

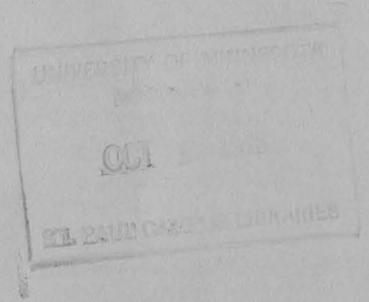
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# Freezing Fruits and Vegetables

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# Freezing Fruits and Vegetables

Freezing is a quick and convenient way to preserve fruits and vegetables at home. It is a popular method of home food preservation throughout Minnesota. Home frozen fruits and vegetables of high quality and maximum nutritional value can be produced if the directions below are followed. These directions are based on:

1. the chemical and physical reactions which take place during the freezing process;
2. scientific knowledge of the effect of freezing on the tissues of fruits and vegetables; and
3. food microbiology.

## CHEMICAL CHANGES DURING FREEZING

Fresh fruits and vegetables, when harvested, continue to undergo chemical changes which can cause spoilage and deterioration of the product. This is why these products should be frozen as soon after harvest as possible and at their peak degree of ripeness.

Fresh produce contains chemical compounds called enzymes which cause the loss of color, loss of nutrients, flavor changes, and color changes in frozen fruits and vegetables. These enzymes must be inactivated to prevent such reactions from taking place.

Enzymes in vegetables are inactivated by the blanching process. Blanching is the exposure of the vegetables to boiling water or steam for a brief period of time. The vegetable must then be rapidly cooled in ice water to prevent it from cooking. Contrary to statements in some publications on home freezing, in most cases blanching is absolutely essential for producing top quality frozen vegetables. Blanching also helps to destroy microorganisms on the surface of the vegetable and to make some vegetables, such as broccoli and spinach, more compact.

The major problem associated with enzymes in fruits is the development of brown colors and loss of vita-

min C. Because fruits are usually served raw, they are not blanched like vegetables. Instead, enzymes in frozen fruit are controlled by using chemical compounds which interfere with deteriorative chemical reactions. The most common control chemicals are ascorbic acid (vitamin C) or sodium bisulfite. Ascorbic acid may be used in its pure form or in commercial mixtures of ascorbic acid and other compounds, such as "Fruit Fresh."

Some directions for freezing fruits also include temporary measures to control enzyme-activated browning. Such temporary measures include soaking the fruit in dilute vinegar solutions or coating the fruit with sugar and lemon juice. However, these latter methods do not prevent browning as effectively as treatment with ascorbic acid or sodium bisulfite.

Another group of chemical changes that can take place in frozen products is the development of rancid oxidative flavors through contact of the frozen product with air. This problem can be controlled by using a wrapping material which does not permit air to pass into the product. It is also advisable to remove as much air as possible from the freezer bag or container to reduce the amount of air in contact with the product.

## TEXTURAL CHANGES DURING FREEZING

County extension offices frequently receive questions about whether certain fruits, vegetables, or mixtures of either may be successfully frozen. Such questions can be answered by knowing the effect of freezing on various plant tissues.

Water makes up over 90 percent of the weight of most fruits and vegetables. This water and other chemical substances are held within the fairly rigid cell walls which give support, structure, and texture to the fruit or vegetable. Freezing fruits and vegetables actually consists of freezing the water contained in the plant cells.

When the water freezes, it expands and the ice crystals cause the cell walls to rupture. Consequently, the texture of the produce, when thawed, will be much softer than it was when raw. This textural difference is especially noticeable in products which are usually consumed raw. For example, when a frozen tomato is thawed, it turns into a pile of mush and liquid. This explains why celery, lettuce, and tomatoes are not usually frozen and is the reason for the suggestion that frozen fruits, usually consumed raw, be served before they have completely thawed. In the partially thawed state, the effect of freezing on the fruit tissue is less noticeable.

Textural changes due to freezing are not as apparent in products which are cooked before eating because cooking also softens cell walls. These changes are also less noticeable in high starch vegetables, such as peas, corn, and lima beans.

## RATE OF FREEZING

The extent of cell wall rupture can be controlled by freezing produce as quickly as possible. In rapid freezing, a large number of small ice crystals are

formed. These small ice crystals produce less cell wall rupture than slow freezing which produces only a few large ice crystals. This is why some home freezer manuals recommend that the temperature of the freezer be set at the coldest setting several hours before foods will be placed in the freezer. Some freezer manuals tell the location of the coldest shelves in the freezer and suggest placing unfrozen products on these shelves.

All freezer manuals give guidelines for the maximum number of cubic feet of unfrozen product which can be frozen at one time. This is usually 2 to 3 pounds of vegetable to each cubic foot of freezer space per 24 hours. Overloading the freezer with unfrozen products will result in a long, slow freeze and a poor quality product.

## **CHANGES CAUSED BY FLUCTUATING TEMPERATURE**

To maintain top quality, frozen fruits and vegetables should be stored at 0°F or lower. This temperature is attainable in separate freezer units and in some combination refrigerator-freezers. A freezer thermometer can help you determine the actual temperature of your freezer. If your freezer has number temperature settings, such as from 1 to 9, check the manual to see what settings are recommended for different uses.

Storing frozen foods at temperatures higher than 0°F increases the rate at which deteriorative reactions can take place and can shorten the shelf life of frozen foods. Do not attempt to save energy in your home by raising the temperature of frozen food storage above 0°F.

Fluctuating temperatures in the freezer can cause the migration of water vapor from the product to the surface of the container. This defect is sometimes found in commercially frozen foods which have been improperly handled.

## **MOISTURE LOSS**

Moisture loss, or ice crystals evaporating from the surface area of a product, produces freezer burn — a grainy, brownish spot where the tissues become dry and tough. This surface freeze-dried area is very likely to develop off flavors. Packaging in heavy-weight, moistureproof wrap will prevent freezer burn. Freezer wraps will be discussed later.

## **MICROBIAL GROWTH IN THE FREEZER**

The freezing process does not actually destroy the microorganisms which may be present on fruits and vegetables. While blanching destroys some microorganisms and there is a gradual decline in the number of these microorganisms during freezer storage, sufficient populations are still present to multiply in numbers and cause spoilage of the product when it thaws. For this reason it is necessary to carefully inspect any frozen products which have accidentally thawed by the freezer going off or the freezer door being left open.

## **NUTRIENT VALUE OF FROZEN FOODS**

Freezing, when properly done, is the method of food preservation which preserves the greatest quantity of nutrients. To maintain top nutritional quality in frozen fruits and vegetables, it is essential to follow directions contained in this leaflet for pretreatment of the vegetables, to store the frozen product at 0°F and to use it within suggested storage times.

## **STORAGE TIMES FOR FROZEN FRUITS AND VEGETABLES**

**Fruits** — Most frozen fruits maintain high quality for 8 to 12 months. Unsweetened fruits lose quality faster than those packed in sugar or sugar syrups.

**Vegetables** — Most vegetables will maintain high quality for 12 to 18 months at 0°F or lower. However, it is a good idea to plan to use your home frozen vegetables before the next year crop is ready for freezing.

Longer storage of fruits and vegetables than those recommended above will not make the food unfit for use, but will decrease its quality.

## **SELECTING FREEZER CONTAINERS**

You must use good quality freezer containers to maintain the quality of frozen fruits and vegetables. A high quality wrap should be both moisture and vapor proof so that moisture can be kept in the product and air kept away from it.

Many moisture- and vapor-resistant wraps, such as heavyweight aluminum foil, plastic coated freezer paper, polyethylene films, saran, and polyester films, are effective at excluding oxygen. They should be strong, pliable, and adhere to the shape of the food item. These can be sealed easily with heat or freezer tape. Be sure to use only tape that is designated for the freezer because other household tapes lose adhesive quality in the extremely cold freezer temperatures. These wraps are not as convenient for fruits and vegetables as plastic bags or rigid freezer containers.

Plastic film bags made especially for freezing are readily available. They seal with twist and tie tops. Collapsible cardboard freezer boxes are frequently used as an outer covering for plastic bags to protect them against tearing, and for easy stacking in the freezer. Plastic sandwich bags and bread wrappers are not suitable for freezing.

“Freeze-and-cook” bags withstand temperatures from below 0°F to above the boiling point and are suitable for both freezing and cooking the product. These come in 1-1/2 pint and quart sizes and also as large rolls of plastic so that they can be made the size desired. A heat sealer is necessary for closing these bags. These products are more expensive but convenient since you can cook in them.

## **METHODS OF PACKING FRUITS**

There are three ways to pack fruits for freezing: sugar pack, syrup pack, and unsweetened pack. Al-

though some fruits may be packed without sweeteners, the flavor of many fruits is retained better with the use of sugar. Gooseberries, currants, cranberries, blueberries, and rhubarb give as good quality packs without or with sugar.

To freeze fruits using sugar pack, sprinkle the required amount of sugar over the fruit. Gently stir until the pieces are coated with sugar and juice.

To make sugar syrup, dissolve the needed amount of sugar in cold water. Stir the mixture and let stand until the solution is clear.

## METHODS OF PACKING VEGETABLES

There are two basic methods for packing vegetables for freezing, the tray pack and the dry pack.

**Dry pack** — This is the method used to describe the packing of blanched and drained vegetables into containers or freezer bags. Pack the vegetables tightly to cut down on the amount of air in the container. If the vegetables are packed in freezer bags, press air out of the unfilled part of the bag. When packing broccoli, alternate the heads and stems.

**Tray Pack** — This is the method of freezing individual pieces of blanched and drained vegetables on a tray or shallow pan, then packing the frozen pieces into a freezer bag or container. This method produces a product similar to commercially frozen plastic bags of individual vegetable pieces and is particularly good for peas, corn, and beans.

In this method it is most important to pack the individually frozen pieces into a bag or container as soon as they are frozen.

## FREEZING VEGETABLES

1. Assemble the necessary equipment for processing vegetables.

- a large kettle (minimum capacity of 2 gallons)
- a colander, wire basket, or net bag for blanching
- large pans for cooling
- ice cubes or ice blocks for cooling
- knives
- cutting board
- plastic freezer bags or other containers
- a timer or a clock with a second hand
- hot pads

2. Choose vegetables for freezing that are at their peak of flavor and texture. If possible, harvest the vegetables in the cool part of the morning and process as quickly as possible. If the freezing process is delayed, refrigerate the vegetables to preserve quality and nutrients.

3. Carefully follow the blanching instructions in the included table for each vegetable. Count the blanching time from when the vegetable is immersed in the vigorously boiling water. Do not add so much vegetable that the water stops boiling.

The quality of water used to blanch the vegetables can have an effect on the texture of certain vegetables. Very hard water can cause the toughening of vegetables such as green beans. If you have problems with excessively tough green beans, check into the level of hardness in your water supply.

### To Blanch in Boiling Water

- Use 1 gallon water for each pound of vegetable except for leafy greens, which need 2 gallons per pound.
- Bring water to rolling boil.
- Immerse wire basket or blanching basket mesh bag containing vegetable.
- Cover kettle and boil at top heat the required length of time (see table). Begin counting time as soon as you place the vegetable in water. You may use the same blanching water 2 or 3 times. Keep it at required level. Change the water if it becomes cloudy.
- Cool immediately in pans of ice water for same time used for blanching. Keep chilling water ice cold.
- Drain the vegetables thoroughly. Extra water will form too many ice crystals.
- Pack using dry or tray pack method.
- Freeze.

### To Blanch in Steam

- Put 1 inch of water in kettle, bring to a rolling boil.
- Suspend a thin layer of vegetable in wire basket or loose cheesecloth over rapidly boiling water.
- Cover and steam blanch vegetable required amount of time as listed on table.
- Complete as for boiling water blanching.

### Microwave Oven Blanching

Some directions are available for microwave blanching of vegetables. However, these directions are not based on any published research, and should be used only for the oven for which they are intended.

Lack of standardization of power levels among various microwave ovens make it impossible to publish a blanching timetable that can be used with all microwave ovens.

Vegetables blanched in the microwave should be chilled in ice water and processed as regular frozen vegetables.

## TO FREEZE FRUITS

1. Wash and sort fruits carefully and discard parts that are of poor quality.
2. Prepare fruits as you will use them.
3. Check the chart for fruit being frozen to see if an anti-browning treatment is suggested. Use ascorbic acid preparation or sodium bisulfite as recommended in the chart or in the manufacturer's instructions.

4. Use dry sugar, or sugar syrup in proportions suggested in the chart. If you are preparing a sugarless pack of fruits that brown be sure to treat with ascorbic acid or other anti-browning agents.

5. Pack into good quality plastic bags, freezer containers or freezer jars. Allow 1/2-inch headspace for expansion. Keep fruits that tend to darken, such as peaches, under the syrup by placing crumpled wax paper between lid and fruit.

## TO USE HOME FROZEN PRODUCE

**Fruits** — Thaw fruit at room temperature in its original package to preserve quality and nutritive

value. If faster defrosting is required, place package in front of an electric fan or submerge (if watertight) in cool or lukewarm water. Serve as soon as defrosted, preferably while a few ice crystals remain.

**Vegetables** — All vegetables may be cooked from the frozen state except corn-on-the-cob, which should be partially defrosted. Cook frozen vegetables in a small amount of salted water (about 1/2 cup or less). Cook only until tender — about half as long as if the same vegetable were fresh. You can use a pressure saucepan for cooking frozen vegetables. Follow manufacturer's directions for cooking time. A pack should be thawed enough to break it up before pressure cooking.

## HOW TO PREPARE VEGETABLES FOR FREEZING

VEGETABLES	PREPARATION
Asparagus Pick bright colored brittle stalks that snap when broken and have tight heads.	Wash and sort medium and large stalks. Leave whole or cut in 1- to 2-inch lengths. Blanch medium stalks 3 minutes, large stalks (1/2- to 3/4-inch diameter) 4 minutes. Chill in ice water.
Beans (Green and Yellow Podded) Pick young tender beans that snap when broken. Harvest while seeds are small and tender.	Wash, snip off tips and sort for size. Cut or break into suitable pieces or freeze small beans whole. Blanch 3-1/2 minutes. Chill in ice water.
Beans, Lima Pick well-filled pods containing green, young tender beans (white beans are over-mature).	Wash, shell and sort. Blanch small and medium beans, 3 minutes; large beans, 4 minutes. Chill in ice water.
Beans, Snap (Italian)	Wash, snap off ends and cut or break into 1- or 1-1/2-inch lengths. Blanch 3-1/2 minutes. Chill in ice water.
Beets Use garden varieties of good color and quality. Pick smooth, tender small to medium beets.	Remove tops leaving 2 inches of top and wash. Cook until tender. Chill. Remove skins. Slice or dice large beets.
Broccoli Choose firm, tender stalks with bright green compact heads.	Discard off-color heads or any that have begun to blossom. Remove tough leaves and woody butt ends. Cut through stalks lengthwise, leaving heads 1 inch in diameter. Soak 1/2 hour in salt brine (1/2 cup salt to 1 quart water) to drive out small insects. Rinse and drain. Blanch 4 minutes in water. Steam-blanch 5 minutes. Chill in ice water. Pack heads and stalks ends alternately in container. Broccoli may be cut into chunks or chopped.
Brussels Sprouts Pick firm, compact heads of good green color.	Wash and trim. Soak 1/2 hour in salt brine (see broccoli). Rinse and drain. Blanch medium heads, 4 minutes; large heads, 5 minutes. Chill in ice water.
Carrots Pick smooth, tender carrots before roots become woody. Harvest in cool weather.	Top, wash and scrape. Dice or slice 1/4-inch thick. Blanch 3-1/2 minutes. Chill in ice water.
Cauliflower Use well-formed, compact heads with fresh leaves.	Trim and wash. Split heads into individual pieces 1 inch in diameter. Soak 1/2 hour in salt brine (see broccoli). Rinse and drain. Blanch 4 minutes. Chill in ice water.

**VEGETABLES****PREPARATION**

Sweet Corn — On-the-Cob  
 Use Golden Bantam types. Small to medium ears are preferred. Harvest early in the morning if weather is hot. If corn is immature, it is watery when cooked; if too mature, it is doughy. Process rapidly.

Husk, remove silks and trim ends. Use a large kettle (12- to 15-quart capacity) for blanching. Chill in ice water. Corn which is not thoroughly cooled may become mushy. The long blanching time is necessary to inactivate enzymes which are in the cob. The long cooling time is needed to chill the cob. Failure to follow the blanching and freezing times will result in the development of cobby off flavors.

**Blanching Time — 12 Quarts Water**

Size of ears	Number ears	Diameter (inches)	Blanch (minutes)	Cooling time (minutes)
Midget	24	1-1/4 or less	8	16
Small	14	Between 1-1/4 and 1-1/2	8	16
Medium to large	10	Over 1-1/2	11	22

Sweet Corn — Cut

Husk, remove silks and trim ends. Use a large kettle (12- to 15-quart capacity). Blanch whole kernel corn to be cut from the cob 4-1/2 minutes.

Eggplant

Use garden varieties of good color and quality.

Precooked eggplant is usually more satisfactory for freezing than blanched eggplant. Peel, cut into 1/4- to 1/3-inch slices, or dice. To retain light color, drop pieces immediately into cold water containing 4 tablespoons salt per gallon. Blanch 4-1/2 minutes in the same proportion salted water. Chill and package in layers separated by sheets of freezer paper.

Garden Herbs

Wash and drain, but do not blanch leaves. Wrap a few sprigs or leaves in foil or seal in film bags. Store in carton or glass jar.

Kohlrabi

Choose young, tender kohlrabi.

Cut tops, wash, peel and dice in 1/2-inch cubes. Blanch 2-1/2 minutes. Chill in ice water.

Mushrooms

Pick young firm mushrooms of edible types.

Wash and remove stem base. Freeze small mushrooms whole; cut large ones into 4 or more pieces. When blanching mushrooms, add 1 teaspoon citric acid (or 3 teaspoons lemon juice or 1/2 teaspoon ascorbic acid) per quart of water to prevent darkening. Blanch medium or small whole mushrooms 4 minutes; cut pieces, 3 minutes. Chill. OR: Slice mushrooms 1/4-inch thick. Saute in butter, 2 minutes. Cool.

Onions

Sweet Spanish types preferred. Can use good garden varieties.

Peel onions, wash and cut into quarter sections. Chop. Blanch 1-1/2 minutes. Chill in ice water. (They will keep 3-6 months.)

Peas (Green, English)

Avoid Alaska (smooth skin) and other starch peas. Pick bright green, crisp pods with tender, sweet peas but not overmature.

Wash, shell small amount at a time. Blanch 1-1/2 to 2 minutes. Blanch blackeyed peas 2 minutes. Chill in ice water.

Peas (Edible, Podded, Sugar or Chinese)

Select bright green, flat tender pods.

Wash. Remove stems, blossom ends, and any string. Leave whole. Blanch 2-1/2 to 3 minutes. Chill in ice water.

Peppers (Green)

Choose crisp, well developed peppers of deep green color.

Wash, cut out stem and remove seeds. Halve, slice or dice. Blanch halved peppers, 3 minutes, sliced or diced ones, 2 minutes. Chill in ice water. You can freeze chopped peppers without blanching them.

Peppers (Pimiento)

Choose crisp, well developed peppers of deep red color.

Oven roast at 400°F for 3 to 4 minutes. Cool, skin and pack dry without additional heating.

VEGETABLES	PREPARATION
Pumpkin Select any good pie pumpkin of good color.	Cut or break into fairly uniform pieces. Remove seeds. Bake at 350°F, or steam until tender. Cool, scoop pulp from rind, and mash or put through ricer. You can prepare pie mix for freezing, but omit cloves.
Potatoes Any good quality potato.	Wash, peel, remove deep eyes, bruises and green surface coloring. Cut in 1/4- to 1/2-inch cubes. Blanch 5 minutes. Cool. For hash browns: Cook in jackets until almost done. Peel and grate. Form in desirable shapes. Freeze. For french fries, peel and cut in thin strips. Fry in deep fat until very light golden brown. Drain and cool.
Spinach and other Greens Select young, tender leaves.	Sort and remove tough stems. Wash. Blanch most leafy greens 2 minutes. Blanch collards and stem portions of Swiss chard 3 to 4 minutes. Blanch very tender spinach 1-1/2 minutes. Chill in ice water.
Summer Squash—Zucchini Select when 5-7 inches long and rind tender and seeds small.	Wash, peel and cut in pieces. Blanch 1/4-inch slices, 3 minutes; 1-1/2-inch slices, 6 minutes. Chill in ice water.
Winter Squash Select squash with shells hard enough so you cannot push thumbnail through them. "Dry" types are recommended.	Prepare same as pumpkin. You can blend two or more varieties or blend squash with pumpkin.

## HOW TO PREPARE FRUITS FOR FREEZING

FRUITS	PREPARATION
Apples Most firm-fleshed cooking varieties, especially apples suitable for pies or sauces.	Wash in cold water, peel, core, and cut into pie slices. To prevent darkening, submerge slices in sodium bisulfite (USP grade)* solution (1 teaspoon in 1 gallon water) for 5 minutes. Mix solution in glass, earthenware, stainless steel, or enamel container. Drain. Pack in sugar using 10-12 cups apples to 1 cup sugar. OR: Soak apple slices in brine solution (1/2 cup salt to 1 gallon water) for 15 minutes. Drain. Pack in sugar syrup using 2 cups sugar and 1/2 teaspoon ascorbic acid to 1 quart water. OR: Wash whole apples, drain and dry. Place in polyethylene or similar plastic bags. Freeze. To use for pie, sauce or other cooked desserts, run cold water over each frozen apple just before peeling. Peel, slice and use immediately.
Apricots Well-ripened fruits of uniform golden-yellow color.	Wash in cold water and sort. Dip six fully-ripened apricots into boiling water until skins loosen, about 15 to 20 seconds. Chill, peel, halve and remove pits. Fill containers one-third full of syrup — 3 cups sugar to 1 quart water with 1/2 teaspoon ascorbic acid. Pack apricots in syrup. OR: Halve soft ripe fruit, steam 4 minutes, crush and pack with 1 cup sugar to 8-9 cups fruit. Apricots are better canned than frozen.
Blackberries, Boysenberries, Dewberries, Loganberries, Youngberries and Nectarberries.	Wash in cold water and sort. Pack in sugar syrup using 3 cups sugar to 1 quart water. OR: Crush and pack in sugar using 1 cup sugar to 7-8 cups fruit. For pies, pack berries dry without sugar.
Blueberries Any good quality berry, cultivated or wild.	Wash in cold water and sort. For desserts, pack in sugar syrup using 3 cups sugar to 1 quart water. OR: Pack in sugar using 1 cup sugar to 8-9 cups fruit. For pies, pack dry without sugar or sugar syrup.
Pie cherries Any good quality cherry.	For pies, use 1-1/2 to 2 cups sugar to 4 cups cherries for 9-inch pie. To improve color, add 1/4 teaspoon ascorbic acid.
Sweet cherries Choose bright, fully ripe cherries.	Wash in cold water and sort. Pack in syrup using 2 cups sugar to 1 quart water, 1/2 teaspoon ascorbic acid, and either 1 teaspoon citric acid or 4 teaspoons lemon juice.

FRUITS	PREPARATION
Citrus Fruit Mixes Available citrus fruits.	Wash, peel, section or slice fruit. Sprinkle sugar over each layer of citrus fruit, sweetening to taste. Let stand in refrigerator until fruit forms its own juice. If you wish to keep the mix 3-4 months, add 1/4 teaspoon ascorbic acid to the sugar used for each 2 pints fruit.
Cranberries Any good quality fruit.	Wash in cold water, sort and pack without sugar.
Currants Red Lake and similar large fruit varieties.	Wash in cold water and sort. Pack in sugar using 1 cup sugar to 8-9 cups fruit. For cooking, pack dry without sugar.
Gooseberries Any good cooking variety.	Wash in cold water and sort. Pack without sugar or syrup or mix berries and sugar called for in pie recipe.
Ground Cherries Any available varieties.	Wash in cold water and sort. Husk, then scald cherries for 2 minutes. Pack in sugar syrup, 3 cups sugar to 1 quart water.
Muskmelons Use firm-fleshed fruit.	Wash in cold water. Cut flesh into 1/2- to 3/4-inch cubes or balls. Cover with sugar syrup, using 2 cups sugar to 1 quart water. You can add whole seedless grapes. Serve partially frozen.
Nectarines Any good quality fruit.	Same as apricots for preparation and packing.
Peaches Choose well ripened fruit of good quality.	Wash in cold water and sort. Dip 3 or 4 peaches into boiling water until skins loosen. Chill and follow instructions given for apricots. OR: Freeze nonbrowning varieties with dry sugar using 1/2 teaspoon ascorbic acid and 4 cups sugar with 8 pounds fruit (about 4 quarts).
Pineapple Any fruit of bright appearance, dark orange-yellow color.	Peel and core. Dice, slice or cut into wedges. Cover with syrup, 3 cups sugar to 1 quart water. OR: Pack in dry sugar, 1 cup sugar to 8-9 cups fruit. Do not use uncooked pineapple in gelatin molds.
Raspberries Red or purple fruit of good quality.	Wash in cold water and sort. Pack raspberries in syrup, 3 cups sugar to 1 quart water. OR: Pack in dry sugar, 1 cup sugar to 7-8 cups fruit. Pack purple raspberries for jam without sweetening.
Rhubarb Select stalks that are crisp and tender and of good red color in early spring. Do not pick after July 1.	Remove leaves and woody ends, wash in cold water and cut in 1-inch lengths. Do not blanch. For sauce, pack in sugar syrup using 3-1/2 cups sugar to 1 quart water. For pies, pack in dry sugar using 1 cup sugar to 4 cups rhubarb, or pack without sugar for a few months' storage.
Strawberries Choose firm, ripe berries of bright red color, or rich aromatic flavor.	Wash in cold water, sort and stem. Pack whole, sliced (preferred), or crushed berries in 1 cup sugar to 7-8 cups fruit. OR: Pack whole berries in syrup, 3-4 cups sugar to 1 quart water.

\*Sodium bisulfite (USP grade) is an approved additive; however, it may be difficult to find.

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