



freeze fresh Vegetables

Food Preservation

About Freezing and Changes in Vegetables During Freezing

Selecting and Preparing Vegetables Before Freezing

One of the simplest, most convenient, and quickest ways to preserve vegetables is freezing. Because of extremely low temperatures, freezing vegetables retards the growth of microorganisms and slows down enzyme actions (chemical changes causing browning) that cause food to spoil and affect quality (color and flavor changes and loss of nutrients like vitamin C).

Choose top-quality vegetables and follow recommended methods to get high-quality, nutritious foods for year-round enjoyment. 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 a 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.

Approximate Amount Needed to Yield 1 Pint of Frozen Vegetables

<i>Vegetable</i>	<i>Fresh</i>
Beans, lima (in pod)	2 to 2½ pounds
Beans, snap, green, or wax	⅔ to 1 pound
Beets	¼ to 1½ pounds
Broccoli	1 pound
Carrots	¼ to 1½ pounds
Corn (in husks)	2 to 2½ pounds
Eggplant	1 pound
Greens: spinach, kale, mustard	1 to 1½ pounds
Peas	2 to 2½ pounds

Blanching or Scalding: Enzyme Inactivation in Vegetables

Freezing retards but does not inactivate the action of enzymes. To inactivate enzymes, you must blanch vegetables.

In boiling water: Procedure – This method uses large amounts of water (4 quarts) to small amounts of prepared vegetables (1 pound) so that the water quickly returns to boiling after the vegetables are 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 water or ice water. Vegetables cool in about the same length of time as needed for blanching. Drain and package.
- If you reuse the boiling water, 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.

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.
- Paperboard cottage-cheese-type cartons are not airtight, but they can be used if a plastic bag is used to line the carton.
- 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.

Headspace is the amount of space to allow between food and closure. Headspace is necessary to allow for food expansion during freezing. Vegetables that pack loosely, such as broccoli and asparagus, require no headspace.

Dry pack – vegetables packed without liquid.

Selecting Containers

Packaging and Headspace Requirements

Headspace Requirements in Different Types of Packing and Container Openings

Type of Pack	Containers with Wide-top Opening		Containers with Narrow-top Opening	
	Pint	Quart	Pint	Quart
Dry pack	¾ inch	1 inch	1 inch	1 inch

Labeling

Use freezer or masking tape and felt-tipped pen or waxed pencil to mark containers. Include name of product, date, type of pack, and other information you want.

Freezing Guidelines

- Freeze 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° F (-18° 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° F (-18° C).
- Freeze small amounts of food at a time – not more than the amount that 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, which lowers the quality of the product and promotes spoilage.

Most vegetables maintain high quality for 8 to 10 months if they are stored at 0° F (-18° C) or below.

Using 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 ½ 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 for 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.

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

Whole kernel or cream-style

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.

Corn

On the cob

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, Spinach, 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.

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, put 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.

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Credits

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