

Freezing Fruits and Vegetables

Freezing is a simple and quick way to preserve fruits and vegetables. Choose top-quality fruits and vegetables and follow recommended methods to get high-quality, nutritious foods for year-round enjoyment.

Approximate Amount Needed to Yield 1 Pint of Frozen Product

Fruit	Fresh
Apples	1 ¹ / ₄ to 1 ¹ / ₂ pounds
Berries	1 ¹ / ₃ to 1 ¹ / ₂ pounds
Cantaloupes	1 to 1 ¹ / ₄ pounds
Cherries	1 ¹ / ₄ to 1 ¹ / ₂ pounds
Cranberries	¹ / ₂ pound
Nectarines	1 to 1 ¹ / ₂ pounds
Peaches	1 to 1 ¹ / ₂ pounds
Pineapple	1 ¹ / ₄ pounds
Plums	1 to 1 ¹ / ₂ pounds
Raspberries	1 pint
Rhubarb	² / ₃ to 1 pound
Strawberries	² / ₃ quart

Vegetable	Fresh
Beans, lima, in pod	2 to 2 ¹ / ₂ pounds
Beans, snap, green, or wax	² / ₃ to 1 pound
Beets	1 ¹ / ₄ to 1 ¹ / ₂ pounds
Broccoli	1 pound
Carrots	1 ¹ / ₄ to 1 ¹ / ₂ pounds
Corn (in husks)	2 to 2 ¹ / ₂ pounds
Eggplant	1 pound
Greens: spinach, kale, mustard	1 to 1 ¹ / ₂ pounds
Peas	2 to 2 ¹ / ₂ pounds

Containers

Containers should be moisture-vapor resistant, durable, easy to handle, and *made for food storage*. Some common containers are:

- Dual-purpose glass jars (for either canning or freezing) are tapered for ease in removing frozen foods. Jars must be sterilized before use. To sterilize empty jars, put them right side up on the rack in a boiling-water canner. Fill the canner and jars with hot (not boiling) water to 1 inch above the tops of the jars. Boil 14 minutes. Remove and drain hot sterilized jars one at a time.
- Rigid polyethylene boxes come in different sizes. Lids should fit tightly.
- Commercial paperboard cottage-cheese-type cartons are not airtight but could be used if a plastic bag is used as the carton liner.
- Protective cartons may be necessary if plastic bags will be moved around in the freezer.
- Boil-in-bag pouches can be used. When packaging, be sure to press out as much air as possible before sealing.

Packaging

Head space is necessary to allow for expansion during freezing. Amount of headspace to allow between food and closure:

Liquid pack—fruit in juice, syrup, sugar, or water; crushed fruit or juice.

Containers:

<i>Wide-top opening</i>		<i>Narrow-top opening</i>	
pint	quart	pint	quart
1 inch	1½ inch	2 inches	2 inches

Juice requires 1½ inches headspace for pints and quarts with wide-top openings. For narrow-top openings, pints need 2 inches and quarts need 2½ inches of headspace.

Dry pack—fruit or vegetables packed without liquid, or fruit in sugar pack.

Containers:

<i>Wide-top opening</i>		<i>Narrow-top opening</i>	
pint	quart	pint	quart
¾ inch	1 inch	1 inch	1 inch

Vegetables that pack loosely, such as broccoli and asparagus, require no headspace.

Labeling

Use freezer or masking tape and felt-tipped pen or waxed pencil. Label should include name of product, freezing date, type of pack, and other information you want.

Freezing Guidelines

- Freeze fruits and vegetables soon after they are picked.
- Place containers in contact with freezing surfaces in coldest part of freezer.
- Set freezer dial at lowest setting so that foods will freeze at 0 degrees F (-18 degrees C) or below.
- Space at least 1 inch apart to promote rapid freezing. After freezing, packages can be placed close together and stored at 0 degrees F (-18 degrees C).
- Freeze small amounts of food at a time—no more than will freeze within 24 hours. This is no more than 2 pounds of food per cubic foot of freezer capacity per day. Overloading the freezer slows the rate of freezing. This lowers the quality of the product and promotes spoilage.

- Most fruits and vegetables maintain high quality for 8 to 10 months if stored at 0 degrees F or below; citrus fruits keep for 4 to 6 months.

Fruits

- Use ripe but not soft or mushy fruit. Wash, sort, and prepare (peel, trim, pit, halve, or slice) as you will use them.
- Fruit can be packed without sugar, in dry sugar, or in syrup. Different methods lend themselves to different uses. Experiment with all three methods to discover which you like best for your purposes. Unsweetened fruits lose quality faster than those packed in sugar or syrup.
- To prevent discoloration of peaches, apricots, pears, pineapple, and apples, cut fruit into a solution of 3 tablespoons bottled lemon juice to 1 quart of cold water. Drain well.
- In addition, ascorbic acid or a commercial product should be used to keep fruits from discoloring. Ascorbic acid solution can be made by mixing 1 teaspoon of ascorbic acid crystals, or six 500-milligram vitamin C tablets, in 1 gallon of water. Use 2 tablespoons of the mixture per each quart of fruit. Add at the last minute.

Use the commercial product according to the manufacturer's directions.

Freezing with sugar

Dry sugar pack—Place food in shallow container. Sprinkle sugar over fruit—about ½ to ¾ cup of sugar for each quart of fruit. Mix gently with a large spoon until juice is drawn from fruit and sugar is dissolved. Pack into containers and leave recommended headspace; cover with a piece of crumpled wax paper or plastic wrap.

Syrup pack—Select the syrup according to the natural sweetness or tartness of fruit. A 20 or 30 percent syrup is suitable for most fruits. About ½ to ⅔ cup of syrup is needed for each pint package of fruit.

Measures of water and sugar for approximately 9 pints of fruit:

Syrup Type	Approx % sugar	Cups water	Cups sugar
Very light	10	6 ¹ / ₂	³ / ₄
Light	20	5 ³ / ₄	1 ¹ / ₂
Medium	30	5 ¹ / ₄	2 ¹ / ₄
Heavy	40	5	3 ¹ / ₄
Very heavy	50	4 ¹ / ₄	4 ¹ / ₄

Make syrup well in advance as it must be cold before pouring over fruit. Heat water and sugar together. Bring to a boil. Let cool. Place fruit into container and then pour cold syrup over fruit; or fill container about ¹/₄ full with syrup and slice fruit directly into syrup. Add more syrup if needed. Leave headspace as directed. Hold fruit under syrup with crumpled piece of waxed paper or plastic wrap.

Freezing without sugar

Tray pack—Spread a single layer of prepared fruit on shallow trays. Freeze, and package immediately.

Dry pack—Pack prepared fruit in containers with no sugar, syrup or other liquid. Some berries can be packaged this way but freezer life is short.

Liquid pack—Noncaloric sweeteners can be used instead of sugar. For better flavor, however, freeze with plain water or fruit juice and add the sweetener at time of serving.

To serve frozen fruits

Thaw unopened in refrigerator or at room temperature. Texture is best when some ice crystals remain. Fruits packed in syrup are generally best used for uncooked desserts. Fruits packed in granulated sugar or packed unsweetened are best used for cooking purposes.

Vegetables

For best quality, taste, and nutritive value, freeze freshly gathered vegetables. If there is a delay, refrigerate vegetables until you are ready to freeze them.

- Wash well; peel, trim, and cut as desired.
- Vegetables should be blanched or scalded before freezing. This short heat treatment stops enzyme action that changes flavor, texture, color, and nutritive value.
- Vegetables are usually packed dry. They can be frozen in single layer on a cookie sheet (tray pack) and then packed in suitable containers. Single thickness bags require an outside cover. Remove all possible air. Seal.

Blanching or scalding

In boiling water—This method uses large amounts of water (4 quarts) to small amounts of prepared vegetables (1 pound) so that water returns quickly to boiling after the vegetable is added.

- Use a large kettle or blancher with tight-fitting lid. A wire blanching basket, strainer, or cheesecloth bag can be used to hold the vegetables.
- Bring specified amount of water to a vigorous boil. Place vegetables in basket and plunge into boiling water. Cover and start counting immediately.
- At end of blanching time, remove vegetables and cool quickly in cold running or ice water. Vegetables cool in about the same length of time as needed for blanching. Drain and package.
- You can reuse the boiling water, but keep it at the proper level and be sure it is boiling vigorously when vegetables are added.

In microwave oven—Check your manufacturer's manual for recommendations.

To serve frozen vegetables

Cook most frozen vegetables while they are still frozen. Corn on the cob, however, should be partially thawed before cooking so that the cob will be heated through by the time the corn is cooked. To save vitamins, minerals, bright color, and flavor, drop frozen vegetables into a small amount of boiling water (about ¹/₂ cup to a pint package), cover, and cook for 5 to 15 minutes, depending upon the vegetable. Frozen vegetables can be added directly to soups and/or stews.

	Preparation—refer to chart for headspace
Apples	Peel, quarter, and core. Can be frozen raw-syrup packed, dry sugar packed, or packed without sugar. Dip in lemon juice solution, as directed under Fruits; drain and add ascorbic acid solution before packing. Slices can be steamed first and then sugar packed- $\frac{1}{2}$ cup sugar over a quart of sliced apples. To steam: place slices in a single layer in steamer and steam $1\frac{1}{2}$ to 2 minutes. Drain and cool.
Applesauce	Prepare with or without sugar as for the table. Cool. For better flavor, add spices just before serving the thawed product.
Berries: Blackberries, boysenberries, loganberries	Syrup pack is preferred method for berries to be served uncooked. Whole berries can also be dry sugar packed or packed unsweetened.
Blueberries and huckleberries	To tenderize skins, steam 1 minute. Cool and pack as directed.
Strawberries	Remove caps. Can be used whole or sliced. Can be syrup packed or packed dry, with or without sugar. Sprinkle with 2 tablespoons ascorbic acid solution per each quart of fruit before packing.
Cherries, sour	Remove pits. Dry sugar pack is best for pies ($\frac{2}{3}$ cups sugar to 1 quart cherries). Add ascorbic acid solution, as directed, before packing.
Cherries, sweet	Chill in cold water. Remove pits if desired. Pack in syrup, dry sugar, or pack with no sweetener. Add 2 tablespoons ascorbic acid solution, as directed, before packing.
Grapefruit and oranges	Section fruit; remove membranes and seeds. Cover with syrup, using excess fruit juice as part of liquid. For better color quality, add 2 tablespoons ascorbic acid solution to each quart of fruit.
Peaches and nectarines	Peel and pit. For better product, peel without boiling water dip. Slice into lemon juice solution, as directed. If dry packing, sugar packing, or water packing, add ascorbic acid solution, as directed, before packing. If syrup packing, slice peaches directly into syrup and add ascorbic acid solution.
Rhubarb	Cut in 1- or 2-inch pieces. Can be packed raw, but heating in boiling water for 1 minute and cooling promptly help retain flavor and color. Can be syrup or dry sugar packed. Can be packed unsweetened.

Freezing Vegetables

Asparagus	Remove woody part of stalks. Leave in spears or cut into 1- to 2-inch lengths. Blanch according to thickness of stalk: small-2 minutes; medium-3 minutes; large-4 minutes. Can be tray frozen.
Beans: green or wax	Leave whole, snap, or cut french style. Blanch 3 minutes.
Beans: lima	Shell and sort according to size. Blanch small beans 2 minutes; medium beans, 3 minutes; large beans, 4 minutes.
Beets	Remove tops and cook whole in boiling water until tender. Remove skins and slice or dice.
Broccoli	Pare stems if tough and discard woody parts. Split lengthwise so that heads are not more than 1½ inches across. Blanch 3 minutes. Can be tray frozen.
Carrots	If small, leave whole and blanch 5 minutes. Blanch diced, sliced, or lengthwise strips 2 minutes.
Corn	<i>Whole kernel or cream style</i> -Heat ears in boiling water for 4 minutes. Cool promptly and drain. For whole kernel, cut kernels from cob at about two-thirds the depth of the kernels. For cream style, cut corn from cob at about center of kernels. Scrape cobs with back of knife to remove juice and heart of kernel. <i>On the cob</i> -Blanch small ears (1¼ inches or less in diameter) 7 minutes; medium ears (1¼ to 1½ inches) 9 minutes; large ears (over 1½ inches) 11 minutes. Can be wrapped in laminated freezer paper, heavy-duty foil, or plastic wrap.
Eggplant	Peel and cut into ⅓-inch slices or lengthwise strips. To preserve color, soak 5 minutes in ascorbic acid solution. Drain. Blanch 4 minutes. Can be tray frozen.
Greens: beet, chard, kale, spinnach, etc.	Remove tough stems. Blanch very tender leaves 1½ minutes; beet greens, chard, mustard greens, turnip greens, and spinach 2 minutes; collards 3 minutes.
Peas, green	Shell and blanch 1½ minutes.
Peas, sugar snap	Blanch whole 2 minutes.
Pumpkin and winter squash	Cut or break into fairly uniform pieces. Remove seeds. Cook pieces until soft in boiling water, steam, pressure cooker, or oven. Remove pulp from rind. Mash or sieve. To cool, place in a shallow pan and place pan in ice cold water and stir.
Tomatoes	Quality of frozen raw tomatoes is poor. Freeze stewed tomatoes, tomato sauce, and/or favorite spaghetti sauce.
Zucchini and other summer squash	Slice (½ inch) and blanch 3 minutes.

Adapted from WP-103; updated and reviewed by Sheila Rye, Graduate Student, and Guendoline Brown, Ph.D., Nutrition and Health Specialist, 1999.

Programs and activities offered by the West Virginia University Extension Service are available to all persons without regard to race, color, sex, disability, religion, age, veteran status, political beliefs, sexual orientation, national origin, and marital or family status. Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Director, Cooperative Extension Service, West Virginia University. West Virginia University is governed by the Board of Trustees of the University System of West Virginia.