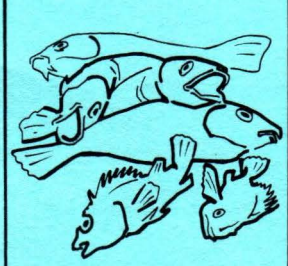
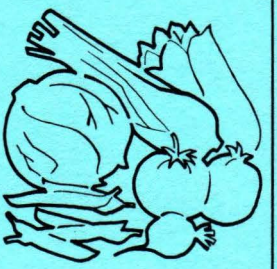
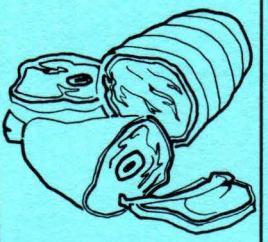
FREEZING FOODS







COOPERATIVE
EXTENSION
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472

FREEZING FOODS*

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in Foods and Nutrition

FRUITS

Selection

Select only well-ripened, high-quality fruits. No matter how carefully you prepare and pack your fruit, the frozen product cannot be better than the fruit you use. Fruit packed before it is fully ripe and allowed to stand at room temperature for several days will not be as satisfactory as tree-ripened fruit.

Preparation

1. Wash fruits thoroughly. Cleanliness is essential. Fruits should be thoroughly cleaned and drained. Freezing does not kill bacteria, it merely slows their growth.

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*This material has been adapted in part from **Home Freezing in Hawaii,** by Faith Fenton, Kathryn J. Orr, and Carey D. Miller, Hawaii Agricultural Experiment Station Circular 47, University of Hawaii. It was first published under the title, **Frozen Foods.**

2. Prevent darkening of light-colored fruits. Certain fruits discolor during processing or storage. In Hawaii, most fruits do not discolor. The banana does discolor in processing. Sugar sirups help to prevent this color change. Ascorbic acid also helps to prevent discoloring and adds vitamin C, as well as bringing out flavors. A quarter teaspoon of ascorbic acid powder mixed with 1 to 1-1/2 cups of sirup is effective in safeguarding color. Ascorbic acid powder may be purchased at some drug stores.

3. Sweeten fruit, if needed. Sugar and sugar sirups are used to sweeten fruits to be frozen. Heat or stir water and sugar long enough to dissolve sugar thoroughly. Chill sirup before using. The thickness and the concentration of the sirup depend on the amount of sugar per cup of water. The table below gives sirup concentrations used when freezing different fruits. When freezing juicy fruits, adding dry sugar is preferred to covering the fruit with sirup.

Proportion of sugar to water for sirups (percent by weight)

Concentration desired	Sugar per pint of hot water (2 cups)	Sirup
Percent	Cups	Cups
20	5/8	2-1/3
25	3/4	2-1/3
30	1	2-1/2
35	1-1/4	2-2/3
40	1-1/2	2-3/4
50	2-3/8	3-1/4

Packaging

Correct packaging prevents oxidation and drying out during storage.
Check the following points:

1. Select wrapping that is moisture-proof and vapor-proof. Special grades of laminated cellophane, plastic coated wrap, aluminum foil, etc., may be used. Glass freezer jars, freezer cartons with innerliners, and plastic ware are also used.

2. Leave a head space at the top of the container to allow for expansion during freezing – about 1/2 to 3/4 inch.

3. Exclude as much air as possible. Remove air bubbles from containers and press air out of the bags. When using bags, twist the top of the bag, double the end back, and tie securely with rubber band or heat-seal, using a moderately hot flat iron. When using heavily waxed, tub-shaped cartons, snap top on snugly. When using specially processed glass containers, simply screw top on firmly to seal.

4. Label each package with name of the food, date of freezing, number of pieces or servings, and any other information that may be helpful at a later date.

Freezing

Freeze quickly. As soon as the container is sealed, place it in the quick-freezing section of regular freezer and later store at a constant temperature of 0 F or below. Freeze at 0 F or below (preferably minus 10 F) and store at 0 F.

Thawing and Serving

Partially thawed fruit containing a few crystals of ice gives a better serving product. Completely thawed fruits often seem limp and withered.

VEGETABLES

Selection and Preparation

Select vegetables in the state just before their full maturity. Prepare vegetables for freezing as for cooking.

All vegetables must be scalded or blanched for a few minutes before being frozen in order to preserve flavor, texture, color, and food value. Blanching brightens the color of vegetables and makes them easier to package because they are less crisp.

To blanch vegetables in water:

1. Blanch 1 pound of vegetables in approximately 1 gallon of water, using a wire basket or cheese cloth sack in which to immerse them. Do not blanch more than 1 pound of green leafy vegetables or 2 pounds of other vegetables at one time.
2. If heat is not enough to bring the water back to boiling 1 minute after vegetables are plunged in the boiling water, use fewer vegetables. Count blanching time *after* the water begins to boil again. Blanching time differs with the type of vegetable.
3. Keep vegetables moving in blanching water to allow water to reach the vegetables evenly.

4. Cool the blanched vegetables by plunging them immediately into water containing ice or running cold water. Failure to cool the vegetable completely and quickly results in loss of color, flavor, texture, and nutrients during freezer-storage.
5. Do not soak vegetables; leave in cold water only until cooled. Soaking blanched vegetables in chilling water too long results in a water-logged vegetable and in a loss of water-soluble minerals and vitamins.

Packaging

Packaging should not be the weak step in your freezing procedures.

Remember:

1. Use suitable containers.
2. Shake the containers to insure a full pack.
3. Press out as much air as possible, because air causes destruction of vitamins and may dry out the vegetables.
4. Seal package carefully. Moisture-proof cellophane may be heat-sealed with an ordinary smoothing iron. Warm the iron and seal the edges together with a pressing movement. Sealing tape that can withstand cold temperatures may be used to seal edges of packaging materials. Tub-type containers have snap-in lids to seal them. Glass jars made especially for freezing foods are easily sealed by simply screwing on the lid. Leave about 3/4 inch head space for expansion in freezing. Tin cans require

close-fitting tops or a can sealer to make a good seal for freezing.

5. Label the container with date of packing, name of vegetable, and style of food.

Freezing and Storing

Be sure the temperature of the home freezer is 0 F or lower for storing (preferably minus 10 F). After freezing (24 hours or so), store packages at 0 F or lower. At temperatures above 0 F, frozen vegetables lose quality.

Cooking

Most vegetables are cooked from the frozen state. Broccoli and asparagus are exceptions; they cook more uniformly if they are thawed so that pieces can be broken apart.

1. Cook frozen vegetables in a minimum amount of water.
2. Do not overcook frozen vegetables since they are softened in blanching and freezing. Frozen vegetables require from one-half to three-fourths the cooking time of fresh vegetables, timing to start when vegetables return to boiling.
3. Start the frozen vegetable in a minimum amount of water so that very little water remains at the end of the cooking period and the minerals and vitamins remain in the vegetables.
4. Salt may be added any time.

MEAT

Selection and Preparation

Freeze only young, tender meat because freezing will not tenderize tough meat. Ground meat develops rancidity quicker than whole cuts. Do not salt ground meat.

1. Quickly and thoroughly chill the freshly killed meat. Freeze pork or veal as soon as chilled. Age or ripen beef for 5 to 10 days and lamb for 1 to 3 days at 32 to 38 F before freezing.
2. Cut meat for freezing as for table use — steaks, chops, roasts, stew meat, and ground meat.
   Remove excess fat and bone. Boning saves storage space.

Packaging

Poor packaging often causes poor-quality frozen meat. Poor package protection causes meat to dry out or become freezer-burned. Poor packaging causes loss in weight. Color fades when the product is exposed to air and light. Meat texture becomes somewhat spongy. Fat becomes rancid and lean gets an "off" taste and odor.

Steaks and shops:

1. Each package should contain the amount needed for family use.
2. Place a double thickness of clear plastic between each steak or chop — this makes it easy to separate them after they are frozen.
3. Pack into a rectangular, freezer carton. Close carton and seal.

Roasts:

1. Wrap tightly in moisture-vapor-proof material such as aluminum foil, freezer meat wrap, plastic coated wrap, or clear plastic and tie with supplied twist tapes or seal with moisture-vapor-proof tape.

Ground meat:

1. Pack in freezer cartons, like those used for vegetables or polyethylene reusable bags. Ground meat can be made into patties before freezing.
2. Place double thickness of clear plastic between each patty. Package patties the same as steaks.

Freezing and Storing

1. Freeze meat immediately after packaging at 0 F or lower.
2. Use beef and lamb within 1 year; pork, veal, and ground meats within 2 to 4 months. Smoked meats, as bacon and ham, are best not frozen.

Thawing and Cooking

Frozen meat can be successfully cooked from either the frozen or the thawed state. Thaw meats in their sealed original wrappings. If meat is thawed, the cooking methods and times are the same as for the fresh meats. If meat is cooked in the frozen state, a longer cooking period is needed.

POULTRY

Preparation

Bleed, pluck and draw poultry. For home freezing of poultry, precooling is not essential if the fowl is frozen immediately after packaging.

Packaging

Roasters:

1. Wrap the giblets separately in moisture-proof paper and insert them in the neck cavity of the bird or under one wing.
2. Truss bird by tying the legs together and the wings to the breast.
3. Wrap in moisture-vapor-proof material — aluminum foil, freezer meat wrap, plastic coated wrap, or clear plastic wrap and tie with supplied twist tapes.
4. Seal transparent materials with tape. Specially treated vegetable parchment paper may also be used.
5. Label and freeze immediately.

Broilers:

1. Wrap giblets in moisture-proof paper and place them between broiler halves.
2. Put a double piece of clear plastic between the halves and package the same as the roasting chicken or place in a folding, rectangular, laminated carton.
3. Close carton, label, overwrap with clear plastic, heat-seal, and freeze.

Fryers and stewing fowls:

1. Wrap giblets in clear plastic.
2. Pack the quarters or fricassee-style pieces in a rectangular freezer carton.
3. If desired, wrap each piece of chicken in plastic for easier handling and thawing later.
4. Close the carton, label, overwrap with plastic, heat-seal, and freeze.

Freezing and Storing

Freeze fowls immediately at 0 F or below and store them at the same temperature. Use within 1 year.

Thawing and Cooking

Thaw whole birds and stuff and cook. Thaw broilers completely or cook partially thawed, allowing longer cooking time for the frozen product. Stewing hens may be stewed without defrosting since the large amount of water used in stews penetrates quickly. Fricassee chicken may be cooked when partially frozen or thawed. Allow more cooking time for icy pieces.

FISH

Selection and Preparation

Freeze only fresh, wholesome, well-flavored fish. Freeze it the day it is caught. Clean the fish and freeze whole or cut into pieces.

Packaging and Freezing

1. Fish steaks may be wrapped, each piece separately, in moisture-vapor-proof material such as aluminum foil, freezer meat wrap, plastic coated wrap, or clear plastic wrap, and tied with supplied twist tapes. Pack in flat, rectangular freezer cartons. Close carton, label, and freeze at 0 F or lower.
2. Whole fish may be wrapped in heavy, strong, moisture-vapor-proof paper and heat-sealed. Freeze at 0 F or lower, and store lean fish for no longer than 6 months and fatty fish no longer than 3 months.

Thawing and Cooking

Fish may be thawed in unopened packages or cooked while partially frozen. Partially frozen fish tends to stick to the pan and to splatter during cooking.

PRECOOKED FOODS

Generally speaking, you can freeze most cooked foods from soup to nuts! The few exceptions are foods which are not completely satisfactory after freezing and thawing. These include:

Boiled potatoes — in potato salad, stews and soups.
Custards, baked.
Gelatin salads and desserts.
Mayonnaise.
Salad vegetables to be eaten raw.
Whites of hard-cooked eggs.

In general, no special recipe is needed for prepared dishes you plan to freeze. Although it is sometimes necessary to omit an ingredient (hard-cooked egg white, for example) or to substitute one or two ingredients, your own favorite recipe will probably freeze perfectly. For best results, we offer the following suggestions:

1. Do not overcook foods.
2. Cool foods quickly.
3. Spices and herbs should be used sparingly.
4. Avoid excessive amounts of fat.
5. Do not refreeze prepared dishes.
6. Do not attempt to freeze precooked foods that have been stored in the refrigerator for several days. There may be some danger from bacteriological contamination when food is thawed and reheated.

It is practical to freeze leftovers to prevent waste and monotony in meals. However, it is a waste of freezer space to freeze dishes that can be freshly prepared as quickly as they can be thawed and reheated. Experience with your own freezer will soon develop your judgment on this question.

PASTRY PRODUCTS

1. Quick breads have better quality if frozen baked.
2. Yeast breads are best if baked before freezing.
3. Cakes are best frozen baked, but unfrosted.
4. Pies are of fresher quality if frozen unbaked and baked later.

Freezing Equipment Available

Equipment	Size & No.
Bags	
Polyethylene (reusable)	1 quart (60) 1/2 gallon (50) 1 gallon (35) 2 gallon (25) 5 gallon (12)
Containers	
Show 'n Store	1/2 pint (8) 1 pint (6) 1 pint (14) 1-1/2 pint (5) 1 quart (4) 1/2 gallon (2)
Freezer cartons	
+ liner bags + 1 filler	1 pint (25) 1 quart (25) + bag closures
Freezer meat wrap	
wrap (Kraft) laminated to cellophane	150 square feet
plastic coated wrap laminated to cellophane	150 square feet
clear plastic	200 feet
aluminum foil	25 square feet

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