

BEGINNER'S GUIDE TO HOME CANNING

Canning is probably the most economical and practical method of preserving food at home. Among other things it is a way to save food that otherwise might be wasted.

Cost of home canning depends on the kinds and sources of food canned as well as the processing methods, containers, and equipment used. Other cost factors - labor, energy, water and added ingredients - make exact cost figures impossible to apply generally, but studies are reporting averages that show canning to be economical.

The wise homemaker will can only the amount to be used within a year. Food held longer will be safe to eat if it has a good seal and no signs of spoilage, but there may be nutrient or quality loss, especially if stored at temperatures above 70 degrees F.

As a beginning canner you need to know something about micro-organisms, including yeasts, molds and bacteria, on the food, in water, air and soil, as causes of spoilage in foods. Knowing about these minute forms of life, which are so abundant everywhere, will help make the work safer as well as more interesting.

In addition to the action of these minute organisms, the spoiling of fruits and vegetables is hastened by natural changes in color, flavor and texture of the food. These changes result from the action of enzymes or micro-organisms found in nature which break down and decompose foodstuffs.

Bacteria are the most serious foes to combat in canning because they are more difficult to kill by heat than either molds or yeasts. Acid in canned food is expressed as pH value. Foods having a pH of 4.5 or lower are called high-acid foods, and those with a value of 4.6 or higher are termed low-acid foods.

The following are some common low-acid vegetables: asparagus, beans (snap or shelled), beets, carrots, corn, potatoes, pumpkin, squash, and sweet potatoes.

Apples, apricots, berries, cherries, grapefruit, peaches, pineapple, rhubarb, and tomatoes are examples of high-acid fruits and vegetables.

Since few bacteria thrive in acids, their destruction is less difficult in fruits than in vegetables (with the exception of tomatoes).

Botulism is a deadly poison caused by a toxin from the growth of spores (seeds) of the bacteria, *Clostridium botulinum*. These spores will produce a deadly toxin in low-acid foods in the absence of air (oxygen) inside a sealed jar. Therefore, the spores must be destroyed by processing under pressure at 240 degrees F. The length of time has been determined by scientists for each individual food.

Clostridium botulinum will not grow in foods with a pH of 4.5 or lower, so high-acid foods may be processed safely in boiling water at 212 degrees F.

Yeasts, mold and non-spore forming bacteria are readily controlled by processing at 212 degrees F.

Most canning equipment and supplies may be purchased at hardware stores, housewares departments, and from mail order companies. Jars and lids are available in many retail stores.

Canning Jars

Select standard canning jars made of tempered glass that can withstand high temperatures. The manufacturer's name or symbol in glass will

identify the product. With careful handling, jars last an average of about 10 years. Avoid using antique jars because there can be hair-line cracks not visible to the eye, causing jars to break.

Use canning jars in sizes suitable for the product canned and your family's needs. Canning jars generally are sold in half-pint, pint and quart sizes with wide and narrow mouths. Large-mouth jars are convenient for packing such foods as whole tomatoes and peach halves. Quart jars are convenient for vegetables and fruits where your family has four or more members.

Examine the sealing edge of jars for nicks, cracks, or sharp edges that would prevent a seal. Discard any with these imperfections.

One-trip jars from purchased canned foods should not be used because they generally are not tempered to withstand the high heat required for home canning, and may break when subjected to the heat. Tops of these jars may not fit standard canning lids, thus preventing a good seal.

Closures - jar lids and rings come with new canning jars. The sealing compound of lids recommended for one use only will not hold a seal effectively after the first use.

Select lids appropriate for the jars being used. You may find the two-piece units (flat lid with sealing composition and ring), one-piece lids, or flats with separate gaskets made of metal or plastic. Always follow the instructions for pretreatment as indicated on the box or container by the manufacturer. If no name is indicated on the lid, use a black wax marking pencil or crayon and mark the identity on each lid. If there are problems, contact the manufacturer whose name and address is on the box or container.

Screw ring bands may be reused if kept clean and dry in a protective

container with a tight-fitting lid. Never use bands with rust, or pried up or bent edges. If you have extra lids, store them protected in a dry, cool place.

One-piece zinc caps lined with white porcelain, with rubber rings, may be used. The caps may be reused if they have not cracked, spread or bent at the edges and are clean, like new. The rubber rings are effective only once because they tend to dry and deteriorate with age, often become porous, and sometimes crack.

If you have jars with bail wire clamps, sometimes called "lightening" type jars, be sure they are not in the "antique" class. Lids for these jars are all glass, and rubber rings are used between the jar and lid for sealing. A wire clamp holds the lid in place during processing; after processing, the short spring wire of the clamp is snapped down to complete the seal.

A boiling water bath canner is needed for processing high-acid foods such as fruits, tomatoes, tomato and fruit juice, and pickles.

Water bath canners in several styles are available on the market. The container must be deep enough for a rack to hold the jars off the bottom of the canner. The depth allows water to be over the jars of food by at least 1 to 2 inches. Keep 1 to 2 inches of space above the water to allow for boiling; this prevents water from boiling over.

The canner must have a tight-fitting lid. Or you can use a large kettle with a tight-fitting lid, and a wooden or wire rack to hold jars off the bottom. There should be free circulation of water to every part of the surface of the jar and lid.

If you are going to buy a water bath canner, check the height, and the lid to be sure it is tight-fitting. The rack preferably should have dividers so jars will not touch each other or fall against the sides

of the canner or each other during processing.

A steam pressure canner is absolutely essential in canning low-acid foods, such as vegetables, and insures the destruction of spoilage micro-organisms.

Ten pounds pressure is used for processing food in standard canning jars at sea level. This pressure corresponds to 240 degrees F.

The steam pressure canner is made of heavy metal that withstands high pressure developed by steam. It consists of a kettle with a tight-fitting lid equipped with an accurate weight or dial gage to register the pounds of pressure in the canner. The lid must lock or seal to prevent escape of steam.

The canner must have a safety valve petcock or steam vent that can be opened or closed to permit exhausting (venting), and a pressure gage. It must have a rack to hold jars at least one-half inch from the bottom of the canner. A dial gage indicates pressure on a numbered instrument.

A weighted gage has no dial, but automatically limits pressure with weights preset for 5, 10, and 15 pounds pressure.

This pressure is adjusted for high altitude. For information on high altitude canning, check with your county extension office.

To insure the canner's proper working condition, check the dial gage for accuracy each year - or if a canner or lid has been roughly handled or dropped, the dial gage glass broken, or any parts are rusty. The manufacturer or your county Extension office can give information on testing availability. Study and follow the manufacturer's directions for using your pressure canner.

Run through the process of operating the pressure canner on your range in a trial run before you get into the canning season, to be sure everything is working properly. Make a note of the dial setting of the range if you use an electric range for holding pressure steady.

Trying to use a pressure canner obtained from garage, rummage, or auction sales or handed down to you from someone's attic may prove dangerous. You may not have any idea as to the care, handling, or storage of the canner. A manufacturer manual on care, use and replaceable parts usually is not available. Old-old canners did not have complete information - manufacturer's name, address or model number - on the appliance.

General kitchen equipment is helpful in any needed washing, peeling, coring and slicing in the preparation of fruits and vegetables. Examples are, a vegetable brush for cleaning vegetables, a blancher or wire basket for scalding fruits and vegetables such as tomatoes and peaches to loosen skins for peeling, and a colander for washing delicate fruits such as berries.

A food mill is handy for making purees and straining fruits for making juices, and a strainer for straining juice. A long handled fork or plastic spatula aids in fitting and packing food and removing air bubbles. A wide-mouth funnel is very convenient for filling jars, and a jar lifter helps you avoid burns in handling hot jars. Use an automatic timer to time processing accurately.

The number of pints of preserved food you will get from a given quantity of fresh food depends on the quality, variety, and maturity of the fruit or vegetable; on the size of the pieces, and on the packing method used.

Selection of good sound fruits and vegetables is of paramount importance. The quality of canned fruits and vegetables will be no

better than the quality of the raw food used. For best flavor retention, preserve only those vegetables that are young, tender, and freshly gathered.

Work Fast

All steps, from beginning to end, of any lot of canning should be carried through as rapidly as possible. A good slogan is "two hours from harvest to container".

Work fast with small amounts of food at a time, especially vegetables with high starch content such as corn and peas which lose quality rapidly. Any delay will result in loss of flavor and nutritive value.

Sorting and grading should be done very carefully, according to size and degree of maturity and ripeness.

Use only uniformly well-ripened products. Discard all defective products and use together those of the same size.

Dirt in seeds, bits of food, or syrup contains bacteria that is hardest to kill, and encourages yeasts and molds to grow on the outer surfaces. Wash fruits and vegetables thoroughly before canning.

Scalding, peeling and coring - some fruits, such as peaches and tomatoes, are scalded in order to peel them smoothly.

Follow up-to-date recommendations, available in U.S. Department of Agriculture or Extension publications, for detailed procedures in preparing fruits and vegetables for canning.

Packing Methods

You can pack food hot or raw in jars. Hot-packed food is heated

thoroughly before it is packed into jars. Raw-packed food is placed raw in jars. Watery and soft foods such as tomatoes are pressed gently to make their own juice.

Air, a poor conductor of heat, should be removed from the jar. Remove air bubbles by gently moving the blade of a plastic spatula or plastic knife around the jar - being careful that the food is not broken. Add more boiling liquid if necessary to get a proper fill.

When filling jars, you will find the jar-filling funnel easy to manage. This makes it possible to avoid spills of seeds, bits of food, or syrup that could prevent sealing. But even when using a funnel you still need to wipe the jar rim.

Prepare the lids and sealing of jar according to the manufacturer's directions. When using a flat metal lid, place the composition side on the rim of the jar. Add the ring band and screw it down until firm, but not hard enough to cut through the sealing compound. The lid will have enough "give" to let air escape during processing. This is called venting and means heating to remove air from jars.

When using porcelain-lined zinc caps, fit the wet rubber ring on the jar shoulder, but do not stretch it more than necessary. Screw the cap firmly and turn it back one quarter inch.

Use a jar lifter or tongs and place the filled jars on the rack in the canner. Fill and place jars in the canner one at a time.

WET BATH

Before you begin preparing the food, fill the water bath canner half full of hot water. This permits water to heat while you prepare the food. Put a large kettle or teakettle of water on to boil.

The water should be boiling when hot-pack food is put in the canner.

Place raw-pack jars in water that is hot (180 to 190 degrees F), just below boiling. Then bring it to a boil after adding jars.

As the rack of jars is lowered into the water, the water level will rise. If more water is needed to have the jars completely covered by 2 inches of water, add boiling water.

Prepare only enough jars of food at one time to fill the canner. Work rapidly, allowing as little time as possible between filling and closing the jars and getting them into the canner.

Start counting processing time as soon as the water in the canner reaches a gently rolling boil. Put the lid on the canner. Set your timer or clock and make a written note of starting time and final time. Keep the water boiling all during the processing period. If water boils down, add boiling water sufficient to keep it at the required height. When pouring water, avoid letting it hit tops of the jars.

Process for the recommended length of time. Do not cut processing time.

Pressure Canner

Follow the manufacturer's directions for operation of your pressure canner before, during and following processing. Supplement these directions with information in U.S. Department of Agriculture or Extension publications.

Count processing time as soon as the pressure reaches 10 pounds or the proper pressure adjusted for altitude. Be sure to hold pressure steady.

At end of the processing time, remove the canner from the heat. Allow the canner to cool until the gage registers zero to avoid breakage of jars and loss of liquid from jars. After a minute or two, open the petcock gradually and remove the cover. If a weighted gage is used, nudge the weight slightly. If no steam escapes, pressure is down. Tilt the far side of the lid upward so steam escapes away from your hands and face. Because food in the jars may be boiling vigorously, leave jars in the canner about five minutes and then remove them.

After Processing

When you remove hot jars from the canner, use a jar lifter, or protect your hands with cooking mitts, pot holders or canvas gloves. Set the jars upright to cool on a rack, such as a cake rack, or a bread or cutting board, with double layers of dry cloth or newspapers beneath the jars. If jars are placed on a cold surface or wet cloth, the difference in temperatures may cause the glass to crack.

Avoid placing jars in a draft, but leave two or three inches between them so air can circulate freely. Avoid further tightening of lids that have sealing compound, since this usually breaks the seal - unless the lid manufacturer states it is safe to tighten.

If your processing temperature was not held steady and liquid boiled out in processing, do not open the jar to add more. Leave the sealed jar just as it is.

Do not cover jars because this slows down cooling and food continues to cook.

If you have an air conditioning vent that will direct cold air on jars, cover the vent during this canning session.

After 12 hours, check the seals. The vacuum may cause a loud snap of the two-piece vacuum seal while it cools, which is an indicator of an airtight seal. If the center of the lid holds down when pressed and the lid does not move, it is sealed. Tap the center of the lid with a spoon - a clear, ringing sound indicates a good seal; a thudding sound indicates the possibility of an imperfect seal.

If there is a sealing failure, you will need to reprocess the jars. Remove the lid, heat the food and liquid, fill a clean jar and use a new lid. Process the full length of time. If only a few jars did not seal, you may elect to refrigerate and use the food within a day or two or freeze it.

Once the jar is sealed, allow it to set until cold. Then remove the screw ring band, wash and store in a dry place for reuse. For safety make a routine check of canned foods each month.

Label and Inventory

Write name of product and date canned on a gummed label or the lid of each jar with a felt tip pen. Keep a record of food canned, date, number of quarts or pints, and a place for you to check them off as you use them. This can be your guide for next year's preservation plan.

Use food preserved for the current year, readying a storage place for next season's garden produce.

Canned foods stored in a dry, dark, cool temperature (70 degrees F or below) will retain good eating quality for a year. Home canned foods stored in a warm place near direct sunlight, hot pipes, above a range or refrigerator, or in kitchen cabinets may lose some eating quality within a few weeks. Dampness may corrode lids and cause leakage so that the food spoils.

The main cause of spoilage in canned foods is improper processing. Bulging jar lids, or a leak, may mean gas is present and the food spoiled.

Before opening home canned foods wash jars and lids and carefully inspect the jars. Bacteria, yeasts and molds should have been destroyed if the food was properly processed.

When you open the container, look for such danger signs as spurting cloudy or frothy liquid, an "off" color, deterioration, or slimy texture. A foamy or murky appearance and patches of mold are visible signs of spoilage. That ordinary looking mold on home- canned food may indicate the presence of a much more deadly problem: botulism.

The odor in good jars of food should be pleasant and characteristic of the product. Do not use food which looks or smells bad, or if there is any doubt as to its safety.

Destroy food if any of these signs are obvious; discard out of reach of humans and animals.

All low-acid, home-canned food should be boiled 10 to 20 minutes to ensure destruction of botulism-causing toxin for added safety. Heating denatures the toxin so that it does not react with the body. Never taste home canned food before cooking it.

Successful results largely depend upon the accuracy with which up-to-date directions are followed.

Safety is best assured when you exercise special care as you prepare and pack food into canning jars, fitting jars with properly pretreated lids, and heating jars of food to a high enough temperature for a sufficient length of time to kill micro-organisms that cause spoilage.

HOME CANNING OF FRUITS AND VEGETABLES

Canning in the home is increasing in popularity as a method of food preservation. Economic considerations are causing consumers to look for ways to stretch their food dollars. By having their own gardens and canning the harvested produce, they often can save money. Eating quality of home-canned products encourages some individuals to can. The activity of growing or obtaining produce and preserving it in the home sometimes gives people a sense of personal achievement and satisfaction.

In canning, food is preserved by applying heat to prepared food in containers so that micro-organisms that cause spoilage or food poisoning are destroyed and enzymes that cause undesirable quality changes in the flavor, color, and texture of food are inactivated. Preservation of food by canning also depends on sealing the food in sterile, airtight containers to prevent it from coming in contact with micro-organisms in the environment.

Canning is not a difficult technique, but it must be done properly to avoid spoilage and food poisoning, such as the often fatal botulism. It is extremely important that only tested reliable instructions are used, such as those found in U.S. Department of Agriculture publications. Based on scientific research, specific instructions have been developed for preparing, packing, and processing each food. Instructions should be followed exactly from beginning to end--without taking any shortcuts or altering any recipes.

Acidity of the food is the chief factor in influencing the time and temperatures necessary for processing. The more acid the products, the easier spoilage organisms are destroyed by heat. Acid foods-- such as tomatoes, fruits, and pickled vegetables--can be safely processed at the temperature of boiling water in a boiling-water- bath canner. If

spoilage organisms are not killed by adequate processing, they will continue to grow and could reduce the acid in the canned product, thus encouraging the growth of more dangerous organisms, such as CLOSTRIDIUM BOTULINUM.

Low-acid foods--all vegetables, except for tomatoes--require a more severe heat treatment than acid foods to kill the organisms. The only safe way to can these foods is with a steam-pressure canner, one with a weighted or dial gage, to obtain temperatures above boiling. Clostridium botulinum is extremely dangerous in these low-acid foods because if it is present, and the heat treatment has been insufficient, it can grow and produce a deadly toxin in the sealed containers.

Processing times are based on sea level conditions where water boils at 212 degrees F or, when under 10 pounds of pressure, at 240 degrees. As the altitude increases, the temperature at which water boils decreases. Therefore, at altitudes above sea level you need to make adjustments in canning instructions to insure that foods are adequately processed.

When using a boiling-water-bath canner you must add more time in processing. For every 1,000 feet in altitude, increase processing time by one minute if the recommended time is 20 minutes or less. If the recommended time is more than 20 minutes, increase processing time by two minutes per 1,000 feet of altitude.

At altitudes above sea level it takes more than 10 pounds of pressure for the temperature of boiling water to reach 240 degrees F.

When using the steam-pressure canner, the pressure must be increased although the time remains the same as that recommended for sea level. At altitudes above 2,000 feet, process as follows:

ALTITUDE POUNDS OF PRESSURE

2,000 feet 11
4,000 feet 12
6,000 feet 13
8,000 feet 14
10,000 feet 15

Equipment

Use jars made especially for home canning so the jars will be the right size for the processing time and temperature used, properly heat tempered, and resistant to mechanical shock. Always check jars before using to be sure they do not have nicks or cracks. Wash jars in hot, soapy water and rinse well.

It is important to use standard jar closures. They are designed to fit home canning jars correctly, and are made from suitable materials to provide a proper seal. One of the most popular types is the two-piece lid with a metal ring or band and a flat metal disk with a sealing compound. Flat metal disks can be used only once since they may not seal properly if reused. Metal bands may be used repeatedly if they are not rusted or dented.

Wash and rinse lids and bands. Metal lids with sealing compound may need boiling or holding in boiling water for a few minutes; follow the manufacturer's directions. Porcelain-lined zinc caps with rubber shoulder rings can also be used to seal jars. Rubber rings should be used only once.

Water-bath canners are readily available on the market. However, any large metal container may be used for a water-bath canner if it is deep enough so the water is well over the tops of the jars and has space to boil freely. Allow 2 to 4 inches above jar tops for brisk boiling. The container or canner must have a tight fitting cover and a rack to allow water to circulate under the jars.

The steam-pressure canner is made of heavy metal and has a cover which fastens to make the pan steam-tight. The cover is fitted with a safety valve, a petcock or vent, and a gage--either weighted or dial. All parts of the canner must be clean and in good working order. Check the gage before the canning season, and also during the season if canner is used often. The weighted ones need only be checked to determine if they are thoroughly clean. A dial gage can be tested for accuracy by a county Extension agent or an equipment manufacturer.

A pressure saucepan may be used for canning pint jars of food. However, 20 minutes must be added to the processing time recommended for a particular food canned with the pressure canner. This is because pressure saucepans heat and cool more rapidly than pressure canners do. Thus additional time is needed to compensate for the otherwise reduced exposure of the food to heat.

Selecting and Preparing

Home-canned foods will be no better than the raw products with which you begin. Fruits and vegetables should be of good quality with no bruises or soft spots. Be sure to choose fresh, firm, ripe fruits and young tender vegetables.

Use them before they lose their freshness. Do not use overripe produce because some foods lose acidity as they mature, and the recommended processing time may not be adequate.

Wash all fruits and vegetables thoroughly, but gently, to remove dirt which contains bacteria. Wash small quantities at a time under running water or through several changes of water. Lift fruits and vegetables out of the water so the dirt will not resettle on the food. Do not let fruits or vegetables soak, as they may lose flavor and food value. Peel and cut or slice produce as indicated in instructions for each

specific fruit or vegetable.

Fruits and vegetables may be packed raw into jars, or preheated and packed hot. Raw or cold pack means that raw, unheated food is placed in jars and covered with boiling hot sirup, juice, or water. When foods are hot packed they are heated in sirup, water or steam, or juice for a specified length of time and then packed hot into jars.

Most raw fruits and vegetables can be packed fairly tightly into containers because they cook down during processing. However, raw corn, lima beans, and peas should be packed loosely because they expand during processing.

Hot food should be packed fairly loosely. It should be at or near the boiling temperature when packed. There should be enough sirup, water, or juice to fill in around the solid food in the container and to cover the food. Food at the top of the container may darken if not covered with liquid.

Do not overpack containers as this may result in underprocessing. It is necessary to leave headspace between the lid and the top of the food or liquid in the jar because there will be some expansion of food during processing. The amount of headspace varies with the product, style of pack, and method of heat sterilization, so follow directions for each fruit or vegetable.

When using the flat metal lid with sealing compound, put the lid on a clean jar rim, with sealing compound next to the glass. Then screw the metal band down firmly. The lid will still have enough "give" to let steam escape during processing. Do not tighten the band further after removing the jar from the canner.

When using the porcelain-lined zinc cap, fit the wet rubber ring down on the jar shoulder. Fill the jar and wipe clean the rubber ring and

jar rim. Screw the cap down firmly and turn back 1/4 inch. When the jar is removed from the canner, tighten the cap to complete the seal.

Processing Fruits

Sugar or sugar-water sirup is often added to fruits to help them hold their shape, color, and flavor. Sugar can be added in the dry form to very juicy fruits.

To make sugar sirup--mix sugar with water or juice extracted from the fruit.

Proportions for 3 types of sirup are as follows:

Thin sirup: 2 C sugar to 4 C liquid Medium sirup: 3 C sugar to 4 C liquid Heavy sirup: 4 3/4 C sugar to 4 C liquid

Heat sugar and water or juice together until sugar is dissolved.

Fruit may be canned without sweetening--in its own juice or in water--for special diets. Processing time is the same for unsweetened fruit as for sweetened because sugar is not needed to prevent spoilage.

Process fruits by the boiling-water-bath method. Work only with the quantity of food needed for one canner load at one time. As each jar is filled, adjust the lid, and place the jar on the rack in the water-bath canner about one-half full of hot or boiling water for raw or hot pack, respectively. Be sure the water is 1 to 2 inches over the tops of the jars, and there is an additional 1 to 2 inch space to allow the water to boil freely.

Cover the canner and when the water comes to a rolling boil, start to count the processing time. Boil gently and steadily for the recommended time for the fruit you are canning. A definite length of time is recommended for processing each kind of fruit.

When the processing time is completed, immediately remove the jars

from the canner with a pair of jar tongs. Adjust the jar lids if necessary. Cool the jars on a rack or folded towel away from drafts.

Processing Vegetables

A steam-pressure canner must be used for processing all vegetables except tomatoes and pickled vegetables. Work only with the quantity of vegetable needed for one canner load at a time. As each jar is filled, adjust the lid, and place the jar in the pressure canner containing 2 to 3 inches of hot or boiling water for raw or hot pack, respectively, to keep food hot.

The manufacturer's directions for general operation of the canner you are using should be followed. A few pointers on the use of any canner follow:

- Use 2 to 3 inches of boiling water in the bottom of the canner.
- Set filled containers on rack in canner.
- Fasten canner cover securely.
- Allow steam to escape from open petcock or weighted gage opening for at least 10 minutes to drive all air from canner. Then close petcock or put on weighted gage.
- When processing time is completed, remove the canner from heat immediately.

Cool undisturbed at room temperature until the pressure registers zero. After a minute or two, slowly open the petcock or remove the weighted gage. Unfasten the cover and tilt the far side up so steam escapes away from you.

- Remove containers from canner with jar tongs.
- Adjust lids if necessary.
- Cool jars on a rack or folded towel away from drafts.

Day-After Check

Jars should be examined after they have cooled, but within 24 hours

after processing, to be sure a seal has been obtained. To test a jar that has a flat metal lid, press the center of the lid; if the lid is down and will not move, it is sealed. Turn jars with porcelain-lined zinc caps partly over in your hands; if they do not leak, they are sealed.

When jars are thoroughly cooled, metal screw bands should be carefully removed.

Wipe outside of jars clean, and label jars to show date and contents. Store in cool dry place. If you find a jar that did not seal, use food right away or re-can the food immediately; empty the jar, pack and process the food as if it were fresh.

Look for Spoilage

Check dates on jar labels to be sure you first use food that has the earliest processing date. Before opening any jar for use, look at it carefully for spoilage signs. If it leaks, has a bulging lid, spurts liquid when opened, or has an off-odor or mold, then do not use it. Do not even taste it. Destroy it out of the reach of children and pets.

Canned vegetables may contain the toxin that causes botulism without showing any visible signs of spoilage. Therefore, boil all home-canned vegetables covered for at least 10 minutes before tasting or serving. Heating generally makes any odor of spoilage more evident.

If the food appears to be spoiled, foams, or has an off-odor during heating, destroy it.

How to Can Cut Green Beans*

1. Select green beans: Choose young, tender beans. Allow 1 1/2 to 2 1/2 pounds of fresh beans for each quart to be canned

2. Prepare green beans: Wash beans Trim ends Cut into 1-inch pieces
3. Pack into jars:

TO PACK RAW-- Pack raw beans tightly into jar Leave 1/2-inch space at top of jar Add 1/2 teaspoon salt to pints; 1 teaspoon quarts Cover with boiling water to 1/2 inch from top of jar Wipe jar rim clean Adjust jar lid Process in pressure canner at 10 pounds pressure (240 degrees F)

Pints--20 minutes

Quarts--25 minutes (At altitudes above sea level, increase pressure according to instructions in early part of text)

TO PACK HOT-- Cover cut beans with boiling water; boil 5 minutes Pack hot beans loosely into jar to 1/2 inch of top Leave 1/2-inch space at top of jar Add 1/2 teaspoon salt to pints; 1 teaspoon to quarts Cover with boiling water to 1/2 inch from top of jar Wipe jar rim clean Adjust jar lid Process in pressure canner at 10 pounds pressure (240 degrees F)

Pints--20 minutes

Quarts--20 minutes (At altitudes above sea level, increase pressure according to instructions given earlier) 4. Allow pressure to return to 0 5. Remove jars from canner 6. Complete seals, if necessary

*These instructions are for green beans only. Procedures and processing times are specific for each vegetable. See USDA Home and Garden bulletin No. 8, Home Canning of Fruits and Vegetables for directions for canning other vegetables.

How to Can Peaches*

1. Select peaches: Choose fresh, firm, ripe fruit, with no soft spots or bruises Allow 2 to 3 pounds of fresh peaches for each quart to be canned
2. Prepare peaches: Dip in boiling water; then in cold water Slip off skins Cut in halves and remove pits. Slice if desired

3. Prevent darkening: Drop peeled peaches into solution of 2 tablespoons each of salt and vinegar per gallon of water Drain just before heating or packing raw

4. Pack into jars:

TO PACK RAW-- Pack raw peaches in jar to 1/2 inch of top Cover with boiling sirup (See sirup table) Leave 1/2-inch space at top of jar Wipe jar rim clean Adjust jar lid Process in boiling-water bath--

Pints--25 minutes

Quarts--30 minutes (At altitudes above sea level, increase processing time according to table near start of text)

TO PACK HOT-- Heat peaches through in hot sirup (See sirup table).

If fruit is very juicy, heat it with sugar, adding no liquid. Pack hot fruit in jar to 1/2 inch of top Cover with boiling sirup Leave 1/2-inch space at top of jar Wipe jar rim clean Adjust jar lid Process in boiling-water bath--

Pints--20 minutes

Quarts--25 minutes (At altitudes above sea level, increase processing time according to table near start of text) 5. Remove jars from canner 6. Complete seals, if necessary

*These instructions are for peaches only. Procedures and processing times are specific for each fruit. See USDA Home and Gardening bulletin No. 8 Home Canning of Fruits and Vegetables for directions for canning other fruits.