



Preserving Food: Freezing Fruit

Freezing is one of the easiest, most convenient and least time-consuming ways to prepare foods at home. Freezing does not sterilize food; the extreme cold simply retards growth of microorganisms and slows down changes that affect quality or cause spoilage in food. Properly frozen fruits will retain much of their fresh flavor and nutritive value. Their texture, however, may be somewhat softer than that of fresh fruit.

Selecting Freezer Containers

Before preparing fruit for freezing, assemble the containers you will use. The selection of containers depends on the fruit being frozen, personal preference and the types that are readily available. Containers should be moisture-vapor resistant, durable, easy to seal and should not become brittle at low temperatures.

Containers suitable for freezing fruits include plastic freezer containers, flexible freezer bags or glass canning and freezing jars. If jars are used, be sure to use wide-mouth jars for fruits packed in liquid. Regular (narrow mouth) jars break too easily at the neck.

Some household containers are not recommended for freezing. The cardboard cartons that milk, ice cream or cottage cheese come in are not moisture-vapor resistant enough. Regular (not canning) jars break too easily at freezer temperatures.

Preparing the Fruit

Sort, wash and drain fruits carefully, discarding parts that are green or of poor quality. Do not allow fruit to soak in wash water or it will lose nutrients and flavor. Prepare fruits as they will be used—stemmed, pitted, peeled or sliced. Prepare enough fruit for only a few containers at a time, especially those fruits that darken rapidly.

Do not use galvanized equipment in direct contact with fruit. The acid in the fruit dissolves zinc, which can be harmful in large amounts. Also, be wary of using iron utensils or chipped enamelware, as metallic off-flavors can result.

Types of Packs

There are several ways to pack fruits for freezing: syrup pack, sugar pack, dry pack or unsweetened pack.

Most fruits have a better texture and flavor if packed in sugar or syrup. However, the sugar is not necessary to safely preserve the fruit. For those watching their sugar intake, it can be left out or an artificial sweetener can be substituted.

The type of pack will depend on the intended use. Fruits packed in syrup are generally best for uncooked dessert use; those packed in dry sugar or unsweetened are best for most cooking purposes, because there is less liquid in the product.

Syrup Pack – The proportion of sugar to water depends upon the sweetness of the fruit to be frozen. A 40-percent syrup is recommended for most fruits. Lighter syrups are desirable for mild-flavored fruits to prevent masking of flavors. Heavier syrups may be needed for very sour fruits. A small piece of crumpled, water-resistant paper can be used to hold the fruit down in the syrup, if necessary.

Sugar Pack – Sprinkle sugar over the fruit and mix gently until the juice is drawn out and the sugar dissolved. Soft sliced fruits such as peaches, strawberries, figs, deseeded grapes, plums and cherries will yield sufficient syrup for covering if the fruit is layered with sugar and allowed to stand for 15 minutes. Some small whole fruits may be coated with sugar and frozen.

Dry Pack – The dry pack is good for small whole fruits such as berries, that give a good quality product without sugar. Simply pack the fruit into a container, seal and freeze.

A tray pack is an alternative that may make the fruit easier to remove from the container. Simply spread a single layer of prepared fruit on shallow trays and freeze. When frozen, promptly package and return to the freezer. The fruit pieces remain loose and can be poured from the container and the package re-closed. Be sure to package the fruit as soon as it is frozen, to prevent freezer burn.

Other Unsweetened Packs – In addition to a dry pack, unsweetened fruit can be packaged in water, unsweetened juice or pectin syrup.

Unsweetened packs generally yield a product that does not have the plump texture and good color of those packed with sugar. The fruits freeze harder and take longer to thaw. However, some fruits such as raspberries, blueberries, steamed apples, gooseberries, currants, cranberries, rhubarb and figs give a good quality product without sugar.

The pectin syrup is often used for fruits, such as strawberries or peaches, that retain their texture better than if frozen in water or juice.

Packs for Purées and Juices – Purées and juices can be packed as is. Sugar may be added, if desired.

Using Artificial Sweeteners

Sugar substitutes may be used in any of the unsweetened packs. Both saccharin and aspartame work well in frozen products or they can be added to the fruit just before serving.

Artificial sweeteners give a sweet flavor but do not furnish the beneficial effects of sugar, such as color protection and thickness of syrup.

Labels on the products give the equivalents to a standard amount of sugar. Use directions on the container to determine the amount of sweetener needed.

Preventing Discoloration

Some fruits such as peaches, apples, pears and apricots darken quickly when exposed to air and during freezing. They may also lose flavor when thawed. There are several ways to prevent darkening of fruit and flavor loss.

Ascorbic Acid (Vitamin C) – Ascorbic acid or vitamin C is effective in preventing discoloration in most fruits. Not only does it preserve natural color and flavor of fruits, but it adds nutritive value as well.

Ascorbic acid in powdered form is available at some drugstores or where freezing supplies are sold. Ascorbic acid tablets may be more readily available and less expensive, but are more difficult to dissolve. They do need to be finely crushed before use. Fillers in the tablets may make the syrup cloudy, but they are not harmful. One-half teaspoon powdered ascorbic acid=1500mg.

Follow the directions below for using ascorbic acid in the various types of packs. Use the amount specified in the directions for freezing each specific fruit.

In syrup or liquid packs – Add powdered or crushed ascorbic acid to cold syrup shortly before using. Stir it in gently so you do not stir in air. Keep syrup refrigerated until use.

RECIPE

PECTIN SYRUP

1 box powdered pectin
2 3/4 cups water

Combine pectin and 1 cup water in saucepan. Heat to boiling and boil 1 minute. Remove from heat and add remaining water. Cool. Makes about 3 cups of moderately thick syrup. Add more water if thinner syrup is desired.

For fruit packed in water, unsweetened juice, or pectin syrup, submerge fruit by using a small piece or crumpled water resistant material, as for syrup pack. Seal tightly.

In sugar or dry packs – Dissolve the ascorbic acid in two or three tablespoons of cold water and sprinkle dissolved ascorbic acid over fruit just before adding sugar.

In crushed fruits, fruit purées and fruit juices – Add ascorbic acid to prepared fruit and stir well.

Ascorbic Acid Mixtures – Ascorbic acid mixtures are special anti-darkening preparations, usually made of ascorbic acid mixed with sugar, or with sugar and citric acid. The important active ingredient in these mixtures is ascorbic acid. Follow the manufacturer’s directions for use. Do not confuse this with the ascorbic acid specified in the table, *Directions for Freezing Fruits*.

Citric Acid or Lemon Juice – Citric acid or lemon juice are sometimes used in place of ascorbic acid. Neither, however, is as effective as ascorbic acid. When used in large quantities, they often mask natural fruit flavors.

Steaming – Steaming works best for fruits that will be cooked before use. Steam the fruit just until hot according to the directions for each fruit.

Syrups for Freezing Fruits

Type of Syrup	Percent Sugar*	Cups of Sugar**	Cups of Water	Yield of Syrup in (Cups)
Very Light	10%	1/2	4	4 1/2 cups
Light	20%	1	4	4 3/4 cups
Medium	30%	1 3/4	4	5 cups
Heavy	40%	2 3/4	4	5 1/3 cups
Very Heavy	50%	4	4	6

* Approximate.

** In general, up to one-fourth of the sugar may be replaced by corn syrup or mild-flavored honey. A larger proportion of corn syrup may be used if a very bland, light colored type is selected.

To make the syrup, dissolve sugar in lukewarm water, mixing until solution is clear. Chill syrup before using. Use just enough cold syrup to cover the prepared fruit after it has been placed in the container (about 1/2 to 2/3 cup of syrup per pint). To keep the fruit under the syrup, place a small piece of crumpled parchment paper or other water-resistant wrapping material on top and press fruit down into the syrup before sealing the container.

Packaging, Labeling and Storing

Most foods require headspace between the packed food and closure. This allows for expansion of the food as it freezes.

Before closing freezer containers, make sure sealing edges are free of moisture and food particles. Seal the container and label plainly. Include name of food, date and type of pack.

Freeze packaged fruits as quickly as possible at 0°F or below. For quickest freezing, place packages against the refrigerated surfaces of the freezer. Freeze no more food at one time than will freeze within 24 hours—usually two to three pounds of fruit per cubic foot of freezer space. After fruit is frozen, rearrange the packages and store close together.

Most fruits maintain high quality for eight to twelve months at 0°F or below; citrus fruits and citrus juices, for four to six months. Unsweetened fruits lose quality faster than those packed in sugar or syrup. Longer storage will not make the food unfit for use, but may impair its quality. It is a good idea to post a list of the frozen foods with freezing dates near the freezer and check the packages off the list as they are removed.

Headspace to Allow Between Packed Food and Closure (inches)

TYPE OF PACK	Container with wide top opening		Container with narrow top opening	
	PINT	QUART	PINT	QUART
Liquid Pack*	1/2	1	3/4***	1 1/2
Dry pack**	1/2	1/2	1/2	1/2

* Fruit packed in juice, sugar, syrup or water; crushed or purée; juice

** Fruit packed without added sugar or liquid.

*** Headspace for juice should be 1 1/2 inches.


Directions for Freezing Fruits

NOTE: The following fruits can all be packed using one of the unsweetened packs. However, the texture of some will be different than when sugar is used.

Fruit	Preparation	Type of Pack (Choose One)
Apples	Wash, peel, core and slice crisp, firm fruit. Slice medium apples into twelfths, large ones into sixteenths.	<ul style="list-style-type: none"> Syrup pack in a 40 percent syrup. If ascorbic acid is used, use 1/2 teaspoon per quart of syrup. Sugar pack using 1/2 cup sugar per quart of fruit, after steaming or boiling for 1 1/2 to 2 minutes to prevent darkening. Cool fruit in cold water and drain before mixing fruit and sugar. Dry pack using the instructions or sugar pack, but omitting the sugar.
Apricots	Wash, halve and pit firm, ripe apricots. Peel and slice if desired. If apricots are not peeled, heat in boiling water for 1/2 minute to keep skins from toughening during freezing. Cool in cold water, drain.	<ul style="list-style-type: none"> Syrup pack in 40 percent syrup. If ascorbic acid is used, use 3/4 teaspoon per quart of syrup. Sugar pack using 1/2 cup sugar per quart of fruit. Mix until all sugar is dissolved. If ascorbic acid is used, use 1/4 teaspoon dissolved in 1/4 cup water.
Blackberries or Dewberries	Wash and sort fully ripe, firm berries. Discard any soft or defective berries.	<ul style="list-style-type: none"> Syrup pack in 40 or 50 percent syrup. Sugar pack using 3/4 cup sugar per quart of berries. Use dry pack.
Blueberries or Huckleberries	Wash and sort fully ripe berries, removing leaves, stems and defective berries.	<ul style="list-style-type: none"> Use dry pack. Do not wash the berries until just before serving. Crush or purée the berries and then mix with 1 to 1 1/8 cups sugar per quart of crushed or puréed berries.
Cherries: sour	Wash, stem and pit bright red, tree-ripened cherries.	<ul style="list-style-type: none"> Syrup pack in 60 to 65 percent syrup. Sugar pack using 3/4 cups sugar per quart of fruit. Mix until sugar is dissolved.
Cherries: sweet	Wash, stem and pit bright, fully-ripe cherries of dark-colored varieties.	<ul style="list-style-type: none"> Syrup pack in 40 percent syrup. If ascorbic acid is used, use 1/2 teaspoon per quart of syrup.
Citrus Fruits	Wash and peel firm tree-ripened fruit that is heavy for its size. Divide fruit into sections, removing membrane and seeds.	<ul style="list-style-type: none"> Syrup pack in 40 percent syrup made from excess juice or water. Juice-Squeeze juice from the fruit, being careful not to press any oil from the rind. Freeze as is or add 2 tablespoons sugar per quart of juice.
Cranberries	Wash and drain firm, deep-red berries with glossy skins.	<ul style="list-style-type: none"> Use dry pack. Syrup pack in 50 percent syrup.
Figs	Wash fully ripe fruit. Peel if desired.	<ul style="list-style-type: none"> Syrup pack in 35 percent syrup. If ascorbic acid is used, use 3/4 teaspoon per quart of syrup, or use 1/2 cup lemon juice per quart of syrup. Use dry pack. If ascorbic acid is used, use 3/4 teaspoon per 3 tablespoons of water.

Fruit	Preparation	Type of Pack (Choose One)
Grapes	Sort, stem and wash fully ripe, firm, sweet grapes. Leave seedless grapes whole; cut table grapes with seeds in half and remove seeds.	<ul style="list-style-type: none"> • Syrup pack in 40 percent syrup. • Juice-Crush grapes. Add 1 cup water per gallon crushed grapes. Simmer 10 minutes. Strain juice through jelly bag. Let juice stand overnight in refrigerator or other cool place so tartrate crystals will settle. Pour off clear juice and freeze. (When freezing juice for jelly-making, be sure to use some slightly underripe fruit.)
Melons: Cantaloupe, Honeydew or Watermelon	Select firm-fleshed, well-colored, ripe melons. Remove seeds and peel. Cut into slices, cubes or balls.	<ul style="list-style-type: none"> • Syrup pack in 30 percent syrup.
Peaches or Nectarines	Sort, wash and peel well-ripened fruit.	<ul style="list-style-type: none"> • Syrup pack in 40 percent syrup. If ascorbic acid is used, use 1/2 teaspoon per quart of syrup. • Sugar pack using 2/3 cup sugar per quart of fruit. Mix until sugar dissolves. If ascorbic acid is used, dissolve 1/4 teaspoon in 1/4 cup water and sprinkle over the fruit. • Crush or purée peeled and pitted peaches and mix with 1 cup sugar per quart prepared fruit: (Heating the pitted peaches for 4 minutes in just enough water to prevent scorching makes them easier to purée.) If ascorbic acid is used, use 1/8 teaspoon per quart of prepared fruit.
Pears	Wash, peel, core and slice crisp, firm, well-flavored pears.	<ul style="list-style-type: none"> • Syrup Pack-Heat pears in boiling 40 percent syrup for 1 to 2 minutes. Drain and cool. Pack pears in cold 40 percent syrup. If ascorbic acid is used, use 3/4 teaspoon per quart of syrup.
Plums	Sort and wash ripe fruit that is soft enough to yield to gentle pressure. Leave whole or cut in halves or quarters and pit.	<ul style="list-style-type: none"> • Syrup pack in 40 to 50 percent syrup. If ascorbic acid is used, use 1/2 teaspoon per quart of syrup.
Raspberries	Wash and drain fully-ripe, well-colored berries.	<ul style="list-style-type: none"> • Sugar pack using 3/4 cup sugar for each quart of berries. Mix carefully to avoid crushing. • Syrup pack in 40 percent syrup. • Use dry pack.
Strawberries	Wash and remove caps from fully ripe, firm berries with a deep-red color.	<ul style="list-style-type: none"> • Syrup pack whole berries using a 50 percent syrup. • Sugar pack whole, sliced or crushed berries using 3/4 cup sugar per quart of fruit.

Putting Knowledge to Work



**When you have a question...
Call or visit your local office of
The University of Georgia's
Cooperative Extension Service.**

**You'll find a friendly, well-trained staff
ready to help you with information, advice
and publications covering family and
consumer sciences, agriculture and natural
resources, 4-H and youth development.**

Edited by Judy A. Harrison, Ph.D., and Elizabeth L. Address, Ph.D., Extension Foods Specialists.

The University of Georgia and Ft. Valley State University, the U.S. Department of Agriculture and counties of the state cooperating. The Cooperative Extension Service, The University of Georgia College of Agricultural and Environmental Sciences offers educational programs, assistance and materials to all people without regard to race, color, national origin, age, sex or disability status.

An Equal Opportunity Employer/Affirmative Action Organization Committed to a Diverse Workforce.

Issued in furtherance of Cooperative Extension work, Acts of May 18 and June 30, 1914, The University of Georgia College of Agricultural and Environmental Sciences and the U.S. Department of Agriculture cooperating.

Gale A. Buchanan, Dean and Director

FDNS-E-43-4

07-00