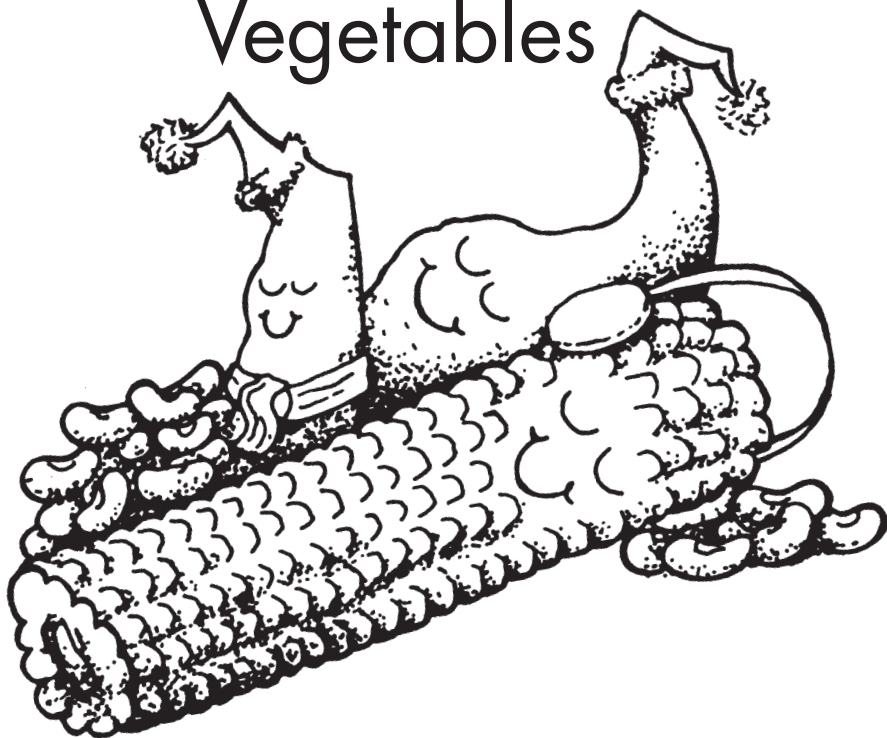


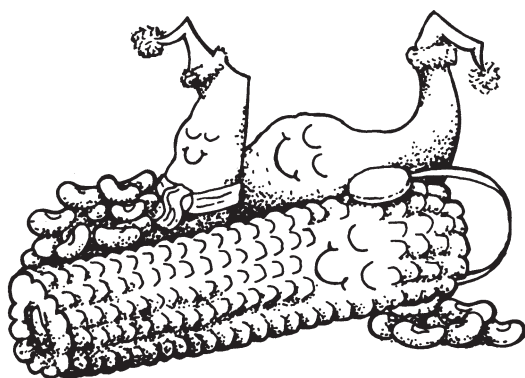
# Summer the Year Round with Frozen Vegetables



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HE-16-A  
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**F**REEZING VEGETABLES is simple and easy, and most vegetables can be successfully frozen. When properly selected, prepared, frozen, and stored, they hold their fresh qualities. The flavor, color, texture, and nutritive value do not change. Vegetables that have been bought, taken home, and then frozen usually are not as fresh tasting as those that have been grown at home. Practically all frozen vegetables may be held for about a year.

*Foods properly frozen and stored come from the freezer just as good as when they were put in—no better.* Freezing does not improve the product.

When freezing vegetables, a few important techniques help ensure a quality product.

## SELECTING VARIETY

Select the varieties that your family enjoys eating fresh and that are especially suitable for freezing. Do not put too much importance on varieties; other factors are equally important.

**Table 1.** SOME RECOMMENDED VEGETABLE VARIETIES FOR FREEZING

Beans (bush, snap)	Contender, Harvester, Top Crop, Green Crop
Beans (pole, snap)	Kentucky Wonder 191, McCaslan, Dade, Blue Lake 231
Beans (bush, lima)	Thorogreen, Henderson, Fordhook 242, Jackson's Wonder (colored)
Beans (pole, lima)	Carolina Sieva, Florida Speckled
Beets	Detroit Dark Red, Asgrow Wonder
Broccoli	Early Green Sprouting, Coastal
Carrots	Red Cored Chantenay, Danvers 126
Cauliflower	Snowball
Corn	Seneca Chief, Aristogold Bantam Evergreen, Silver Queen (white), Golden Security
Eggplant	Black Beauty, Florida Highbush
Mustard	Southern Giant Curled, Florida Broadleaf
Okra	Clemson Spineless, Emerald
Peas (garden)	Wando, Victory Freezer, Little Marvel
Peas (field)	Giant Blackeye, Mississippi Purple Hull, White Acre, Pinkeye Purple Hull, Mississippi Silver, Floricream
Pepper (sweet)	Keystone Resistant Giant, Trueheart, Yolo Wonder L
Pimiento	Trueheart Perfection
Pumpkin	Alagold
Spinach	Bloomsdale Savoy
Squash (summer)	Yellow Crookneck, Dixie, Early Prolific
Turnip greens	Shogoin (mild), Purple Top White Globe

## PICKING

Vegetables that are tender and just mature are best. This is very important. The fresher the vegetable when put in the freezer, the more satisfactory the product. Gather only as many vegetables as can be completely processed and placed in the freezer within a

2-hour period. From the vine to the freezer in 2 hours is an excellent rule to follow. Vegetables are generally better if picked in the early morning just when the dew is off the vines. Picking at night and holding in the refrigerator until the next day is not advisable for best quality. But if it becomes necessary to store vegetables, spread them in the refrigerator or in a cool, well-ventilated place.

## PREPARING

Prepare vegetables for freezing in much the same manner as for cooking for lunch or dinner. Wash carefully and thoroughly before starting the preparation. While washing, sort for size and eliminate any inferior vegetables. For best results, freeze only the choice, fresh, tender ones. Size-sorting of vegetables is important for blanching, and it also makes packaging easier. *Lift* vegetables up and down when washing; this agitates the water and removes trash and dirt.

## BLANCHING

*Blanching is a must—never to be omitted* (except for sweet pepper).

Blanching is a critical step and must be done carefully; otherwise, a poor product will result.

Why blanch vegetables? The most important reason is that it stops the enzyme action that destroys the fresh flavor in some vegetables. If vegetables are not blanched, enzymes are left in their active state, and the frozen food undergoes a change in flavor and

**Table 2.** BLANCHING TIME FOR VEGETABLES\*

Vegetable	Time in Vigorously Boiling Water
Beans (lima)	2 to 4 minutes
Beans (snap)	3 minutes
Corn (on cob)	7 to 11 minutes
Corn (whole grain)	4 minutes
Corn (cream style)	4 minutes
Peas (garden or field)	2 minutes
Okra	3 to 4 minutes
Squash	3 minutes

\*See Alabama Cooperative Extension System Publication HE-1, *Food Preservation in Alabama*, for other vegetables.

color after about 4 to 6 weeks of freezer storage. An off-odor develops, too, and is very noticeable when the vegetable is cooked for the family meal.

Blanching shrinks some vegetables, making them easier to pack. Also, blanching destroys some bacteria and helps remove any dirt that might be on the vegetables.

It is important that only *1 pound* (about 1 pint) of vegetable be used in *1 gallon of vigorously boiling water*. This may seem like a small amount of the vegetable. However, the water must circulate around each piece and must return to a boil quickly for the enzymes to be destroyed. Hence, you will have a much better product with this proportion. It does not take any more time to blanch 4 quarts of a vegetable using this method than it does to blanch the 4 quarts all at one time.

As soon as the gallon of water is boiling *vigorously*, add the pound (pint) of prepared vegetable, stir, and place the lid on the blancher. Be sure the range unit is on high. The water will return to a boil within a minute or less. *When the water has returned to a vigorous boil, start timing*. Remove the lid and stir so the pieces will not clump together. Then replace lid. To destroy the enzymes, the inside of the vegetable must reach a temperature of about 180 to 190 degrees F. That is why it is important to use a gallon of vigorously boiling water to a pint of vegetable and to start timing only when the water *returns* to a vigorous boil.

Follow the recommended blanching time for each vegetable. This is important; under-blanching may stimulate the activity of enzymes and could be worse than no blanching. That is why some home-makers claim blanching is unnecessary; they did not blanch correctly.

Prolonged blanching causes loss of vitamins, minerals, flavor, and color.

When blanching leafy vegetables, use 2 gallons of boiling water to prevent the leaves from matting together.

You can use the same blanching water for six to ten batches of the same vegetables.

## **COOLING**

Blanched vegetables need to be cooled as quickly as possible to stop the cooking process. Too, some spoilage organisms live at temperatures over 100 degrees.

Cooling can be done by two methods. Remove the blanched vegetable from the boiling water. Put the vegetable into a large pan of ice and ice water.

A second method is to place blanched vegetables in a single layer on a clean, wet cloth on a rack. The rack should be elevated about 2 to 3 inches. Let a fan blow on the vegetable to cool it. It is important that the cloth be sopping wet; otherwise, the vegetable will dry out. This method is especially good for okra and squash.

It generally takes 3 to 4 minutes to cool the vegetable by either one of these methods.

If the ice-and-ice-water method is used, be sure to have enough ice made for the day. Covered containers of water can be placed in the freezer a day or so earlier to have an adequate supply of ice.

## **PACKAGING AND LABELING**

Immediately after cooling, pack the vegetable in meal-size portions. If packaging lima beans, peas, or snap beans, add enough ice cold water to just cover the vegetable. This removes air and helps preserve the characteristic color and flavor of the vegetable.

Any food that is to be frozen should be packaged in moisture-vapor-resistant freezer containers: moisture-resistant so that the food will not dry out; vapor-resistant so that oxygen will not penetrate the package and cause the fat to develop an off-flavor. (Peas, lima beans, etc., all have some fat content.) Vapor-resistant containers also prevent odors of other foods from penetrating the package.

Other features to look for in freezer containers are (1) odor free, (2) will not crack at zero degrees, and (3) grease resistant. Two of the most common freezer containers for vegetables are polyethylene freezer bags with cover boxes and rigid polyethylene containers. Check new polyethylene freezer bags for leaks by filling with cold tap water.

Pack vegetables firmly in the freezer container to remove as much air as possible. Air dries out the food. Leave about ½-inch headspace in most dry packs. If cold water is added to snap beans, peas, or lima beans after they are packed, allow about ¾-inch to 1-inch headspace.

Fill polyethylene freezer bags to within 3 inches of the top. Seal by twisting the top of the bag where the food ends to form a spiral, double it back, then wrap with a rubber band, pipe cleaner, or similar closure material about ½ inch to ¾ inch *from* the food. This allows space for the food to expand.

Always place bag in a cover box to protect it from tears or punctures; otherwise, moving food around in the freezer may damage the bag. Then

the food will dry out, and some flavor, texture, and color will be lost. Also, the cover box is easier to store.

Follow manufacturer's directions when using rigid polyethylene freezer containers.

Write name of product and freezing date on each package.

Glass jars can break. When food freezes it expands and the jars may break. If using a standard canning jar with a standard-size opening, do not fill quite to shoulder of jar. Pint standard canning jars with tapering sides can be filled to within  $\frac{1}{2}$  inch of top for dry packs and  $\frac{3}{4}$  inch for those with liquid (quarts need 1 inch). Use new, flat lids each time. Scald them before placing on jar.

A wax-type carton usually cannot be sealed airtight. And, too, the wax can crack at zero degrees. This is especially true of milk containers. Some of these are plastic coated, but the lid does not fit airtight, and the plastic coating may not always be moisture-vapor-resistant. Milk cartons are made to hold milk for about one week at refrigerator temperature—not food at zero degrees.

## **QUICK-FREEZING**

Freeze vegetables as quickly as possible. Zero degrees or below is best. Slow freezing causes cells to break down, and upon cooking, they do not hold the juice. Generally, the vegetable will be soft and flabby.

Poor quality will result if you try to freeze too many vegetables at one time. Do not add more than 2 to 3 pounds of unfrozen food per cubic foot of freezer space. If you have a 20-cubic-foot freezer, add only 40 to 60 pints of unfrozen vegetables at one time. Twelve to 24 hours later, more food can be safely added. Place unfrozen food in the coldest part of the freezer—generally the sides and bottom of a chest type and on certain freezing shelves in an upright. Leave an airspace between the packages so that they will freeze quickly. After the packages are completely frozen, they can be stored close together.

## STORING

The colder the freezer temperature, the better it is for the food. Never let the temperature get above zero. Frozen vegetables lose color, flavor, texture, and nutritive value when stored at temperatures above zero.

## COOKING

Most vegetables are cooked without thawing. However, corn on the cob, cauliflower, broccoli, and leafy vegetables cook more uniformly if partly thawed. It is best to thaw food in the refrigerator. Do not overcook frozen vegetables, especially snap beans; they will be too soft.

## TEN POINTS FOR QUALITY

1. Use mature, yet tender, vegetables.
2. Remember: 2 hours from the vine to the freezer.
3. Blanch correctly.
4. Cool quickly.
5. Package in moisture-vapor-resistant freezer material.
6. Remove air from package.
7. Seal and label.
8. Freeze in coldest part of freezer.
9. Store at zero degrees or below.
10. Use within 12 months.

See Alabama Cooperative Extension System publication HE-1, *Food Preservation in Alabama*.

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**For more information**, call your county Extension office. Look in your telephone directory under your county's name to find the number.

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