



# Freezing Fruits and Vegetables

Tonya Johnson and Jeanne Brandt

**F**reezing is one of the simplest and least time-consuming methods of food preservation. Under optimal conditions, freezing is the best form of food preservation in terms of retaining nutrients, flavor, and texture.

Freezing does not kill most microorganisms (except trichinae and fish parasites); it just puts them to sleep. Therefore, it is important to handle foods safely prior to freezing and when defrosting. Always wash your hands, surfaces, cutting boards, and knives before preparing foods for freezing.

For best quality, follow directions carefully. Color, flavor, and nutritive value can be affected by the freshness of the produce selected, method of preparation and packaging, and conditions of freezing.

## For best quality

- Freeze fruits and vegetables when they are at peak ripeness.
- Freeze fruits and vegetables in small, made-for-freezer packaging (smaller sizes freeze faster).
- Remove as much air as possible from packaging.
- Freeze fruits and vegetables as quickly as possible (0°F or colder).
- Use oldest frozen foods first.

## Freezing fruits

(See chart on pages 8–9 for specific directions.)

- Select fully ripe fruit that is not soft or mushy. Most fruit has the best flavor, color, and food value if it has ripened on the tree or vine.
- Carefully wash fruit in cool, running water. Do not let fruit stand in water. Sort fruit, trim, and discard parts that are green, bruised, or insect damaged.
- Peel, trim, pit, and slice fruit as directed.
- Prepare fruit for freezing by packing with or without sugar (or syrup). Use ascorbic acid to retard browning of light-colored fruit. (See “Methods of freezing,” page 2.)
- Pack prepared fruit in suitable containers as directed.
- Store in freezer as directed.
- To serve, thaw fruit in the refrigerator, under cool running water, or in the microwave (if serving immediately). Serve while a few ice crystals remain.

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## Methods of freezing

### *Without sugar*

Any fruit can be frozen without sugar. However, the texture may be softer than that of fruit frozen with sugar.

Fruits such as berries, cherries, and grapes may be frozen in a single layer on cookie sheets before packing in containers. This prevents them from sticking together. Serve them frozen as snacks or thaw and use as a topping for salads or desserts.

If desired, a water pack (without sugar) can be used for fruit such as peaches. Fruit juice (either extracted from the fruit or purchased) can also be used. Orange, grape, apple, and berry juices are suitable.

### *Syrup pack*

Fruits that will be served uncooked are often packed in a sugar syrup. The syrup may be prepared from either cane or beet sugar. If desired, part of the sugar may be replaced by honey. Select the strength of syrup that will give the desired flavor. (This will depend on the sweetness of the fruit, personal preference, and intended use.) Allow about  $\frac{2}{3}$  cup of syrup for each pint of fruit and  $1\frac{1}{2}$  cups for each quart of fruit. Dissolve sugar in hot or cold water. If hot, cool before using.

Strength of syrup	Water	Sugar	Yield
Light	4 cups	1 cup	$4\frac{3}{4}$ cups
Medium	4 cups	$1\frac{3}{4}$ cups	5 cups
Heavy	4 cups	$2\frac{3}{4}$ cups	$5\frac{1}{2}$ cups

### *Sugar pack*

Juicy fruits and those that will be used for pies or other cooked products are often packed in sugar. Use about 1 cup of sugar for each 2 to 3 pounds of fruit. Sugar and fruit should be gently but thoroughly mixed together until the sugar has dissolved in the juice.



Prepared fruit bagged for freezing.  
Photo by Clare Columbus, © Oregon State University.

### *Artificial sweeteners*

Sugar substitutes may be used in any of the unsweetened packs. They can be added prior to freezing or just before serving. Follow manufacturer instructions for the amount to use. Artificial sweeteners give a sweet flavor, but do not provide the benefits that sugar provides in freezing (such as improved texture, color, and thickness of syrup).

### *Retarding browning*

#### **Ascorbic acid**

When freezing light-colored fruit, ascorbic acid can be added to inhibit browning. Ascorbic acid in powder or crystal form is often available at pharmacies and health food stores. Ascorbic acid tablets (vitamin C) can also be used. Crush



Equipment for pretreating fruit.  
Photo by Clare Columbus, © Oregon State University.

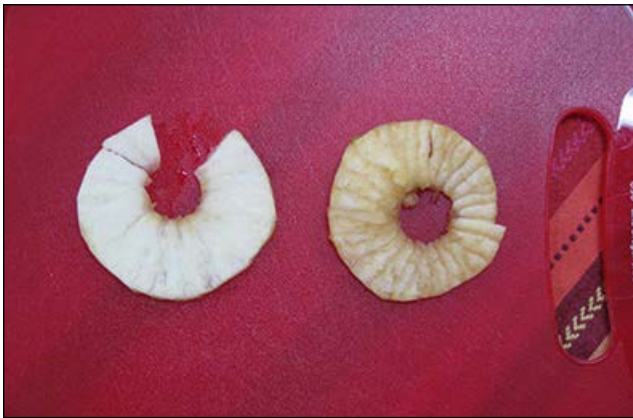
finely before use. (Three crushed 500-milligram vitamin C tablets equal ½ teaspoon of ascorbic acid.)

For syrup or liquid packs, add ½ teaspoon powdered or crushed ascorbic acid to each quart (4 cups) of cold syrup.

For sugar or sugarless (dry) packs, dissolve ½ teaspoon ascorbic acid in 3 tablespoons cold water and sprinkle over 4 cups of fruit just before adding sugar.

### **Commercial antidarkening preparations**

Follow manufacturer's directions for commercial antidarkening products. Ascorbic acid is the main ingredient in commercial mixtures available in most supermarkets.



Apple slice treated (left) and untreated (right).  
Photo by Clare Columbus, © Oregon State University.

## **Freezing juices**

A variety of fruit juices can be prepared, including cherry, grape, grapefruit, plum, raspberry, and strawberry. The procedure is similar for each.

- Select fully ripe, good-quality fruit.
- Rinse and sort in cool, running water.
- Extract juice by crushing fruit and straining it through a jelly bag. (Heat fruit slightly to start the flow of juice if necessary.) A steam juicer also can be used.
- Sweeten juice if desired.
- Pour into freezer containers, allowing adequate headspace. (Refrigerate grape juice overnight before packing to allow sediment to sink to the bottom. Strain sediment.)
- Seal and freeze.

Tomato juice can be extracted by simmering quarters or eighths for 5 to 10 minutes. (Skipping this step causes the juice to separate.) Then press through a sieve or food mill. Season with salt, if desired. Pour into containers and freeze.



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## Freezing vegetables

(See chart, pages 10–14, for specific directions.)

- Select top-quality vegetables. If possible, harvest vegetables in the early morning or early evening when it is cool. Prepare them as soon as possible to avoid loss of quality. If there is a delay, store them in the refrigerator.
- Wash and sort vegetables in cool, running water.
- Peel, trim, and cut into pieces as directed. Remove damaged pieces.



Cut vegetable into pieces.

Photo by Clare Columbus, © Oregon State University.

- Prepare most vegetables for freezing by **blanching**. This short heat treatment stops enzymes that can cause undesirable changes in flavor, texture, color, and nutritive value during storage. (See “Methods of blanching.”)
- Pack prepared vegetables in suitable containers as directed.
- To serve, submerge frozen vegetables in a small amount of boiling water (~½ cup per pint). When water returns to full boil, turn heat down to simmer. Cover kettle and cook until tender. Corn on the cob and leafy greens should be partially thawed before cooking. To cook in a microwave oven, refer to the instruction manual.
- Vegetables that hold up well to cooking generally freeze well.

## Methods of blanching

### *In boiling water*

- Put water in a large kettle with a tight-fitting lid and bring to a rolling boil. (Allow 1 gallon of water for each pound of vegetables except for leafy greens, which require 2 gallons per pound.)
- Put a small quantity of vegetables in a wire basket, strainer, or cheesecloth bag. Immerse in boiling water.
- Cover kettle and boil at top heat for the required length of time (see chart, pages 10 through 14). Begin counting time as soon as the water returns to a boil.
- Cool immediately in ice water for the same length of time used for blanching. When thoroughly cool, drain, and pat dry. Pack vegetables in freezer bag or container.

### *In steam*

- Use a kettle with a tight-fitting lid and a basket that holds the food at least 3 inches above the bottom of the kettle.
- Put 1 to 2 inches of water in a kettle and bring to a rolling boil.



Blanching equipment.

Photo by Clare Columbus, © Oregon State University.

- Put vegetables in a single layer in a steamer basket or in a colander with legs. Suspend over boiling water.
- Cover kettle and heat vegetables for the required length of time. (See chart, pages 10 through 14.) Start timing as soon as the lid is on the kettle. Steam blanching times are 1½ times boiling-water times.
- Cool immediately in ice water for the same length of time used for blanching. When thoroughly cool, drain, and pat dry. Pack vegetables in a freezer bag or container.



1. Vegetable ready to steam.  
Photo by Clare Columbus, © Oregon State University



2. Steam for recommended minutes until bright green.  
Photo by Clare Columbus, © Oregon State University



3. Cool immediately in ice water.  
Photo by Clare Columbus, © Oregon State University.



4. Pat dry when thoroughly cooled and drained.  
Photo by Clare Columbus, © Oregon State University.



5. Vegetable packed in a freezer bag.  
Photo by Clare Columbus, © Oregon State University



## Steps for freezing fruit and vegetables

### Packing in containers

Food must be packed in suitable containers for freezing. These containers should be durable, easy to handle, and moisture and vapor resistant. They should also protect foods from absorbing other flavors and colors. Select containers that will pack well in the freezer. Smaller containers are best since food will freeze faster and more evenly. Fruits and vegetables should not be frozen in anything larger than a half-gallon.

Acceptable containers include:

- Plastic freezer bags (best for dry packs)
- Vacuum packaging designed for freezing (best for dry packs)
- Rigid plastic containers (especially good for liquid packs)
- Glass canning or freezing jars with wide mouths (especially good for liquid packs)

Pack foods tightly into containers. Allow ample headspace between the packed food and the lid to allow room for expansion during freezing. See table below.

To keep fruit covered with liquid, put a crumpled piece of freezer wrap or waxed paper between the fruit and the lid. This will keep the surface from darkening and drying out.

When food is packed in freezer bags, squeeze out as much air as possible. To remove air, twisting freezer bags can help. There are also commercial products that help draw out air. Seal the package well.

Label containers with name of product, type of pack (for fruit), and date.

### Loading the freezer

Freeze fruits and vegetables as soon as possible after they are packed. If there will be a delay before freezing, keep packages in the refrigerator.

Foods that freeze too slowly may lose quality or spoil. Only put the amount of unfrozen food into a home freezer that will freeze within 24 hours. Usually this will be about 2 or 3 pounds of food for each cubic foot of freezer capacity. For fastest freezing, place packages in a single layer against freezing plates or coils. Leave a little space between them so that air can circulate freely. Make sure the packages are completely dry so they don't freeze to the freezer. Stack after frozen.



Packing the freezer.  
Photo by Clare Columbus, © Oregon State University.

### Headspace to allow between packed food and closure

Type of pack	Container with wide top opening		Container with narrow top opening	
	<i>Pint</i>	<i>Quart</i>	<i>Pint</i>	<i>Quart</i>
Liquid pack*	½ inch	1 inch	¾ inch	1½ inch
Dry pack**	½ inch	½ inch	½ inch	½ inch
Juices	1½ inch	1½ inch	1½ inch	1½ inch

\*Fruit packed in juice, sugar, syrup, or water; crushed or puréed fruit.

\*\*Fruit or vegetable packed without added sugar or liquid.

## Storing frozen food

After freezing, packages may be stored close together. Store them at 0°F (-18°C) or below. Foods lose quality and nutritive value much faster at higher temperatures. Use a freezer thermometer to monitor the temperature.

Most fruits and vegetables maintain high quality for 8 to 12 months. (Unsweetened fruits lose quality faster than those packed in sugar or syrup.) Storage for longer periods will affect the quality of the frozen foods, but they will be safe to eat.

Keeping a freezer inventory and dating packages will help to rotate the supply.

## Refreezing frozen foods

Occasionally a home freezer stops running. The length of time food will stay frozen depends on the amount of food in the freezer and the temperature of the food. A full load of food will stay frozen for up to 2 days if the freezer is not

opened. Dry ice can be used to keep foods frozen longer. If the power will be off for a long period of time, food should be transferred to a working freezer.

It is safe to refreeze fruits and vegetables that still contain ice crystals. For best quality, refreeze food in small quantities.

If the temperature has warmed above 40°F (5°C), foods may not be safe for refreezing. Check your freezer thermometer to determine the temperature.

Do not eat thawed vegetables that are above 40°F. The low acidity of vegetables makes it possible for harmful bacteria to grow. Unsafe products may not show obvious signs of spoilage.

For information about the safety of specific foods, call your local Extension office. Be prepared to give the “history” of the food (length of time that the power was off and temperature of the food before the freezer began to run again).

## Freezing fruits

See pages 1 to 3 for details on packing with or without sugar or syrup. Fruits may also be frozen as purées and for making jams. For light-colored fruits, use ascorbic acid to prevent browning. Store at 0°F (-18°C) or below for top quality. You can also freeze some fruits such as berries, cherries, and grapes in a single layer on cookie sheets before packing in containers. This prevents them from sticking together.

Fruit	Preparation
Apples	Select crisp, firm fruit (not mealy). Wash, peel, core, and slice. To prevent browning during preparation, slice into ascorbic acid solution (3,000 mg ascorbic acid to 1 gallon of water). Drain. Pack in cold syrup, sugar (or artificial sweetener), or without sugar. Syrup pack is preferred for apples that will be used for uncooked desserts or fruit cocktail. A sugar pack is good for making pie.
Applesauce	Wash apples, peel (if desired), core, and slice. Cook until tender, adding a small amount of water to prevent burning or sticking. Strain through a food mill if desired and mash to desired texture. Sweeten to taste. Cool and pack.
Apricots	Select firm, ripe, uniformly yellow fruit. Wash, halve, and pit. Peel and slice, if desired. To loosen skins, score skin and dip in boiling water until skin starts to split. If apricots are not peeled, heat them in boiling water for 30 seconds to keep skins from toughening during freezing. Cool in ice water and drain. Pack in syrup or sugar (or artificial sweetener). Use ascorbic acid to retard browning.
Avocados	Best frozen as purée (not whole or sliced). Select avocados that are soft and with rinds free from dark blemishes. Wash, peel, halve, and remove pit. Mash the pulp. For better quality, add ¼ teaspoon of ascorbic acid per quart. Pack without sugar if using for salads, dips, or sandwiches.
Bananas	Select firm, ripe bananas. Wash, peel, and mash thoroughly. To retard browning, add ½ teaspoon (1,500 mg) ascorbic acid per cup of mashed bananas. Bananas can also be frozen in their skin (packed in a freezer container).
Blackberries	<b>Also boysenberries, marionberries and loganberries.</b> Select firm, fully ripe fruit with glossy skins. Wash carefully and drain. Discard any soft, underripe, or defective fruit. Pack in syrup, sugar (or artificial sweetener), or without sugar. Blackberries can also be frozen in a single layer on a cookie sheet before packing.
Blueberries	<b>Also huckleberries.</b> Select ripe berries with tender skins. For dry pack without sugar, wash, drain, dry, and pack berries into freezer bags or containers. Blueberries can also be frozen in a single layer on a cookie sheet before packing. Blueberries can also be crushed or puréed, then frozen. Wash berries. Crush by pressing berries through a fine sieve, or purée in a blender or food processor. Mix 1½ cups of sugar with each quart of crushed or puréed berries, if desired. Stir until sugar is dissolved. Pack in freezer container.
Cantaloupe	<b>Also other melons.</b> Select firm, well-colored, ripe melons. Wash skin with vegetable scrub brush. Cut in half, remove seeds, and peel. Cut into slices, cubes, or balls. Pack in syrup.
Cherries, sour	Select bright red, tree-ripened fruit. Stem and wash. Drain and pit. Pack in syrup, sugar (or artificial sweetener), or without sugar. Use ascorbic acid to retard browning, if desired.
Cherries, sweet	Select tree-ripened, deep-colored varieties. Stem and wash. Drain and remove pits if desired. Pack in syrup or pack without sugar.
Cranberries	Choose firm, deep red berries with glossy skins. Stem and sort. Wash and drain. Pack in syrup or without sugar. Cranberries can also be frozen in a single layer on a cookie sheet before packing.

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Fruit	Preparation
Currants	Select fully ripe, bright red fruit. Wash and stem. Pack in syrup, sugar (or artificial sweetener), or without sugar.
Dates	Select dates with good flavor and tender texture. Wash and split to remove pits. Leave whole or press through a sieve for purée. Pack without sugar.
Figs	Select tree-ripened, soft, ripe fruit. Wash and cut off stems. Peel, if desired. Slice or leave whole. Pack in syrup or without sugar. Use ascorbic acid to retard browning.
Gooseberries	Select fully ripe (for pie) or slightly underripe (for jelly) berries. Wash and remove stems and blossom ends. Pack without sugar (for use in pies or preserves).
Grapes	<p>Choose fully ripe, firm, sweet grapes. Sort, stem, and wash. Leave seedless grapes whole; cut table grapes with seeds in half and remove seeds. Pack in syrup or pack without sugar. Grapes can also be frozen in a single layer on a cookie sheet before packing.</p> <p>Grapes can also be puréed. Wash, stem, and crush the grapes. Heat to boiling. Drain off free juice and freeze it separately. Remove seeds and hulls with a colander. To one quart purée, add ½ cup sugar. Pack in freezer containers.</p>
Grapefruit	<b>Also oranges.</b> Select firm, tree-ripened fruit, heavy for its size and free from soft spots. Wash fruit. Remove all peel, membranes, and seeds. Divide fruit into sections, or slice, if desired. Pack in syrup (made with excess juice and water if needed) or pack in water without sugar.
Nectarines and peaches	<p>Select firm, fully ripe, well-colored fruit. Handle carefully to avoid bruising. Wash, peel, and remove pit. Cut in halves, quarters, or slices. Pack in syrup, orange juice, water without sugar, or pack dry with sugar (or artificial sweetener). Use ascorbic acid to retard browning.</p> <p>Nectarines and peaches can also be frozen crushed or puréed. Coarsely crush peeled and pitted nectarines or peaches. For purée, press through a sieve or purée in blender or food processor (heating pitted nectarines or peaches for 4 minutes in just enough water to prevent scorching makes them easier to purée). For better quality, add ⅛ teaspoon ascorbic acid to each quart of fruit. Pack into freezer containers.</p>
Pears	Select well-ripened, firm fruit. Wash and peel. Cut in halves or quarters and remove cores. Heat in boiling syrup for 1 to 2 minutes (depending on size of pieces). Drain, cool, and pack in syrup. Use ascorbic acid to retard browning.
Persimmons	Select orange, soft, ripe persimmons. Sort, wash, peel, and cut into sections. Press fruit through a sieve or blend in a blender to make a purée. To each quart of purée, add ⅛ teaspoon ascorbic acid. Purées may be made with or without sugar. Pack in freezer containers.
Plums	<b>Also prunes.</b> Select firm, tree-ripened fruit. Wash. Leave whole, or cut in halves or quarters; remove pits. Pack in syrup or without sugar. Use ascorbic acid to retard browning.
Raspberries	Select fully ripe, juicy berries. (Seedy berries are best for purées or juice.) Wash and drain. Pack in syrup, sugar (or artificial sweetener), or without sugar.
Rhubarb	Select firm, well-colored stalks with good flavor and few fibers. Wash, trim, and cut into ½-inch pieces. Blanching rhubarb in boiling water for 1 minute and cooling promptly in ice water will help retain color and flavor. It can also be frozen raw. Pack in syrup or without sugar.
Strawberries	Select firm, ripe, red berries. Wash, drain, and remove hulls. Slice, if desired. Pack the fruit alone or with syrup, sugar, or artificial sweetener.

## Freezing vegetables

See pages 4 to 5 for details on blanching. For blanching in boiling water, begin timing as soon as the water returns to a boil. For steam blanching, start timing as soon as the lid is on the kettle. Store packaged vegetables at 0°F (-18°C) or below for top quality.

Vegetable	Preparation	Blanching times (minutes)		
		In boiling water	In steam	
Asparagus	Select young stalks with compact tips. Wash and sort by size. Leave whole or cut in 1- to 2-inch lengths. Blanch, cool, drain, and pack, leaving no headspace.	Small stalk	2	3
		Medium stalk	3	5
		Large stalk	4	6
Beans—green (snap or wax)	Select young, stringless beans. Wash, snip off tips. Cut or break into suitable pieces or slice lengthwise into strips. Blanch, cool, drain, and pack leaving ½-inch headspace.		3	5
Beans—pinto, lima, or butter	Harvest beans while seeds are green. Wash, shell, and sort according to size. Blanch, cool, drain, and package leaving ½-inch headspace.	Small	2	3
		Medium	3	5
		Large	4	6
Beets	Select deep, uniformly red, tender, young beets. Wash and sort by size. Trim tops, leaving ½-inch of stems and tap root to prevent bleeding of color during cooking. Cook in boiling water until tender (small beets 25 to 30 minutes; medium beets 45 to 50 minutes). Cool promptly in cold water. Peel, remove stem and tap root, and cut into slices or cubes. Package leaving ½-inch headspace.		Cook	—
Broccoli	Select firm, young, tender stalks with compact heads. Wash and trim leaves and woody ends. If necessary to remove insects, soak 30 minutes in salt brine (4 teaspoons salt to 1 gallon of water). Rinse and drain. Cut through stalks lengthwise, leaving heads 1 inch in diameter. Blanch, cool, drain, and pack head and stalk ends alternately in container. Leave no headspace.		3	5
Brussel sprouts	Select green, firm, compact heads. Wash and trim outer leaves. Soak 30 minutes in salt brine (see broccoli). Rinse and drain. Blanch, cool, drain, and package leaving no headspace.	Small heads	3	5
		Medium heads	4	6
		Large heads	5	7
Carrots	Select tender carrots. Remove tops, wash, and peel. Dice or slice lengthwise ¼-inch thick. Blanch, cool, drain, and package leaving ½-inch headspace.	Small	5	8
		Diced or sliced	2	3
Cauliflower	Select firm, white heads. Wash and trim. Split heads into pieces 1 inch across. If necessary to remove insects, soak 30 minutes in salt brine (4 teaspoons salt to 1 gallon of water). Rinse and drain. Blanch, cool, drain, and package leaving ½-inch headspace.		3	5

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Vegetable	Preparation	Blanching times (minutes)	
		In boiling water	In steam
Celery	Celery loses its crispness when frozen, so it is suitable only for cooked dishes. Select crisp, tender stalks, free from coarse strings. Wash thoroughly, trim and cut stalks into 1-inch lengths or desired size for cooking. Blanch, cool, drain, and package leaving no headspace.	3	—
Corn—on cob	Select ears with plump kernels and thin, sweet milk. Husk, remove silk, and wash. Blanch, cool promptly, and drain. Wrap each ear separately or tightly pack desired number in large freezer bags or containers.	Small 7 Medium 9 Large 11	10 13 16
Corn—cream style	Select tender, freshly gathered corn in the milk stage. Husk and trim the ears, remove silks, and wash. Blanch, cool promptly, and drain. Cut kernel tips and scrape the cobs with the back of a knife to remove the juice and the heart of the kernel. Package leaving ½-inch headspace.  Another way to prepare cream-style corn for freezing is to cut and scrape the corn from the cob without blanching. Place the cut corn in a double boiler and heat with constant stirring for about 10 minutes or until it thickens; allow to cool by placing the pan in ice water. Package in moisture- and vapor-resistant containers, leaving ½-inch headspace.	4	6
Corn—whole kernel	Select tender, freshly gathered corn in the milk stage. Husk and trim the ears, remove silks, and wash. Blanch, cool promptly, drain, and cut from cob. Cut kernels from cob about ⅔ the depth of the kernels. Package leaving ½-inch headspace.	4	6
Eggplant	Harvest before seeds become mature and when color is uniformly dark. Wash, peel, and slice ½-inch thick. Prepare quickly, enough eggplant for one blanch at a time. Blanch in 1 gallon of boiling water containing ½ cup lemon juice. Cool, drain, and package leaving ½-inch headspace.	4	6
Herbs—fresh	Wash, drain, and pat dry with paper towels. Wrap a few sprigs or leaves in freezer wrap and place in a freezer bag. Chop and use frozen herbs in cooked dishes.	—	—
Kohlrabi	Select stems when fully grown but tender. Cut off tops and roots. Wash and peel off the tough bark. Leave whole or dice in ½-inch cubes. Blanch, cool, drain, and package leaving ½-inch headspace.	Whole 3 Cubes 1	— —

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Vegetable	Preparation	Blanching times (minutes)	
		In boiling water	In steam
Mushrooms	<p>Select edible mushrooms free of spots or decay. Wash and remove stem base. Freeze small mushrooms whole; cut large ones into four or more pieces.</p> <p>Mushrooms can be steamed or heated in fat in a fry pan. Steamed mushrooms will keep longer than those heated in fat.</p> <p><b>To steam:</b> Mushrooms to be steamed will have better color if first given anti-darkening treatment. To do this, dip for 5 minutes in a solution containing 1 teaspoon lemon juice or 1½ teaspoons citric acid to a pint of water. Then steam, cool promptly, drain, and package leaving ½-inch headspace.</p> <p><b>To heat in fry pan:</b> Heat small quantities of mushrooms in margarine or butter in an open fry pan until almost done. Cool in air or set pan in which mushrooms were cooked in cold water. Package leaving ½-inch headspace.</p>		Whole 9 Buttons 9 Slices 5
Onions	Select fully mature onions. Peel and wash. Blanch, cool, drain, and package leaving ½-inch headspace. Onions (including green onions) may also be frozen diced and unblanched.	3–7	—
Peas—edible pod	<p>Select young, bright green, flat, tender pods. Wash. Remove stems, blossom ends, and any strings. Blanch, cool, drain, and package leaving ½-inch headspace.</p> <p><b>NOTE:</b> If the peas have started to develop, follow the directions for green beans. If the peas are already developed, shell and follow the directions for green peas.</p>	Small pods 2 Large pods 3	4 5
Peas—green	Harvest when pods are filled with young, tender peas that have not become starchy. Wash and shell. Blanch, cool, drain, and package leaving ½-inch headspace.	1½–2½	3–5
Peppers—sweet (green)	Select crisp, tender, green or bright red peppers. Wash, cut out stems, cut in half, and remove seeds. Slice or dice. Blanch, cool, drain, and package leaving ½-inch headspace. May also be frozen unblanched.	Halves 3 Strips 2	5 3
Peppers—hot (green chile)	<p>Select firm, smooth peppers. Wash and dry. Protect hands with rubber gloves. Broil for 6 to 8 minutes to loosen skin. (First make a small slit in each to allow steam to escape.) Cool. Remove peel, seeds, and stems before or after freezing. Chop if desired. Package leaving no headspace.</p> <p>Hot peppers can also be frozen without heating first. Wash and stem peppers. Chop if desired. Package leaving no headspace.</p>	—	—

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Vegetable	Preparation	Blanching times (minutes)	
		In boiling water	In steam
New Irish potatoes	Select smooth new potatoes directly from the garden. Wash and peel or scrape. Blanch, cool, drain, and package leaving ½-inch headspace.  <b>For French fries:</b> Wash, peel, and cut into ½-inch sticks lengthwise, then crosswise into ½-inch strips. Rinse in cold water. Dry thoroughly. Fry small amounts in deep, hot fat (360°F) about 5 minutes until tender but not brown. Drain on paper towel. Cool. Package leaving no headspace. To serve, finish browning potatoes in a hot oven (475°F).	3–5	5–8
Potatoes—sweet	Select medium to large sweet potatoes. Wash and cook until almost tender. Cool. Peel, cut in halves, slice, or mash. To prevent browning, dip sweet potatoes 5 seconds in a solution of ½ cup lemon juice to 1 quart of water. To keep mashed sweet potatoes from darkening, mix 2 tablespoons orange or lemon juice with each quart of mashed sweet potatoes. Package leaving ½-inch headspace.  <b>Baked:</b> Wash, trim, and bake potatoes (with skin on) in oven until slightly soft. Cool completely, remove peel, and wrap individually in aluminum foil. Place in freezer bag and freeze. Complete the baking in an oven at 350°F immediately before serving, leaving potatoes wrapped in foil.	Cook	—
Pumpkin	<b>Also other winter squash.</b> Select full-color, mature pumpkin. Wash with vegetable scrub brush. Cut into fairly uniform pieces. Remove seeds. Cook until soft in oven or pressure cooker, or by steaming. Cool promptly, scoop pulp from rind, and mash or put through ricer. Package leaving ½-inch headspace.	Cook	—
Spinach	<b>Also other greens.</b> Select young, tender leaves. Remove tough stems. Wash. Blanch, cool, drain, and package leaving ½-inch headspace.	Collards 3 Spinach and others 2	5 3
Tomatoes	Select firm, ripe tomatoes.  <b>Raw:</b> Wash and dip in boiling water for 30 seconds to loosen skins. Core and peel. Freeze whole or in pieces. Package leaving 1-inch headspace. Seal and freeze. Use only for cooking or seasoning as tomatoes will not be solid when thawed. Raw tomatoes can also be frozen with skin on.  <b>Stewed tomatoes:</b> Remove stem ends, peel, and quarter ripe tomatoes. Cover and cook until tender (10 to 20 minutes). Place pan containing tomatoes in cold water to cool. Package leaving headspace (see table on page 6 for amount).  <b>Juice:</b> Cut in quarters or eighths. Simmer 5 to 10 minutes. Press through a sieve. If desired, season with 1 teaspoon salt to each quart of juice. Pour into freezer containers leaving headspace (see table on page 6 for amount).	Cook	—

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Vegetable	Preparation	Blanching times (minutes)	
		In boiling water	In steam
Turnips or parsnips	Select small to medium, firm turnips or parsnips that are tender and have a mild flavor. Wash, peel, and cut into ½-inch cubes. Blanch, cool promptly, drain, and package leaving ½-inch headspace.	3	5
Zucchini	<p><b>Also other summer squash.</b> Choose young squash with tender skin. Wash and cut in ½-inch slices. Blanch, cool promptly, drain, and package leaving ½-inch headspace.</p> <p>Grated zucchini (for baking): Choose young, tender zucchini. Wash and grate. Steam blanch in small quantities. Pack in measured amounts, leaving ½-inch headspace. Cool by placing the containers in cold water. Freeze. If watery when thawed, discard the liquid before using the zucchini.</p>	Slices 3 Grated —	5 1–2

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