

Freezing Vegetables



Freezing is one of the simplest and best ways to preserve vegetables. It is less time consuming than other methods, and the color, flavor, texture and nutritive value are much like the fresh product.

Most vegetables freeze well. Those with high water content, which are normally eaten raw, lose their crispness and get limp and tough when frozen.

If you have a freezer, there is no “out of season” for fresh vegetables. You can serve a variety of nutritious, tasty meals on short notice. Frozen vegetables cook in 1/3 to 1/2 the time required for fresh ones.

What Freezing Does

Freezing preserves food because it retards the activity of natural enzymes and stops or retards the growth of bacteria, yeasts and molds that cause spoilage. How good a frozen vegetable is depends on the quality of the fresh product and how carefully it's handled from the time it leaves the garden or field until it's ready to eat. To have the best quality in frozen vegetables, it is important to:



Freeze only high quality, fresh produce. Freezing will maintain quality; not improve it.

Handle quickly. Vegetables begin to deteriorate rapidly as soon as they are harvested.

Handle in a sanitary manner. Freezing does not destroy spoilage microorganisms as canning does; it only stops or retards growth.

Prepare properly. Blanching is the most important step in preparation for freezing.

Package airtight in moisture-vapor-proof freezer bags or containers. Exposure to oxygen and loss of moisture cause undesirable changes in flavor and a dried-out texture and appearance called freezer burn.

After packaging, barely cover vegetable with ice water before sealing. For most vegetables, you will have a much better product after long-term storage if they are frozen in water. The water forces all the air out and keeps the moisture in.

Freeze quickly and store at 0 degrees F. Slow freezing results in poor quality. Large ice crystals are formed,

which may result in a mushy texture and increased loss of natural juices when thawed.

Use within a reasonable length of time. Vegetables frozen in water will retain high quality for two or three years.

Selecting Vegetables to Freeze

Select vegetables for freezing that you enjoy eating fresh, and choose varieties most suitable for freezing. Vegetables that are fresh, tender and just mature are best. When possible, gather vegetables early in the morning, then freeze as quickly as possible. Freezing the same day is ideal, but if vegetables must be stored, refrigerate if possible, or spread in a cool, well-ventilated place.

Preparation for Freezing

Prepare vegetables for freezing the same as for cooking.

Wash thoroughly in cold water several times, lifting from the water, allowing soil and grit to settle to the bottom.

While washing, remove bruised or decayed portions.

Sort vegetables according to size for blanching, unless they are to be cut in uniform pieces.

Prepare vegetables for eating. Snap, shell or peel, trim and cut into pieces as directed in the chart.



Blanching

The only part of preparation for the freezer that seems to be a problem for some people is blanching, or heating. They cannot understand why it's necessary.

Why do we blanch vegetables? Actually, heating before freezing is the most important step in preparing vegetables for the freezer. All vegetables, except green peppers and onions or herbs for seasoning, must be heated. Heating destroys the natural enzymes found in vegetables.



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Enzymes are chemical substances that help vegetables grow and mature, but if their action isn't stopped before freezing, they destroy the fresh flavor about a month into storage. Their activity in frozen storage causes vegetables to develop off-flavors, off-odors, to discolor or to toughen.

Blanching also wilts and softens vegetables, making them easier to pack; destroys some of the surface bacteria; and helps remove any surface dirt left from washing.

Blanching is a critical step and must be done properly. The most common method is to put a small quantity of vegetable into a large quantity of boiling water for a short time.

To blanch:

Use a large kettle that can be covered, will hold at least a gallon of water and into which a fine mesh wire basket will fit. Or use a blancher that has a blanching basket and cover.

For each pound (3 to 4 cups) of vegetable, use a gallon of boiling water.

Place prepared vegetable in wire basket or loosely in a cheesecloth bag.

Immerse in the rapidly boiling water, stir.

When the water returns to a boil, immediately begin to count blanching time; stir again.

Follow recommended blanching time for each vegetable as given in the table. This is important because underblanching may stimulate enzyme activity and could be worse than no blanching; overblanching may cause excessive loss of vitamins and minerals, and result in a leftover, cooked flavor.

Water ideally should not stop boiling, but if it takes longer than one to two minutes to resume boiling, use a smaller quantity of vegetable.

When blanching time is finished, cool vegetable quickly in ice water or cold running water. It takes about as long to cool as to blanch. Bite into a piece. It should be cool to the tongue.

When cool, remove from water; drain. Use same blanching water for several batches.

Blanching Vegetables in the Microwave Oven:

Prepare vegetable by washing, peeling, slicing or dicing. Measure only 1 pound or about 1 quart of vegetable per batch. Following the chart, use the recommended size of casserole.

Add water, according to chart. Do not add salt. Cover casserole. Turn control to high or cook setting.

Stir vegetables after half of time listed.

Continue cooking. At end of blanching time, stir again. Blanched vegetables will have a bright, even color. Check vegetable at minimum time on chart; if color is not evenly bright throughout, stir well and continue cooking to maximum time.

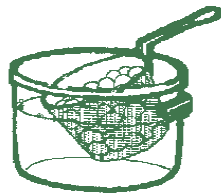
Put food immediately in ice water to stop cooking. When cold, drain.

Pack in moisture-vapor-proof containers. Freeze at once at zero degrees F.

Guide for Blanching Vegetables in the Microwave Oven

Vegetable	Amount	Casserole Size	Amount of Water	Time in Minutes
Beans, green or wax	1 pound (1 quart)	1 1/2 quarts	1/2 cup	3 1/2 to 5 1/2
Broccoli (1 inch cuts)	1 bunch	2 quarts	1/2 cup	3 to 5
Carrots	1 pound, sliced	1 1/2 quarts	1/4 cup	3 1/2 to 5 1/2
Cauliflower	1 head, cut into florets	2 quarts	1/2 cup	3 to 5
Corn*, whole kernel or cream style	4 ears, cut off before blanching	1 quart	1/4 cup	4 to 5
Onions	4 medium, quartered	1 quart	1/2 cup	2 1/2 to 4
Peas	2 pounds, shelled	1 quart	1/4 cup	3 to 4 1/2
Spinach	1 pound, washed	2 quarts	None	2 to 3
Other greens (cut or tear large leaves)	1 pound, washed	2 quarts	2 table- spoons	3 to 4
Squash, summer (Yellow, Zucchini)	1 pound, sliced or cubed	1 1/2 quarts	1/4 cup	2 1/2 to 4
Turnips	1 pound, cubed	1 1/2 quarts	1/4 cup	2 1/2 to 4

*Cool by setting casserole in ice water, stirring occasionally until cool.



Other Ways to Heat

Vegetables such as pumpkin, sweet potato and winter squash may be cooked until almost tender in water, steam, a pressure cooker or the oven. Broccoli is sometimes heated in steam; okra is often heated in hot oil, and cream style corn is heated in a saucepan or in the oven. Vegetables heated in this manner are cooled by setting the pan of vegetables in ice water and stirring often.



To heat in steam:

Use a kettle with a tightly fitting lid and a rack that will hold the steaming basket at least 3 inches above bottom of kettle. Pour water 1 to 2 inches deep in kettle; bring to a boil. Place a single layer of vegetable in basket and place over water. Cover kettle and keep heat high. Start counting steaming time as soon as the lid is on.

Steam broccoli 5 minutes; pumpkin, sweet potato and winter squash are cooked until soft.

Never steam greens; they mat together.

Packaging

Package vegetables immediately after cooling in moisture-vapor-proof materials and seal airtight. Select freezer containers that are moisture-proof, odorless and will not crack at zero degrees F. The most common freezing containers for vegetables are zippered plastic freezing bags, plain plastic freezer bags and reusable rigid plastic containers.

It's important to choose freezer bags rather than storage bags. Some freezer bags come with cardboard cover boxes. The boxes make it easier to fill the bags, help protect the bags from punctures, are good for wet-packed foods and easy to stack. Most of these plastics are polyethylene, which will not keep all the oxygen out, but since it is an excellent moisture barrier, most vegetables packaged in it will maintain high quality when frozen and stored at zero degrees F or lower.

Glass freezing jars are moisture-vapor-proof and are excellent containers, especially for soft or cooked foods or those packed in liquid. They require more care because they can break.

Pack vegetables tightly in containers, filling airspaces and leaving 1/2 inch headspace.

To fill freezer bags:

Barely cover vegetables with ice water, leaving 1/2 inch headspace. The water pushes air out and forms a protective glaze when frozen. This keeps moisture in. The bags will lie flat for freezing.

If water is not used, press bags from bottom, removing as much air as possible. Another good way to remove air is to submerge all but the bag opening in water, forcing the air out. Leave 1/2 inch headspace, and seal bags by closing zipper or by twisting the top where the food ends to form a spiral. Double it back, then close with a rubber band, wire twist or string.

It is desirable to put plain plastic bags in cover boxes before filling to protect them from punctures and to make stacking easier.

Blanched vegetables may be spread in single layer on a tray, frozen quickly, then packaged loosely in large plastic bags. They won't stick together, and the desired amount can be removed and the package closed.

Label with kind of vegetable and date. Freeze immediately at zero degrees F or lower. Do not put more food in the freezer than will freeze in 24 hours. Most home freezers can freeze 2 or 3 pounds per cubic foot capacity. This means about 45 pounds for a 15-cubic-foot freezer.

Freezing Herbs

Fresh or frozen herbs have a more delicate flavor than commercially dried ones. They can perk up many vegetables and meat dishes and add interest and variety to your meals.

When you buy bunches of parsley for garnishes, chop and freeze unused portions in small amounts. It thaws almost instantly and will make a lot of things look pretty. Many other garden herbs, such as dill weed, marjoram, thyme, fennel and mint, can be frozen.

Herbs, like onions, chives and peppers used for seasoning, need not be blanched (scalded). Wash and drain. Wrap a few sprigs in individual packages of plastic film or foil, then put several together in a plastic freezer bag or container. Seal, label and freeze.

Chop while frozen and use for flavor and color in soups, stews, cooked vegetables and other dishes. Since they are limp when thawed, they should be chopped and used for color and flavor rather than used as a garnish.

Vegetables That Don't Freeze Well

Unblanched Vegetables – except green peppers or onions for seasoning. Within a short time they begin to lose fresh flavor and nutritive value, and have an odd taste. Always blanch vegetables.

Fresh Whole Tomatoes – Water content is so high they collapse when thawing, losing lots of juice. It's better to cook them down before freezing.

Mature, Raw Irish Potatoes – They get mushy after cooking. Bake, mash or par-fry for french fries before freezing. Plain cooked potatoes, such as boiled or in stews or potato salad, get spongy.

Lettuce, Cabbage, Celery, Carrot Sticks for eating raw – They lose crispness and get limp and tough when frozen.



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Guide to Freezing Vegetables			
Vegetable	Selection	Preparation	Blanching Time
Asparagus	Select young tender stalks.	Sort by size. Wash thoroughly. Cut off tough parts of stalks. Leave whole or cut into desired lengths.	Small stalks - 2 min. Large stalks - 4 min.
Beans, lima (or butter beans)	Bright green, well-filled pods.	Shell and sort according to size.	Small - 2 min. Large - 4 min.
Beans, snap (green or wax)	Young, tender beans that snap when broken.	Wash, remove ends. Snap or cut.	3 min.
Beans, shelled	Select pods that are plump, mature; not dry or wrinkled.	Shell.	1 min.
Beets	Select young, tender beets, less than 3 inches in diameter.	Wash, sort. Do not peel; leave roots, trim tops, leaving 1/2-inch stems. Cook in boiling water until tender. Cool enough to peel.	Small - 25 to 30 min. Medium - 45 to 50 min.
Broccoli	Select tender, dark green stalks, compact heads (without blooms).	Wash, trim. To remove insects, soak 1/2 hour in salt water (4 teaspoons salt per gallon water). Separate stalks so florets are no more than 1 1/2 inches across. Split large stalks to 1/2-inch thickness.	3 min. (Steam: 5 min.)
Brussels sprouts	Select firm, green heads.	Trim, remove outer leaves, wash; sort according to size.	Small - 3 min. Large - 5 min.
Cabbage	Select fresh, firm green heads with crisp leaves.	Discard outside and defective leaves. Cut in wedges or shred coarsely.	Wedges - 3 min. Shredded - 1 1/2 min.
Carrots	Select small, tender carrots.	Wash, scrape or peel. Leave small carrots whole; dice or slice others.	Slices - 2 min. Whole - 5 min.
Cauliflower	Choose firm, tender snow-white heads.	Break or cut into florets. Wash well. To remove insects, soak 1/2 hour in salt water (4 teaspoons salt per gallon of water). Add 1 tablespoon vinegar or lemon juice to 1 gallon blanching water to preserve color.	3 min.
Celery (for cooked dishes)	Select crisp, tender stalks free from coarse strings and pithiness.	Wash thoroughly. Trim and cut into 1-inch lengths.	3 min.





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Corn, sweet (Corn-on-the-cob, whole kernel, Southern cream style)	Select ears with fresh, succulent husks with a good green color, and well covered with plump, tender kernels. When ears are pierced with thumbnail, milky juice should spurt from kernels.	<p>On-the-cob: Prepare within 2 to 3 hours after harvesting, if possible. Husk, remove silks with a vegetable brush. Trim ends, wash.</p> <p>Whole kernel: Blanch 4 minutes, chill and drain. Cut kernels from cob at about 2/3 the depth of the kernel. Pack tightly into freezer containers or bags, leaving 1/2 inch headspace. Seal and freeze.</p> <p>Southern cream style: Cut and scrape before blanching for creamier corn. Cut corn at center of kernels, then scrape cob with back of knife to remove juice and heart of kernel. Use sharp knife or corn cutter. Add 1 to 2 cups water for each quart of corn and choose one of these methods for heating: on top of stove in pan or double boiler, or in the oven.</p> <p>On top of stove: Pan: Heat corn and water mixture to boiling and cook 4 minutes, stirring constantly to keep from sticking or scorching. Double boiler: Heat 10 to 15 minutes or until heated thoroughly. Stir occasionally. Cool quickly. Oven: Heat at 350 degrees until very hot; continue to heat 4 minutes. Requires less stirring.</p> <p>Cool corn quickly by placing pan or ice or in a pan of ice water, or change corn to a cold, shallow pan and place on ice. Stir often until cool. Package in freezer containers or bags and freeze.</p>	<p>Small ears - 7 min. (1 1/4 inches or less)</p> <p>Medium ears - 9 min. (1 1/4 - 1 1/2 inches)</p> <p>Large ears - 11 min. (more than 1 1/2 inches)</p>
Eggplant	Best when picked young, 6 to 8 inches long. Skin may be a glossy dark purple, light green or white – depending on variety. Seeds should be small and hardly noticeable.	Peel, slice in 1/4- to 1/2-inch slices or dice. To prevent darkening, peel into salted water (1 tablespoon salt to a quart of cold water). Cool after blanching, then dip into a solution of 1 tablespoon citric acid or 1/2 cup lemon juice in quart of water to preserve color.	2 to 4 min.
Greens (spinach, mustard, turnip, chard, kale, collards)	Select fresh, young, tender greens, free from blemishes.	Look over greens carefully for insects when washing. Wash thoroughly several times, lifting greens from water. Cut or tear out tough stems and midribs. Note: Another good way to freeze greens is to cook, then package immediately (without cooling) in half-pint or pint containers; set containers in cold water a short time to cool, then freeze immediately.	<p>Collards – 3 min.</p> <p>Others – 2 min.</p>



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Mushrooms		Sort by size. Wash in salt solution (5 teaspoons salt to a quart of water). Trim stems. Leave whole or slice. Add 1 tablespoon lemon juice to quart of blanching water or saute in margarine until tender.	2 to 4 min. (according to size)
Okra	Select small to medium-sized pods that are fresh, young and tender, with small immature seeds.	Wash, cut off stems, but don't open seed cells. Blanch whole. You can slice after blanching, if desired. To heat cut okra, place in a skillet the bottom of which has been covered with fresh oil. Stir to coat okra with oil; heat on top of stove 6 to 8 minutes or in 350 degree oven about 12 minutes, stirring occasionally.	Small pods – 3 min. Large pods – 4 min.
Onions (yellow or white)		Peel, chop. Package in small portions, use within 2 months.	Do not blanch.
Parsley (other herbs)		Wash well, drain. Chop. Freeze in small containers.	Do not blanch.
Peas, English or green	Well-rounded pods; sweet, tender peas.	Shell; discard starchy peas.	1 1/2 min.
Snow peas (Chinese edible pod peas)	Pick when young just as peas can be seen inside pods.	Remove stem and blossom ends, and any string.	1 1/2 min.
Peas, field (blackeye, cream, crowder, purple hull, etc.)	Select fresh-looking pods with well-formed peas that are young and tender. Discard yellow or dry pods.	Shell; discard starchy peas.	2 min.
Pepper, sweet	Crisp; a glossy shine and thick flesh	Wash, split, remove stems and seeds. Leave in halves or chop. Not necessary to blanch. It's best to package in glass jars to prevent odors from getting into other foods. You may want to blanch peppers for making stuffed peppers, but it isn't necessary.	2 min.
Potatoes, Irish new potatoes Mature	Freshly dug, small potatoes.	Scrub, scrape or peel. Bake and stuff as usual. Wrap individually in foil or plastic film and freeze. Or cook and mash or whip. Parfry for french fries. Cut in strips, wash in cold water, pat dry. Fry about 4 minutes, or until done but not brown.	Cook until barely tender.
Potatoes, sweet (yams)	Select well-cured potatoes, smooth and bright.	Sort according to size and wash. Grease and bake until 3/4 done, or bake completely. Or cook until almost tender, cook enough to peel; cool and package; or cook until tender and mash. To prevent darkening, dip cut potatoes in a solution of 1 tablespoon citric or ascorbic acid per quart of water or 1/2 cup lemon juice per quart of water. Add 2 tablespoons lemon or orange juice per quart of mashed potatoes. Prepared casseroles freeze well.	
Pumpkin	Mature; not coarse or stringy. Firm, hard shell.	Wash, cut in pieces, remove seeds.	Cook until soft. Mash or puree.



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Vegetable	Selection	Preparation	Blanching Time
Mirliton or vegetable pear (or chayote)	Green pear-shaped varieties with wrinkled surfaces usually grown in this area. May vary from green to ivory and be smooth or prickly. Contour may be round or a flattened pear shape. Should be fiberless with little or no seed coat, and flesh should be firm and tender.	Wash, remove stem and blossom ends. Do not peel; dice.	2 min.
Spinach – see Greens			
Squash, summer (yellow, white, zucchini)	Pick when young and tender before skin hardens. Yellow – 4 to 7 inches. White – small size; skin greenish white before it turns ivory. Zucchini – 5 to 8 inches.	Wash, cut off stem ends. Cut in 1/4 to 1/2 inch slices.	3 min. (Steam: 4 1/2 min.)
Squash, winter (acorn, banana, butternut, Hubbard)	Select mature, fully colored, firm and with a hard shell.	Wash and peel. Cut open and remove seeds; cut in chunks.	Cook until soft in small amount water. Mash.
Turnips, Rutabagas Tomatoes	Peel and cook.	Cut off tops, peel, dice or cube.	1 min.

Additional Information

Contact an agent in your parish LSU AgCenter Extension Office for more information on growing, preparing and preserving nutritious foods – as well as a variety of other topics including 4-H youth development, family and home, crops and livestock, lawns and gardens, and much more.

To find the LSU AgCenter office nearest you, check your local phone listings or visit www.lsuagcenter.com. (If you don't find LSU AgCenter listed in the business pages of your phone directory, try "county agent" or "extension service" in the blue pages or government services listings of your phone book.)

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