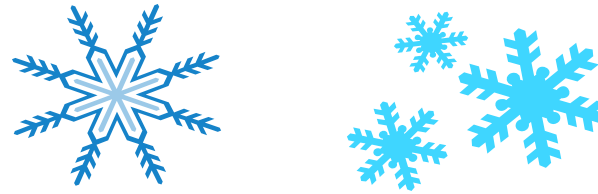
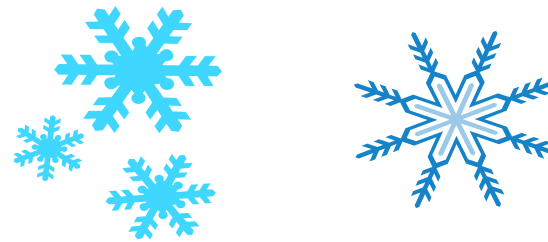




Prepared by: Mary Ann Walrath, Nutrition Staff,  
Cornell Cooperative Extension of Herkimer County  
June 1996, updated 7/07



# How To Freeze Food the Right Way



## Why Freeze Foods?

- Keeps natural color and flavor (tastes more like fresh).
- Maintains nutritional value of food
- Simplest and least time consuming preservation method to use.

## Other Considerations:

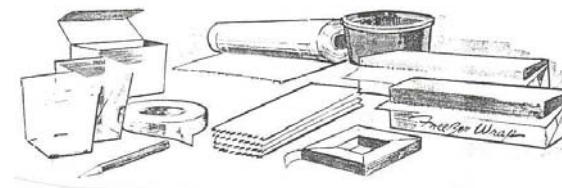
- Cost of the freezer
- Cost of electricity to operate freezer
- Cost of packaging materials



## How Freezing Preserves

3

- Foods spoil or lose quality by:
  - growth of bacteria, yeast, and mold
  - activity of food enzymes
  - reaction with oxygen
  - moisture loss

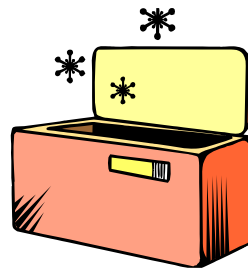
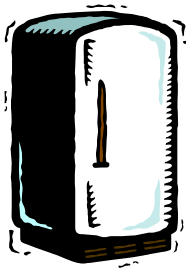


- Freezing temperature (0°F) and air- and water-tight packaging help to prevent or delay these losses. Blanching is important to stabilize vegetables before freezing.
- Freezing does not kill bacteria, yeast and molds. It only stops most of them from growing. Once thawed these bacteria become active and continue to grow.

## Which Model of Freezer to Choose?

4

- **Large financial investment** - will last 15 to 20 years.
- **Size / capacity** - how big of a freezer do you need to feed your family?
- **Efficiency** - check estimate of operating cost per year on the energy label.
- **Defrosting features** - frost-free or manual defrost.
- **Shape** - Which is most convenient for your family?



**Upright Freezer:**

- doesn't require any more space than refrigerator

**Chest Type:**

- requires a lot of floor space
- needs a type of storage system, such as crates or racks to make finding food easier

**Refrigerator-freezer combinations**

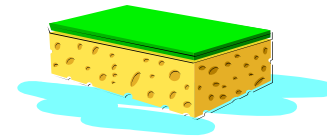
- doesn't have as much space as a regular freezer
- side by side refrigerators usually have more freezer space than refrigerator freezers that have freezer on top or bottom
- should be used for short-term storage because door is opened frequently

**Freezer placement is important - Put in a convenient, cool, dry and well-ventilated place - not outside or on an unheated porch.**

## Manual Defrost Freezers

6

- More efficient than frost-free models
- Maintain higher quality food than frostless models



### Defrosting

- Defrost at least once a year **OR** when ice builds up to 3/4 inch.
- Place food in a cooler with ice.
- Disconnect freezer from electrical outlet.
- Place pans of hot water on shelves to melt ice quickly.
- Sponge out interior with a solution of 1 teaspoon baking soda per quart (4 cups) of warm water.
- Wipe dry, plug freezer in and replace food.
- Place an opened box of baking soda in freezer to absorb odors.



## Freezer Management

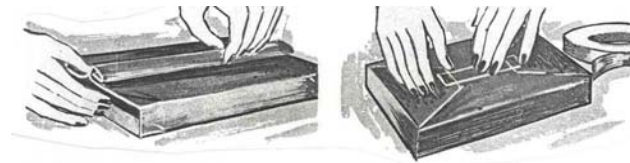
- Maintain freezer at 0°F or below (use a thermometer to check).
- Keep freezer full for best energy efficiency - refill throughout the year to keep it full.
- Avoid putting large amounts of room temperature food in the freezer at one time. This will delay freezing and can actually result in spoiled food (try not to exceed 2 pounds per cubic foot of freezer space). Place room temperature food throughout the freezer to freeze quickly.



## What is this? (or did you forget to label?)

8

- Put on the label: (use freezer tape)
  - name of product
  - date frozen
  - other information (amount, etc.)



- Keep a dated list of what you have frozen on the outside of the freezer. Check it off when you take food out. Add to the list when you put food in. This prevents opening the freezer for browsing. It also helps you make out your grocery list.
- Menus can be planned weekly. Make one trip to the freezer and transfer food to the freezer in your refrigerator. Thaw in refrigerator as needed during the week.



## Prevent Freezer Burn

- “Freezer burn” appears as grayish-brown leathery spots on food.
- It is caused by air reaching the surface of food either through:
  - improper wrapping
  - use of containers or wrap not suitable for freezer
  - torn packages
  - unsealed packages
- “Freezer burn” does not make food unsafe. However it does cause flavor and quality loss. If area is small, you can trim freezer-burned sections before cooking. Heavily freezer-burned foods should be discarded since flavor and texture will be poor.
- Use packaging materials recommended for freezing. Press out as much air as possible, since air spaces can cause freezer burn.



## Packaging Materials

10

Packaging materials for the freezer must be moisture and vapor proof, close tightly, and should be odorless, tasteless, and grease proof. Use materials suitable for food - check labels to be sure. Here are some possibilities:

- **Plastic freezer bags & wraps:** Be sure to force air out before closing (you can use a straw to suck out air). Do not use bread bags or plastic bags - they are not moisture proof. Also, garbage bags are not food-grade plastic.
- **Rigid plastic freezer containers:** These are good for liquid products. Leave a head space for expansion. Use freezer tape to hold lids on. Avoid reusing plastic containers that food was purchased in such as toppings, spreads, etc.
- **Glass freezing jars:** These are made from tempered glass that allows for expansion. They also have straight edges rather than shoulder on jar to allow for easier filling and removal of frozen food. Avoid using other kinds of glass containers for freezing, since they may break in the freezer.
- **Laminated freezer paper:** This is important to use properly to force air out of packaging.
- **Foil and foil containers:** Use heavy-duty foil because it is a thicker gauge foil. Avoid acid foods which cause pitting of aluminum.

## Freezing Fruits

11

- Freeze only what you can use in one year.
- Cherries, berries, rhubarb, and cranberries are especially easy to use.
- Some fruits don't freeze well:
  - pears become soft
  - apples, apricots, pears and peaches need ascorbic acid to prevent darkening

For best quality:

- select varieties that freeze well
- freeze fruit that is firm, ripe - but not soft
- wash fruit in clean, cold water - **DO NOT SOAK**
- sort out soft, bruised or decayed fruit
- package, label and freeze quickly

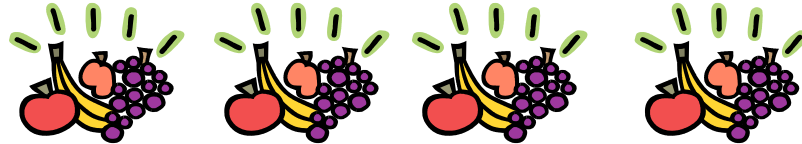


## Freezing Methods for Fruit

12

### Tray Pack

This is a dry unsweetened pack which is good for small whole berries and fruits. Place fruit on clean dry tray in single layer. Freeze for 30 minutes to 1 hour. Remove from freezer and put into containers or bags. Remove air, seal and label. Fruit pieces remain loose and can be poured from container and package re-closed.



### Sugar Pack

Combine sugar with fruit to discourage oxidation - which changes taste, texture, appearance, and nutrients. Place in containers and freeze.

### Syrup Pack

Fruit frozen in syrup has best texture when thawed - good for serving uncooked fruit. Fill containers with fruit; pour chilled syrup over fruit to cover. Allow room for expansion, remove air, seal, label and freeze.

# Vegetables

13

Asparagus, broccoli, beans, carrots, peas, cauliflower, spinach, corn and squash are good when frozen.

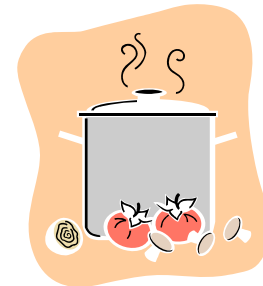
Cooked beets, raw onions, raw peppers are best when sliced or diced before freezing. Eggplant and mushrooms don't freeze well. Neither do celery, cucumbers, lettuce, and tomatoes for use in fresh salads because of high water content that freezes into ice crystals that break texture down when product is thawed.

## For best quality:

- freeze young, tender vegetables
- freeze produce within 24 hours of picking (the sooner the better)
- wash, sort, prepare, and blanch
- cool quickly, drain, package and freeze

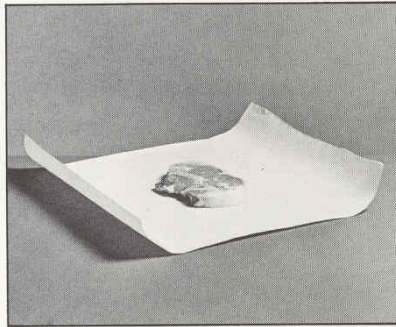
## To blanch:

- fill large pot - 1 gallon water - bring to boil
- place no more than 2 cups (or 1 pound) of produce in wire basket or colander - lower into water, cover
- begin timing when water returns to boil - EXACT timing is important (Charts available on our website at: <http://counties.cce.cornell.edu/herkimer/foodpreservation.htm>)
- remove produce from pot, plunge into ice water until cooled to below 50°F.
- drain well, package, label and freeze

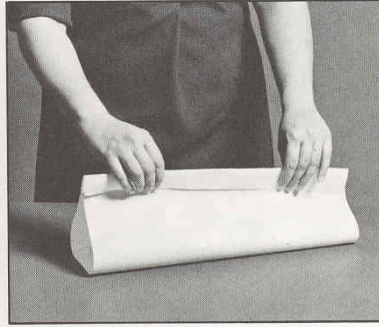


## How to Wrap Meat

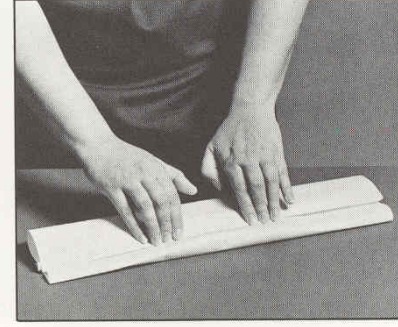
14



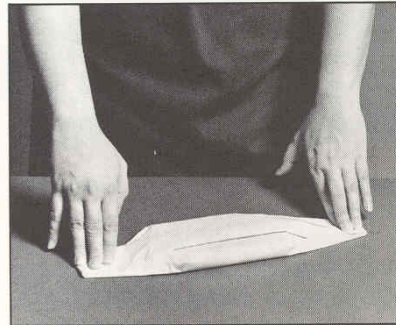
1. Tear off enough paper or film to go  $1\frac{1}{2}$  times around the food. Place meat in the center of the wrapping material.



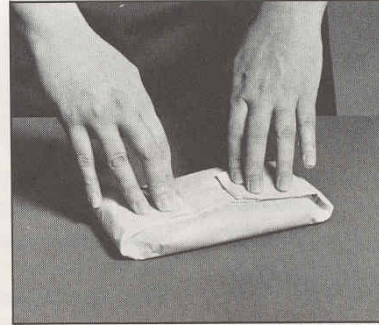
2. Bring ends together and fold over. Crease along the fold.



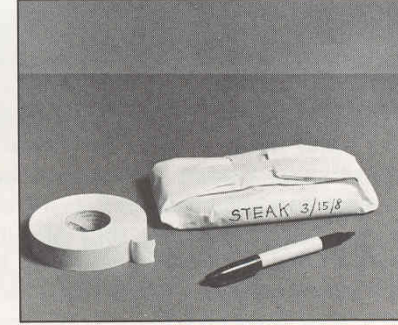
3. Turn down, fold, and crease as many times as needed, with the last fold pulling wrap tightly around the food.



4. Press the paper or film down at both ends, to keep out as much air as possible. Fold ends to points.



5. Fold each end in about an inch to seal points. Then fold ends under, tight against the package.



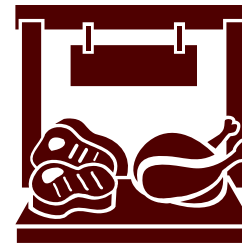
6. Seal the package with freezer tape, label, and freeze.

## Meat

- Freeze in amounts you use for your family.
- Remember that smaller sizes thaw quicker.
- Freeze in single layer. Hamburger can be pressed into a big patty to fill the freezer bag. These bags can then be frozen and stacked to take up less freezer space. They also thaw quickly.
- Repackage fresh meat purchased at grocery store and put it in appropriate freezer wrap. Remove air as noted earlier.

## Poultry

- Clean inside cavity, wash, drain, and pat dry.
- Do not season.
- Package liver and giblets separately.
- Poultry may darken around bone. Bone darkening results when pigment seeps through bones of young poultry into surrounding meat when poultry is frozen and thawed. It is safe to use.



## Some Foods Do Not Freeze Well

16

- **Cooked egg whites:** become rubbery when reheated.
- **Gelatin:** becomes tough and weepy when thawed.
- **Potatoes:** become mealy or crumbly and change flavor when thawed.
- **Cooked fried foods:** become soggy, “warmed-over” flavor. French fries, donuts, and onion rings are possible.
- **Spaghetti or macaroni:** may become rubbery when thawed.
- **Salad or raw vegetables:** lose shape and crispness when thawed.
- **Milk, cottage cheese:** tends to separate.
- **Hard cheese:** freeze up to 6 months, turns crumbly but can be used if texture is acceptable.
- **Mayonnaise and salad dressing:** tends to separate when thawed.





## Freezer Tips

17



- To save time, prepare double or triple recipes of stews, chili, soups, spaghetti sauce, and casseroles. Cool and freeze in shallow containers in amounts you plan to use later.
- It's best to prepare food without seasoning when freezing and season when re-heating. Seasonings and spices often change quality and flavor in freezer.
- Avoid crumbs or cheese toppings. They can become soggy, stringy or tough. Add before heating and serving.
- To avoid mushy or soggy food - shorten cooking time when reheating. Remember, most frozen foods have already been cooked.
- Grains, flours, granola, and rice can be frozen in original bags. Nuts can be frozen (will have a longer shelf life - up to 1 year).
- Let frozen flours warm to room temperature before using in yeast doughs.

## Refreezing Foods

Once food is thawed in the refrigerator (for no longer than one day), it is safe to refreeze without cooking, although there may be a loss of quality due to moisture loss during defrosting. After cooking foods that were frozen, they may also be refrozen with some loss of quality possible.

## How long to keep foods in the freezer?

Time frame varies depending on product. Check out the Food Marketing Institute “Food Keeper” brochure at:

[www.fmi.org/consumer/foodkeeper/Food\\_Keeper\\_Brochure.pdf](http://www.fmi.org/consumer/foodkeeper/Food_Keeper_Brochure.pdf)

- **Check odor** - some foods develop a rancid or “off-odor” when frozen too long and should be discarded.
- **Appearance** - some foods may not be picture perfect to serve along but can be used in soups or casseroles. See page 9 regarding freezer burn.

## Safe Ways to Defrost Food Safely

19

**In refrigerator:** Small items may defrost overnight. Most foods require a day or two. Large items like turkeys take one day for each 5 pounds of weight.

**In cold water:** Place food in a leak-proof plastic bag and immerse it in cold water. If the bag leaks, bacteria from the air or surrounding environment could be introduced into the food. The food product can absorb water like a sponge resulting in a watery product. Check the water frequently to be sure it stays cold. Change the water every 30 minutes. After thawing, refrigerate the food and cook within 24 hours.

**In microwave oven:** When microwave-defrosting food, plan to cook it immediately after thawing because some areas of the food may become warm and begin to cook during microwaving. Holding partially cooked food is not recommended because any bacteria present wouldn't have been destroyed.

**Note:** Never defrost foods in a garage, basement, car, dishwasher or plastic garbage bag, on the kitchen counter, outdoors or on the porch. These methods can leave your food unsafe to eat because food is left in the “danger zone” (40°-140°) too long.

## Power Outage

If there is a power outage, the freezer fails, or the door has been left ajar by mistake, check food as soon as you realize the problem.

A freezer full of food should be okay for about 2 days **IF** the door is kept shut; (a half-full freezer about 1 day). The freezer compartment of your refrigerator may not keep food as long.

### **To determine the safety of food:**

- Check condition and temperature of food immediately.
- If food is partly frozen, and still has ice crystals, it is safe to refreeze (rewrap if leaking). Discard food that has been warmer than 40°F for more than 2 hours.
- If the food is still refrigerator temperature (below 40°F) and has been completely thawed for one day or less, cook and refreeze.
- Discard food that has been warmer than 40°F for more than 2 hours.
- Discard food that has been contaminated by meat juices.
- Dispose of soft or melted ice cream for quality sake.