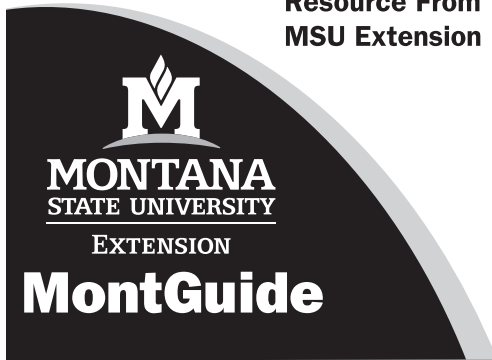


Freezing Vegetables



by Lynn Paul, Ed.D., RD, Professor and Extension Food and Nutrition Specialist, Montana State University-Bozeman; and MSU Extension Agents Judy Johnson, formerly Richland County; and Katelyn Andersen, Ravalli County

Freezing is a convenient method for preserving foods at home. Frozen foods will maintain most of their nutritional value and fresh flavor if frozen properly.

MT200908HR Revised 2017

Safety is the Top Priority

Safely preserving foods at home by canning, drying, and freezing requires using processing methods that not only preserve the food but also destroy bacteria and molds that cause foodborne illness or food poisoning. Protect yourself and others when sharing home-preserved foods by learning safe preservation techniques. The safest recipes and resources are those that have been researched and rigorously tested by the United States Department of Agriculture (USDA) and Extension Services associated with land-grant universities. Many home-preserved recipes are not tested for safety, so it is critical to use the resources located below.

Recommended Research-based Food Preservation Resources

National Center for Home Food Preservation (NCHFP), USDA sponsored website is the most current source for publications, video clips, tutorials for the beginning home food preserver, frequently asked questions, and seasonal tips: <http://nchfp.uga.edu/>

USDA Complete Guide to Home Canning, 2015. Earlier editions not recommended. Available on NCHFP website, click on 'publications.'

So Easy to Preserve, 6th edition, 2014 only. Earlier editions not recommended. <http://www.soeasytopreserve.com>

The following publications are available at local stores or order online. *The All New Ball Blue Book of Canning and Preserving*, 1st ed., 2016; *The Best Ball Home Canning and Preserving Recipes: Fresh Flavors All Year Long*, 1st ed. 2016; *Ball Blue Book Guide to Preserving, 37th ed.*, 2014. Earlier editions not recommended.

Advantages of Freezing Vegetables

Freezing is a convenient method for preserving foods at home. Frozen foods will maintain most of their nutritional value and fresh flavor if frozen properly. Freezing acts to preserve food by almost completely stopping growth of bacteria and other microorganisms that cause foodborne illness or spoilage, at least while the food is completely frozen.

Freezing causes texture changes when the water inside the vegetables expands and ruptures the cells. This results in soft vegetables after defrosting.

Selecting and Preparing Vegetables

Use vegetables at peak flavor, maturity and texture and if possible, freeze vegetables within two hours of harvest. Wash vegetables in cold water, using small quantities of vegetables. Do not let vegetables soak.

Selecting Containers

Select freezer containers that meet the following characteristics:

- Moisture/vapor resistant (waterproof)
- Should not become brittle or crack at low temperatures
- Straight or flared sides to easily remove food before thawing
- Square or rectangular, flat-sided containers use space economically

All safe packaging material must be food grade. Approved by FDA as not containing or transferring chemicals hazardous to human health into food, food grade materials are clearly labeled for food use. These include glass canning jars, ceramic containers, plastic freezer bags, plastic freezer containers with tight lids, and freezer wraps of plastic, paper, or foil. Examples of containers not approved for food contact include trash bags and plastic fiberboard containers that have previously held non-food materials.

Vacuum Sealing

Vacuum sealing foods can increase the shelf life of some foods, but it is NOT a food preservation method by itself. If the food required refrigeration or freezing before vacuum sealing, it must still be kept refrigerated or frozen. Essentially vacuum sealing removes oxygen. Lower levels of oxygen help reduce food spoilage. But on the other hand, this reduction in oxygen increases the risk of botulism, a potentially deadly foodborne illness caused by a bacteria that grows best when oxygen is removed during vacuum sealing.

Blanching Vegetables

Blanching time (scalding vegetables for a short period of time) is very important and varies among vegetables. Follow the correct blanching time according to vegetable. Under-blanching stimulates enzymes, which is worse than no blanching. Over-blanching causes loss of flavor, color, vitamins and minerals. Blanching and prompt cooling will extend the overall quality

of the vegetable by slowing enzyme action that can cause loss of quality, flavor, texture, and nutrients. It will also destroy some bacteria that can cause spoilage and remove additional dirt. Blanching will cause some wilting or softening of vegetables, making them easier to pack.

Blanching and Cooling Methods

Water Blanching

- In a blancher or large kettle with lid, bring at least one gallon of water to a rapid boil per pound of vegetable.
- Place vegetables in a metal basket or cheesecloth and lower into boiling water and cover with lid.
- Water should return to boil within one minute; if not, too large a quantity of vegetables is being used.
- Start counting time as soon as the water returns to a boil.
- Keep the heat on high for the total blanching time. It is very important to follow the recommended blanching time for each vegetable.
- Follow cooling directions to stop the cooking process and follow directions for packing and freezing.

Microwave Blanching (not recommended)

Blanching in the microwave is not recommended because research has shown that some enzymes may not be inactivated.

Cooling

- Cooling vegetables should take as long as blanching time.
- Drain vegetables thoroughly after cooling as extra moisture can cause loss of quality.
- Cool by plunging the basket or bag of vegetables immediately into a large quantity of cold water (60°F or lower).

Packing Methods

Headpace is required for most vegetable packs except tray pack. Headpace is the amount of empty space between food and the top of the container that should be left and is necessary for expansion of the food as it freezes.

Dry Pack

- Tightly pack the blanched, cooled and drained vegetables leaving ½ inch of headspace for rigid containers.
- Leave three inches of headspace for freezer bags and push out air in the bag. Keep the zippered spaces and channels completely dry and free of moisture, or frozen crystals can break the seal in storage.
- Headspace is not necessary for foods such as broccoli and asparagus that do not pack tightly.

Tray Pack

- Place blanched, chilled and well-drained vegetables in a single layer in shallow trays or pans.
- Place in freezer until firm (check after one hour), then remove and quickly fill containers or bags.
- Headspace is not a consideration for tray pack.

- Quickly close rigid containers. If using freezer bags, quickly press out air and close. Freeze immediately.
- Keep the zippered spaces and channels completely dry and free of moisture, or frozen crystals can break the seal in storage.
- Pack tray vegetables loosely so the desired amount can be poured from the container and the package reclosed.

Labeling, Thawing and Storing

- Leave space between packages so air can circulate while the vegetables are freezing. After the product is frozen, store packages close together.
- Use freezer tape to seal the lids of loose fitting containers.
- Label each package with the following information: vegetable and form (sliced, whole, etc.), added ingredients, date, and amount. Label with tape, marker or gummed labels – all made specifically for freezing.
- Freezer should be 0°F. Lower freezer to -10°F 24 hours prior to freezing foods to facilitate quick freezing. Storing frozen foods above 0°F increases the deterioration of food.
- Keep vegetables frozen for no longer than 12 months for best quality.
- If the freezer stops working, vegetables can be safely refrozen if they still contain ice crystals or if they are thawed but are still cold (40°F) for no longer than one or two days. If safely refrozen, vegetables will typically have reduced quality.
- Safely thaw foods in refrigerator (best), microwave on defrost, or submerge container in cold water. Do not thaw at room temperature due to safety and quality concerns.

Vegetable Freezing Guide

NOTE: Blanching times given are for elevations 5,000 feet or lower. Add one minute to times given for altitudes above 5,000 feet.

Asparagus

Select young, tender stalks with compact tips. Remove or break off tough ends and scales. Wash thoroughly. Sort by size. Cut to fit containers or in 2 inch lengths. Water blanch small stalks 2 minutes, medium stalks 3 minutes and large stalks 4 minutes. Dry pack with no headspace, or tray pack.

Beans – Green

Select young, tender stringless beans. Wash thoroughly, remove ends and sort for size. Cut into 2 to 4 inch pieces, leave whole, or slice into lengthwise strips. Water blanch 3 minutes. Cool and drain. Dry pack with ½ inch headspace, or tray pack.

Beets

Select tender, young beets. In order to prevent bleeding while cooking, trim tops and tap roots, leaving ½ inch of stems. Wash; sort for size. Cook in boiling water until tender – 25 to 30 minutes for small beets, 45 to 50 minutes for medium-sized beets. Cool and drain; remove top and tap root, peel, slice or cube. Dry pack with ½ inch headspace or tray pack.

Broccoli

Select tender, dark green stalks. Wash, peel and trim stalks. To remove insects from heads, soak 30 minutes in salt solution 4 teaspoons salt per gallon water. Rinse and drain. Split lengthwise into pieces not more than 1½ inches across. Water blanch 3 minutes. Cool and drain. Dry or tray pack without headspace.

Brussels Sprouts

Select green, firm and compact heads. Wash and trim. Water blanch small heads 3 minutes, medium heads 4 minutes, and large heads 5 minutes. Cool and drain. Dry or tray pack without headspace.

Cabbage

Wash. Trim coarse outer leaves off solid heads. Cut heads into medium or coarse shreds, thin wedges or separate into leaves. Water blanch 1½ minutes. Cool and drain. Dry pack with ½ inch headspace or tray pack.

Carrots

Select tender, mild-flavored carrots. Remove tops, wash and peel. Leave whole if small; dice or slice larger carrots ¼ inch thick. Water blanch whole carrots 5 minutes, diced or sliced carrots 2 minutes. Cool and drain. Dry pack with ½ inch headspace or tray pack.

Cauliflower

Choose firm, tender white heads. Break or cut into pieces 1 inch across. Wash well. Soak 30 minutes in salt brine (see broccoli), if needed to drive out insects. Rinse and drain. Blanch 3 minutes in boiling water containing 4 teaspoons salt per gallon water. Cool and drain. Dry pack without headspace or tray pack.

Celery

Select crisp, tender stalks and wash thoroughly, trim and cut stalks into 1 inch lengths. Water blanch 3 minutes. Cool and drain. Dry pack without headspace or tray pack. Use in cooked products.

Corn – Cut

Husk, remove silk, trim ends and wash. Water blanch 4 minutes. Cool and drain. Cut kernels from cob, but cut only ⅔ depth of kernels. Dry pack with ½ inch headspace, or tray pack.

Corn – Cream Style

Water blanch 4 minutes, cool and drain. Cut kernel tips and scrape cobs with the back of a knife to remove juice and heart of kernel. Dry pack with ½ inch headspace.

Corn on the Cob

Husk, remove silk, wash and sort for size. Water blanch small ears 7 minutes, medium ears 9 minutes and large ears 11 minutes. Cool and drain. Pack in plastic freezer bags with ½ inch headspace.

Eggplant

Peel, cut into slices ⅓ inch thick. Water blanch 4 minutes in 1 gallon of boiling water containing ½ cup lemon juice. Cool and drain. Dry pack, leaving ½ inch headspace, or tray pack in layers separated by sheets of freezer paper.

Greens

Wash young, tender leaves well. Remove tough stems and imperfections. Cut in pieces, if desired. Water blanch collards for 3 minutes, all others for 2 minutes. Cool and drain. Dry pack with ½ inch headspace.

Herbs

Wash and drain; trim or chop. Wrap a few sprigs or leaves in freezer wrap and place in freezer bag and seal. Use in cooked dishes as product becomes limp when thawed.

Mushrooms

Select mushrooms free of spots or decay. Sort for size. Wash and drain. Trim off ends of stems. Slice or quarter mushrooms larger than 1 inch across. Mushrooms will have a better color if given anti-darkening treatment before blanching. For anti-darkening, dip mushrooms to be blanched for 5 minutes in solution of 1 teaspoon lemon juice or 1½ teaspoons citric acid per pint water. Mushrooms need to be steam blanched, not water blanched. For steam blanching, use a pot with a tight lid and basket that holds the food 3 inches above the bottom of the pot. Put one to two inches of water in the pot and bring to a boil and place mushrooms in basket in a single layer so steam reaches all parts quickly. Cover the pot, leave heat high and start counting steaming times as soon as the lid is on. For whole or quartered mushrooms, steam blanch for 9 minutes; for sliced mushrooms, steam blanch for 5 minutes. Cool and drain. Mushrooms may also be lightly sautéed prior to freezing. Dry pack cooled mushrooms with ½ inch headspace after cooling mushrooms.

WARNING: The toxins of poisonous varieties of mushrooms are not destroyed by drying or cooking. Only a certified expert can differentiate between poisonous and edible varieties. Morrell mushrooms are especially hard to differentiate from the poisonous false morrell. Please contact your county Extension agent for determining the procedure needed to verify if the mushroom is safe to consume.

Onions – Whole, Green

Wash and peel onions. **Whole onions:** water blanch 3 to 7 minutes until center is heated; cool and drain. Dry pack with ½ inch headspace. **Chopped green onions;** green onions can be chopped for soups and salads and frozen without blanching. Dry pack with ½ inch headspace.

Parsnips

Remove tops, wash, peel and cut in ½ inch cubes or slices. Water blanch 3 minutes. Cool and drain. Dry pack with ½ inch headspace or tray pack.

Peas – Green

Harvest pods when seeds are tender and well-filled. Wash, shell and discard any over-mature and immature seeds or insect damaged peas. Water blanch 2 minutes. Cool and drain. Dry pack with ½ inch headspace.

Peas – Sugar, Edible-Podded, Chinese or Snow

Wash, remove stems, blossom ends and any strings. Leave whole. Water blanch 2 minutes for small pods and 3 minutes for large pods. Cool and drain. Dry pack with ½ inch headspace or tray pack.

Peppers – Sweet Green, Red, Orange, Yellow

Select firm, crisp, thick-walled peppers. Wash; cut out stems and remove seeds. Cut into strips or rings, as desired. Freeze without blanching for use in salads and as garnishes. If used in cooked dishes, water blanch halves 3 minutes, slices or rings 2 minutes. Cool and drain. Dry pack blanched peppers with ½ inch headspace. Tray or dry pack unblanched peppers without headspace.

Potatoes – Russet, Yukon Gold, Red, Irish

Select new potatoes. Wash and peel; remove eyes, bruises and green spots. Water blanch 3 to 5 minutes, depending on size. Drain and cool. Dry pack whole or sectioned with ½ inch headspace, or tray pack.

Rutabagas

Cut off tops of young, medium-sized rutabagas; wash and peel. Cut into cubes and water blanch 3 minutes. Cool, drain and dry pack with ½ inch headspace, or tray pack.

Squash, Summer – Zucchini, Yellow Straight or Crookneck, White Scallop

Select young squash with small seeds and tender rind. Wash and cut in ½ inch slices. Water blanch 3 minutes. Cool and drain. Dry pack with ½ inch headspace or tray pack.

Squash, Winter (and Pumpkins) – Banana, Butternut, Hubbard, Buttercup, Spaghetti

Wash; cut into pieces and remove seeds. Cook pieces until soft. Cool. Scoop out pulp and mash. Chill thoroughly. Dry pack with ½ inch headspace.

Sweet Potatoes

Select medium to large mature sweet potatoes that have been air-dried for at least one week after harvest. Sort for size; wash. Cook until almost tender. Cool at room temperature. Peel; cut in halves, slice or mash. To prevent darkening, dip halves or slices in solution of ½ cup lemon juice per quart water for 5 seconds. For **mashed sweet potatoes**, mix 2 tablespoons orange or lemon juice with each quart. Dry pack with ½ inch headspace or tray pack.

Tomatoes – Raw

Wash and dip in boiling water for 30 seconds to loosen skins. Core and peel. Pack into containers whole or in pieces, using 1 inch headspace. Use in cooked products only as tomatoes will not be solid when thawed.

Tomatoes – Juice, Puree

Wash, sort and trim firm tomatoes. Cut in quarters or eighths. Simmer 5 to 10 minutes. Press through sieve. Season with 1 teaspoon salt per quart juice, if desired. Pour into containers with 1½ inch headspace.

Tomatoes – Stewed

Wash ripe, blemish-free tomatoes. Scald 2 to 3 minutes to loosen skins; peel and core. Cut into quarters and simmer 10 to 20 minutes until tender. Cool and pack into containers with 1½ inch headspace.

Turnips

Select tender, firm, mild-flavored small to medium turnips or parsnips. Wash, peel and cut into ½ inch cubes. Water blanch 3 minutes. Cool and drain. Dry pack with ½ inch headspace or tray pack.

Acknowledgements

This revised MontGuide has been reviewed by Dr. Elizabeth Andress, Director, National Center for Home Food Preservation, University of Georgia Extension Food Safety Specialist; Laurie Lutt, Big Horn County Extension agent, retired; and Kelly Moore, Missoula County Extension agent.



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File under: Nutrition and Health (Food Preservation)
Revised May 2017 0517SA