q: WHY IS IT NECESSARY TO USE THE CORRECT RECIPE TO HOME CAN?

A: When canning, use only recipes that have been scientifically developed and tested for an exact processing time and method. Recipes are developed by food preservation experts for individual foods so that sufficient heat is present throughout the food for a specific amount of time to destroy the microorganisms that would spoil food or cause illness. Do not make substitutions for ingredients, jar sizes or methods in home canning recipes.

Q: WHY DO HOME CANNING RECIPES DIFFER IN PROCESSING TIMES AND TEMPERATURES?

A: Just as foods look and taste different, different foods take different times for all of the food inside a home canning jar to reach the correct temperature. The different times and temperatures are related to the basic food type being canned.

Q: WHAT MUST I KNOW ABOUT BASIC FOOD TYPES BEFORE STARTING TO CAN?

A: Basically foods are either acid or low-acid types. Do not use canning methods meant for one type when canning another.

Q: WHAT ARE ACID FOODS?

A: Acid foods are: fruits; tomatoes (which many of us think of as vegetables, but which are really fruits); sauerkraut; pickles and relishes; jams, jellies and preserves; and fruit juices. In canning acid foods, one needs only

to heat the canned food through to 212°F using boiling water in a water bath canner for a safe and wholesome product. Because each acid food is different, and therefore contains a different amount of acidity, be sure to follow recipe instructions exactly for the correct processing time.

Q: WHAT ARE LOW-ACID FOODS?

A: Low-acid foods are: all vegetables; meats; poultry; seafoods; soups; and mixed canned foods which contain some low-acid foods (as corn with tomatoes). Because these foods do not naturally contain enough acid to protect against certain bacteria, such as those causing botulism, low-acid foods must be processed, or superheated, to 240°F in a pressure canner for the correct length of time to destroy these bacteria and produce a safe and wholesome end product.

Q: WHY CAN'T I USE A BOILING WATER BATH CANNER FOR PROCESSING ALL FOODS?

A: Never use a water bath canner to prepare low-acid foods because botulism could be your final product. A water bath canner cannot heat foods to a high enough temperature to destroy the spores of botulism causing bacteria. Botulism is caused by the toxin produced when these particular bacterial spores are present and grow in foods in the absence of air. This may occur in foods that are low-acid or that have become low-acid. Remember low-acid foods are vegetables, meats, poultry, seafoods, soups and mixed canned foods. Acid foods such as

fruits, tomatoes, sauerkraut, pickles and relishes, jams, jellies and preserves and fruit juices may become low-acid by using overripe fruit or by adding excess water or through the growth of mold. Figs and green peppers are particularly low-acid foods and require special precautions in processing.

Q: HOW DOES A BOILING WATER BATH CANNER WORK?

A: The boiling water bath method is a way of processing food at a temperature of 212°F. Filled jars are placed on a rack inside a water bath canner and covered completely with hot water. The water level should be 1 to 2 inches over the tops of the jars. The canner is covered with a well-fitting lid and the water is brought up to a rolling boil. Then the processing time begins. This method is recommended for processing high-acid foods. Enough heat is supplied by the boiling water to destroy the bacteria, enzymes, molds and yeasts which cause spoilage in acid foods.

Q: HOW DOES A STEAM PRESSURE CANNER WORK?

A: The pressure canner method is a way of processing foods at a temperature of 240°F by not allowing the steam to escape. The steam causes the pressure in the canner to increase as its temperature is raised. This method is a must for processing low-acid foods. Steam heat under pressure reaches temperatures high enough to destroy the harmful bacteria found in low-acid foods. Be sure to follow the pressure canner manufacturer's instructions.

Q: WHY IS THE CANNING TIME SO IMPORTANT?

A: Canning times are chosen so that the temperature required to destroy all the harmful microorganisms is reached in all parts of the jar. Do not shorten the time or take shortcuts. Begin counting processing time only after the water in a boiling water bath canner has returned to a rolling boil or after the pressure in a steam pressure canner has reached 10 pounds pressure. Use an accurate kitchen timer, clock or watch.

Q: WHAT CAN I DO IF THE LIDS DO NOT SEAL?

A: Check the lids for sealing after 12 to 24 hours. If they are not sealed, the food should be eaten or reprocessed for the full amount of time, using a new lid.

Q: WHAT ARE SIGNS OF SPOILAGE?

A: Before tasting, check the food for signs of spoilage. Indications that the food has spoiled include broken seals, seepage, mold, gassiness, spurting liquid when the jar is opened, sliminess, cloudiness and disagreeable odors. Even if no signs of spoilage are obvious, canned meats and vegetables and other low-acid foods must be boiled for 15 to 20 minutes before tasting. Fruits, which are acids, do not have the risk of botulism present as do low-acid meats and vegetables. Even though it is not practical to boil fruits, they should be carefully examined before eating. All spoiled food should be destroyed so that it cannot be eaten by humans or animals.

Q: WHY IS IT IMPORTANT TO KEEP THE JARS IN HOT WATER UNTIL READY TO USE?

A: Keeping the jars in hot water before using helps to prevent jar breakage. Home canning jars may not withstand sudden changes in temperature. Remember this when using a boiling water bath canner. Both the jars and the water in the canner should be hot (but not boiling) when adding the jars to the canner. Only after the jars have been placed in the canner should the water be brought to a rolling boil.

Q: WHY IS IT IMPORTANT TO LEAVE THE CORRECT AMOUNT OF HEAD SPACE?

A: Always leave the correct amount of head space when filling the jars. Leaving too much head space may prevent the formation of a vacuum within the jar and cause the lid to come unsealed after processing. Not leaving enough head space may prevent the lid from sealing because the food may not have enough room to expand when processed and be forced between the lid and top of the jar. Leave 1-inch head space for vegetables (except tomatoes), meats, poultry, seafoods and soups; 1/2-inch head space for fruits, tomatoes and sauerkraut; 1/4-inch head space for jams, jellies and other preserves, pickles, relishes and fruit juices.

Q: WHY IS IT NECESSARY TO REMOVE AIR BUBBLES BEFORE CAPPING THE JARS?

A: Always remove air bubbles. Leaving excess air in the jars may prevent an airtight seal. (NOTE: Use only a non-metallic spatula to remove air bubbles. A metal utensil or knife may scratch the inside of the jar which could cause it to break during processing.)

Q: IF FOODS ARE PRECOOKED, IS IT NECESSARY TO PROCESS FOR THE ENTIRE RECOMMENDED TIME?

A: Yes. Processing times and temperatures are based on the acidity and density of the foods being home canned. Preheating does not prevent the growth of microorganisms in a sealed jar. Only heat processing destroys spoilage organisms.

Q: WHY IS IT NECESSARY TO REMOVE THE SCREW BANDS BEFORE STORING THE JARS?

A: If screw bands are left on the jars, moisture on the bands could cause corrosion. The jars must be washed in hot, soapy water, rinsed and dried before storing. Remaining food particles near the lid may spoil causing the lid to come unsealed.

Q: HOW SHOULD LIDS AND BANDS BE PREPARED BEFORE HOME CANNING?

A: Lids and bands must be washed in hot, soapy water and rinsed. The lids must be placed in water and brought to a simmer; then removed from heat. They are kept in hot water until ready for use. The bands are screwed down evenly and firmly without excessive force.



FREEZING

GETTING STARTED

Freezing has many advantages over other methods of food preservation because frozen foods are more like fresh foods than those either canned or dried. Freezing keeps the natural color, fresh flavor and nutritive qualities of most foods better than any other known method of preservation. It is also one of the simplest and least time-consuming ways to preserve foods.

To be successful in freezing foods, start with a quality product that has been handled under the most sanitary conditions. The quality of the original product is the most important single factor in determining its quality when it is served.

Foods for freezing should be fully prepared for serving or cooking so that little or no preparation is required after they are taken from the food freezer.

For economical use of your freezer, all foods should be used within a year, and most of them should be held for much less time. By continuously using foods from the freezer and replacing them with others in season, the space in the freezer may be used many times during a year. The higher the rate of turnover, the lower the cost per pound of frozen food.

Store like foods together; place most recently frozen foods at the bottom or back. At the same time, move foods that have been in freezer storage longer toward the top or front.

It's a good idea to keep a record of the frozen foods that are in storage. If posted near the freezer, a list can be easily kept up to date by regular recordings as you put foods in or take them out. Such a list will let you know exactly what foods you have and how long they have been in storage, thus helping you use all frozen foods within the recommended storage period.

THE SPOILERS

Preservation by freezing is based on the principle that extreme cold retards growth of microorganisms and slows down enzyme activity and oxidation. Freezing does not sterilize food.

Testing has been done by researchers to determine effective and safe methods for freezing fruits, vegetables, meats and precooked foods. Directions for each product have been established to prevent changes in frozen food caused by:

- a) bacteria, yeast and molds;
- b) enzymes;
- c) "freezer burn";

- d) formation of large ice crystals;
- e) oxidation.

Bacteria, Yeasts and Molds: All fresh foods contain bacteria, yeasts and molds. These will multiply rapidly and cause spoilage if not stopped. This can be accomplished by:

- a) using only quality products;
- b) preparing the food under the most sanitary conditions;
- c) storing the food at a specific low temperature.

Enzymes: Foods contain enzymes which cause chemical changes in them. Some of these changes are desirable. Beef, for example, is aged in a chill room about a week to give the enzymes a chance to make the meat more tender. Enzymes can cause an off-color product and destroy the fresh flavor in vegetables if they are not inactivated before food is frozen. Enzyme control is most easily obtained by a short heat treatment (blanching) prior to freezing and storage. Since blanching may have a softening effect on the texture of fruits, control of enzyme activity is usually continued by the addition of sugar and antioxidants after blanching.

"Freezer Burn": This condition occurs when food is improperly wrapped. Dry air in freezer circulates overexposed surfaces, removing moisture from the food and causing a dry, pithy, tough surface to develop. Moisture/vapor-resistant packaging materials prevent drying and protect from contact with air. Be sure package is free of air and sealed airtight.

Formation of Large Ice Crystals:

Freeze the packages as quickly as possible. When foods are frozen quickly, at 0°F or lower, the cells in the fiber retain their normal places. Slower freezing causes moisture from the fibers to form ice crystals between the groups of fiber, and the product will lose liquid and may darken.

Oxidative Changes: Are commonly encountered chemical changes in frozen foods. If the product is exposed to oxygen as the result of storage in direct contact with air or in packages permeable to air, it may suffer losses in quality as the result of direct participation of the oxygen in chemical reaction with other substances in the product.

EQUIPMENT NEEDED FOR FREEZING FOODS AT HOME

The equipment needed for freezing at home is little more than the pots, pans, strainers and other utensils required in the kitchen for preparing everyday meals.

TIP: As with all food storage methods, it is important to keep bacterial contamination to a minimum by using clean equipment and working surfaces.

FREEZER CONTAINERS

Proper packaging is very important to prevent:

1. **Chemical changes** which result from exposure to the air, thus causing loss of color, development of off-flavors, absorption of odors and loss of vitamins.
2. **Physical changes** which result in loss of box weight and fresh appearance due to loss of moisture.

While it is not necessary for frozen foods to be hermetically sealed (as with canned foods), the package must be moisture/vapor-proof, odorless, tasteless, grease-proof and capable of being tightly closed.

Boxes, Bags & Jars

There are two types of packaging materials for home freezing use—rigid containers and flexible bags or wrappers.

Rigid Containers

Excellent results can be achieved in home freezing with either can or freeze jars with large mouths and slightly

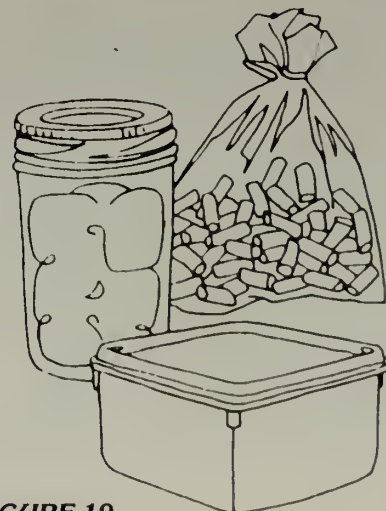


FIGURE 19

tapering sides on plastic freezer boxes (See Figure 19). Can or freeze jars may be purchased in three sizes: half pint, pint and 1½ pint. Plastic freezer boxes may be found in pint, 1½-pint, quart and 2-quart sizes. Both can be reused many times. Rigid containers should be used for most frozen foods and are recommended for all foods that are soft or "runny" at room temperatures, such as fruits packed in syrup or sugar, butter, eggs, stews, creamed foods and meats with gravy.

Flexible Bags and Wrappers

Flexible bags are best for packaging products with irregular shapes, such as roasting turkeys or hens, fish and all cuts of meat. They can be used for vegetables, some fruits—grapes, raspberries, blueberries without syrup or added sugar and precooked foods that are not liquid at room temperature.

Plastic freezer bags come in the following sizes: pint, 1½ pint, quart, two quart, one gallon and two gallon. These are closed by pressing out the air, then twisting the top, doubling it over and wrapping it several times with handy ties included in the package.

Wrapping materials are similar to flexible bags except they are available in rolls and are cut to the desired size as they are used.

For Trouble-Free Freezing: Package so as to leave no air pockets. For dry pack, leave no head space. For packs that are "runny" at room temperature, leave ½-inch head space in quart containers and ¼-inch head space in pint containers. (Some plastic freezer boxes have the fill line marked.) Wipe mouth of container with a clean, wet cloth. Seal container so it is airtight. Keep record of storage times. Label with name of product, date and any other information needed.

Reuse of Containers: Wash can or freeze jars in hot, soapy water. Rinse and drain. Invert the containers on a clean towel to cool before filling them. Wash and rinse lids. Wash plastic boxes in hot, soapy water; rinse well and drain.

THE FREEZER

There are three types of freezers on the market. The type you choose will depend on floor area available and the amount of freezer space you desire.

An effective freezer maintains 0°F or lower for fast freezing and proper low temperature storage of foods.

The frostless feature eliminates the messy, tedious chore of defrosting, and frost doesn't build up on food packages.

1. **The Upright Freezer:** Ranges in size from 6 to 22 cubic feet and has from 3 to 7 shelves for storing food.

2. **Chest Freezer:** Ranges in size from 6 to 23 cubic feet.

3. **Refrigerator-Freezer Combinations:** The freezer space contains from 2 to 16 cubic feet, has separate door which is located at top, bottom or side.

Regardless of the type of freezer selected, it should be placed in a convenient, cool, dry and well-ventilated place. The temperature should be held at 0°F or lower at all times. Keeping the temperature at -10°F will help keep the temperature below 0°F when unfrozen food is placed in the freezer. It is good insurance to use a freezer thermometer and check it often.

Defrost once a year (if not a frostless one) or as often as ice on the sides reaches a thickness of ¾ inch. Defrosting is accomplished by turning off the current, opening the door or lid, removing all the food from the freezer (protect frozen food by covering with a blanket or quilt) and turning an electric fan on the interior of the freezer for a few minutes. Or, place pans of hot water inside. The ice loosens and then may be scraped off. After thawing, wash the inside with a warm baking soda solution (3 tablespoons baking soda with 1 quart water). Wipe dry and turn on electricity. Replace food.

Frostless freezers do not need defrosting. However, such a freezer should be cleaned at least once a year in the same way as above. If odors develop in freezer, place charcoal on paper in freezer for several days.

LOADING THE FREEZER

The quantity of food that can be frozen successfully at one time depends on the kind of food, its size, kind of package and design of freezer. Put no more unfrozen food into a food freezer than will freeze within 24 hours (usually about 2 or 3 pounds of food per cubic foot of capacity). Overloading slows down the rate of freezing and foods that freeze too slowly may lose quality or spoil. Also, overloading can raise the temperature above 0°F and this affects the quality of the frozen food already in the freezer. Place each package in direct contact with a refrigerated surface and leave a little space between. The original fresh flavor, color, texture and nutritive value of the frozen product will reach the table if it is properly prepared and protected at 0°F during storage.

FROZEN FOODS "MUSTS"

1. The home freezer should be placed in the most convenient, coolest, driest, best-ventilated place and defrosted or thawed at least once a year.

2. Foods must be in the best condition. If not, they are not worth freezing.

3. Vegetables must be properly blanched* to preserve quality. Exceptions are rhubarb and those used exclusively for flavoring, such as peppers, onions, horseradish, mint, sage and thyme.

4. For best quality, all meats and poultry must have been chilled quickly after killing. Beef must be aged about a week at 33° to 38°F to become tender and flavorful.

5. Everything must be properly packaged. Fruits in syrup, stews and other "runny" products should be tightly closed in rigid freezer containers such as can or freeze jars and plastic freezer boxes. Vegetables packed "loose" should be in moisture/vapor-resistant containers such as plastic freezer bags or boxes or can or freeze jars. Meats should be wrapped "skin tight" as nearly as possible in moisture/vapor-proof materials.

6. Freezing must be rapid to preserve the natural color, flavor and texture of delicate fruits and vegetables and to prevent spoilage of meats and prepared foods.

7. Frozen foods must be stored at 0°F or lower. Only in rare cases should they be refrozen if allowed to thaw. Meats and cooked foods may be refrozen if it is certain that the temperature did not rise above 32°F nor remain at this point longer than a few hours.

8. Frozen foods must be used within a reasonable time since there is gradual loss of quality of all frozen foods. Most cooked foods have a relatively short shelf life. Pork should be used within six months; ground meat and liver should be used within three months; and most fruits, vegetables and other meats may be held in good condition for almost a year.

9. Frozen foods must be cooked and served properly. For best quality, meats and vegetables must be cooked and served immediately upon thawing; most vegetables (and some meats) are cooked in the frozen stage; fruits to be eaten as dessert should be served while in the sherbet stage; and precooked main dishes should be thawed, reheated and served in rapid succession.

* If you live 5,000 feet or more above sea level, blanch one minute longer than times specified in recipes.

THESE DO NOT FREEZE WELL

Cake icings made with egg whites become frothy or “weep” when thawed. **Cream fillings and soft frosting** are unsatisfactory when frozen.

Custards and cream pie fillings become watery and lumpy.

Egg whites become cracked, tough and rubbery when frozen.

Fat may separate from gravy if too much is used in proportion to the starch and flour. Use less fat when making gravy to be frozen. Stir it well when reheating.

Fried foods lose their crispness and become soggy. (Exceptions are french fried potatoes and onion rings.)

Fruit jelly in sandwiches may soak into the bread.

Macaroni, spaghetti and some rice (frozen separately) have a warmed-over flavor and often are mushy.

Mayonnaise (not in salads) separates during freezing and thawing.

Meringue toughens and sticks to paper after a few days of freezing.

Pepper, onions, cloves and synthetic vanilla become strong and bitter when used in frozen prepared food.

Potatoes (Irish) cooked in stews and soups become mushy and may darken.

Salt loses flavor.

Sauces tend to separate unless beaten or stirred when reheated.

Vegetables (raw) lose their crispness.

Time and Temperature: The relationship between temperature of storage and the length of time foods are frozen is highly important. Deterioration in frozen foods accelerates rapidly with a rise in storage temperature. Figures 20 and 21 show times and temperatures for storing food.

LABELING

Label with the name of the product, a description of how it was prepared, the number of servings and the shelf life date.

THAWING and PREPARING Methods of Thawing

By careful thawing and serving at exactly the right state, it is possible to prepare attractive servings of products that would be rejected if served without thawing or if completely thawed. Do not thaw more food at one time than is actually needed because once frozen food is thawed it spoils more readily than fresh foods. Thaw each product to the desired point by placing it (in the unopened package):

a) in the refrigerator (this is the best method);

- b) on a table in the kitchen for three to four hours;
- c) in front of an electric fan for 1/2 to one hour;
- d) in the microwave oven on the defrost cycle, following manufacturer’s instructions;
- e) place sealed package in cold water. Never thaw by holding product in hot water. In most cases the thawed product can be used the same as the fresh.

Cooking and Serving

Prepared or cooked foods may be thawed and made ready for serving by either one of the following ways:

- 1. Served while still frozen: fruit pies, cookies, candies, ice cream, salads and similar foods.
- 2. Served immediately after thawing (at room temperature): cakes, sandwiches and similar foods.
- 3. Heated to serving temperature: soups, meat dishes, stews and similar dishes.
- 4. Cooked frozen: uncooked pies, rolls and combination dishes.

REFREEZING

Occasionally, foods are partially or completely thawed before it is discovered that the freezer is not operating.

If foods have thawed only partially and there are still ice crystals in the package, they may be safely refrozen. Even this partial thawing reduces quality. If some of the high quality has already been lost during previous partial thawing, the additional loss may result in very low quality. Refrozen foods should be used as soon as possible.

If foods have slowly thawed and have warmed gradually over a period of

several days to a temperature of 40°F, they are not likely to be suitable for refreezing. Under these conditions, meats, poultry, fish, most vegetables and some prepared foods may become unsafe to eat; most fruits and

**FIGURE 20
LENGTH OF STORAGE**

PRODUCT	RECOMMENDED LENGTH OF STORAGE AT 0°F (MONTHS)
Beef, Lamb, Mutton, Veal, Venison	8-12
Breads, Quick, baked	2
Breads, Yeast, baked	4-8
Breads, Yeast, unbaked	1/2
Butter	5-6
Cakes	6
Cakes, Fruit	12
Candies	12
Cheese, cottage	1
Cheese, hard or semi-hard	6-12
Cheese, soft	4
Cookies, baked	6
Cookies, unbaked	4
Eggs	12
Fish	2-3
Fruits, Citrus	3-4
Fruits, except citrus	12
Gravy	2
Ground Meat	3-4
Ice Cream, Sherbet	1-3
Liver	3
Milk	1
Onions	3-6
Opossum, Rabbit, Squirrel	6-8
Oysters, Crab, Fish, Roe, Lobster	3-4
Pastry, unbaked	2
Pies, baked	1
Pies, unbaked	3
Pizza	1
Pork, cured	1-2
Pork, fresh	6-8
Poultry, Turkeys	12
Prepared Main Dishes	3-6
Salads	2
Sandwiches	1
Sausage	4-6
Shrimp	6
Soups, Stews	6
Vegetables, cooked	1
Vegetables, except onions	12

**FIGURE 21
HOW STORAGE TEMPERATURE AFFECTS STORAGE TIME OF FROZEN FOODS**

STORAGE TEMPERATURE DEGREES (0°F)	SENSITIVE FRUITS AND VEGETABLES*	OTHER FRUITS AND VEGETABLES**	TURKEYS AND CUT-UP CHICKEN***
0	1 year	1 year	1 year
5	5 months	5 months	—
10	6 weeks	2 months	6 months
15	3 weeks	1 month	—
20	1 week	2 weeks	3 months
25	2 days	1 week	—
30	1 day	3 days	—

*Where discoloration occurs, such as in peaches and cauliflower.
**Where discoloration is not as critical, but does occur and flavor changes take place.
***Whole chicken is more stable than turkey.

fruit products soon develop an undesirable flavor.

If in doubt about any thawed foods, it is better not to take any chances with them. Eating spoiled food can be very dangerous.

CARE OF FOODS IN EMERGENCIES

If you know or suspect that power will be off in your home, set the freezer control at its coldest setting right away. The lower temperature of freezer and food will delay thawing if power does go off.

If the freezer stops operating because of power outage or any other reason, try to find out how long it will be inoperative.

If normal operation will not be resumed before the food will thaw, use dry ice to keep the food cold or transfer the food in insulated boxes to a freezer plant or other low temperature storage space. If the trouble is freezer breakdown, your neighbors may have enough space in their freezers to solve your problem.

A fully loaded freezer at 0°F usually will stay cold enough to keep foods frozen for a couple of days; in one with half a load, food may not stay frozen for more than a day.

If dry ice is put in the freezer soon after power goes off, 50 pounds should keep the temperature of food in a 20-cubic-foot cabinet below freezing for three to four days; in a cabinet with half a load or less, for two or three days. Tip: Keep the phone number and address of a source of dry ice handy.

Work quickly when you put in dry ice. Place it on thick cardboard or boards on top of the frozen food or on shelves—not directly on the packages. Handle dry ice with care. Be sure the room is well ventilated when you use it to allow air circulation. Never touch it with bare hands, as short exposure can cause severe frostbite!

Do not open the freezer door while the freezer is not operating, except as part of food-saving procedure.

STEP-BY-STEP FREEZING

1. Use only quality fresh products. Freezing retains quality, but cannot improve it.
2. Work under the most sanitary conditions.
3. Organize items needed in order to save time and energy.
4. Use only approved packaging materials.
5. Be an expert. Follow proper freezing instructions and ...

(a) Blanch or scald all vegetables; cool quickly.

(b) Use ascorbic acid and citric acid mixture for certain light fruits to prevent discoloration.

(c) Use dry sugar or syrup pack for fruits. See page 15, figure 16, for syrup recipes.

(d) Keep meats cold while preparing for freezing.

6. Package to remove all air; fasten packages airtight.
7. Label with date and name of product.
8. Promptly place packages in food freezer in single layers.
9. Maintain 0°F temperature in freezer.
10. Keep an inventory.
11. Use all products within recommended storage period.
12. Never thaw by holding product in hot water. Glass containers can break with quick changes in temperature.

DAIRY PRODUCTS

MILK

Preparation: Freeze only pasteurized milk. Pour into can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

CREAM

Preparation: Freeze only heavy cream containing 40 percent or more of butterfat. Heat from 170° to 180°F for 15 minutes. Add 3 tablespoons sugar per pint of cream. Cool quickly and pour into can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

BUTTER

Preparation: Freeze only high-quality butter made from pasteurized cream. Mold into desired shapes. Wrap tightly into freezer film and pack in plastic freezer bags. Seal; label; and freeze.

ICE CREAM and SHERBET

Homemade: Prepare your favorite recipe and freeze in a hand or electrically turned ice cream freezer. Pack in plastic freezer boxes. Seal; label; and freeze.

Commercially Made: Place original carton in plastic freezer bags. Seal; label; and freeze.

CHEESE

Preparation: Hard or semi-hard cheese—cut in 1/2 to 1-pound pieces. Wrap tightly in a freezer film and pack in plastic freezer bags. Seal; label; and freeze.

Soft Cheese: Wrap tightly in a freezer film and pack in plastic freezer bags. Seal; label; and freeze.

Cottage Cheese: Use uncreamed cheese. Pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

THAWING and PREPARING DAIRY PRODUCTS

Place the frozen product in the refrigerator to thaw. After thawing, it may be used as fresh.

EGGS

Selection: Select eggs as fresh as possible.

Preparation: Wash eggs then break each egg separately into a clean, small bowl and examine by smell and appearance before mixing with others.

Whole Eggs: Gently mix the whites and yolks by putting them through a sieve or colander without forming air bubbles. Pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

Yolks: Gently mix the yolks without forming air bubbles. To each 6 yolks add 1 teaspoon sugar or 1/2 teaspoon salt to reduce coagulation. Package same as whole eggs.

Whites: Gently mix whites, without forming air bubbles. Package same as whole eggs.

MEASURING EGGS

(Use These Measurements For Frozen Eggs)

3 tablespoons of whole eggs = 1 egg

2 tablespoons of egg white = 1 egg white

1 tablespoon of egg yolk = 1 egg yolk

FRUITS

APPLES

Select full-flavored apples that are crisp and firm, not mealy in texture. Wash; peel; and core. Slice medium apples into twelfths, larger ones into sixteenths. Drop immediately into ascorbic acid and citric acid mixture made according to manufacturer's instructions.

Syrup Pack: Use 50% syrup and add 1/2 teaspoon ascorbic acid and citric acid mixture to each quart of syrup. Pour 1/2 cup cold syrup into can or freeze jars or plastic boxes. Press apple slices down in containers and add enough syrup to cover. Pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

Pie Apples: Place the apple slices in boiling water for 2 minutes and cool in ice water. Drain. Pack in plastic freezer bags. Seal; label; and freeze.

Applesauce: Wash apples; peel, if desired; core; and slice. To each quart of apples, add 1/3 cup water and 1/4 teaspoon ascorbic acid and citric acid mixture. Cook apples until tender, puree and add 1/4 cup sugar to 1 quart of hot puree, stirring until dissolved. Cool and pour into can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

APPLE PIE FILLING

6 pounds apples
2 cups sugar
1/4 cup flour
1 1/2 teaspoons cinnamon
1/4 teaspoon nutmeg
2 tablespoons lemon juice
Wash, peel, core and slice apples. Place sliced apples in soaking solution to prevent darkening. Combine sugar, flour and spices. Rinse and drain apples; stir into sugar mixture. Let stand until juices begin to flow, about 30 minutes. Stir in lemon juice. Cook over medium heat until mixture begins to thicken. Pour into can or freeze jars or plastic freezer boxes. Seal; label; and freeze. Yield: about 6 pints.

BERRIES

(Except Strawberries)

Select fully ripe, firm berries. Wash carefully in cold water, discarding soft, under-ripe or defective fruit. Remove caps and stems.

Place berries in colander to drain. Pack in one of the following ways:

Syrup Pack: Prepare a 50% syrup (use berry juice instead of water). Place the drained berries in can or freeze jars or plastic freezer boxes. Shake the container gently to avoid empty spaces. Cover the berries with the syrup. Pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

Sugar Pack: Gently mix 1 part sugar with 4 parts berries until fruit is coated with the sugar. Pack in plastic freezer bags. Seal; label; and freeze.

Puree: Select fully ripe berries of the finest flavor. The berries should be too ripe for freezing whole. Press the berries through a food mill. Pour into can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

BLUEBERRIES, HUCKLEBERRIES, ELDERBERRIES and GOOSEBERRIES

Remove leaves, stems and immature or defective berries. Wash thoroughly but quickly in ice water. Drain the berries. Pack in one of the following ways:

Syrup Pack: Same as berries above.

NOTE: You may heat syrup to boiling; immerse berries for 1 minute; remove; cool; and pack in can or freeze jars or plastic freezer boxes. Cool syrup and pour over berries.

Sugar Pack: One quart fresh berries (well washed and drained) and 2/3 cup sugar. Pack in can or freeze jars or plastic freezer boxes with alternate layers of berries and a sprinkling of sugar. Seal; label; and freeze.

No-Sugar Pack: Pack the drained berries in plastic freezer bags. Seal; label; and freeze.

BLUEBERRY PIE FILLING

12 cups blueberries
3 cups sugar
3/4 cup cornstarch
1 tablespoon grated lemon peel
1/4 cup lemon juice

Combine sugar and cornstarch. Stir in blueberries; let stand until juice begins to flow, about 30 minutes. Add lemon peel and lemon juice. Cook over medium heat until mixture begins to thicken. Pour into can or freeze jars or plastic freezer boxes. Seal; label; and freeze. Yield: about 5 pints.

CHERRIES, SOUR

Select tender-skinned, bright, red cherries with a characteristic tart flavor. Wash in ice water; stem; and pit. Mix 1 part sugar to 4 parts fruit. Pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze. These may also be frozen in a 50% syrup.

CHERRIES, SWEET

Select bright, fully ripened cherries of dark colored varieties. Wash; stem; and pit. To retain the natural fruit flavor, add 1/2 teaspoon ascorbic acid to 1 quart of the 50% syrup. Package the same as berries (syrup pack).

CHERRY PIE FILLING

8 cups tart cherries
2 1/2 cups sugar
5 tablespoons cornstarch

Wash and pit cherries. Drain. Combine sugar and cornstarch. Stir in cherries; let stand until juices begin to flow, about 30 minutes. Cook over medium heat until mixture begins to thicken. Pour into can or freeze jars or plastic freezer boxes. Seal; label; and freeze. Yield: about 4 pints.

COCONUT

Grate the coconut by hand or in food blender. Prepare in one of the following ways:

Method I: Mix grated coconut with its own milk and pack in can or freeze jars or in plastic freezer boxes. Seal; label; and freeze.

Method II: Mix 1 part sugar to 8 parts shredded coconut. Pack in plastic freezer bags. Seal; label; and freeze.

Method III: Pack grated coconut in freezer containers. Seal; label; and freeze.

CRANBERRIES

Select deep red, uniform color, firm with glossy skins. Wash thoroughly in cold water; stem; sort; and drain. Pack in plastic freezer bags. Seal; label; and freeze.

Berry Sauce: Prepare as for serving; cool; pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

CURRANTS

Select fully ripe berries. Sort; stem; wash carefully; and drain. Prepare in one of the following ways:
Sugar Pack: Crush the fruit lightly and mix 3 parts fruit with 1 part sugar. Allow to stand until sugar dissolves. Package the same as peaches (sugar pack).

Whole (No Sugar): Package the same as strawberries (whole).

FIGS

Select fully ripe fruit; wash; and peel. Prepare in one of the following ways:

Sugar Pack: Roll whole or halved figs in 1 cup sugar to 4 cups fruit and pack in plastic freezer bags. Seal; label; and freeze.

Syrup Pack: Pack whole or halved figs in can or freeze jars or plastic freezer boxes and cover with 50% syrup. Seal; label; and freeze.

Whole (No Sugar): Place the figs in plastic freezer bags, attempting to fill all space. Seal; label; and freeze.

FRUIT JUICES

Most fruit juices make excellent frozen products and retain their fresh flavor from one season to another. Prepare the juice by your favorite recipe; cool; pour into can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

GRAPEFRUIT and ORANGES

Select firm, tree-ripened fruit. Heaviness indicates maturity. Wash the fruit; chill in refrigerator; peel; section, removing all membranes and seed.

Syrup Pack: Prepare a 40% syrup (using juice as part of liquid). Add 1/2 teaspoon ascorbic acid and citric acid mixture. Pack fruit in can or freeze jars or plastic freezer boxes and cover with syrup. Seal; label; and freeze.

GRAPES

Choose fully ripe, firm, sweet grapes. Sort, stem, wash and prepare in one of the following ways:

Whole Grapes: Pack grapes in can or freeze jars or plastic freezer boxes and cover with 40% syrup. Seal; label; and freeze.

Seeded Grapes: Heat grapes to boiling. Remove seed and hulls with food mill. Add 1 cup sugar to 5 cups puree. Cool and pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

Grape Juice: Prepare and heat grapes same as above, then press or strain out juice through several layers of cheesecloth. Sweeten to taste with sugar. Pour into can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

GRAPES, MUSCADINE

Select fully ripe, firm, sweet grapes. Sort, stem, wash and prepare in one of the following ways:

Whole Grapes: Same as grapes.

Seeded Grapes: Separate pulps; heat to boiling; put through a food mill to separate seed. Mix juice and pulps with hulls and boil until the hulls are tender (15 to 20 minutes). Add 1 cup sugar to 6 cups grapes, stirring until sugar is dissolved. Cool and pack in can or freeze jars or plastic freezer boxes.

Grape Juice: Same as grapes.

KIWI

Select fully ripe, but firm kiwi. Peel. Cut into 1/4-inch slices. Pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

MELONS

(Cantaloupe, Cranshaw, Honeydew, Persian and Watermelon)

Select fully ripe, but firm melons.

Remove seed and peel. Cut into 3/4-inch cubes, slices or balls. Pack in plastic freezer bags. Seal; label; and freeze. Serve before completely thawed.

PEACHES, NECTARINES and APRICOTS

Select well-ripened fruit and handle carefully to avoid bruising. Wash them in several changes of cold water. Peel the fruit by hand, and drop it into ascorbic acid and citric acid mixture.

Prepare in one of the following ways:

Sugar Pack: Thoroughly mix 2/3 cup sugar and 1/4 teaspoon ascorbic and citric acid mixture. Pit the fruit; slice it into a bowl; and sprinkle with the sugar mixture. Continue until you have 1 quart sliced fruit mixed with the 2/3 cup sugar. Allow these to stand until sugar dissolves (about 10 minutes). Pack the sliced fruit into can or freeze jars or plastic freezer boxes. Crumple a piece of freezer wrap and place it in top of the container. Seal; label; and freeze.

Syrup Pack: Prepare a 50% syrup and add 1/2 teaspoon ascorbic and citric acid mixture for each quart of syrup. Pour 1/2 cup syrup into can or freeze jars or plastic freezer boxes. Pit the fruit; slice into the container, shaking container to fill all space; add more syrup if needed. Pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

Puree: Pit and slice 1 pound fruit; add 2 tablespoons sugar and 1/4 teaspoon ascorbic and citric acid mixture. Place the mixture in a food blender and convert into a liquid. Pour the mixture into pint can or freeze jars or plastic freezer boxes. Place a disc made from aluminum foil or plastic wrap over the top of puree to prevent discoloration. Seal; label; and freeze.

PEACH PIE FILLING

6 pounds peaches
2 1/4 cups sugar
1/2 cup flour
1 teaspoon cinnamon
1/2 teaspoon nutmeg
1/4 cup lemon juice
2 teaspoons lemon peel

Peel; pit; and slice peaches. Place sliced peaches in soaking solution to prevent darkening. Combine sugar, flour and spices. Rinse and drain peaches; stir into sugar mixture. Let stand until juices begin to flow, about 30 minutes. Stir in lemon juice and lemon peel. Cook over medium heat until mixture begins to thicken. Pour into can or freeze jars or plastic freezer boxes. Seal; label; and freeze. Yield: about 4 pints.

PEARS

Select full-flavored pears that are crisp and firm, not mealy in texture. Wash; peel; and core. Treat to prevent darkening. Leave in halves or cut in quarters or slice. Prepare a 40% syrup and boil. Blanch drained pears 2 minutes; cool and pack in can or freeze jars or plastic freezer boxes. Cover with cool syrup. Seal; label; and freeze.

PINEAPPLE

Select fruit of bright appearance, dark yellow-orange color, with fragrant odor. If top pulls out easily, pineapple is ripe for freezing. Peel, core, dice, slice or cut in wedges. Prepare in one of the following ways:

Slices: Pack slices in can or freeze jars or plastic freezer boxes with two pieces of freezer paper between slices. Seal; label; and freeze.

Syrup Pack: Pack in can or freeze jars or plastic freezer boxes and cover with a 50% syrup. Seal; label; and freeze.

Sugar Pack: Mix 1 cup sugar to 8 cups pineapple. Allow to set until sugar is dissolved. Pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze. Frozen, fresh pineapple is not suitable for use in gelatin salad.

PLUMS

Select firm, ripe fruit soft enough to yield to slight pressure. Wash; halve; and pit. Prepare in one of the following ways:

Sugar Pack: Mix 5 parts fruit with 1 cup sugar. Allow to set until sugar is dissolved. Pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

Syrup Pack: Prepare 50% syrup. Pack the fruit in can or freeze jars or plastic freezer boxes and cover with syrup. Seal; label; and freeze.

Whole (No-Sugar): Pack the washed and drained plums in plastic freezer bag, attempting to fill all space. Seal; label; and freeze.

RHUBARB

Select stalks that are crisp, tender and well colored with red; early spring cuttings are best for freezing. Remove leaves and woody ends; discard blemished and tough stalks. Wash rhubarb well under running water and cut into 1-inch lengths. Prepare in one of the following ways:

Dry Pack: Pack in plastic freezer bags. Seal; label; and freeze.

Sugar Pack: Mix 1 cup sugar to 4 cups rhubarb. Allow to stand until sugar is dissolved. Pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

Syrup Pack: Pack rhubarb in can or freeze jars or plastic freezer boxes. Cover with a 50% syrup. Seal; label; and freeze.

Stewed: Stew or steam rhubarb according to your favorite recipe, sweeten to taste; cool; and package according to syrup pack instructions.

STRAWBERRIES

Select fully ripe, firm berries with a deep red color. Sort out immature and defective fruit. Gently wash the berries in several changes of cold water. Remove caps and place berries in a colander to drain. Prepare in one of the following ways:

Sugar Pack: Slice the berries in halves or thirds, lengthwise. Mix 6 parts sliced berries with 1 part sugar. Allow to stand until sugar dissolves (about 10 minutes). Gently stir. Package the same as peaches.

Syrup Pack: Leave the berries whole or slice. Pack in can or freeze jars or plastic freezer boxes. Cover with 50% syrup. Seal; label; and freeze.

Whole (No Sugar): Pack berries in plastic freezer bags. Seal; label; and freeze.

Purée: Put 1 pint strawberries, 4 tablespoons sugar and 1 teaspoon lemon juice in food blender and convert into a liquid. Package the same as peach puree.

THAWING AND PREPARING FRUITS

When serving frozen fruits for dessert, open the package just when you are ready to serve while there are still a few ice crystals in the fruit. Frozen fruits may be used the same as fresh fruits in most recipes. When using frozen fruits in cooking, allowance should be made for any sugar that was added at the time of freezing.

Some fruits, especially youngberries and boysenberries, make better jellies when frozen than when fresh because freezing and thawing cause the juices to be released from the cells and the natural fruit color dissolves in the juice. Freshly made jellies, jams, marmalades and preserves from frozen berries are

superior in flavor, color and texture to those made from fresh berries.

JELLIES & SEMI-SOFT SPREADS

APRICOT JAM

Follow recipe for Strawberry Jam, except 1 teaspoon powdered citric acid is added to the finely mashed apricots.

BLACKBERRY JAM

Follow recipe for Red Raspberry Jam, except reduce sugar from 6 cups to 5 $\frac{1}{2}$ cups.

BLACK RASPBERRY JAM

Follow recipe for Strawberry Jam.

CHERRY JAM

Follow recipe for Strawberry Jam, except sour cherries are pitted and put through a food chopper before measuring.

GRAPE JAM

Follow recipe for Red Raspberry Jam, except seeds are separated after heating Concord Grapes. Crush grapes. Simmer grapes without adding water until grapes have softened. Put pulp through a colander or food mill before measuring.

PEACH PINEAPPLE JAM

- 1 pound peaches, peeled, pitted and chopped
- 1 cup crushed pineapple (in unsweetened juice), undrained
- 2 tablespoons lemon juice
- 4 cups sugar
- 1 cup light corn syrup
- 1 package powdered pectin
- $\frac{3}{4}$ cup water

Measure 1 $\frac{1}{4}$ cups chopped peaches into a large mixing bowl. Stir in the undrained pineapple and lemon juice. Add sugar and corn syrup, mix well and let stand 10 minutes. Combine pectin and water in a small saucepan. Bring to a boil; boil 1 minute, stirring constantly. Add pectin to fruit mixture; stir 3 minutes. Pour into can or freeze jars, leaving $\frac{1}{2}$ -inch head space. Adjust caps. Let stand until set, up to 24 hours. Freeze. Yield: about 6 half pints.

TART PLUM JAM

Follow recipe for Red Raspberry Jam, except plums are pitted and put through a food chopper or blender before measuring.

SPICED PLUM JAM

- 2 pounds plums, pitted and chopped
- $\frac{1}{4}$ cup orange juice
- 1 tablespoon grated orange rind
- $\frac{1}{2}$ teaspoon mace
- 5 cups sugar
- 1 package powdered pectin
- $\frac{3}{4}$ cup water

Measure 3 cups plums into a large mixing bowl. Add orange juice, rind and mace. Stir in sugar; let stand 10 minutes. Combine pectin and water in a small saucepan. Bring to a boil; boil 1 minute, stirring constantly. Add pectin to fruit mixture; stir 3 minutes. Pour into can or freeze jars, leaving $\frac{1}{2}$ -inch head space. Adjust caps. Let stand until set, up to 24 hours. Freeze. Yield: about 7 half pints.

MILD PLUM (PRUNE PLUM) JAM

Follow recipe for Strawberry Jam, except plums are pitted and put through a food chopper before measuring.

RED RASPBERRY JAM

- 3 cups finely mashed or sieved red raspberries
- 6 cups sugar
- 1 package powdered pectin
- 1 cup water

Combine berries and sugar. Let stand about 20 minutes, stirring occasionally. Combine pectin and water in a small saucepan. Bring to a boil; boil 1 minute stirring constantly. Add pectin to fruit mixture; stir 3 minutes. Pour into can or freeze jars, leaving $\frac{1}{2}$ -inch head space. Adjust caps. Let stand until set, up to 24 hours. Freeze. Yield: about 9 half pints.

STRAWBERRY JAM

- 2 cups finely mashed or sieved strawberries
- 4 cups sugar
- 1 package powdered pectin
- $\frac{3}{4}$ cup water

Or:

- 24 ounces sliced, frozen, unsweetened strawberries
- 4 tablespoons lemon juice
- 3 cups sugar
- 1 package powdered pectin
- $\frac{3}{4}$ cup water

Combine berries, lemon juice (if needed) and sugar. Let stand about 20 minutes, stirring occasionally. Combine pectin and water in a small saucepan. Bring to a rolling boil; boil 1 minute, stirring constantly. Add pectin to fruit mixture; stir 3 minutes. Pour into can or freeze jars, leaving $\frac{1}{2}$ -inch head space. Adjust caps. Let stand until set, up to 24 hours. Freeze. Yield: about 6 half pints.

STRAWBERRY GRAPE JAM

- 1 cup crushed strawberries
- 1 cup grape juice, unsweetened
- 1 tablespoon lemon juice
- 4 cups sugar
- 1 package powdered pectin
- $\frac{3}{4}$ cup water

Combine crushed strawberries, grape juice and lemon juice in a large mixing bowl. Add sugar; mix well; and let stand 10 minutes. Combine pectin and water in a small saucepan. Bring to a boil; boil 1 minute, stirring constantly. Add pectin to fruit mixture; stir 4 minutes. Pour into can or freeze jars, leaving $\frac{1}{2}$ -inch head space. Adjust caps. Let stand until set, up to 24 hours. Freeze. Yield: about 5 half pints.

SPICED PEACH KIWI FREEZER JAM

- 2 cups crushed peaches
- 1 cup peeled and chopped kiwi
- $\frac{1}{4}$ cup lemon juice
- 1 package powdered pectin
- $\frac{1}{2}$ cup light corn syrup
- 2 $\frac{1}{2}$ cups sugar
- $\frac{1}{8}$ teaspoon nutmeg
- $\frac{1}{8}$ teaspoon cinnamon

Combine peaches, kiwi and lemon juice in a large bowl; stir well. Slowly add the pectin, stirring constantly for 2 minutes. Let mixture stand 30 minutes, stirring occasionally. Add light corn syrup and stir well. Gradually stir in sugar and spices to fruit mixture. Jam is ready when sugar has completely dissolved. Pour into can or freeze jars, leaving $\frac{1}{2}$ -inch head space. Adjust caps. Let stand until set, up to 24 hours. Freeze. Yield: about 6 half pints.

TWO BERRY FREEZER JAM

- 2 cups crushed strawberries
- 1 cup black raspberries, firmly packed
- 3 tablespoons lemon juice
- 1 package powdered pectin
- $\frac{1}{2}$ cup light corn syrup
- 3 $\frac{1}{2}$ cups sugar

Combine berries and lemon juice in a large bowl; stir well. Slowly add pectin, stirring constantly for 2 minutes. Let mixture stand 30 minutes, stirring occasionally. Add light corn syrup and stir well. Gradually stir in sugar, beating well. Jam is ready when sugar has completely dissolved. Pour into can or freeze jars, leaving $\frac{1}{2}$ -inch head space. Adjust caps. Let stand until set, up to 24 hours. Freeze. Yield: about 6 half pints.

GRAPE JELLY

- 1 package powdered pectin
- 2 cups lukewarm water
- 6 ounces frozen grape juice concentrate
- 3½ cups sugar

Mix the pectin slowly into the lukewarm water in a 2-quart bowl. Stir constantly until completely dissolved. Let stand 45 minutes. Stir occasionally but do not beat. Thaw juice by placing can in cold water. When juice is thawed, pour into a 1-quart bowl. Add 1¾ cups sugar. Mix thoroughly. All the sugar will not dissolve. Add the remaining 1½ cups of sugar to the dissolved pectin. Stir until all sugar is dissolved. Mix the juice mixture with the pectin mixture. Stir constantly until all sugar is dissolved. Pour into can or freeze jars, leaving ½-inch head space. Adjust caps. Let stand until set, up to 24 hours. Freeze or refrigerate. Yield: about 4 half pints.

ORANGE JELLY

- 1 package powdered pectin
- 2 cups lukewarm water
- 6 ounces frozen orange juice concentrate
- 4½ cups sugar
- ¼ cup fresh lemon juice

Mix the pectin slowly into the lukewarm water in a 2-quart bowl. Stir constantly until completely dissolved. Let stand 45 minutes. Stir occasionally but do not beat. Thaw juice by placing can in cold water. When juice is thawed, pour into a 1-quart bowl. Add the lemon juice and 2½ cups of the sugar. Mix thoroughly. All the sugar will not dissolve. Add the remaining 2 cups of sugar to the dissolved pectin. Stir until all sugar is dissolved. Mix the juice mixture with the pectin mixture. Stir constantly until all sugar is dissolved. Pour into can or freeze jars, leaving ½-inch head space. Adjust caps. Let stand until set, up to 24 hours. Freeze or refrigerate. Yield: about 4 half pints.

BLUEBERRY CONSERVE

- 2 pints blueberries, crushed
- 1 cup finely chopped pineapple
- ½ cup raisins
- 2 tablespoons lemon juice
- ½ cup light corn syrup
- 5 cups sugar
- 1 package powdered pectin
- ¾ cup water

Combine blueberries, pineapple, raisins, lemon juice, corn syrup and sugar in a large mixing bowl. Let stand 20 minutes, stirring occasionally. Combine the pectin and water in a small saucepan. Bring to a boil and boil rapidly for 1 minute, stirring constantly. Remove from heat; add to berry mixture; and stir constantly for 2 minutes.

Pour into can or freeze jars, leaving ½-inch head space. Adjust caps. Let stand until set, up to 24 hours. Freeze. Yield: about 7 half pints.

CITRUS MARMALADE with PINEAPPLE

- ¼ cup thinly sliced orange peel
- ¼ cup thinly sliced grapefruit peel
- 1 cup water
- ⅛ teaspoon baking soda
- 1 cup chopped grapefruit pulp
- ½ cup thinly sliced lemon
- 1 cup finely chopped pineapple
- 1 package powdered pectin
- ½ cup light corn syrup
- 3 cups sugar

Combine citrus peel, water and baking soda in a saucepan. Bring to a boil; reduce heat; and simmer covered for 10 minutes. Add grapefruit pulp and sliced lemon. Return to a boil; reduce heat; and simmer covered for 5 minutes. Place mixture and pineapple in a large bowl. Slowly add pectin, stirring constantly for 2 minutes. Let mixture stand for 30 minutes, stirring occasionally. Add light corn syrup; mix well. Gradually stir in sugar until completely dissolved. Pour into can or freeze jars, leaving ½-inch head space. Adjust caps. Let stand until set, up to 24 hours. Freeze. Yield: about four 12-ounce jars.

MEATS

General Information

Freezing preserves the natural fresh qualities of meat better than any other method of preservation. Freezing may tenderize meat slightly, but it will not make tough meat tender.

While beef, lamb, pork, chickens and turkeys may be produced on the farm and frozen in the home, it is advisable for slaughtering, chilling and preparation of beef, lamb and pork to be done in commercial establishments. The advantages are that animals may be slaughtered at any time of the year, and the meat can be handled under sanitary conditions, controlled temperatures and inspected by local authorities.

Equipment for handling meat products should be as free of seams and cracks as possible and should be scrubbed in hot water with a good detergent and sanitizer after each use.

Many families prefer to select cuts of their choice from the market and freeze these at home. All store-packaged fresh meats should be repackaged in freezer materials at home, since "butcher paper" usually is not moisture/vapor-proof and contains air pockets.

Beef, Lamb, Mutton, Veal and Venison

Cuts: Roasts, rolled roasts, steaks, chops, stew meat, frying meat and ground meat. All may be stored frozen for one year if desired, except ground meat. Three to four months is the maximum time to freeze ground meat. Three months is the maximum time to freeze liver.

Preparation: Use only good quality meat from carcasses that have been aged about one week, in a relatively dry room, at 35°F. Cut meats as for cooking, removing as much bone and other waste as possible, and package in family-size servings. Keep meat cold while it is being cut and wrapped. Large pieces should be wrapped individually in freezer foil, film or paper. Steaks or chops should be wrapped the same way except a double layer of moisture/vapor-proof material should be placed between each piece of meat to make separation for cooking easier. Ground meat should be packaged in family-size servings and wrapped as large pieces. For short storage periods, the cuts may be frozen in plastic freezer bags. Seal; label; and freeze.

Pork, Opossum, Rabbit and Squirrel

Cuts: Suitable for roasting, broiling, frying, stewing and ground meat. Use frozen pork and opossum in about six months; after that long, it could become rancid.

Preparation: Pork meat products should be frozen or prepared for curing as soon as chilled; that is, second day after slaughter.

Fresh Meat: All of the cuts of this type should be frozen fresh except hams, bacon, jowls and sausage, which may be cured instead. While cutting into cooking-size pieces, as much bone and fat should be removed as possible. Wrap the same as beef, as explained under "preparation" above.

Cured Pork: Freshly cured pork loses desirable color and flavor during freezer storage. Therefore, it has a very short shelf life in the freezer.

Sausage: Make sausage from trimmings of lean portions of pork. Sausage to be frozen should contain approximately three times as much lean as fat. Prepare the sausage, using your favorite recipe. Pack sausage tightly in can or freeze jars or plastic freezer boxes. Seal; label; and freeze. It may also be stuffed into casings and smoked. For country-style flavor, cure stuffed sausage for five days at 35°F before freezing. Wrap tightly in family-size servings in freezer foil, film or paper. Seal; label; and freeze.

THAWING AND PREPARING BEEF, PORK, LAMB, MUTTON, VEAL AND VENISON

Leave package wrapped until ready to cook. The refrigerator is the best place to thaw meats. Slow thawing allows the meat to absorb the thawed ice crystals. Also, the meat is less likely to spoil and develop off-flavor. If you must thaw meat fast, use an electric fan. Thaw frozen meats just long enough for the ice to disappear in the center. Never thaw meat and allow it to return to room temperature. It is best to put meat on to cook while it still contains a few ice crystals. Usually roasts and steaks over 1½-inches thick should be thawed before cooking. Thin steaks, chops or patties may be cooked from the frozen stage, but the cooking time must be longer to allow for thawing the meat. Use a recommended meat cooking chart for accurate times and temperature for completely thawed meats. Add from 12 to 21 minutes per pound for roasting meats that are still frozen.

POULTRY

CHICKEN

Chicken (Fryers, Broilers, Roasters and Hens) Selection: Select choice birds that have grown rapidly and are well fattened. If practical, starve birds overnight before killing.

Fryers and Broilers (Whole): For short storage, pack the whole bird in plastic freezer bags and seal airtight. For long storage, wrap the bird in a freezer film and overwrap with a freezer paper. Seal; label; and freeze.

Cut Up: Disjoint or otherwise cut birds for cooking and pack closely in can or freeze jars or plastic freezer boxes. Seal; label; and freeze. If several birds are prepared at one time, package the various pieces separately. Place livers in a separate package and use within three months.

Halves: Split the birds in halves, package in family-size packages with a double layer of moisture/vapor-proof material between each piece. Package same as whole birds.

Roasters and Hens: Prepare same as whole fryers.

TURKEY

Preparation: Allow carcass to chill two days; then prepare same as whole fryers.

THAWING and PREPARING CHICKENS and TURKEYS

Frying Chicken: Thaw cut-up fryers in the refrigerator until the pieces can be separated easily. They should then be prepared and cooked as fresh.

Roasting Chicken and Turkeys: Thaw unwrapped roasters completely either in refrigerator or closed brown paper bag or cold water—never at room temperature. They should then be prepared and cooked as fresh.

PREPARED FOODS

BREADS, QUICK

Biscuits: Bake to light brown. Cool. Pack in plastic freezer bags. Seal; label; and freeze.

Fruit and Nut Breads, Muffins and Waffles: Prepare and cook as usual. Cool. Package same as biscuits.

BREADS, YEAST

Loaves and rolls, baked: Prepare and cook as usual. Cool. Pack in plastic freezer bags. Seal; label; and freeze.

"Brown and serve" rolls: Bake 20 minutes at 275°F. Cool. Package same as breads—yeast.

ROLLS, UNBAKED

Shape rolls. Freeze on baking sheet. Pack in plastic freezer bags for storage. Seal; label; and freeze.

PIZZA

Prepare. Do not bake. Freeze before packaging. Wrap in freezer film, foil or paper. Seal; label; and return to freezer.

GRAVY

It is better to freeze broth and thicken while heating than to freeze gravy. Pour cool broth into can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

CAKES, BAKED

Layer, Loaf, Cupcakes, Angel, Chiffon, Sponge and Fruit: Prepare; bake; and cool. May be frozen whole or in meal-size portions or slices. Pack in plastic freezer bags. Seal; label; and freeze.

FROSTED CAKES

Prepare; bake; and cool. Place in freezer to harden the frosting. Then remove and pack in plastic freezer bags. Seal; label; and freeze.

CANDIES

All homemade candies such as fudge, divinity, brittle, taffy, creams and caramels may be frozen. Wrap each piece individually in freezer film and pack in plastic freezer boxes to avoid crushing. Seal; label; and freeze. Allow to thaw in the package.

CHICKEN

(Also Turkey and Fish)

Frozen creamed chicken, chicken a la king, pies, baked chicken, broth, chicken chopped for salad, barbecued...all keep well. Do not freeze stuffed poultry. Cover chicken with a cream sauce or gravy if possible. Cool the product and pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

COMBINATION DISHES

Creamed Meat, Poultry and Fish:

Prepare product. Cool quickly. Pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

Baked Beans, Stew, Ravioli and Meat Sauce Casseroles: Prepare as usual, keeping fat to minimum. Cool quickly and package same as creamed meat.

COOKIES

Baked: Prepare; bake; and cool quickly. Pack in plastic freezer bags or boxes using moisture/vapor-resistant paper between layers. Seal; label; and freeze.

Unbaked: For bar or refrigerator cookies, form into long roll. Wrap in freezer film and pack in plastic freezer bags. Seal; label; and freeze.

Doughnuts: Fry in high quality fat and cool. Package as baked cookies.

DESSERTS

Mousse: Needs only to be mixed and poured into can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

Cheesecake, Baked: Cool and wrap in freezer film and pack in plastic boxes. Seal; label; and freeze.

Pudding, Steamed: Cool and pack in covered can or baking mold and seal with freezer tape or pack into plastic freezer bags. Seal; label; and freeze.

FRUITS

Such cooked fruits as baked apples, baked pears and applesauce may be prepared for the freezer. Cool quickly and package in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

MEATS

Stews, creamed meats, meat sauces, casserole dishes, meat with vegetables, pies, roasted and baked meats, meatballs and meat loaf may be frozen. Package the same as chicken.

Meat, Poultry and Shell Fish: Prepare the meat. Cool. Pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze. When ready to use, thaw meat and mix with other ingredients.

PASTRY CIRCLES

Roll out circles large enough for pie or tart shells. Place on a cardboard circle covered with foil or film. Separate circles with double thickness of freezer paper. Freeze, then pack in plastic freezer bags. Seal; label; and return to freezer.

PIE CRUST

4¹/₂ cups flour
2 teaspoons salt
4 teaspoons sugar
1³/₄ cups shortening
1 egg, beaten
1 tablespoon vinegar
1/2 cup water

Combine dry ingredients; cut in shortening until mixture is uniformly coarse. Combine egg, vinegar, and water; gradually add to flour mixture, stirring until mixture forms a ball. Divide dough into 4 equal parts. Roll dough out on a floured surface; cut into circles; and pack in plastic freezer bags, or place in pie plates and pack in plastic freezer bags. Yield: about 4 pie crusts.

PIES

Double-crust fruit and mince pies, raw or cooked, as well as single-crust, coconut, nut, potato and similar pies may be frozen. The filling for pies to be frozen should be slightly thicker than usual. Freeze before packaging. Pack in plastic freezer bags. Seal; label; and return to freezer.

POTATOES, IRISH

Baked or Stuffed: Prepare as usual; top with melted cheese. Cool quickly. Wrap individually in freezer foil or film. Freeze, then pack in plastic freezer bags. Seal; label; and return to freezer.

French Fried: Cut and scald potatoes 2 minutes; cool and dry in clean cloth. Fry in fresh, first-grade fat (370°F) until a very light brown. Drain. Cool quickly. Pack in plastic freezer bags. Seal; label; and freeze.

Scalloped: Prepare and place in baking dish that can withstand wide variations in temperature. Bake as usual until pale in color and not quite done. Leave in baking dish and cool quickly. Place dish in plastic freezer bags. Seal; label; and freeze.

SALADS

Fruit salads which freeze well are those served with a base of cream, cottage cheese, whipped cream or mayonnaise. Gelatin combined with those items just mentioned also freeze well. Prepare in large or individual molds. Fit a piece of freezer paper over the top and wrap total container of salad in freezer paper. Muffin tins or other individual serving containers may be lined with a freezer film or foil, or a paper-lined dish may be used. Fill with mixture; freeze; remove from container to free use of container; wrap individually; and pack in plastic freezer bags. Or, you may pour mixture in can or freeze jars. Seal; label; and freeze.

FREEZER SLAW

- 2 pounds cabbage
- 1 large green pepper (about 8 ounces)
- 3 large carrots (about 12 ounces)
- $\frac{3}{4}$ cup chopped onion
- 1 teaspoon salt
- 2 cups sugar
- 1 teaspoon dry mustard
- $\frac{1}{2}$ cup water
- 1 cup vinegar
- 1 teaspoon celery seed

Shred cabbage, green pepper and carrots. Add onion. Sprinkle with salt; let stand 1 hour. Drain. Combine remaining ingredients in a saucepan. Bring to a boil; boil 3 minutes. Cool. Pour over cabbage mixture; let stand 5 minutes. Stir well. Pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze. Yield: about 5 pints.

SANDWICHES

Sandwiches suitable for freezing include those made with cheese, chicken, meat, peanut butter, nut pastes, egg yolk mixtures and fish. Use day-old bread spread with butter. Wrap sandwiches individually in freezer film or foil. Freeze and pack in plastic freezer bags. Seal; label; and return to freezer.

Open-Face Canapes: Make as usual. Be sure to spread to very edge. Space out and freeze. Pack in layers in top-opening box separating layers with freezer paper. Seal; label; and freeze.

SAUCES

Both dessert sauces and meat sauces freeze successfully. Pack in serving portions in can or freeze jars. Seal; label; and freeze.

SPAGHETTI SAUCE

- 2 cups chopped onions
- 2 cups chopped green peppers
- 1 cup chopped celery
- 4 cloves garlic, minced
- 2 tablespoons oil
- 2 pounds ground beef
- 3 cans (6-ounces each) tomato paste
- 3 cans (8-ounces each) tomato sauce
- 1 can whole tomatoes, chopped
- 2 bay leaves
- 2 teaspoons oregano
- 1 teaspoon basil
- 1 teaspoon salt
- $\frac{1}{4}$ teaspoon pepper

Saute onion, green pepper, celery and garlic in oil until onion is tender. Add ground beef; cook until browned. Drain off fat. Add remaining ingredients; simmer 1 hour. Remove bay leaves. Pour into can or freeze jars of plastic freezer boxes. Seal; label; and freeze. Yield: about 6 pints.

TOMATO CATSUP

- 1 stick cinnamon, broken
- 1 teaspoon whole cloves
- 1 teaspoon mustard seed
- 1 teaspoon celery seed
- 1 cup vinegar
- 8 pounds tomatoes
- 1 cup chopped onion
- $\frac{1}{4}$ teaspoon cayenne pepper
- 1 cup sugar
- 1 tablespoon salt

Place cinnamon, cloves, mustard seed and celery seed in a cheesecloth bag; add to vinegar. Bring vinegar and spices to a boil; remove from heat; let stand. Peel, core and quarter tomatoes. Combine tomatoes, onion and cayenne pepper. Simmer until soft. Press through a sieve or food mill. Add sugar to tomato pulp. Bring to a boil; simmer until reduced by half. Remove spices from vinegar. Add vinegar and salt to tomato mixture. Simmer until desired consistency, about 30 minutes. Pour into can or freeze jars or plastic freezer boxes. Seal; label; and freeze. Yield: about 5 half pints.

SOUPS

Most soups freeze well. These include dried beans, split pea, oyster and those made from chicken, meats and vegetables. Cool. Pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

GAZPACHO

- 2 pounds tomatoes (about 6 medium)
- 1 pound cucumbers (about 2 medium)
- 5 cups tomato juice
- 1 cup chopped onion
- 1 cup chopped green pepper
- $\frac{1}{2}$ cup chopped celery
- 1 clove garlic, minced
- 1 teaspoon salt
- $\frac{1}{4}$ teaspoon pepper
- $\frac{1}{2}$ teaspoon hot pepper sauce
- $\frac{1}{2}$ cup wine vinegar
- 2 tablespoons olive oil

Peel, core, seed and chop tomatoes. Peel, seed and chop cucumbers. Combine all ingredients. Pour into can or freeze jars or plastic freezer boxes. Seal; label; and freeze. Yield: about 7 pints.

ONION SOUP

- 2 pounds onions, sliced
- 6 tablespoons butter
- 1 teaspoon sugar
- 1 teaspoon dry mustard
- 3 tablespoons flour
- 2 quarts beef broth
- 1 cup white cooking wine

Salt

Pepper

Cook onions in butter until transparent but not browned. Add sugar and dry mustard. Blend in flour. Gradually stir in beef broth and wine; simmer 30 minutes. Add salt and pepper, to taste. Pour into can or freeze jars or plastic freezer boxes. Seal; label; and freeze. Yield: about 5 pints.

VEGETABLES

Some fully cooked vegetables such as baked beans and candied sweet potatoes, when frozen, keep in excellent condition for many months; but most fully cooked vegetables lose flavor rapidly and should be stored for only a few days. Loss of flavor may be retarded by covering the vegetables with a cream sauce.

SEAFOOD

FISH

Selection: Select any kind of desirable fish, as fresh as possible.

Preparation: Prepare fish for freezing the same as for cooking. Freeze small fish whole. Large fish may be cut into steaks or fillets or left whole. Steaks and fillets need a 30-second dip in a 5 percent salt solution ($\frac{2}{3}$ cup salt in 1 gallon water). Wrap each fish tightly in a freezer film, foil or paper, then pack in a plastic freezer bag. Seal; label; and freeze. Fish may also be frozen by packing them in can or freeze jars or plastic freezer boxes and covering with water. Seal; label; and freeze.

OYSTERS

Preparation: Prepare the oysters as for using fresh. Pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

SHRIMP

Preparation: Several methods are recommended for freezing shrimp:

1. Remove the shrimp head and freeze.
2. Remove the shrimp head; shell; clean; and freeze.
3. Cooked shrimp—Boil 5 minutes in salt solution ($2\frac{1}{2}$ ounces salt per gallon of water).
4. Breaded shrimp—Peel the raw shrimp; de-vein it; bread with your favorite breading method; and freeze.
5. Precooked shrimp.

Pack in can or freeze jars, plastic freezer boxes or plastic bags. Allow head space when freezing in a liquid. Seal; label; and freeze.

CRAB

Preparation: Prepare crabs as for using fresh. Grade the meat by size. Pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

FISH ROE

Preparation: Thoroughly wash roe. Pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

LOBSTER

Preparation: Prepare lobster as for using fresh. Pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

NOTE: Fish, Oysters, Shrimp, Crab, Fish Roe and Lobsters—It is important that only strictly fresh products be used for freezing. Being a perishable commodity, it should be kept under refrigeration at all times. The freezing of these products shortly after catching is very important.

THAWING and PREPARING SEAFOOD PRODUCTS

Fish, Oysters, Shrimp, Crab and Lobsters: Place the unopened package in the refrigerator until thawing begins and the product softens slightly, then remove the food and cook as fresh.

SPECIAL FOODS and BABY FOODS

1. Foods for diabetics can be prepared and frozen without sugar or sweetened with a noncaloric sweetener. Consult physician and follow manufacturer's instructions.

2. Dietetic. It is often a convenience to freeze individual portions without salt or without fat for persons on special diets. These can be frozen in ice trays, then removed and stored in plastic freezer bags or boxes.

3. Purees of vegetables, fruits and meats for babies and convalescents may be made and frozen when the foods are in season. The half pint can or freeze jars are excellent containers for storing these items in the freezer.

VEGETABLES

GENERAL INFORMATION

Excellent frozen products may be had from most vegetables when: (a) the proper varieties are used; (b) they are harvested at the right time; (c) they are adequately scalded and cooled; and (d) they are packaged correctly. Many frozen vegetables are fresher than those purchased on the "fresh market." Practically all frozen vegetables may be stored for one year. Choose a variety that is recommended for eating fresh, or a newer variety which has been found to be especially suitable for freezing.

If you grow your own, harvest tender vegetables at the best stage to be eaten fresh or slightly younger. Process on the day harvested or bought, and never use if allowed to become over-mature either before or after harvesting. The fresher the vegetables when frozen, the more satisfactory the product.

If it is necessary to store vegetables for a short time, spread them in a cool, well-ventilated place or in the refrigerator. Prompt cooling in ice water followed by storage in the refrigerator will help retain flavor and other qualities.

SCALDING or BLANCHING

Scalding is a critical step in preparing vegetables for freezing and must be done carefully. (This is a "must" for all vegetables to be stored frozen for more than four weeks, except those used exclusively for their flavor such as green onions, hot peppers and herbs.) Scalding cleanses the surface of dirt and organisms, brightens the color, helps retain vitamins and reduces the action of enzymes which otherwise would destroy the fresh flavor after about four weeks. It also shrinks the product, making packing easier.

Immediately before scalding, wash, drain, sort, trim and cut the vegetables as for cooking fresh. Use 1 gallon water per pound for vegetables—2 gallons for leafy greens. Put vegetables into blancher (wire basket, coarse mesh bag or perforated metal container) and lower it into vigorously boiling water. Begin counting the time as soon as vegetable is placed in the boiling water. Keep the heat on high and stir water, or keep container covered during blanching. Follow the scalding time given in the recipe for each vegetable. This is very important because underscalding stimulates the activity of enzymes and is worse than no scalding. Prolonged scalding causes loss of vitamins, minerals, flavor and color.

COOLING

As soon as scalding is complete, the vegetables should be cooled quickly to stop the cooking process. This may be done by immersing the vegetables in ice water. They should be stirred several times during cooling which should not be longer than the scalding time. The water should be as cold as possible in order to reduce the time of immersion. Otherwise, nutrients, flavor and color will be lost. To aid cooling, pour hot vegetables into a cool colander—leaving hot basket to scald more vegetables.

With a large quantity, determine how many vegetables can be blanched in 15 minutes. Prepare this amount, leaving the others in the refrigerator; blanch and cool these before packaging. Package; label; and place in freezer. Continue until all vegetables are frozen. The same scalding water may be reused for the same product, but keep the water at the proper level.

PACKAGING

Vegetables usually are packaged loosely without seasoning. Immediately after scalding and cooling, pack the vegetables in meal-size, airtight, moisture/vapor-proof containers. Quart or pint-size plastic freezer bags have been found most suitable for home packaging of many frozen vegetables. After placing the vegetables in bag, press out all of the air possible; twist the top of the bag so as to form a spiral; bend spiral back to form a gooseneck; and then wrap it with a fastener. Can or freeze jars and plastic freezer boxes also are excellent.

FREEZE QUICKLY

Place sealed packages in freezer in single layers, leaving 1-inch space between packages. Use coldest part of freezer for freezing foods. Foods should freeze in 12 to 24 hours.

STORAGE

When completely frozen, packages may be compactly stacked. Keep the freezer at 0°F or lower at all times.

THAWING and PREPARING VEGETABLES

Most vegetables can be cooked without thawing. The exception to this is corn-on-the-cob, the only vegetable which should be completely thawed before being cooked. All greens should be partially thawed so as to separate them before cooking. Precooked vegetables should also be partially thawed.

To maintain quality, cook frozen vegetables as you would fresh ones—but cook them for a shorter period of time because they were blanched before freezing. Use the smallest amount of water possible. Time the cooking so the vegetables may be served immediately because nutrients are lost if the vegetable is allowed to stand after cooking. Cook only the amount that can be consumed at one meal.

ARTICHOKE, GLOBE

Select those with uniformly green color, compact globes and tightly adhering leaves. Size has little to do with quality or flavor. Remove outer bracts until light yellow or white bracts are reached. Cut off tops of bud and trim to a cone. Wash the hearts in cold water as soon as trimming is completed. Drain.

Scald 7 minutes. Cool; drain; and pack in plastic freezer bags or can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

ARTICHOKE, JERUSALEM

Select mature unblemished artichokes. Wash thoroughly; peel or scrape; wash; scald 3 to 5 minutes, depending on the size. Cool; drain; and pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

ASPARAGUS

Select young tender tips. Wash thoroughly and sort into sizes. Trim stalks by removing scales with a sharp knife. Cut into even lengths to fit freezer containers. Scald small spears 1½ minutes, medium spears 2 minutes and large spears 3 minutes. Cool; drain; and pack in plastic freezer bags, can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

BEANS, LIMA

Harvest while the seed is in the green stage. Wash in cold water; shell; wash; and sort according to size. Scald small beans 1 minute, medium beans 2 minutes and large beans 3 minutes. Cool; drain; and pack in plastic freezer bags, can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

BEANS, SNAP

Select young, tender pods when the seed is first formed. Wash in cold water; snip and cut 2 to 4-inch lengths or lengths to fit freezer container. The longer cuts are best quality. Scald 3 minutes. Cool; drain; and pack in plastic freezer bags, can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

BEANS, SOY

Harvest when the beans are just newly-formed and in the green stage. Wash in cold water. Boil pods 5 minutes. Cool; squeeze the beans out of the pod; rinse; and drain. Pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

BEETS

Select deep, uniformly-red, tender, young beets. Remove tops; wash and cook until tender. Cool and remove skins. Leave whole, quarter, slice or dice. Pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

BROCCOLI

Select firm, young, tender stalks with compact heads. Wash and remove leaves and woody portions. Separate heads into convenient-size sections and immerse in brine (1 cup salt to 1 gallon water) for 30 minutes to remove insects. Rinse and drain. Scald medium-size sections 3 minutes and large-size sections 4 minutes. Cool; drain; and pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

BRUSSELS SPROUTS

Select dark green, compact heads. Remove coarse outer leaves; wash and sort into small, medium and large sizes. Scald small size 3 minutes, medium size 4 minutes and large size 5 minutes. Cool; drain; and pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

CABBAGE

Select solid, green heads with crisp leaves. Wash; discard the coarse outer leaves; and cut the head into wedges or shred rather coarsely. Scald wedges 3 minutes; shredded cabbage 1½ minutes. Cool; drain; and pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

CARROTS

Select young, tender, coreless, medium length carrots. Wash; scrape; wash; and dice or section lengthwise. Small carrots may be frozen whole. Scald carrot sections 3 minutes and whole carrots 5 minutes. Cool; drain; and pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

CAULIFLOWER

Choose compact heads. Trim; break into flowerets of uniform size, about 1 inch across; wash carefully; and drain. Immerse in brine (1 cup salt to 1 gallon water) for 30 minutes to remove insects. Rinse and drain. Scald medium-size sections 3 minutes and large-size sections 4 minutes. Cool; drain; and pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

CORN

Select only tender, freshly gathered corn in the milk stage. Husk and trim the ears; remove silks and wash.

Corn-On-The-Cob: Scald ears 1½ inches in diameter 6 minutes, 2 inches in diameter 8 minutes and larger ears 10 minutes. Cool; drain; and wrap individually, tightly in moisture vapor-proof film; and pack in plastic freezer bags. Seal; label; and freeze.

Whole Kernel: Scald 5 or 6 minutes, depending on size of ears. Cool; drain; and cut from cob. Pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

Cream-Style Corn: Scald ears the same as for whole kernel. Cool and drain. Cut kernel tips and scrape rest of kernels from cob. Pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

Precooked Corn: Cut and scrape the corn from the cob without blanching. Put small amount of water in saucepan; add cut corn; and cook over low heat (stirring constantly) for about 10 minutes or until it thickens. Pour in a pan; set in ice water to cool. Do not cook more than 3 quarts at a time. Package same as cream-style corn.

EGGPLANT

Harvest before seeds become mature and when color is uniformly dark. Wash; peel; and slice ⅓ inch. Prepare quickly, just enough eggplant for 1 scalding at a time. Scald 4 minutes in 1 gallon boiling water containing 4½ teaspoons citric acid or ½ cup lemon juice. Cool; drain; and pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

For Frying: Pack the drained slices with freezer wrap between slices.

GREENS

Pick young, tender, green leaves. Wash thoroughly and cut off woody stems. Scald 2 minutes and avoid matting of leaves. Cool; drain; and package same as cream-style corn.

HERBS, GARDEN

Many garden herbs may be frozen. Wash; drain, but do not scald. Wrap a few sprigs or leaves in freezer film and place in plastic freezer bags. Seal; label; and freeze. These usually are not suitable for garnish as the frozen product becomes limp when it thaws. It can be chopped and used in cooked dishes.

KOHLRABI

Select stems when fully grown but tender. Trim top and bottom; wash; peel off the tough bark; and wash. Slice the tender centers crosswise ¼-inch thick. The small roots may be left whole. Scald slices 2 minutes, whole ones 3 minutes. Cool; drain; and pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

MUSHROOMS

Select young, firm mushrooms and process quickly. Mushrooms deteriorate rapidly. Wash and remove the base of the stem. Sort the mushrooms into sizes. Smaller mushrooms may be frozen whole; larger mushrooms should be cut into smaller pieces.

Mushrooms tend to darken. To prevent discoloration, use 3 teaspoons lemon juice or ½ teaspoon ascorbic acid to each quart of water when scalding the mushrooms. Scald small whole mushrooms 4 minutes and larger sliced mushrooms 3 minutes. Chill at once in cold water and drain. Pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

Mushrooms can be cut into slices and sauteed in butter for about 3 minutes. Cool quickly; package as above. If mushrooms are sauteed, no scalding is required.

OKRA

Select young, tender pods. Wash and separate into two sizes: 4 inches or under, and larger. Remove stems at the end of the seed cells. Scald the small pods 3 minutes; cool; drain; and pack in can or freeze jars or plastic freezer boxes. Scald the larger pods 5 minutes. Cool; cut into 1-inch lengths; and package the same as above. Seal; label; and freeze.

ONIONS

Choose mature bulbs and clean as for eating. Scald for 3 to 7 minutes or until the center is heated. Cool; drain; and pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze. These are suitable for cooking only. Young green onions may be washed and chopped for salads and sandwiches and frozen without scalding. They will not be crisp. These will be highly flavored but may be slightly tough.

PARSNIPS

Choose smooth, firm roots free from woodiness. Remove tops; wash thoroughly; and peel. Slice, dice or cut lengthwise. Scald 3 minutes; cool; drain; and pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

PEANUTS

GREEN IN THE SHELL

Select fully mature peanuts; thoroughly wash; and clean. Leave in shell. Scald 10 minutes; cool; drain; and pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

PEANUTS, SHELLED

Select fully mature peanuts; shell; and pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze. These peanuts may be removed from the freezer, thawed, then used as fresh-shelled peanuts in any recipe.

PEAS, FIELD (BLACKEYED)

Select pods when seeds are tender and barely grown. Wash; shell; and discard over-mature and immature seeds and those injured by insects. Wash and scald smaller sizes 1 minute and larger sizes 2 minutes. Cool; drain; and pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

PEAS, GREEN or GARDEN

Harvest when pods are filled with young tender peas that have not become starchy. Wash, shell, wash, scald 2 minutes. Cool; drain; and pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

PEAS, SNOW or SUGAR SNAP

Select firm, unblemished pods. Wash and scald 2 minutes. Cool; drain; and pack into can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

PEPPERS, SWEET

Select crisp, tender, green or bright red pods. Wash; cut out stems; and remove seeds. Freeze whole, as halves, strips or diced. Do not scald. Pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

PEPPERS, PIMIENTOS

Select well-ripened pods of deep red color. Wash; cut out stems; and remove seeds. Peel by roasting in oven 400°F or cover with water and boil until peppers are tender. Cool; drain; and pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

PEPPERS, HOT

Select crisp, tender, green or bright red pods. Wash and drain. Pack in can-or-freeze jars or plastic freezer boxes. Seal, label, and freeze.

NOTE: When cutting or seeding hot peppers, wear rubber gloves to prevent hands from being burned.

POTATOES, IRISH

Select smooth new potatoes directly from the garden. Wash thoroughly; peel or scrape; wash; scald 3 to 5 minutes, depending on the size. Cool; drain; and pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

POTATOES, SWEET

Allow potatoes to cure for at least one week. Wash thoroughly; drain; and sort for sizes.

Baked: Grease surface with fresh cooking oil; bake in a preheated oven 350°F until slightly soft. Cool. Wrap potatoes individually in freezer film or foil and place in plastic freezer bags. Seal; label; and freeze.

Sliced: Preheat the unpeeled potatoes in water at 130°F for 30 minutes. Peel and cut lengthwise into 1/2-inch slices. Scald 3 minutes in boiling syrup (made with 1 1/2 cups water to 1 cup sugar and 1 tablespoon lemon juice—prepare enough syrup to cover the slices). Cool quickly (slices and syrup). Pack closely in can or freeze jars or plastic freezer boxes. Cover with syrup. Seal; label; and freeze.

Purée: Bake the potatoes in a preheated oven 350°F until soft. Remove peel and put potatoes through a food mill. For each 5 pounds of pureed potatoes, add 1/2 cup sugar, 1/2 cup cold water and 1 tablespoon lemon juice. Cool and pack closely in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

PUMPKINS

Pick at optimum maturity, indicated by good color and stem that breaks loose easily. Wash thoroughly; peel; remove seeds; cut into sections; steam until soft; put through a food mill; and add 1 part sugar to 6 parts puree. Cool and package same as pureed sweet potatoes (sugar may be omitted).

SQUASH, SPAGHETTI

Cut squash in half; remove seeds. Place squash in baking dish, cut side down. Add 1/2-inch water and bake in 350°F oven until fork tender. Using a fork, rake pulp away from peel. Squash should separate into strands. Cool. Place in bowl. Set bowl in ice water to cool quickly. Pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.

SQUASH, SUMMER

Choose young squash with tender skin. Wash; slice; scald 3 minutes. Cool; drain; and pack in can or freeze jars or plastic freezer boxes.

Precooked: Wash; slice; and cook in a very small amount of water until just tender. Mash. Place in bowl. Set bowl in ice water to cool quickly. Package same as pureed sweet potatoes.

SQUASH, WINTER

Harvest fully mature squash with a hard rind. Wash; cut in halves; and scoop out seeds and membrane. Place cut side down on baking sheet and bake at 375°F until tender. Scoop out pulp; put through a food mill; cool; and package same as pureed sweet potatoes.

TOMATOES, COOKED

Select firm, sound, ripe tomatoes. Wash; core; cut; and cook until soft. Put through a food mill; cool; and package same as pureed sweet potatoes. Puree may be concentrated by boiling to one-half volume; cool; and package.

TOMATO JUICE

Select firm, sound, red-ripe tomatoes. Wash; core; and cut into pieces. Simmer about 5 minutes; put through a food mill. Cool and package same as pureed sweet potatoes.

TOMATOES, GREEN SLICED

Select firm, sound, green tomatoes. Wash; core; and slice 1/4-inch thick. Pack in can or freeze jars or plastic freezer boxes with freezer wrap between slices. Seal; label; and freeze.

TURNIPS

Select young, tender turnips. Remove tops; wash; peel; slice or dice. Scald 3 minutes. Cool; drain; and pack in can or freeze jars or plastic freezer boxes. Seal; label; and freeze.



DEHYDRATION

Drying food at home is easy to do, to use and to store. However, unlike the exact methods needed for canning and freezing, finding the best technique for drying may require the trial and error approach. Various factors like the drying methods used, the quality of the produce, pretreatment techniques and even, the climate may affect the finished product. Follow the general guidelines given for a specific food and then make the necessary adjustments accordingly.

Successful home food dehydration is dependent on three basic principles:

HEAT - controlled temperature high enough to force out moisture, but not hot enough to cook the food.

DRY AIR - to absorb the released moisture.

AIR CIRCULATION - to carry the moisture away.

When food is dehydrated, 80% to 95% of the moisture is removed, inactivating the growth of bacteria and other spoilage microorganisms, making it a useful method of preservation.

DRYING METHODS

Food dehydration can be done by several methods. Natural ones like sun and room drying require warm days of 90°F or more, low humidity, little air pollution and control of insects for an adequate finished product. Oven drying is a good choice for only small quantities of food, because the energy costs of operating a gas or an electric range are high compared to the cost of operating an electric food dryer. A conventional oven only heats food and does not carry away moisture. Commercial or homemade electric dehydrators provide the most reliable and consistent results, often without pretreatment, because of the controlled temperature and air flow. Food dehydrated by this method dries quickly and evenly. The quality of the finished product can be excellent, and food can be dried 24 hours a day, summer or winter, rain or shine. The main disadvantage is the initial investment. Like any appliance purchase, your personal needs should be assessed.

Cost of operation must also be considered, but this can be minimized by operating the dehydrator at full capacity. If a dehydrator is used frequently and to maximum capacity, it can be a very cost-effective way to preserve foods.

Desirable Electric Dehydrator Features

Heat Source - The heating element should be efficient and durable, enclosed for safety and have sufficient wattage for the entire drying area, about 70 watts per tray.

Fan - The fan should blow heated air evenly over all the food. Its size should be proportional to the dryer capacity, and it should be quiet. The unit may be in operation more than 12 hours a day.

Thermostat - The dehydrator should have an adjustable temperature control with a range from 85° to 160°F.

Drying Trays - Trays and inserts should be made of safe, food-grade material such as stainless steel, nylon, Teflon-coated fiberglass or plastic. Do not use copper, aluminum or plated metal, such as cadmium or zinc plated, in contact with drying food. Copper reduces the vitamin C. Aluminum discolors some fruits. Cadmium and zinc (galvanized) plated metal can be dissolved by fruit acids to cause the fruit to become toxic. Trays should have adequate spaces for air circulation and be easy to load, unload and clean.

Construction Quality - The dehydrator should be made of a durable, easy to clean material such as plastic or metal. It should be UL approved, come with a warranty and information for factory repair service.

Dehydrators may be made at home, but see your state extension service for building plans.

GETTING STARTED

Equipment other than an electric dehydrator, most equipment needed for drying food is found in the kitchen. The list includes: a sharp paring knife, a colander/steamer for washing and blanching produce, a cutting board, a vegetable peeler, a food processor or a vegetable slicer for evenly cut slices, a grater, a blender and measuring utensils.

Selection Of Produce

Fresh, high-quality, mature, ripe produce is best for drying. Naturally, fresh from the garden is the first choice for any method of food preservation. Plan to dry food in peak seasons, especially if produce must be purchased from farm stands or supermarkets. The quality will be higher and the price lower.

How Much Produce to Grow or Buy

When produce is properly dried, it will weigh much less and take up less volume, depending on such factors as natural moisture content of the fruit or vegetable and discarded non-edible portions, such as peelings, cores, seeds, pits, pods and stems. As an example, apples are usually pared and cored prior to drying, so a purchased weight of 10 pounds will be reduced to 1 to 1½ pounds when dried.

Pretreatment Techniques

Most vegetables and some fruits benefit from pretreatment techniques, such as blanching and dipping. Although the drying process slows down the action of enzymes, those chemical substances that cause fruits and vegetables to mature and ripen, it does not stop the action entirely. Simple pretreating can retard this action. Blanching (heating in steam or water for a specific time) is the most common method of pretreating vegetables. Steam blanching is preferred because more water-soluble vitamins and minerals are preserved. In steam blanching, vegetables (or fruits) are suspended above boiling water in a colander and are heated by the steam. In water blanching, the vegetables (or fruits) are placed directly in the boiling water. Blanching shortens the drying and rehydration time, sets color, retards enzyme action and kills many spoilage microorganisms.

Dipping is a pretreatment used to prevent fruits like apples, bananas, peaches and pears from oxidizing. Oxidation is the process that causes fruits to turn brown and lose some vitamin A and C when exposed to the oxygen in air. Common antioxidants are lemon or lime juice, ascorbic acid, commercial products containing either ascorbic or citric acid or a combination of both.

Lemon or Lime Juice - the most natural pre-dip. Use 1 cup of juice to 1 quart of water. Soak fruit for no longer than 10 minutes; drain before drying.

Ascorbic Acid - also known as vitamin C; available in drugstores. Dissolve 1 tablespoon to each quart of water. Hold fruit in solution no longer than 1 hour; drain before drying.

Commercial Antioxidants - available in the supermarket. Use according to package instructions.

The Drying Process

Temperature plays a key role in the drying process. If the temperature is too high, food may case harden; that is, cook and harden on the outside while trapping moisture on the inside. Generally, vegetables are dried at 125°F, fruits at 135°F and meats at 145°F.

There are other variables to consider when timing foods in a dehydrator: the amount of natural water in the food, the size and thickness of the food, the relative humidity of the air and even the efficiency of the dehydrator. Vegetables may take as little as 3 to 4 hours or up to about 14 hours to dry, depending on the above variables. For example, sliced mushrooms will probably dry in an average of 4 hours, while beets may take as long as 12 to 14 hours to dry.

Weight Loss Due to Dehydration

Testing fruits and vegetables for dryness can be done simply by tasting and touching or by using the following methods:

1. After peeling, coring, etc., weigh prepared produce. (For example, pared, cored and sliced apples weigh 10 pounds.)
2. See the recipes for the water content of fruit or vegetable (apples 84%).
3. The total weight of water = weight of prepared fruit x percent of water content ($10 \times 0.84 = 8.4$ pounds of water).
4. Most fruits need 80% of water removed; most vegetables need 95% of water removed. To find the weight of water to be removed, multiply the total weight of water by the percent of water to be removed. (For apples, $8.4 \times 0.80 = 6.72$ pounds of water to remove.)
5. To find how much the produce should weigh after dehydration, subtract the weight of water to be removed from the weight of the fresh product. (For apples, 10 pounds prepared apples - 6.72 pounds of water = 3.28 pounds of dried apples.) In this technique, if one starts out with 10 pounds of prepared apples, the apples will be sufficiently dehydrated when they weigh about 3½ pounds.

Storage

Any food-safe container that protects dried food from air, moisture, light and insects will extend its shelf life. Home canning jars have the advantage of keeping out these spoilers while providing a convenient "see-thru" container. Jars should be washed in very hot, soapy water (a dishwasher may be used), thoroughly rinsed and dried and allowed to cool completely before filling. Screw on two-piece caps; label; and date the finished product. Other containers suitable for dried foods include: heavy-duty, self-sealing or seal-by-heat food storage bag or metal containers like a coffee can, lined with a food-grade plastic bag and with a tight-fitting lid.

Store dried food in a cool, dry, dark place; the cooler the storage area, the longer the shelf life. Most fruits and vegetables can safely be stored from six months to one year, depending on temperature. Occasionally check dried fruits and vegetables for moisture. If moisture is apparent and no spoilage is evident, use product immediately or dehydrate again and repackage food.

Rehydrating Tips - The Final Facts for Enjoying Dried Food

Vegetables dried to 5% residual moisture take longer to rehydrate than fruit dried to 20% residual moisture content.

Small or thin pieces of fruits and vegetables rehydrate in less time than large pieces.

Blanched vegetables rehydrate more quickly than unblanched vegetables.

Boiling water shortens rehydration time.

Rehydration is quicker in soft water than in hard water.

Sugar and salt increase time for food rehydration; add at final 5 minutes for best results.

VEGETABLE BASICS

Most vegetables, from asparagus to zucchini, can be dehydrated at home. Select garden fresh, top quality produce for the best results. Remember

that although dried vegetables retain most of their vitamin and mineral content and good flavor, the original quality cannot be improved upon.

All vegetables require some preparation; such as removing stems, peel or seeds before drying. Like fruits, uniformly cut slices or pieces result in even drying. Unlike fruits, vegetables are better cut slightly smaller to hasten drying time. Vegetables lose flavor and tenderness if the drying time is prolonged. Drying time varies from about 4 to 14 hours. A temperature of 125°F is recommended for most vegetables. Finished vegetables should contain about 5% moisture. When tested, vegetables should look and feel crisp or brittle.

Home canning jars make excellent storage containers for vegetables, making it easy to remove needed quantities and reseal and store. Vegetables can be eaten dried, but they are usually reconstituted before using. An equal volume of water is needed. Boiling water will shorten the rehydration time. Generally, it takes 15 minutes to 2 or 3 hours, depending on the texture and thickness of the vegetables.

If a vegetable is not listed below, freezing or canning may be a more suitable method of food preservation.

ASPARAGUS

Choose young tender, green stalks. Wash; cut off tough end. Slice into 1-inch pieces. Steam blanch 3 to 4 minutes. Dry at 125°F until brittle. Rehydrate and serve in soups or with seasoned cream sauce. Water content 92%.

BEANS, GREEN or WAX

Choose Blue Lake, Tendergreen and Goldcrop Wax, or any variety with crisp thick walls and small seeds. Wash; snap off ends; cut diagonally into 1-inch pieces, or French cut to expose more surface area. Steam blanch 4 to 6 minutes. Freeze beans 30 minutes to tenderize before drying at 125°F until brittle. Rehydrate and use in casseroles, soups or stews. Water content 90%.

BEETS

Choose Morse Red, or Detroit Dark Red, or any fresh young variety with deep red color and smooth skins. Wash; remove all but one inch of top.

Steam about 30 minutes, or until tender. Cool; then peel; cut into ¼-inch slices or dice. Dry at 125°F until leathery. Use in soups or reconstitute as a vegetable. Water content 87%.

CARROTS

Choose Royal Chantenay, Imperator or Danvers Half Long, or any deep orange, mature variety. Wash; trim

FIGURE 22
FRESH WEIGHT VS. DRIED WEIGHT

FRUITS		VEGETABLES	
20 POUNDS PREPARED PRODUCE	DEHYDRATED POUNDS	20 POUNDS PREPARED PRODUCE	DEHYDRATED POUNDS
Apples	6½	Beans, Green, Wax	3
Cherries, Sweet	7	Carrots	3 to 3½
Peaches	6½ to 7	Corn	6
Pears	6½ to 7	Onions	3
Prune Plums	7½	Peas	5 to 5½
		Squash, Summer	2

tops; and peel. Slice crosswise or dice. Steam blanch 3 to 4 minutes. Dry at 125°F until almost brittle. Use in soups, stews, carrot cake. Water content 88%.

CORN

Choose any yellow variety with tender, sweet kernels. Shuck corn; remove silk. Steam until milk is set; carefully cut from cob. Dry at 125°F until brittle. Use in soups, chowders, fritters, or make corn meal. Water content 73%.

MUSHROOMS

Choose only edible cultivated mushrooms with small closed caps. Wash quickly to remove dirt; cut in 1/4-inch slices. Dry at 125°F until brittle. Use in soups, sauces and casseroles. Water content 90%.

OKRA

Choose Clemson Spineless or any firm pod 2 to 4 inches long. Wash; cut off ends; slice crosswise 1/4-inch thick. Dry at 125°F until leathery. Use in soups, gumbos, or rehydrate, bread, and fry in oil. Water content 89%.

ONIONS

Choose Red or White Creole, Yellow or White Globe, White Bermuda or White Sweet Spanish. Large, pungent white varieties dry best. Trim ends; peel off paper shell; cut into slices 1/4-inch thick. Dry at 145°F until crisp. Use in soups, stews, casseroles, or powdered or flaked for seasoning. Water content 89%.

PEAS

Choose a medium-sized pea such as Maestrol or Thomas Laxton. Shell peas. Steam blanch 3 minutes. Dry at 125°F until brittle. Use in soups, stews, or rehydrate. Water content 78%.

PEPPERS, HOT

Choose hot varieties, such as Jalapeno, Anaheim, Hungarian Wax and Long Red Cayenne. Protect hands with rubber gloves, and do not touch face or eyes. Wash; cut into pieces, about 1/4 to 1 inch. Dry at 125°F until crisp. Grind and use as a seasoning in soups, stews, casseroles, Mexican foods. Water content 93%.

NOTE: When cutting or seeding hot peppers, wear rubber gloves to prevent hands from being burned.

PEPPERS, SWEET BELL

Choose California Wonder, Bell Boy or Yolo Wonder, or any well-shaped sweet pepper. Wash; remove stem and seeds; dice. Dry at 125°F until leathery. Use to season other foods. Water content 93%.

POPCORN

Choose varieties specifically grown for popping: Japanese Hulless, Dynamite or Creme-Puff. Leave kernels on cob until dried. Dry at 130°F until shriveled. Test a few kernels to see if they pop. Popcorn should have a dehydrated moisture content of 10%. Water content 73%.

POTATOES

Choose any of Russet varieties. Wash well to remove dirt; peel. Cut into slices 1/4-inch thick. Steam blanch 5 to 6 minutes. Rinse well in cold water to remove starch. Dry at 125°F until crisp. Use in soups, casseroles, potato dishes. Water content 80%.

PUMPKIN

Choose fleshy variety such as Small Sugar. Wash; peel; remove fibers and seeds. Cut into small thin strips. Steam blanch 2 or 3 minutes, or until tender. Dry at 125°F until brittle. Use in pies and baked goods. Water content 90%.

SWEET POTATOES AND YAMS

Choose thick orange potatoes free from decay and blemishes. Wash; peel; and cut into 1/4-inch slices. Steam blanch 3 minutes. Dry at 125°F until brittle. Use to make candied yams or bake in pies and bread. Water content 71%.

TOMATOES

Choose paste-type varieties like San Marzano or Roma. Wash; dip in boiling water for 30 seconds, then cold water to remove skins. Core. Cut into slices 1/4-inch thick. Dry at 145°F until crisp. Use in soups, sauces or combined with other vegetables for flavor. Can be powdered and used in making tomato sauces, paste or catsup. Water content 94%.

TURNIPS, RUTABAGA

Choose firm, round turnips. Wash; remove tops; and peel. Cut into slices 1/4 to 1/2-inch thick. Steam blanch 3 to 5 minutes. Dry at 125°F until brittle. Use in soups and with potatoes. Thinly sliced turnip chips are an excellent snack. Water content: turnips 92%, rutabagas 87%.

ZUCCHINI

Choose young slender squash. Wash; cut into 1/4-inch slices or 1/8-inch slices for chips. Dry at 125°F until brittle. Use in soups, casseroles. Sprinkle zucchini chips with seasoned salt. Serve with dips. Water content 94%.

FRUIT BASICS

Sweet, ripe fruits in their natural state will be sweet and delicious when dried. As a rule, most fruits can be successfully dried, but a few are best eaten fresh; such as, avocados, citrus fruits and melons.

Some fruits like grapes, plums and blueberries have a waxy coating or "bloom" that must be "checked" or removed by dipping in boiling water before beginning the drying process. Other fruits, particularly temperate-zone stone fruits, such as peaches, plums and apricots, benefit by a technique called "popping the backs"; that is, pushing in the rounded side of cut fruits to expose more fruit surface to dry. It may take as long as 24 hours to properly dry stone fruit.

Uniformly cut slices or pieces of fruit will dry more evenly. Dried fruit should retain some moisture, about 15 to 20%. To test for dryness, cut a piece in half; no visible moisture should be present. The piece of fruit should be pliable and chewy. Bananas and strawberries should be almost crisp for best protection against mold spoilage.

Dried fruit is a natural, sweet tasting snack. However, there may be times when you will want to rehydrate the fruit for eating and serving. Nothing could be simpler: just barely cover the fruit with boiling water; wait ten minutes and serve or use in a favorite recipe.

APPLES

Choose Granny Smith, Jonathan, McIntosh, Rome Beauty, Winsap or any tart, firm-textured apple. Wash; peel; and core. Cut into 1/4 to 1/2-inch slices or rings. Pretreat by dipping. Dry at 130°-135°F until pliable. Use as a snack, for applesauce or in baked goods, like pies, cobblers or crisps. Water content 84%.

APRICOTS

Choose Blenheim/Royal, Tilton or any firm, ripe apricot with a deep yellow to orange color. Wash; cut in half; remove pits. Pretreatment by dipping is optional. Dry at 130°-135°F until pliable with no moisture pockets. Use as a snack, in meat dishes, salads or baked goods. Water content 85%.

BANANAS

Choose Cavendish or Martinique or any large, slightly brown speckled yellow variety. Peel and cut into 1/4 to 1/2-inch slices. Pretreatment by dipping is optional. Dry at 130°-135°F until pliable to crisp. Use in trail mixes, cookies, cakes, breads, on cereal or as a snack. Water content 76%.

BLUEBERRIES

Choose large, firm blueberries with deep blue color. Wash and remove stems. Dip in boiling water for 30 seconds to remove waxy coating. Blueberries dried without boiling first have a puffy appearance. Dry at 130°-135°F until leathery. Use like raisins in baked goods. Water content 83%.

CHERRIES

Choose sweet varieties (Bing, Lambert, Napoleon, Royal Ann) or sour varieties (Early Richmond, Montmorency). Wash; cut in half; remove pits. Dry at 165°F for 2 to 3 hours; then at 135°F until leathery, but slightly sticky. (Note: Cherries may be left whole but will take longer to dry.) Use sweet cherries as a snack or like raisins in baked goods. Use sour varieties in baked goods, like pies and cobblers. Water content: Sweet 80%, Sour 84%.

CITRUS PEEL

Choose peels from grapefruit, lemon, lime, orange or tangerine. Do not use fruit labeled color added. Wash well to remove surface dirt and pesticides. Cut a thin layer of peel from fruit, avoiding the bitter white portion. Dry at 135°F until crisp. Use as a flavoring in baked goods.

COCONUT

Choose fresh coconut that is heavy and full of coconut milk. Pierce eyes to remove milk, then crack the hard outer shell with a hammer. Remove coconut meat, discarding dark outer skin. Grate or thinly slice. Dry at 135°F until crisp. Use in pies, cakes, candy, trail mixes. Water content 51%.

GRAPES

(Home-dried raisins)

Choose Thompson seedless or red seedless varieties. Wash; remove stems; and leave whole. Dip in boiling water for 30-60 seconds to "check" skins. Dry at 130°-135°F until pliable with no moisture pockets. Use raisins in baked goods or as a nutritious snack. Water content 81%.

NECTARINES

Choose bright looking plump fruit with an orange-yellow color between red areas. Wash; cut in half; remove pits. Cut into 1/4 to 1/2-inch slices. Pretreatment by dipping is optional. Place on drying trays skin side down. Dry at 130°-135°F until pliable with no moisture pockets. Use as a snack or in baked goods. Water content 82%.

PEACHES

Choose either Clingstone or Freestone varieties. Peaches must be firm and ripe with no green color. Wash peaches; dip in boiling water for one minute, then in cold water, to loosen skins. Remove pits; cut into 1/2-inch slices or circles. Pretreat by dipping. Dry at 130°-135°F until pliable with no moisture pockets. Use as a snack or in baked goods, salads, desserts. Water content 89%.

PEARS

Choose Bartletts or other summer or winter varieties. Allow pears to ripen at home before drying. Wash; peel; and core. Cut into 1/2-inch slices, quarters or halves. Pretreatment by dipping is optional. Dry at 130°-135°F until leathery with no moisture pockets. Use as a snack or in baked goods. Water content 83%.

PINEAPPLE

Choose only fully ripe pineapples with a yellowish-brown shell and no decayed bottoms. Wash; peel; remove eyes; and core. Cut into 1/2-inch slices. Dry at 130°-135°F until leathery, but not sticky. Use as a snack or in baked goods and granolas. Water content 86%.

PLUMS

Choose any fully ripe sweet plums. Wash; cut in half; remove pits. Cut into 1/4 to 1/2-inch slices. Dry at 130°-135°F until pliable. Use as a snack, in puddings, muffins or breads. Water content 87%.

PRUNE PLUMS

(Homemade prunes)

Remember all prunes are plums, but not all plums can be prunes. Choose varieties such as California French, Stanley, Imperials and Italian. Ripe prune plums are slightly soft with a sweet flesh. Wash; cut in half; remove pits. "Pop the backs" to increase surface area. Dry skin side down at 130°-135°F until pliable with no moisture pockets. Use in breads, stuffings, salads, or as a snack. Water content 79%.

STRAWBERRIES

Choose ripe, juicy, fully red berries. Gently wash; remove caps. Cut into 1/2-inch slices. Dry at 130°-135°F until pliable to crisp. Use in puddings, yogurt, desserts or as a snack.

NOTE: Strawberries do not rehydrate well. Water content 90%.

MAKING FRUIT LEATHER

Fruit leather is pureed fruit dried and rolled into a chewy fruit taffy. It's a delicious, nutritious snack for lunch boxes, after school snacks or to tote along anywhere.

Apples, apricots, berries (all kinds), cherries, nectarines, peaches, pears, pineapple and plums make excellent fruit leathers. Be sure to remove excess seeds from berries. Bananas are wonderful blended with other fruits for a smooth, naturally sweet finished product. Fresh fruit in season has the best flavor, but don't overlook canned or frozen fruits any time of the year.

To make leather, wash fruit, cut away blemished areas, peel, if necessary, remove pits or seeds. Puree in a blender until smooth. If excessively thick, thin with a little water or fruit juice. Add a tablespoon of honey or corn syrup if the fruit is tart, or if desired. Spices or flavorings may be added at this time. Fruits that oxidize (apples, cherries, nectarines, peaches and pears) can be heated at about 190°F and then allowed to cool before proceeding to the dehydrator. Cover drying trays with a heavy food grade plastic wrap or use specifically designed sheets that come with most dehydrators. Spread the puree evenly, about 1/8-inch thick in the center to 1/4-inch thick at the edges. Dry at 135°F until it feels pliable and leather-like. Check center to be sure there are no sticky spots. Roll, jelly-roll style, while still warm; cut in pieces; and then seal securely in plastic wrap. Store the fruit leather in home canning jars for long-term storage.

MAKING BEEF JERKY

Jerky is raw meat or fish which is salted or marinated and then dried. Although most any kind of meat (lamb, pork, poultry or game) or fish may be used, beef jerky is the easiest with the most reliable results. Choose any very lean cut of beef: flank, round and sirloin tip are excellent choices. Rump, if it is lean, is a good choice. Use only a commercial or homemade electric food dehydrator. Do not attempt to dry meat in the sun for risk of spoilage and contamination.

Freeze meat slightly to aid in slicing. Cut beef in strips 1/2-inch thick across grain for a tender, but slightly brittle finished product, or with the grain for a chewy end product.

The meat must be "cured"; that is, treated in such a way to prevent spoilage. Dry cures are salt and seasonings rubbed on the meat surface. Brine "cures" are marinades or liquid season-

ing mixtures in which the meat is soaked for a period of time.

Dry in an electric dehydrator at 145°F. If fat droplets appear during the drying process, blot with a paper towel. To test a slice of meat, allow to cool. It should bend, but not break.

If the finished jerky is dry enough, it should be stored at room temperature in airtight containers such as home canning jars. If the finished jerky is slightly moist, it should be placed in plastic freezer containers and frozen. If there is too much moisture, jerky may become moldy. If there is too much fat, it may become rancid more rapidly. Beef jerky is an excellent source of protein, iron, phosphorus and riboflavin. One pound of beef will provide four ounces of jerky.

BARBECUED BEEF JERKY

- 3 pounds lean beef (flank, round or sirloin tip)
- 1 cup catsup
- 1/2 cup red wine vinegar
- 1/4 cup brown sugar
- 2 tablespoons Worcestershire sauce
- 2 teaspoons dry mustard
- 1 teaspoon onion powder
- 1 teaspoon salt
- 1/4 teaspoon cracked pepper

Dash of hot pepper sauce

Cut beef into strips 1/2-inch thick. Combine all marinade ingredients in a large glass baking dish. Add strips of beef, cover and refrigerate overnight. Drain beef slices. Dry in an electric dehydrator at 145°F until pliable. Package in home canning jars, food-grade plastic bags or seal-by-heat food storage bags.

SOY JERKY

- 3 pounds lean beef (flank, round or sirloin tip)
- 3/4 cup soy sauce
- 1/4 cup Worcestershire sauce
- 1/4 cup brown sugar
- 1 teaspoon onion powder
- 1 clove garlic, crushed
- 1/2 teaspoon cracked pepper
- 1/4 teaspoon liquid smoke (optional)

Cut beef into strips 1/2-inch thick. Combine marinade ingredients in a large glass baking dish. Add strips of beef, cover and refrigerate overnight. Drain beef slices. Dry in an electric dehydrator at 145°F until pliable. Package in home canning jars, food-grade plastic bags or seal-by-heat food storage bags.

DRIED APPLE PIE

- 3/4 pound dried apples
 - 1 quart apple cider
 - 1/2 cup sugar
 - 3 tablespoons cornstarch or flour
 - 1/2 teaspoon cinnamon
 - 1/4 teaspoon nutmeg
 - 2 tablespoons butter or margarine
- 9-inch pastry for double-crust pie
Combine apples and cider; simmer for 30 minutes until soft but not mushy. Drain apples, reserving 1/4 cup cider. Cool. In a large bowl, combine sugar, cornstarch and spices. Add apples and toss gently. Add the reserved 1/4 cup cider and toss again. Place apple mixture in a 9-inch pie plate lined with an unbaked pie shell. Dot with butter. Cover with pastry; crimp edges; and cut several steam vents. Bake pie on baking sheet in bottom of a preheated 425°F oven for 15 minutes. Reduce heat to 350°F and bake 30 minutes more.

FRUIT CRISP DESSERT

- 3 cups dried fruit (apples, apricots, cherries, peaches or pears)
- 3 cups boiling water
- 1/2 cup flour
- 1/2 cup butter or margarine, cut in small pieces
- 3/4 cup brown sugar
- 1 teaspoon cinnamon
- 1/4 teaspoon nutmeg
- 1/2 cup regular or quick oats
- 1 tablespoon cornstarch
- 1 tablespoon sugar

Cut dried fruit into small pieces. Cover with boiling water and let stand 30 minutes. Preheat oven to 350°F. Butter a square baking pan 8 x 8 x 2. Make a crumb topping by combining flour, butter, sugar, cinnamon and nutmeg. Add oats to mixture. Combine cornstarch and sugar; sprinkle over reconstituted fruit; mix well. Place fruit in buttered pan. Cover with crumb topping. Bake in preheated 350°F oven for 30 minutes, or until bubbly at edges.

STEWED FRUIT

- 3 cups dried fruit (apples, apricots, cherries, nectarines, peaches, pears, pineapple and prunes)
- 2 cups boiling water
- 1/4 cup lemon juice
- 1 lemon, sliced
- 2 cinnamon sticks
- 1/2 cup honey

Pour boiling water over dried fruit. Let stand about 15 minutes. Add lemon juice, lemon slices and cinnamon sticks. Simmer 20 minutes. Remove cinnamon sticks. Stir in honey.

PEACH AND PINEAPPLE JAM

- 1 pound dried peaches
- Peel of 1/2 orange
1/2 cup chopped orange pulp (about 1 large)
2 1/2 cups water
3 1/2 cups sugar
1 1/2 cups canned crushed pineapple with juice
1/4 teaspoon salt
1/2 teaspoon ginger

Rinse, drain and cut peaches into small pieces. Cut orange peel into 3 pieces. Cover fruit and peel with the 2 1/2 cups water; let stand overnight. Put fruit mixture in a large sauce pot. Add the remaining ingredients and bring the mixture to a rolling boil, stirring occasionally until mixture thickens. Discard the orange peel. Skim foam if necessary. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 6 half pints.

APRICOT LITE JAM

- 2 cups dried apricots
- 1 1/2 cups crushed pineapple, unsweetened (if using canned, drain)
- 1/2 cup chopped orange pulp (about 1 large)
- 2 tablespoons lemon juice
- 3 1/2 cups sugar

Cover apricots with cold water and let soak overnight. Simmer apricots in soaking water, uncovered, until tender. Mash with a potato masher or in a food processor. Add pineapple, orange, lemon juice and sugar to apricot mixture. Simmer until sugar has dissolved, stirring frequently; then cook over high heat until thick, about 20-30 minutes. Skim foam if necessary. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: 6 half pints.

BANANA NUT BREAD

- 1 cup dried banana chips or pieces
- 1³/₄ cups flour
- 2¹/₄ teaspoons baking powder
- ¹/₂ teaspoon salt
- ¹/₃ cup shortening
- ²/₃ cup sugar
- 2 eggs, slightly beaten
- ¹/₂ cup chopped pecans or walnuts

Rehydrate bananas in 1 cup water. Let stand 1 hour. Grease a 9 x 5 x 3 loaf pan. Sift together dry ingredients. Cream shortening and sugar. Add dry ingredients. Stir in eggs, bananas and nuts until just blended. Pour batter into greased pan. Bake in 350°F oven for 1 hour or until done. Cool.

PRUNE BARS

- 3 eggs
- 1 cup sugar
- 1 cup flour
- 1 teaspoon baking powder
- ¹/₈ teaspoon salt
- ¹/₂ teaspoon cinnamon
- 1 teaspoon vanilla
- 2 cups chopped dried prunes or dates
- 1 cup chopped walnuts

Powdered sugar

Grease and flour 9 x 13 inch baking pan. Beat eggs until light; gradually add sugar. Sift together dry ingredients. Blend into egg mixture; continue mixing until very light. Stir in vanilla, dried fruit and walnuts. Pour batter into prepared pan. Bake in preheated 325°F oven for 25 minutes. When cool, cut into bars and sprinkle with powdered sugar.

GRANOLA

- 4 cups uncooked regular or quick oats
- ¹/₂ cup wheat germ
- 1 cup coconut
- 1 cup slivered almonds
- 1 cup sunflower seeds
- ¹/₂ cup honey
- ¹/₂ cup brown sugar
- ³/₄ cup vegetable oil
- 1 teaspoon vanilla
- 1 teaspoon cinnamon
- ¹/₂ teaspoon salt
- 1 cup raisins

Combine all ingredients, except raisins, until well blended. Spread on a shallow baking sheet and bake at 300°F for 25-30 minutes, stirring every 10 minutes. Mixture may also be dried in an electric dehydrator at 145°F for about 3 hours, or until mixture is crunchy. Stir in raisins.

TRAIL MIX

- ¹/₂ cup each: almonds, dried apples, dried apricots, dried banana chips, coconut flakes, dried pears, dried pineapple, raisins and sunflower seeds.

Cut fruit into ¹/₂-inch pieces. Combine all ingredients; mix well. Store in home canning jars or plastic food bags. Makes 4¹/₂ cups.

GREEN BEANS WITH HAM

- 2 cups dried green beans
- 2¹/₂ cups boiling water
- 2 tablespoons butter or margarine
- ¹/₄ cup chopped onion
- ¹/₄ cup chopped celery
- ¹/₂ cup diced cooked ham
- ¹/₈ teaspoon pepper

Salt (optional)

Reconstitute dried green beans in 2¹/₂ cups boiling water. Let stand about 1 hour. In a large sauce pot, melt butter, saute onions and celery until soft; do not brown. Add ham and heat gently for 2-3 minutes. Add green beans and liquid. Simmer, covered, for about 30-40 minutes. Additional water may be added. Season with pepper and salt if needed. Serves 4.

VEGETABLE BEEF SOUP

- 1 large soup bone with meat, or two 10³/₄ ounce cans beef broth
- 2 cups dried mixed vegetables (carrots, peas, corn, potatoes, green beans, onions, etc.)
- 2 cups boiling water
- 1 cup tomato puree, sauce or whole tomatoes, crushed
- 1 teaspoon salt
- 1 beef bouillon cube
- 1 tablespoon parsley
- ¹/₄ teaspoon pepper
- ¹/₄ cup rice, barley or soup pasta

Water

Cover soup bone with water; bring to a boil; reduce heat; and simmer, covered, 1 to 2 hours. Meanwhile, rehydrate vegetables in 2 cups boiling water for up to 2 hours. Remove soup bone; cut off meat; and set aside. Measure out 3 to 4 cups of stock, or use canned broth. Combine beef stock, meat pieces, tomato puree, bouillon cube and seasonings; bring to a boil; reduce heat; and simmer 30 minutes. Add reconstituted vegetables and ¹/₄ cup rice, barley or soup pasta. More water may be added to soup if too thick. Simmer about 1 hour, or until vegetables are tender. Serves 6.

CORN CHOWDER

- 1 cup dried corn
- $\frac{1}{2}$ cup diced bacon
- $\frac{1}{4}$ cup diced onion
- $\frac{1}{2}$ cup diced celery
- $\frac{1}{4}$ cup diced green pepper
- 1 cup raw, peeled, diced potato
- 2 cups water
- $\frac{1}{2}$ teaspoon salt
- $\frac{1}{4}$ teaspoon pepper
- $\frac{1}{4}$ teaspoon paprika
- 2 cups milk

Chives

Rehydrate corn in 2 cups water. Let stand about 2 hours. Fry diced bacon until crisp. Remove bacon; set aside. Sauté onions, celery and green pepper in bacon drippings until golden brown. Add potatoes, water, salt, pepper and paprika; simmer about 45 minutes. Add milk and rehydrated corn and liquid. Simmer gently for 30 minutes. Do not boil. Add cooked bacon. Garnish with chopped chives.

AU GRATIN POTATOES

- 3 cups dried sliced potatoes
- 3 cups boiling water
- $1\frac{1}{2}$ cups grated cheddar or Colby cheese
- $\frac{3}{4}$ cup milk, heated
- 1 teaspoon salt
- $\frac{1}{8}$ teaspoon pepper

Butter or margarine

Paprika

Butter a 2-quart casserole. Place dried potatoes in a large bowl. Cover with boiling water and let stand 2 minutes. Add 1 cup grated cheese, milk, salt and pepper. Stir gently. Pour into buttered casserole. Bake, covered, at 375°F for about 35 minutes. Remove cover, add remaining $\frac{1}{2}$ cup cheese; sprinkle with paprika; and continue baking 25 more minutes, or until liquid is absorbed and potatoes are tender.

MIXED VEGETABLE

QUICHE

- $\frac{1}{2}$ cup dried mixed vegetables (corn, peas, green beans, onions, carrots, etc.)
- 2 cups milk or cream
- 3 eggs
- $\frac{1}{4}$ teaspoon salt
- $\frac{1}{8}$ teaspoon pepper
- $\frac{1}{2}$ cup shredded Swiss cheese

9-inch pastry for single-crust pie

Rehydrate mixed dried vegetables in $\frac{1}{2}$ cup boiling water. Let stand 1 to 2 hours or until vegetables are soft. Drain. Beat together cream, eggs, salt and pepper. Stir in mixed vegetables. Pour into a prepared pie shell. Top with Swiss cheese. Bake at 375°F for 35-40 minutes or until light golden brown and filling is set.



SOMETHING EXTRA

Creating a gift from the kitchen provides that extra special personal touch that you simply cannot buy, and it looks and tastes better than the most expensive brands in the store. Although the holiday season comes to mind for gift-giving, many of these recipes are best prepared throughout the year when fruits and vegetables are at their peak. Each recipe uses a different, but popular and easily obtained, main ingredient. Because they are processed, the finished jars can be stored until given as gifts.

APPLE-CINNAMON SYRUP

- 6 cups apple juice
- 3 sticks cinnamon, broken
- 4 cups water
- 5 cups sugar
- 3 cups corn syrup
- 1/4 cup lemon juice

Simmer apple juice and cinnamon sticks for 5 minutes. Mix sugar and water; boil to 260°F (adjust for altitude). Add apple juice and corn syrup to sugar syrup. Boil 5 minutes. Remove cinnamon sticks. Add lemon juice. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 3 pints.

BLUEBERRY SYRUP

- 2 quarts blueberries, rinsed and drained
- 2 cups water
- 1 tablespoon grated lemon peel
- 3 cups sugar
- 4 cups water
- 2 tablespoons lemon juice

Crush berries; add 2 cups water and lemon peel. Simmer 5 minutes. Drain through several layers of damp cheesecloth or jelly bag. Squeeze to extract juice and pulp from berries. Mix sugar and 4 cups water. Boil to 260°F (adjust for altitude). Add berry juice to sugar syrup. Boil 1 minute. Add lemon juice. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 3 pints.

STRAWBERRY SYRUP

- 2 1/2 quarts strawberries
- 1 1/2 cups water
- 1 2-inch strip of lemon peel
- 1 1/2 cups water
- 2 1/2 cups sugar
- 3 1/2 cups corn syrup
- 2 tablespoons lemon juice

Crush cleaned berries. Add 1 1/2 cups water and lemon rind. Simmer 5 minutes. Drain through several layers of damp cheesecloth or jelly bag to extract juice. Mix sugar and water. Boil to 260°F (adjust for altitude). Add berry juice and corn syrup to sugar syrup. Boil 4 minutes. Add lemon juice. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 3 pints.

MAPLE WALNUT SYRUP

- 1 1/2 cups corn syrup
- 1 cup maple syrup
- 1/2 cup water
- 1/2 cup sugar
- 2 cups walnut pieces

Combine corn syrup, maple syrup, water and sugar in a saucepan over medium heat. Bring to a boil, stirring occasionally. Reduce heat and simmer syrup about 15 minutes or until thick. Stir in nuts. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 4 half pints.

PRALINE SYRUP

- 2 cups dark corn syrup
- 1/3 cup dark brown sugar
- 1/2 cup water
- 1 cup pecan pieces
- 1/2 teaspoon vanilla

Combine syrup, sugar and water in a saucepan over medium heat. Bring to a boil; boil 1 minute. Remove from heat; stir in pecans and vanilla. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 4 half pints.

SPICED HONEY

- 1 lemon
- 12 whole cloves
- 3 sticks cinnamon
- 2 2/3 cups honey

Cut lemon into 6 thin slices. Place 2 cloves in each slice. Place lemon slices, cinnamon sticks and honey in a saucepan. Bring to a boil, stirring occasionally. Remove lemon slices from honey and place 2 lemon slices and 1 cinnamon stick in each jar. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 3 half pints.

CHABLIS JELLY

- 3 1/2 cups chablis
- 1/2 cup lemon juice
- 1 package powdered pectin
- 4 1/2 cups sugar

Combine wine, lemon juice and pectin in a large sauce pot. Bring to a rolling boil, stirring constantly. Add sugar and return to a rolling boil. Boil hard 1 minute, stirring frequently. Remove from heat. Skim foam if necessary. Pour hot into hot sterilized jars, leaving 1/4-inch head space. Process 5 minutes in boiling water bath. Yield: about 5 half pints.

CHAMPAGNE BLUSH JELLY

- 3 cups bottled raspberry juice
- 1/4 cup lemon juice
- 1 package powdered pectin
- 4 cups sugar
- 1 1/4 cups champagne

Combine raspberry juice, lemon juice and pectin in a large sauce pot. Bring to a rolling boil, stirring constantly. Add sugar and return to a rolling boil. Boil hard 1 minute, stirring constantly. Remove from heat. Skim foam if necessary. Stir in champagne. Pour hot into hot sterilized jars, leaving 1/4-inch head space. Adjust caps. Process 5 minutes in boiling water bath. Yield: about 6 half pints.

CRANBERRY CIDER JELLY

- 3 cups apple cider
- 1 cup cranberry juice cocktail
- 1 teaspoon lemon juice
- 1 package powdered pectin
- 5 cups sugar

Pour cider, cranberry juice cocktail and lemon juice into a large saucepot. Stir in pectin. Bring to a rolling boil. Add sugar and return to a rolling boil. Boil hard 1 minute. Remove from heat. Skim foam if necessary. Pour hot into hot sterilized jars, leaving 1/4-inch head space. Process 5 minutes in boiling water bath. Yield: about 6 half pints.

APPLE MAPLE JAM

- 3 quarts finely chopped apples (about 6 pounds)
- 6 cups sugar
- 1 cup maple syrup
- 1 teaspoon cinnamon
- 1/2 teaspoon allspice
- 1/2 teaspoon nutmeg
- 1/4 teaspoon cloves

Combine all ingredients in a large sauce pot. Bring slowly to a boil. Cook rapidly to jellifying point. As mixture

thickens, stir frequently to prevent sticking. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 8 half pints.

CHERRY ALMOND JAM

- 3 12-ounce bags frozen sweet cherries, thawed, drained
- $\frac{3}{4}$ cup almond liqueur
- 3 tablespoons lemon juice
- 1 package powdered pectin
- $4\frac{1}{2}$ cups sugar

Grind or finely chop cherries. Combine cherries, almond liqueur and lemon juice in a large sauce pot. Stir in powdered pectin. Bring to a rolling boil. Add sugar and return to a rolling boil. Boil hard 1 minute, stirring constantly. Remove from heat. Skim foam if necessary. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 6 half pints.

PLUM ORANGE JAM

- 5 cups pitted, finely chopped plums (about 3 $\frac{1}{2}$ pounds)
- 1 tablespoon grated orange rind
- 1 package powdered pectin
- $5\frac{1}{2}$ cups sugar
- $\frac{1}{4}$ cup orange-flavored liqueur

Combine plums, orange rind and pectin in a large sauce pot. Bring to a rolling boil. Add sugar and return to a rolling boil. Boil hard 1 minute, stirring constantly. Remove from heat; stir in orange-flavored liqueur. Skim foam if necessary. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 6 half pints.

STRAWBERRY KIWI JAM

- 3 cups crushed strawberries
- 3 kiwi, peeled and diced
- 1 tablespoon lemon juice
- 1 tablespoon minced crystallized ginger
- 1 package powdered pectin
- 5 cups sugar

Combine strawberries, kiwi, lemon juice, ginger and pectin in a large sauce pot. Bring to a rolling boil, stirring frequently. Add sugar and return to a rolling boil, stirring constantly. Boil hard 1 minute. Remove from heat. Skim foam if necessary. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 6 half pints.

CARAMEL SPICE APPLE BUTTER

- 4 pounds Rome apples
- $4\frac{1}{2}$ pounds Granny Smith apples
- 1 cup water
- 4 cups sugar
- 1 teaspoon cinnamon
- $\frac{1}{2}$ teaspoon cloves
- $\frac{1}{4}$ teaspoon ginger
- 2 tablespoons lemon juice

Wash apples and cut into pieces; combine with water in a large covered sauce pot. Cook until soft, about 30 minutes. Press through a food mill; measure 12 cups apple pulp; and return to sauce pot. Heat 2 cups sugar in a saucepan, stirring until sugar melts and turns a rich golden brown. Carefully pour into apple pulp. Sugar will crackle and harden. Add remaining 2 cups of sugar and spices. Cook, uncovered, about 1 hour or until apple butter thickens, stirring occasionally to prevent sticking. Stir in lemon juice. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: 6 half pints.

APRICOT AND DATE CHUTNEY

- 2 pounds dried apricots
- $2\frac{1}{2}$ cups pitted dates
- 3 cups brown sugar
- $2\frac{1}{2}$ cups raisins
- 2 cups white wine vinegar
- 2 cups water
- 1 tablespoon mustard seed
- 1 tablespoon salt
- 2 teaspoons ginger
- 1 teaspoon coriander

Soak apricots in water to cover for 30 minutes. Drain and place in large sauce pot. Chop the dates and add to apricots. Add remaining ingredients and simmer over low heat, stirring frequently until thick; about 1 hour. Pack hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: 12 half pints.

DANISH CHERRY SAUCE

- $4\frac{1}{2}$ pounds cherries (3 pounds pitted)
- 1 cup water
- $1\frac{1}{2}$ cups sugar
- $\frac{3}{4}$ cup corn syrup
- 3 sticks cinnamon
- $1\frac{1}{2}$ tablespoons almond extract

Wash and pit cherries. Combine water, sugar, corn syrup, cinnamon sticks and almond extract. Bring to a boil. Reduce heat to simmer. Add cherries

and simmer until hot. Remove cinnamon sticks. Ladle sauce into hot jars, leaving $\frac{1}{2}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: 3 pints.

To make sauce for ice cream or dessert, mix 1 tablespoon cornstarch with 2 tablespoons water. Add cherries and syrup. Heat to boiling, stirring constantly. Cook until mixture thickens and sauce becomes clear. Serve hot or cold.

NOTE: Do not add cornstarch before canning.

PLUM SAUCE

- 4 pounds plums
- 1 cup cider vinegar
- 2 cups brown sugar
- 1 cup white sugar
- 1-inch piece fresh ginger, minced
- 1 tablespoon salt
- 2 tablespoons mustard seed
- 2 tablespoons canned chopped green chili peppers
- $\frac{3}{4}$ cup chopped onion (about 1 medium)

- 1 clove garlic, minced

Pit and chop plums. Combine vinegar, sugars and seasonings. Bring to a boil; reduce heat; and add chopped plums. Cook until thick and syrupy, about $1\frac{1}{2}$ hours. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 20 minutes in boiling water bath. Yield: about 4 pints.

BRANDIED MINCEMEAT

- 2 quarts tart apples, pared, cored and diced (about 8 large)
- 4 cups cleaned cranberries (about 1 pound)
- 1 14-ounce package golden raisins
- 1 14-ounce package dark raisins
- 1 11-ounce package currants
- 1 12-ounce package figs, chopped
- $1\frac{1}{3}$ cups seeded and ground oranges (about 2 medium)
- 1 cup seeded and ground lemons (about 2 large)
- $\frac{1}{2}$ cup chopped candied orange peel
- $\frac{1}{2}$ cup chopped candied lemon peel
- 2 cups brown sugar, firmly packed
- 1 tablespoon cinnamon
- 2 teaspoons allspice
- 2 teaspoons nutmeg
- 1 teaspoon cloves
- 1 teaspoon ginger
- 1 quart apple cider
- $\frac{3}{4}$ cup brandy
- $\frac{1}{2}$ cup dry sherry

Combine all ingredients, except brandy and sherry, in a large sauce pot. Simmer gently about 1 hour, stirring occasionally. Remove from heat; carefully stir in brandy and sherry. Return to heat; simmer 30 minutes. Pour hot into hot jars, leaving 1/2-inch head space. Remove air bubbles. Adjust caps. Process 30 minutes in boiling water bath. Yield: about 6 pint and one half jars.

ALMOND PEARS

- 7 pounds pears
- 4 cups water
- 2 cups sugar
- 1/2 cup almond liqueur
- 1/3 cup blanched almonds

Peel pears; cut into halves; and core. Treat to prevent darkening. Rinse and drain. Cover one layer of pears at a time with water and simmer over low heat 5 minutes. Combine 4 cups water and 2 cups sugar in a sauce pot. Simmer until sugar dissolves, stirring frequently. Drain pears. Pack pears hot into hot jars, leaving 1/4-inch head space. Add 1 tablespoon almonds to each jar of pears. Remove sugar syrup from heat; stir in almond liqueur. Pour hot over pears, leaving 1/4-inch head space. Remove air bubbles. Adjust caps. Process 20 minutes in boiling water bath. Yield: about 5 pints.

BLACKBERRIES IN FRAMBOISE

- 3 pints blackberries
- 2 cups sugar
- 2 cups water
- 1 stick cinnamon, broken
- 1 tablespoon grated lemon peel
- 1/2 teaspoon freshly grated nutmeg
- 1/2 cup Framboise, raspberry brandy

Extract juice from 1 pint blackberries. Measure 1/2 cup juice and set aside. Combine sugar, water, cinnamon stick, lemon peel and nutmeg in a large sauce pot. Bring to a boil. Reduce heat and simmer 5 minutes. Strain syrup; return to sauce pot. Add blackberry juice, remaining blackberries and raspberry brandy; and reheat to a boil. Remove from heat. Pack blackberries into hot jars, leaving 1/2-inch head space. Pour syrup over blackberries, leaving 1/2-inch head space. Remove air bubbles. Adjust caps. Process 10 minutes in boiling water bath. Yield: about three 12-ounce jars.

BRANDIED APPLE RINGS

- 6 pounds firm, red apples
- 4 cups sugar
- 3 cups water
- Red food coloring (optional)
- 1 cup brandy

Wash and core apples; cut into 1/4-inch rings. Treat to prevent darkening. Bring sugar and water to a boil; boil 5 minutes. Add food coloring. Remove from heat, add rinsed and drained apple rings; let stand 10 minutes. Return to heat; bring to a boil; then simmer 30 minutes or until rings are desired color. Remove from heat; cool to room temperature. Remove apple rings from syrup. Bring syrup to a boil; remove from heat; and stir in brandy. Pack apple rings loosely into hot jars, leaving 1/4-inch head space. Pour hot syrup over apple rings, leaving 1/4-inch head space. Remove air bubbles. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 4 pints.

CURRIED FRUIT COMPOTE

- 3 pounds peaches, peeled and sliced
- 2 pounds apricots, peeled and halved
- 1 fresh pineapple, peeled and cut into chunks (about 5 pounds)
- 1 cantaloupe, cut into chunks or balls (about 4 pounds)
- 1/2 cup thinly sliced lime (about 1 small)
- 4 cups water
- 3 cups sugar
- 1/4 cup lemon juice
- 3 tablespoons curry powder

Treat peaches and apricots to prevent darkening while preparing other ingredients. Combine water, sugar, lemon juice and curry powder. Bring to a boil. Reduce heat and add peaches, apricots, pineapple and cantaloupe. Simmer just until fruit is hot through. Pack hot fruit into hot jars, adding 1 lime slice to each jar when filling. Leave 1/2-inch head space. Pour hot syrup over fruit, leaving 1/2-inch head space. Remove air bubbles. Adjust caps. Process 30 minutes in boiling water bath. Yield: about 4 quarts.

PINEAPPLE IN BROWN SUGAR RUM SYRUP

- 2 fresh pineapples (about 5 pounds each)
- 2 cups water
- 1 1/2 cups brown sugar
- 1/2 cup rum

Peel pineapple; remove eyes; and core. Cut into chunks. Combine water and brown sugar. Bring to a boil. Reduce heat and simmer 5 minutes, stirring occasionally. Add pineapple; simmer in syrup until heated through. Remove from heat; stir in rum. Pack hot into hot jars, leaving 1/4-inch head space. Remove air bubbles. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 4 pints.

PLUMS 'N PORT

- 8 pounds plums
- 3 cups sugar
- 3 cups water
- 3 tablespoons slivered orange peel
- 2 sticks cinnamon
- 2 cups tawny port

Prick plums with sterilized needle to prevent bursting. Combine sugar, water, orange peel and cinnamon sticks in a large sauce pot. Bring to a boil. Reduce heat and simmer a few minutes. Add plums, a layer at a time to heat through, about 2 minutes. Remove plums from syrup. Peel skins, if desired. Pack hot plums into hot jars, leaving 1/2-inch head space. Reheat syrup to a boil. Remove from heat; discard cinnamon sticks. Stir in port. Pour over plums, leaving 1/2-inch head space. Remove air bubbles. Adjust caps. Process 20 minutes in boiling water bath. Yield: about 3 quarts.

PICKLED PINEAPPLE

- 2 cups brown sugar
- 1 cup red wine vinegar
- 1 cup unsweetened pineapple juice
- 3 sticks cinnamon, broken
- 1/2 teaspoon whole allspice
- 1/4 teaspoon whole cloves
- 2 fresh pineapples (about 5 pounds each)

Combine brown sugar, vinegar and pineapple juice in a large sauce pot. Add spices tied in cheesecloth bag. Cover; simmer 20 minutes. Peel pineapple; remove eyes; and core; cut into spears. Add pineapple to syrup; simmer until heated through. Drain; reserve syrup. Heat syrup just to a boil; remove spice bag. Pack hot pineapple into hot jars, leaving 1/4-inch head space. Pour hot syrup over pineapple, leaving 1/4-inch head space. Remove air bubbles. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 4 pints.

SPICY MELON PICKLES

- 13 cups cantaloupe cut into 1" cubes or balls
- 3 cups vinegar
- 2 cups water
- 2 sticks cinnamon
- 2 teaspoons whole cloves
- 1 teaspoon whole allspice
- 1 teaspoon slivered, whole nutmeg
- 4½ cups sugar

Combine vinegar and water in a large sauce pot. Tie spices in a cheesecloth bag and add to vinegar mixture. Bring to a boil. Reduce heat and simmer 5 minutes. Remove from heat; add melon; and let stand 1½ to 2 hours. Add sugar to sauce pot. Bring to a boil, stirring to dissolve sugar. Reduce heat and simmer 45 minutes or until cantaloupe becomes slightly transparent. Pack melon balls into hot jars, leaving ¼-inch head space. Pour hot syrup over melon balls, leaving ¼-inch head space. Remove air bubbles. Adjust caps. Process 10 minutes in boiling water bath. Yield: about five 12-ounce jars.

CRANBERRY APPLE RELISH

- 4 cups cleaned cranberries, chopped
- 1 pound apples
- 2½ cups brown sugar
- 1 cup water
- ½ teaspoon cinnamon
- ½ cup chopped walnuts

Peel, core and chop apples. Combine cranberries, apples, brown sugar and water in a large sauce pot. Simmer over medium heat for 15 minutes, stirring frequently. Stir in cinnamon and walnuts; cook 5 minutes. Pour hot into hot jars, leaving ¼-inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 5 half pints.

CRANBERRY ORANGE VINEGAR

- 1 cup cranberry juice
- 1 cup sugar
- 3 cups white wine vinegar
- ½ cup cranberries
- 2 sticks cinnamon
- 4 whole cloves
- 2 orange slices

Combine cranberry juice and sugar in a large sauce pot; cook over medium heat until sugar is dissolved. Add white wine vinegar, cranberries, cinnamon sticks and whole cloves. Bring to a boil. Reduce heat and simmer, covered, 10 minutes. Remove whole cloves and cinnamon sticks. Place 1 orange slice in each jar. Pour hot vinegar into hot jars, leaving ¼-inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 2 pints.

JARDINIERE

- 1 pound sweet green peppers, cut into strips (about 3 medium)
- 12 ounces zucchini, sliced (about 4 small)
- 8 ounces carrots, cut into sticks (about 5 medium)
- 1¼ pounds onions, sliced (about 3 medium)
- 3⅔ cups sliced celery (about 6 stalks)
- 4 banana peppers, cut into strips
- 8 ounces mushrooms, sliced
- 1 quart cider vinegar
- 1½ cups water
- 1 cup sugar
- 2 tablespoons mixed pickling spice
- 1 teaspoon oregano
- 2 teaspoons basil
- 1 teaspoon peppercorns
- 1 clove garlic, minced
- 1 teaspoon salt

Prepare vegetables; set aside. Combine vinegar, water, sugar and spices in a large sauce pot. Bring to a boil; reduce heat to a simmer. Add vegetables and simmer until just tender. Pack hot vegetables into hot jars, leaving ¼-inch head space. Pour hot pickling liquid over vegetables, leaving ¼-inch head space. Remove air bubbles. Adjust caps. Process 20 minutes in boiling water bath. Yield: about 6 pints.

PICKLED CALICO VEGETABLES

- 6 cups cauliflowerets (about 1 large head)
- 1 cup peeled pickling onions
- 2 cups chopped green peppers (about 2 medium)
- 2 cups sliced carrots (about 4 large)
- ¼ cup canning salt
- 1 quart vinegar
- 1½ cups sugar
- 2 teaspoons mustard seed
- 2 teaspoons celery seed
- 2 teaspoons hot pepper sauce

Combine vegetables and salt in a large mixing bowl. Cover with ice; let stand 3 hours. Drain vegetables; rinse well. Combine vinegar, sugar, mustard seed, celery seed and hot pepper sauce in a large sauce pot. Bring to a boil; add vegetables and simmer 5 to 7 minutes. Pack hot into hot jars, leaving ¼-inch head space. Remove air bubbles. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 5 pints.

PICKLED THREE BEAN SALAD

- 1½ pounds green beans
- 1½ pounds wax beans
- 1 pound lima beans
- 2 cups sliced celery (about 3 stalks)
- 1 8-ounce onion, sliced (about 1 large)
- 1 cup diced sweet red pepper (about 1 medium)
- 2½ cups sugar
- 3 cups vinegar
- 1¼ cups water
- 1 tablespoon mustard seed
- 1 teaspoon celery seed
- 4 teaspoons canning salt

Wash beans; trim ends; cut into 1½-inch pieces. Shell lima beans. Combine beans, celery, onion and pepper in a large sauce pot. Cover with boiling water; cook 7 to 8 minutes. Drain. Bring sugar, vinegar, water, mustard seed, celery seed and salt to a boil. Simmer 15 minutes. Add drained bean mixture. Heat to a boil. Pack hot into hot jars, leaving ¼-inch head space. Remove air bubbles. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 5 pints.

SPICY PICKLED BEETS

- 4 pounds beets, cooked
- 3 cups thinly sliced onions (about 3 medium)
- 2½ cups cider vinegar
- 1½ cups water
- 1 teaspoon salt
- 2 cups sugar
- 1 tablespoon mustard seed
- 1 teaspoon whole allspice
- 1 teaspoon whole cloves
- 3 sticks cinnamon, broken

To cook beets: Wash and drain beets. Leave 2 inches of stems and the tap roots. Cover with boiling water and cook until tender. Remove peel. Combine remaining ingredients in a large sauce pot. Bring to a boil. Reduce heat and simmer 5 minutes. Add beets and cook until heated. Remove cinnamon sticks. Pack hot beets into hot jars, leaving ¼-inch head space. Pour hot pickling liquid over beets, leaving ¼-inch head space. Remove air bubbles. Adjust caps. Process 30 minutes in boiling water bath. Yield: about 4 pints.

SWEET AND SOUR PEPPER RELISH

- 4 cups finely chopped sweet green peppers (about 4 medium)
- 1 cup finely chopped banana peppers (about 6 large)
- 3 cups chopped green cooking apples (about 3 large)
- 2 cups chopped cabbage (1/2 small head)
- 2 tablespoons salt
- 3 cups cider vinegar
- 3 cups sugar
- 1 teaspoon mustard seed
- 1 hot red pepper (optional)

Combine chopped peppers, apples, cabbage and salt. Let stand 2 hours. Drain well. Combine vinegar, sugar and mustard seed in a large sauce pot. Cut two small slits in hot red pepper. Add to vinegar mixture. Bring to a boil; reduce heat. Add drained pepper mixture and simmer about 10 minutes. Remove hot red pepper. Pack hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 7 half pints.

NOTE: When cutting or seeding hot peppers, wear rubber gloves to prevent hands from burning.

ZESTY SALSA

- 10 cups peeled, cored, chopped red-ripe tomatoes (about 6 pounds)
- 5 cups seeded, chopped long green peppers (about 2 pounds)
- 5 cups chopped onion (about 1 1/2 pounds)
- 2 1/2 cups seeded, chopped hot peppers (about 1 pound)
- 1 1/4 cups cider vinegar
- 3 cloves garlic, minced
- 2 tablespoons cilantro, minced
- 3 teaspoons salt
- 1 teaspoon hot pepper sauce (optional)

Combine all ingredients in a large sauce pot. Bring mixture to a boil. Reduce heat and simmer 10 minutes. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 15 minutes in a boiling water bath. Yield: about 6 pints.

NOTE: When cutting or seeding hot peppers, wear rubber gloves to prevent hands from burning.

TACO SAUCE

- 3 cups tomato paste
- 5 cups water
- 1 cup cider vinegar
- 1/2 cup corn syrup
- 2 tablespoons chili powder
- 1 tablespoon salt
- 1 teaspoon cayenne pepper
- 1/2 teaspoon hot pepper sauce

Combine all ingredients in a large sauce pot. Bring to a boil. Reduce heat and simmer about 1 hour or until thick. Stir frequently as mixture thickens to prevent sticking. Pour hot into hot jars, leaving 1/4-inch head space. Adjust caps. Process 30 minutes in boiling water bath. Yield: about 6 half pints.



CANNING FOR A FEW

For today's smaller families, having a pantry full of preserved foods isn't always necessary, especially if those who do the canning are preparing foods exclusively for home use.

So, in order to keep preserved foods from sitting on the shelf too long—and to ensure their freshness once they are opened—it makes sense to put up smaller batches in smaller containers.

This section provides a variety of delicious recipes for the "small-batch" home canner. By following these specially-tested recipes, even the smallest family can enjoy all the goodness of home-canned foods.

APPLE SAUCE

7-8 pounds apples
Sugar (optional)

Wash; pare; quarter; and core apples. Simmer, covered, in a small amount of water until tender. Press apples through sieve or food mill. Sweeten sauce to taste. Bring to a boil. Pour hot into hot jars, leaving $\frac{1}{2}$ -inch head space. Remove air bubbles. Adjust caps. Process 20 minutes in boiling water bath. Yield: about 5 pints.

TANGY TOMATO JUICE

10 pounds tomatoes
 $\frac{1}{3}$ cup lemon juice
1 teaspoon hot pepper sauce

Fresh dill
Wash and drain fresh ripe tomatoes. Peel; core; and cut into small pieces; simmer until soft. Press tomatoes through a food mill. Add lemon juice and hot pepper sauce to tomato juice; bring almost to a boil. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Add a sprig of dill to each jar. Adjust caps. Process 40 minutes in boiling water bath. Yield: about 5 pints.

PEARS

5 pounds pears
4 cups water
2 cups sugar

Wash pears. Cut into halves or quarters; core; and pare. Treat to prevent darkening. Drain. Combine water and sugar in a large sauce pot. Simmer until sugar dissolves, stirring frequently. Cook pears 5 to 6 minutes in hot syrup. Pack hot into hot jars, leaving $\frac{1}{2}$ -inch head space. Pour hot syrup over pears, leaving $\frac{1}{2}$ -inch head space. Remove air bubbles. Adjust caps. Process 20 minutes in boiling water bath. Yield: about 4 pints.

ITALIAN TOMATO SAUCE

1 cup finely chopped onion (about 1 medium)
2 cloves garlic, minced
2 tablespoons olive oil
5 pounds tomatoes, peeled and cored
1 cup finely chopped green pepper (about 1 medium)
1 tablespoon each basil, oregano and Italian seasonings
1 teaspoon salt
 $\frac{1}{2}$ teaspoon pepper

Cook chopped onions and garlic in oil in a large sauce pot until tender. Add remaining ingredients and simmer about 1 hour, stirring occasionally. Press mixture through food mill; discard seeds. Cook mixture over medium-high heat until thickened, about 1 hour. Stir frequently to prevent sticking. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 35 minutes in boiling water bath. Yield: about 4 half pints.

CARROT AND ORANGE MARMALADE

6 tablespoons grated lemon peel (about 2 large)
4 tablespoons grated orange peel (about 1 medium)
4 cups grated raw carrots (about 6 large)
1 cup freshly squeezed orange juice (about 2 medium)
 $1\frac{1}{3}$ cups freshly squeezed lemon juice (about 4 large)
6 cups water, divided
Sugar (about 7 cups)

Grate the peels of 1 orange and 2 lemons. Combine peels and 3 cups water. Cook until tender, about 30 minutes. Add grated carrots and remaining 3 cups water. Cook 20 minutes more or until carrots are tender. Add orange and lemon juice. Measure the mixture. For each cup, add $\frac{2}{3}$ cup sugar. Bring to a boil, stirring until sugar is dissolved. Cook to jelling point, about 45 minutes, stirring frequently. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 3 half pints.

BLUEBERRY SAUCE

6 cups blueberries
2 cups unsweetened crushed pineapple, undrained
1 teaspoon grated orange peel
 $\frac{1}{4}$ teaspoon cinnamon

Combine ingredients in a large sauce pot. Simmer for 10 minutes, stirring

occasionally. Pour hot into hot jars, leaving $\frac{1}{2}$ -inch head space. Adjust caps. Process 15 minutes in boiling water bath. Yield: about 4 half pints.

STRAWBERRY BUTTER

2 quarts strawberries
2 cups sugar
2 tablespoons lemon juice

Wash and hull berries. Press through a sieve or food mill. Measure 5 cups of puree; add sugar and lemon juice. Let stand 2 to 3 hours. Bring to a boil. Reduce heat. Simmer until thick, about 1 hour, stirring occasionally. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 3 half pints.

RED PEPPER RELISH

1 quart finely chopped sweet red peppers (about 9 small)
1 tablespoon salt
1 cup sugar
1 cup vinegar

Combine peppers and salt in a large sauce pot. Let stand 3 to 4 hours. Add remaining ingredients. Cook until thick, about 35 minutes, stirring frequently. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 3 half pints.

ZUCCHINI RELISH

2 cups chopped zucchini (about 3 medium)
1 cup chopped onion (about 1 medium)
 $\frac{1}{2}$ cup chopped sweet green pepper (about 1 small)
 $\frac{1}{2}$ cup chopped sweet red pepper (about 1 small)
2 tablespoons salt
 $1\frac{3}{4}$ cups sugar
1 cup cider vinegar
2 teaspoons celery seed
1 teaspoon mustard seed

Combine zucchini, onion, green and red peppers; sprinkle with salt; and cover with cold water. Let stand 2 hours. Drain vegetables; press out liquid. Combine remaining ingredients; bring to a boil. Add vegetables; simmer 10 minutes. Pour hot into hot jars, leaving $\frac{1}{4}$ -inch head space. Adjust caps. Process 10 minutes in boiling water bath. Yield: about 4 half pints.

BEANS, GREEN, SNAP AND WAX

5 pounds fresh beans
Salt (optional)

Wash; drain; string; trim ends; and break or cut beans into 2-inch pieces. Boil beans 5 minutes. Pack hot into hot jars, leaving 1-inch head space. Add $\frac{1}{2}$ teaspoon salt to each pint, if desired. Cover with boiling water, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process 20 minutes at 10 pounds pressure. Yield: about 5 pints.

COUNTRY VEGETABLE SOUP

3 cups beef stock
3 cups peeled, cored, chopped
tomatoes (about 5 large)
2 cups peeled, cubed potatoes
(about 2 medium)
2 cups sliced carrots (about
4 medium carrots)

2 cups fresh corn (about
5 medium ears)

1 cup chopped onion (about
1 medium)

$\frac{1}{2}$ cup diced celery (about 1 stalk)

Combine all ingredients in a large sauce pot. Boil 5 minutes. Pour hot into hot jars, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process 55 minutes at 10 pounds pressure. Yield: about 6 pints.

MINTED PEAS

8 pounds fresh peas
Fresh mint
Salt (optional)

Wash; drain; and shell peas. Wash again. Boil small peas (less than $\frac{1}{4}$ ") 3 minutes, larger ones ($\frac{1}{4}$ " to $\frac{1}{3}$ ") 5 minutes. Drain; rinse in hot water; drain. Pack hot into hot jars, leaving 1-inch head space. Add a sprig of mint to each jar. Add $\frac{1}{2}$ teaspoon salt to each jar, if desired. Cover with boiling water, leaving 1-inch head space. Remove air bubbles. Adjust caps. Process 40 minutes at 10 pounds pressure. If peas are large, process 10 minutes longer. Yield: about 4 pints.

GLOSSARY OF CANNING, FREEZING AND DRYING

- acid** — Food which normally contains enough acid to result in a pH of 4.6 or lower. Foods which may contain very little natural acid, but which are preserved in vinegar, are treated as acids in canning. Acid foods may safely be processed in a boiling water bath canner at 212°F. Included are fruits, rhubarb, tomatoes, sauerkraut, pickles and relishes, jams, jellies and preserves.
- antioxidant** — A chemical agent that inhibits oxidation, such as ascorbic acid (Vitamin C), and which controls discoloration of fruits.
- ascorbic acid** — White, crystalline Vitamin C found in some fruits and vegetables. A commercially available brand is used to control discoloration of fruits.
- bacteria** — Microorganisms, some of which are harmful, found in the soil, water and air around us. Certain bacteria produce harmful toxins and must be destroyed in food that is to be preserved. Some bacteria thrive in conditions common in low-acid canned food, and can be neutralized only by superheating to 240°F. For this reason, low-acid foods must be processed in a steam pressure canner.
- band** — (See metal band.)
- blanch** — To loosen the skin of fruits and vegetables by scalding. Also, to scald vegetables in boiling water or steam to slow the actions of enzymes. Submerge produce in boiling water. Start counting blanching time as soon as produce is placed in the boiling water. Blanch for specified time. Drain; cool in ice water.
- boil** — Water or food heated to 212°F at sea level. Boiling water, when referring to the boiling water bath canner, means a rolling boil for the entire processing time. Water which is simmering reaches only about 180°-185°F and is not hot enough to sterilize the food and jars.
- boiling water bath canner** — A kettle large enough to immerse completely and fully surround canning jars for processing of food. The boiling water bath canner is used for sterilizing acid foods and their containers.
- botulism** — A poisoning caused by a toxin produced by the growth of spores of *Clostridium botulinum*. The spores are usually present in dust, wind and soil clinging to raw foods. The 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 do not normally thrive in acid foods. The spores are destroyed when low-acid foods are correctly processed in a pressure canner. 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 must be boiled for 15 minutes before tasting 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.
- can** — n. A tin-coated steel container in which food is preserved. tr. v. canned, canning, cans. To seal foods in a can or jar to preserve for future use.
- cap** — Two-piece vacuum closure for sealing mason canning jars. The set consists of a metal screw band and a flat metal lid with a flanged edge, the underside of which has a rubber-like sealing compound.
- case harden** — Formation of a hard shell on the outside of produce that traps moisture inside and causes deterioration.
- citric acid** — An acid derived from citrus fruits, such as lemons and limes, and used as an antioxidant to control discoloration of fruits or to acidify tomatoes.
- cold pack** — See raw pack.
- cool place** — Used when referring to storage of canned jars of food. Ideally, a cool place should be around 50°F.
- dehydration (or drying)** — The process of removing water from food.
- dry pack** — When freezing food, to pack without added liquid syrup.
- enzyme** — A protein that functions as a catalyst in organisms. In food, enzymes start the process of decomposition, changing the flavor, texture and color. Enzyme action slows down in frozen food, increases quickly at temperatures between 85° and 120°F, and stops at temperatures above 140°F. Thus, both freezing and processing during canning neutralize the action of enzymes.
- exhausting** — See venting.
- fermentation** — Caused by yeasts which have not been destroyed during processing of canned food, or yeasts which enter the food before it is sealed. With the exception of some pickles, fermented canned 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. The jars of pickles should then be processed in a boiling water bath canner to prevent further fermentation.
- flat-sour** — A heat-resistant organism common in canned vegetables, caused by bacteria, which gives food an unpleasant, sourish flavor. Flat-sour is easily avoided by the use of correct and sanitary methods of selecting, handling, preparing, packing, processing and cooling foods.
- freezer burn** — Dehydration of improperly packed food for freezing, leading to loss of flavor, texture and color.
- head space** — An area left unfilled between the top of the food in a jar and the inside bottom of the lid. In canning, too little space can cause food to boil out of the top of the jar, possibly ruining the seal; too much head space can cause exposed food at the top of the jar to discolor and can prevent a proper seal, since all of the air may not be vented, preventing the formation of a vacuum. When freezing, standard home canning jars should not be used as inadequate head space may cause the jar to break when the food expands from the cold.
- hot pack** — Filling jars with precooked hot food prior to processing during canning. Preferred method where food is firm; permits tighter pack, reduces floating and requires fewer jars.
- jar** — A glass container, sometimes called a mason jar, which is specially designed and heat-treated for use in home canning.
- lid** — Usually refers to the flat metal disc with a flanged edge and a sealing compound on its underside, used in combination with metal screw bands for sealing jars.

low-acid — Food which contains little natural acid and has a pH above 4.6. All vegetables, except tomatoes, and all meats, poultry, seafood, mushrooms and soups are in the low-acid group. Bacteria thrive in low-acid foods and can be neutralized only by superheating to 240°F for the prescribed time in a pressure canner.

microorganism — A living plant or animal of microscopic size, including molds, yeasts and bacteria, which can cause spoilage in canned or frozen food.

metal band — A threaded screw band that is used with a metal vacuum lid to form a two-piece metal cap.

mold — Microscopic fungi that grow as silken threads and appear as fuzz on food. Molds thrive on acids and can produce toxins, but are easily destroyed at processing temperatures between 140° and 190°F.

open kettle — An old style method of canning, no longer considered safe, in which food is cooked in an open sauce pot and then quickly put into jars and sealed without further processing.

overnight — About 12 hours.

pectin — A complex colloidal substance found in ripe fruits, such as apples. Pectin is available commercially in powdered and liquid form and is used to make jellies and soft spreads gel.

pH — Potential of hydrogen — A measuring system in chemistry for determining the acidity or alkalinity of a solution. In canning, foods are separated into acids and low-acids, and different processing techniques must be used for each.

pickling — Preserving food, especially cucumbers, in a solution of brine or vinegar, often with spices added. Processing of pickled products is necessary, since harmful microorganisms may enter the food when transferring from pickling container to jars.

pressure canner — A heavy kettle with a lid which can be clamped on to make a steam-tight fit. The lid is fitted with a safety valve, a petcock (vent) and a pressure gauge. The steam pressure canner is used for processing low-acid foods, since the steam under pressure reaches 240°F, adequate for destroying harmful bacteria which thrive in these foods.

pretreatment — Blanching or treating produce with an antioxidant to set color, retard enzyme action or destroy bacteria.

processing — Sterilizing jars and the food they contain in a pressure or boiling water bath canner to destroy harmful molds, yeasts, bacteria and enzymes.

raw pack — Filling jars with raw, unheated food prior to processing.

rehydration or reconstitution — Restoring water (liquid) to dried food.

scald — See blanch.

simmer — To cook gently just below the boiling point in the range between 180° and 200°F. At these temperatures, bubbles rise gently from the bottom of the pot and the surface is slightly disturbed.

superheating — Heating above the boiling point under pressure without causing vaporization. The pressure canner superheats water to 240°F to kill harmful bacteria in low-acid foods.

syrup — A mixture of water or juice and sugar used to add liquid to canned or frozen products.

vacuum seal — 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, the air and food inside expand, forcing air out and decreasing the inside pressure. As the jar cools and the contents shrink, a partial vacuum forms, and atmospheric pressure of almost 15 pounds per square inch holds the lid down to keep the jar sealed. The sealing compound on lids prevent the air from reentering.

venting — Forcing air to escape from a jar by applying heat, or permitting air to escape from a pressure canner. Also called exhausting.

wet pack — To pack fruits in sugar syrup or plain sugar for freezing.

yeast — Microscopic fungi grown from spores that cause fermentation in food. Yeasts are inactive in food that is frozen and are easily destroyed by processing at temperatures from 140° to 190°F.

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Dear Consumer:

As with any quality publication, much time, effort and expense has been put into this edition of the *Ball* Blue Book® guide to food preservation. The result is a practical, easy-to-use guide for both beginners and experienced home canners.

One of the key factors in our continuing success is the flow of information and ideas from the millions of dedicated home canners just like you. In fact, ideas for some of the recipes in this book have come from kitchens across the country and around the world.

Our job, of course, is the testing and refinement of these recipes in order to assure you a safe, reliable and delicious final product.

But our responsibilities go much further. Beyond creating and testing recipes, we carry out seminars and demonstrations; provide educational materials for schools, colleges and universities; and respond personally via mail to consumer questions.

So, we invite you to participate in our pursuit of home canning excellence. Write us. We're glad to answer any questions, listen to your suggestions, or send you a free copy of the CONSUMER NEWSLINE™.

Sincerely,

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