



4-H CLUB



FOOD PRESERVATION MANUAL

DIVISION 5



X9MJ372:73

8

DEC 10 1950

FJ37:95.7377
 H9
 036181

1090
11-12-50

Extension Bulletin
333 • 1949

PURDUE UNIVERSITY

DEPARTMENT OF AGRICULTURAL EXTENSION

LAFAYETTE, INDIANA

4-H CLUB PLEDGE

I pledge my HEAD to clearer thinking; my HEART to greater loyalty; my HANDS to larger service, and my HEALTH to better living for my club, my community and my country.

4-H CLUB COLORS

Green and White

4-H CLUB EMBLEM

The Four Leaf Clover

4-H CLUB MOTTO

To Make the Best Better

PLEDGE TO THE FLAG

I pledge allegiance to the Flag of the United States of America and to the Republic for which it stands, one nation indivisible with liberty and justice for all.

TABLE OF CONTENTS

Minimum work requirements	3
Exhibit requirements	4
Canning Fruits, Vegetables, and Meats	4
I. Preparation of equipment	4
II. General suggestions for fruits and vegetables.....	5
III. Instructions and time table for fruits.....	7
IV. Instruction and time table for vegetables.....	8
V. General suggestions for canning meats.....	9
VI. Yield of canned meat from fresh.....	9
VII. Instructions for canning meat.....	9
VIII. Care after processing.....	13
Freezing Fruits, Vegetables, and Meats.....	14
Making Pickles and Relishes	17
Planning Dinner Menus—Using Your Preserved Foods.....	17
Score card for Meal	18
Check Sheet for Your Canned Foods.....	19
Planning a Home Garden.....	20
Planning a Family Food Budget	21
Commercial Food Preservation.....	22
Preparing Your Exhibit	23
Check Sheet for Comparing Commercial and Home Packed Products.....	24

Cooperative Extension Work in Agriculture and Home Economics, State of Indiana, Purdue University, and U. S. Department of Agriculture Cooperating. H. J. Reed, Director, Lafayette, Indiana. Issued in furtherance of the acts of May 8 and June 30, 1914.

4-H FOOD PRESERVATION

FIFTH DIVISION

Irma M. Winkleblack*

Division of Boys' and Girls' Club Work

Success in the preservation of food—ample food for family use—is an art that every 4-H Club girl can achieve. If a family food budget is planned, a variety of fruits and vegetables may be provided for use throughout the year. Most of the fruits and vegetables may be produced in the family garden. More nutritious meals and better health for all the family may result from the use of a variety of wholesome home-preserved foods.

Food Preservation V offers you a choice of Sub-divisions, A, B, C, and D. This year you should choose the sub-division that will help you to preserve the foods needed by your family. You may get more experience by doing more than the minimum work requirements. You may help someone else, preserve food for someone else or do more food preservation for your family if you care to do more than the minimum requirements.

Minimum Work Requirements

Any member having completed the first four divisions or having acquired the same kind and amount of experience at home or at school may enroll in any one of the following sub-divisions: (Use either pint or quart jars for canning).

A—"Learn to Can Meats and to Plan Meals"

1. Can twelve jars of meat (two varieties).
2. Can twenty jars fruit (three varieties).
3. Can twenty jars vegetables (three varieties).
4. Do any one of the four listed:
 - a. Make six jars of relish or pickles.
 - b. Dry three pounds (dry weight) of any fruit or vegetable.
 - c. Prepare fruits or vegetables for frozen locker storage. The amount to be equivalent to twenty-five jars.
 - d. Can fifteen jars of fruit juice or tomato juice.
5. Plan twelve dinners using products prepared and preserved in this project.
6. Write six of the above dinner menus in your record book.
7. Learn to judge products canned.
8. Complete record book.

B—"Have Your Own Garden and You Will Have Fresh Vegetables to Can."

1. Work with other members of family in planning the family garden.
2. Make diagram of garden, showing location of plantings.
3. Assist with the care of garden—dropping seeds, setting out plants, weeding, light hoeing, and other work.
4. Can at least twenty jars of vegetables—(four varieties).

* Assistant in 4-H Club work, Purdue University, 1942-1946. Now Assistant State 4-H Club Leader, University of Connecticut, Storrs, Conn.

5. Can at least twenty jars of fruit—(three varieties).
6. Can at least ten jars of other products—(your family's choice, such as relishes, jellies, jams, or meats).
7. Give the following information in record book: (a) Number in family. (b) Part you took in planning, in care of garden and in gathering vegetables, and (c) List of new vegetables raised.
8. Judge products canned.
9. Complete record book.

C—"Planning the Canning Budget and Preserving Food for the Family"

1. Plan the year's canning budget for your family. Write in record book.
2. Can at least sixty-five jars, including fruits, vegetables, jellies, preserves, relishes, pickles. (Meat may or may not be canned.)
3. Judge products canned.
4. Complete record book.

D—"Canning What You Like: Also Something New."

1. Can at least sixty-five quarts, including some varieties not previously canned.
2. Compare commercial canned products with home canned products as to cost and quality.
3. Judge products canned.
4. Complete record book.

EXHIBIT REQUIREMENTS

Sub-division A

1. Two jars meat (two varieties).
2. Two jars fruit (two varieties).
3. Two jars vegetables (two varieties).

Sub-division B

1. Six jars of vegetables showing variety of vegetables grown and products canned.

Sub-division C

1. Canned products (in addition to stored and fresh foods) necessary for your family for a day in January.
2. Card, 5 by 8 inches, showing: (a) Number in family, (b) Menu for day.

Sub-division D

1. Eight jars representative of what the family likes.

CANNING—FRUITS, VEGETABLES, AND MEATS

I. Preparation of Jars and Equipment

Check all equipment carefully to be sure it is in good condition before starting to do any canning. Be sure all the equipment is clean and conveniently arranged in the working area. This will save time and work when the food is being prepared and processed.

All *small equipment* such as pans, jar lifter, spoons, paring knife, basket for blanching, measuring cups and spoons and other equipment should be assembled.

A *boiling water bath* should be used for processing fruits, pickled vegetables, (sauerkraut, pickled beets, relishes), and tomatoes. A boiling water bath may be in any vessel that is deep enough to allow at least 1 or 2 inches of boiling water to cover jars during processing. This may be a wash boiler, lard can or a large stew kettle. The vessel must be fitted with a rack and covered with a lid. The rack may be made from wire mesh or wooden slats. The rack will hold the jars off of the bottom of the vessel and will allow the boiling water to circulate about the jars more freely.

The *pressure canner* should be used to process non-acid vegetables and meats. The pressure canner will hold the steam under pressure and cause a much higher temperature (10 pounds pressure-240° F.) The higher temperature will destroy more bacteria than the temperature of the boiling water bath which never exceeds 212° F.

The pressure canner should be checked before using. The gauge indicator should rest at zero when not in use. Open the safety valve, scour the ball and be sure that it does not stick. The pet cock should be open. Steam should not escape from the lid of the canner after it is completely sealed and the air and steam have been expelled through the pet cock for 7-10 minutes.

Jars, lids and rubber rings need to be checked and clean. Jars should be free from nicks and cracks. Wash each jar in hot soapy water then rinse in hot water. Before using they may be drained in a dry pan or on a clean cloth.

Lids should be washed in clean soapy water then rinsed in hot water and drained. Mason or screw cap lids should be free from breaks or dents and have a tight-fitting porcelain lining. Glass top and lightning seal lids should be free from cracks and have smooth edges. The rubber composition on self-seal lids should be free from air bubbles and breaks. Screw bands are needed for the glass top and self-seal lids. The screw bands for glass top and self-seal lids vary in size and can not be interchanged on the lids. Screw bands have a tendency to corrode and should be removed 24 hours after processing. The same bands may be used on other lids.

Rubber rings should be free from cuts and breaks. The edge of the lid often cuts into the ring and the heat during the processing weakens the rubber, therefore, it is recommended that the rings not be used a second time. When canning use only rubber rings that have been tested. A good rubber ring does not leave a mark where it is pinched together tightly.

II. General Suggestions for Fruits and Vegetables

Fruits and vegetables used for canning should be gathered when they are mature yet not overripe. Food should be processed soon

after gathering: "two hours from garden to jar" is a good motto. Gather in small amounts that can be processed quickly.

Vegetables are best at their prime stage of maturity—when they are greenest and tenderest—before the beans start to separate from the pod and before the corn milk begins to harden.

Fruits should be fully and evenly ripened. Those ripened on the tree are usually sweeter and better flavored.

Prepare fruits and vegetables for canning by first washing. Several pans of lukewarm water may be necessary to remove all sand and dirt. Sort and grade food as to size and degree of maturity.

Sterilize jars that will not be processed for more than 20 minutes. All jars should be *clean* and *hot* when filled with hot food.

1. To sterilize, invert clean jars on a rack or cloth in a pan of warm water. Mason (screw cap) or glass lids may be placed in the pan, too.

2. Boil the jars for at least 15 to 20 minutes.

3. Keep jars in the boiling water until they are filled with hot food.

4. Dip rubber rings in boiling water and place on the jars before filling.

Precooking is recommended for all non-acid vegetables and most fruits. This shrinks the product, gives a better pack and starts the processing of the food more quickly. Processing soon after packing helps to prevent spoilage.

Vegetables should be prepared as for cooking, then covered with boiling water. Boil until the vegetables are heated thoroughly—usually 3 to 5 minutes. (Greens should be precooked until wilted. Usually after washing sufficient water for precooking will cling to the leaves.)

Fruits may be precooked in a boiling sirip or in fruit juice.

Pack the boiling hot food into the hot jars. Fill the jars to within one-half inch of the top, except starchy vegetables (beans, peas, and corn) which need one inch head space.

Cover the food with the boiling liquid in which the food has been precooked but allow the needed head space. If there is not enough liquid, boiling water may be used.

Work out the air bubbles by inserting a knife blade or spatula down the side of the jar. Wipe the rubber ring and sealing edge of the jar with a *clean* cloth to remove all particles of food.

Sealing for processing:

Self-seal jars should be completely sealed.

Mason (screw-cap) and glass top jars should be screwed on firmly, then turned back one-fourth turn.

Lightning seal jars should have the top clamp snapped in place and the side clamp left up.

Process at once according to time table.

Pressure canner—begin to count time when pressure gauge indicates desired pressure.

Boiling water bath—begin to count time when water is at a rolling boil.

III. Instructions and Time Table for Processing Fruits, Tomatoes and Acid Vegetables

Fruits and Acid Foods	Canning Directions	Processing Time Boiling Water Bath Time 212°F. Minutes Pints and Quarts Glass Jars
Apples	Wash, pare, core, cut in quarters. Boil in sirup or water 5 minutes. Pack hot.....	15
	Or pack hot in form of apple sauce.....	10
Cherries	Wash, remove pits or leave unpitted. Cook in sirup 5 minutes; pack hot.....	5
	Or pack raw, cover with boiling sirup.....	25
Berries other than Strawberries	Wash carefully, remove stems. Precook 3-5 minutes in sirup and pack hot.....	15
Peaches, Apricots	Immerse in boiling water until skins will slip off. Dip in cold water. Peel, cut in halves, remove pits, cook in sirup; pack hot.....	20
Pears	Wash and peel, cut in halves, core. If hard, cook in sirup 4-8 minutes, pack hot.....	20
Pimentos, ripe	wash, place in hot (450° F.) 6-8 minutes. Dip in cold water. Remove skins, steam and core. Fold and pack hot. Add no liquid....	40
Pineapple	Slice, peel, core. Cut in pieces, heat slowly with sugar to taste. Pack hot.....	30
Plums	Wash, prick skins, cook in small amount of sirup. Pack hot.....	15
Rhubarb	Trim, wash, cut in half-inch lengths. Boil only until soft, with sugar to taste. Pack hot	5
Sauerkraut	All to be well fermented before canning. Heat to simmering; avoid boiling. Pack hot and closely. Cover with hot juice.....	30
Strawberries	Wash, stem. Boil only until soft with sugar to taste. Allow to stand over night in kettle. In morning bring quickly to boil. Pack hot..	15
Tomatoes	Wash, put in boiling water (about 1 min.) until skins loosen. Plunge into cold water. Peel, remove core. Simmer until soft, pack hot	10
Tomato juice	Wash, skins may be left on. Simmer only until soft. Put through sieve at once. Re-heat to simmering. Pour into sterilized jars. Process at simmering (180° F.).....	15
Fruit juices	Wash, drain, crush fruit. Heat to simmering. Strain. Add sugar if desired. Re-heat. Pour into jar, process at simmering (180°F.)	5
Sirup for Fruit	Water and Sugar or Corn Sirup or Honey	
Thin Sirup	1 c. ¼ c. ½ c. ¼ c.	
Medium Sirup	1 c. ½ c. 1 c. ½ c.	
Heavy Sirup	1 c. 1 c. 2 c. 1 c.	

IV. Instructions and Time Table for Processing Non-acid Vegetables

(Canning Time Table Revised as of February, 1947, by the Bureau of Home Economics and Human Nutrition)

Vegetables, non-acid	Canning Directions	Processing Time			
		Boiling Water Bath* Glass Jars Pts. & Qts.	Pressure Cooker		Pounds Pressure
			Time—Min. Glass Jars		
		Pts.	Qts.		
Asparagus	Wash. Cut in 1" lengths or tie in uniform bundles; stand upright with tough portions in boiling water, cover tightly. Boil 2 or 3 minutes. Pack hot.	3 hrs.	25	55	10
Beans, Lima fresh	Wash, shell. Boil in water to cover for 3 min. Pack loosely while hot.	3 hrs.	35	60	10
Beans, string	Wash, remove tips and cut into desired lengths. Boil in water to cover for 5 min. Pack hot.	3 hrs.	20	25	10
Beets, baby	Wash, leave on roots and 1" of stems to prevent bleeding. Boil about 15 min. or until skins slip off. Skim, trim, cut if desired. Pack hot.	3 hrs.	25	55	10
Corn	Remove husks and silk. For whole kernel—cut from cob without scraping. Cream style cut shallow and scrape cob. Boil 8-5 min. Pack loosely while hot.	Kernel 3 ½ hrs. cream 3 ½ hrs.	55 85	85 Do not use qts.	10 10
Greens, spinach, kale, dandelion, etc.	Wash thoroughly, lifting greens from several waters. Remove tough stems. Cook in uncovered vessel without added water until wilted. Pack loosely while hot. Cut through greens with sharp knife.	3 hrs.	45	70	10
Peas, green	Wash, shell—simmer about 5 min. Pack loosely while hot.	3 hrs.	40	40	10
Pumpkin, Squash	Cubed—Wash, peel, cut into 1-1 ½" cubes. Simmer until heated through. Pack hot. Mashed pumpkin.	3 hrs.	55	90	10
			60	80	10
Sweet Potatoes	WET PACK—Wash, peel or steam until skins slip. Skin and cut into pieces. Pack hot into jars to 1 inch of top. Cover with boiling water, leaving 1 inch head space. DRY PACK—Pack hot into jars to 1 inch of top. Add no salt or liquid.		55	90	10
			65	95	10

* Steam pressure canning is the only method recommended by the Bureau of Human Nutrition and Home Economics for non-acid vegetables and meats. When pressure canners are not available, some people still use the boiling water bath method, therefore a water bath table is included. Do not taste the food until it has been boiled vigorously for at least 10-15 minutes.

V. *General Suggestions for Canning Meats—Poultry, Beef, and Pork*

Meat for canning should be from healthy animals, slaughtered and handled in a sanitary way. After killing and dressing, chill the meat at once at 40° F. or lower and keep it chilled until ready for canning; or can the meat as soon as the body heat has gone. Meat that is chilled should be canned within a few days after killing. If the meat does freeze, keep it frozen until canning time. *Thawed meat is very perishable.*

The pressure cooker is recommended as the safest way to can meats. Meat canned at 10 pounds pressure will reach 240° F. Cooking at this high temperature will destroy the bacteria that cause dangerous spoilage. A hot pack shrinks the meat and is recommended for home canning. It is best not to fry meat before canning. The brown crust that is formed in frying becomes dry and hard and the canned meat may have a disagreeable flavor. Salt may be used to add to the flavor although it does not help to preserve the meat.

VI. *Yield of Canned Meat from Fresh*

Approximate Yield of Canned Meat from Fresh

For a quart jar

5 to 5½ pounds of pork loin (untrimmed).

5 to 5½ pounds of beef rump (untrimmed).

3 to 3½ pounds of beef round (untrimmed).

4½ to 5½ pounds of chicken (dressed, undrawn) to be canned with bone.

7 to 8 pounds of chicken (dressed, undrawn) to be canned without bone.

VII. *Instructions for Canning Meats*

Poultry

For the best flavored canned chicken, select plump stewing hens.

The birds should be dressed cut into pieces and chilled to remove the animal heat. These directions may be followed for canning:

Hot Pack, with bone

1. Bone the breast, saw the drumsticks off short, if desired, but leave bone in other meaty pieces, such as second joints, or thigh, breast. Trim off large lumps of fat. Sort into meaty pieces and bony pieces. Set aside giblets to can separately.

2. Broth or hot water will be needed as liquid. To make broth, use bony pieces: Cover them with cold water, simmer until meat is tender. Drain broth into bowl; skim off fat. Remaining meat stripped from bone may be canned as little pieces.

3. Pour hot broth or hot water over raw meaty pieces in cooking pan to cover meat. Put on lid and precook until meat is medium done, or, when cut, shows almost no pink color at center of pieces. Stir occasionally, so meat will heat evenly.

4. If salt is desired, put level measure into clean, empty containers: 1 teaspoon in quart jar.

5. Pack second joints and drumsticks. Have skin next to glass or tin. Fit breasts into center, smaller pieces where needed. Leave about 1 inch above meat in glass jars for head space.

6. Cover meat with hot broth, using about $\frac{1}{2}$ to $\frac{3}{4}$ cup for each quart container. Leave 1 inch for head space in jars.

7. Work out air bubbles with knife. Add more liquid, if needed, to cover meat. Be sure to leave 1 inch head space in jars.

8. Adjust lids on glass jars.

9. Process at once in the steam pressure canner at 10 pounds pressure (240° F.) pint jars—65 min.; quart jars—75 min., or for 3½ hours in the boiling water bath.

Hot Pack, without bone

Follow directions for hot-packed poultry with bone, with these exceptions:

Remove bone—but not skin—from meaty pieces. You can bone poultry either raw, or after precooking.

Boned poultry must be processed in the steam pressure canner longer than poultry with bone. Process at 10 pounds pressure (240° F.) pint jars—75 min.; quart jars—90 min. or for 3½ hours in the boiling water bath.

Giblets

Because of flavor, it is best to can livers alone. Gizzards and hearts, may be canned together. Since these are ordinarily canned and used in small quantities, directions are given only for pint glass jars.

When packing chicken place second joint and drumsticks with skin next to glass; breast in the center of jar with small pieces fitted in. The meat should be cooked until medium done before packing. Leave 1 inch head space in jar.





Chicken or other meat should be covered with hot broth ($\frac{1}{2}$ to $\frac{3}{4}$ cup for each quart jar). Leave 1 inch head space.

Hot Pack

1. Put giblets in cooking pan. Cover with broth made from bony pieces, or hot water, cover pan and precook giblets until medium done. Stir occasionally.

2. If salt is desired, put level measure into clean, empty containers: $\frac{1}{2}$ teaspoon in pint jar.

3. Pack giblets hot. Leave about 1 inch above meat in glass jars for head space.

4. Cover giblets with hot broth or hot water. Leave 1 inch for head space in jars.

5. Work out air bubbles with knife. Add more liquid, if needed, to cover meat. Be sure to leave 1 inch head space in jars.

6. Adjust lids on glass jars.

7. Process at once in the steam pressure canner at 10 pounds pressure (240° F.)—pint jars—75 min. or for $3\frac{1}{2}$ hours in the boiling water bath.

The directions given for chicken may be used for rabbit and other small game.

Beef and Pork

For canning as large pieces, use loin and other cuts suitable for roasts, steaks or chops. For canning as stew meat, use the less tender cuts and smaller pieces.

Cut meat from bone. Set aside bones to make soup. Trim away most of the fat without unduly slashing the lean.

For larger pieces, cut into pieces that will slip easily into the glass jars, with the grain of the meat running lengthwise.

The smaller pieces of stew meat are handled and processed just like larger pieces.

Hot Pack

1. Put meat in large shallow pan; add just enough water to keep from sticking. Cover pan and precook meat slowly until medium done, stirring occasionally, so meat will heat evenly.

2. If salt is desired, put level measure into clean, empty containers: $\frac{1}{2}$ teaspoon in pint jars; 1 teaspoon in quart jars.

3. Pack meat hot. Leave about 1 inch above meat for head space in glass jars.

4. Pour in hot broth or hot water to cover meat. Again leave 1 inch at top of glass jars for head space.

5. Work out air bubbles with knife. Add more liquid, if needed, to cover meat. Be sure to leave 1 inch head space in jars.

6. Adjust lids on glass jars.

7. Process at once in the steam pressure canner at 10 pounds pressure (240° F.)—Pint jars—75 min.; Quart jars—90 min. or for 3½ hours in the boiling water bath.

Ground Meat

For grinding, use small pieces or meat from the less tender cuts, but make sure the meat is fresh and kept clean and cold. Never mix in scraps of doubtful freshness—they may spoil a whole batch; and don't use lumps of fat.

If desired, add 1 level teaspoon of salt to the pound of ground meat, mixing well.

Hot Pack

1. Form ground meat into fairly thin cakes that can be packed in glass jars.

2. Put meat cakes into cooking pan. Precook in oven until medium done or, when cut into, red color at center of cakes is almost gone.

3. Pack cakes hot. Leave 1 inch above meat in glass jars for head space.

4. Skim fat off drippings and do not use the fat in canning.

5. Add water to the meat juice and use in filling jars. Leave about 1 inch above meat in jars for head space.

6. Work out air bubbles with knife. Add more liquid, if needed, to cover meat. Be sure to leave 1 inch head space in jars.

7. Adjust lids on glass jars.

8. Process at once in the steam pressure canner at 10 pounds pressure (240° F.)—Pint jars—75 min.; Quart jars—90 min. or for 3½ hours in the boiling water bath.

Sausage

Use any tested sausage recipe, but omit sage as it is likely to give the canned sausage a bitter flavor. Go easy with other spices, onion, and garlic, because flavors change with processing and storing.

Shape sausage into cakes. Precook, pack, and process like ground meat, hot packed.

Soup Stock

1. Make fairly concentrated stock by covering bony pieces of chicken or other meat with lightly salted water and simmering until meat is tender. Don't cook too long, or soup will lose flavor.

2. Skim off fat, remove all pieces of bone, but don't strain out meat and sediment.

3. Pour hot stock into containers. Leave 1 inch at top of glass jars for head space.

4. Adjust lids on glass jars.

5. Process at once in pressure canner at 10 pounds pressure (240° F.)—Pint jars—20 min.; Quart jars—25 min.

Veal and lamb may be canned by the hot pack method used for beef and pork.

VIII. Care After Processing

Check the Seal Carefully

The screw bands should be removed from the self-seal and glass top jars 12 to 24 hours after processing. The self-seal lids should give a clear ring when tapped with a teaspoon. When the jars are cold, no liquid will escape when the jar is tilted, if the seal is perfect. Jars should never be inverted to cool for pressure on the lid makes it more difficult to form a perfect seal.

If any jar or can has leaked, either use the food at once or can it all over again using another container. Heat the food all through; then pack and process for the same time as fresh.

Washing and Labelling Jars

Canned products have a much better appearance if the outside of the jars are clean and shining. The film that may collect on the outside during the processing may be removed with a damp cloth or in some cases warm soapy water with a little vinegar added may be necessary.

Label each jar after it is tested and cleaned. You may want to include the date and method used in processing as well as the contents. This will help you determine the method of processing your family prefers. In case of any spoilage you may check the amount of spoilage of foods canned by different methods.

Storing

A cool dry place that is relatively free from light is best for storing canned foods.

Heat in the storage place may cause any bacteria that survive processing to grow and multiply thus causing spoilage.

Freezing may crack a jar or break a seal and let in bacteria.

Checking for Spoilage

Inspect all jars carefully before opening. A bulging lid or rubber ring, gas bubbles, mold or leakage may be a sign of spoilage.

When the jar is opened look for other signs such as spurting

liquid and "off odor". If the metal lid of a jar of meat has turned dark inside it is not an indication of spoilage, but due to the presence of sulfur in the meat. Broth over meat may or may not be jellied. If it is liquid it is not a sign of spoilage.

It is possible for meats and non-acid vegetables to contain a poison that may cause botulism. However, if a pressure canner is in perfect order and the canning recommendations given are followed carefully there is little danger. But as a safety precaution, before tasting, empty the food into a pan, add a little water if needed, cover the pan and boil at least 10 minutes before tasting. If the food looks or smells queer after this, destroy without tasting.

Spoiled food should be emptied at once. The jars should be washed in soapy water and sterilized. Spoiled canned meat should be burned.

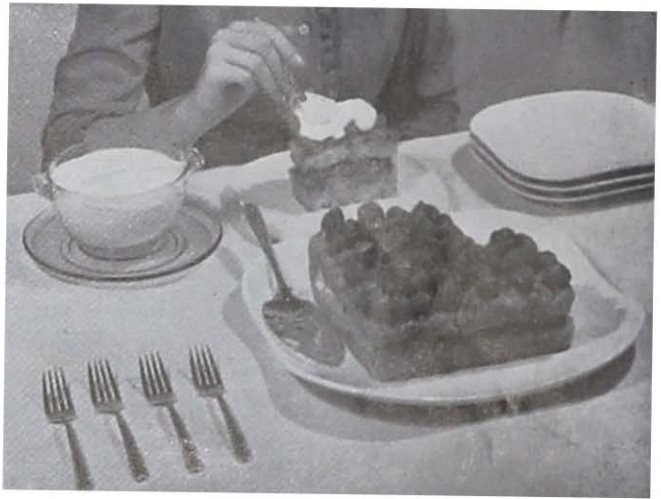
FREEZING FRUITS, VEGETABLES AND MEATS

Fruits, vegetables and meats retain most of the original goodness of fresh foods when processed by quick freezing. A continuous low temperature, 0°F. or lower, is necessary to keep the food. If the food is processed by a locker plant, the plant manager may have some suggestions to make regarding the freezing.

Some general suggestions for freezing fruits.

1. Choose varieties recommended for freezing and when the fruit is fully mature yet not overripe.
2. Wash and clean fruits thoroughly. Handle carefully to avoid bruising.
3. Prepare as for table use.
4. Work quickly to help keep fruits from darkening and losing their color. Fruits that oxidize (darken) readily may be put directly into a cold sugar sirup.
5. Pack fruit in containers to within $\frac{1}{2}$ inch of the top. Methods that may be used are:
 - (1) Dry pack (without sugar). Berries and other fruits, that do not oxidize readily, may be frozen without sugar.
 - (2) Dry sugar pack may be used for juicy fruits like cherries and berries. A proportion of 4 parts fruit to 1 part sugar gives a good product. Slicing or slightly crushing the fruit causes the sugar to go through the fruit better.
 - (3) Sugar Sirup pack is best for apricots, peaches or other fruits that darkens readily. The sirup may be made of 1 cup of sugar to 3 or 4 cups of water. The sirup should be cold when the fruit is added.
6. Seal and then label all containers. Give the name of the product, type of pack, date of packing, locker number and any other information you may want.
7. Freeze at once, after packing and freeze at 0°F. or less.

Attractive dishes to serve to the family and guests may be prepared from home preserved foods.



Some General Directions for Freezing Vegetables:

1. Gather variety recommended for freezing in small quantity so they can be prepared and frozen quickly.
2. Clean all the vegetables thoroughly in luke warm water. Freezing doesn't kill bacteria it only retards their growth.
3. Blanching is necessary to stop enzyme action. This may be done by placing vegetables (not over one or two pounds) in a wire basket or cloth bag and lowering the vegetables in boiling water. The water should come back to a rolling boil within $\frac{1}{2}$ minute after the vegetables are put in. Leave the vegetables in the boiling water for the time recommended for blanching. Blanching time—Count only while the water is at a rolling boil.
4. Cooling immediately after blanching is important. Cooling stops the blanching process and helps to retain more of the vitamin C, natural color and flavor. Use ice water or cold running water of 55°F. or less. Never pack warm vegetables.
5. When vegetables are thoroughly cooled, drain well and pack in containers to within one-half inch of the top.
6. Seal and then label the container. Give the name of the product, variety, date of packing, locker number and any other information you may need.
7. Freeze immediately after packing and store at zero or lower. Directions for freezing some vegetables and a few of the varieties recommended for freezing, are listed.

Asparagus (Mary Washington)—Wash thoroughly, sort for uniformity and cut tips into length that fit the container. Blanch small stalks for three minutes; large size five minutes. Chill immediately in water. Drain and pack.

Beans, Snap (Stringless, Green Pod, Green Refugee, Kentucky Wonder)—Select only tender, fresh beans. Wash thoroughly and sort as to size. Snip and string if necessary and cut or break if desired. Blanch small beans two minutes; larger ones four minutes. Chill immediately, drain and pack.

Beans, Lima (Baby Potato, Baby Fordhook)—Select while still green and immature. Wash, hull and blanch two minutes. Chill and pack.

Corn, Sweet (Golden Bantam)—Select ears when at the best eating stage. Blanch four to six minutes, depending on the size of the ear. Chill immediately, Cut from the cob, but don't cut any of the cob or husk.

Peas (Laxtonian, Laxton's Progress, Thomas Laxton, World's Record, Alderman)—Select when suitable for table use. Wash pods well and remove peas. Blanch one minute. Chill and pack.

Soybeans, green edible—Select well filled pods which are green and succulent. Wash pods thoroughly in lukewarm water. Boil or steam for five minutes; cool quickly and squeeze out of pods. Pack.

Spinach or Other Greens (Giant Nobel, King of Denmark, Bloomsdale)—Select deep, green and tender leaves. Wash thoroughly in lukewarm water. Blanch for two minutes. Cool immediately. Drain well and pack.

General Suggestions for Freezing Meats:

Poultry

1. Dress, chill and prepare poultry as for cooking.
2. Package according to directions for the type paper or carton you are using.
3. Freeze promptly and store at zero or lower.

Meats

1. Select sound, high quality meats.
2. After dressing, chill promptly and thoroughly, to below 40°F. Pork and veal should be frozen as soon as the animal heat is out. Beef and lamb may be chilled five to seven days to make the meat more tender.
3. Cutting. Plan cuts of meat for the family needs. Thawed meats spoil easily so the cuts should be of a size that can be used soon.
4. All meats should be carefully wrapped in moisture-vapor proof paper to prevent drying.
5. Freeze quickly at zero or lower.
6. Store at 0°F.
7. Limit storage time. If the wrapping paper is moisture-vapor proof and your freezer carries a uniform near zero temperature, meats may be stored six to twelve months. If foods dry or lose quality, shorten the storage period.

MAKING PICKLES AND RELISHES

Pickled vegetables, pickled fruits and relishes add color and zest to any meal. A large variety of pickles and relishes may be made. These general suggestions may be followed:

1. Use only fresh, good quality fruits and vegetables. Fruits and vegetables may be slightly underripe.
2. Wash and sort as to uniformity of size.
3. Vinegar used for pickling should be free from sediment with a 4 to 6 per cent acetic acid.
4. Pure granulated salt will give the best results.
5. Spices may be tied in a cloth bag for cooking and removed before packing the pickles. Spices when packed in the jars may turn the pickles dark.
6. Measure all ingredients and follow directions given in the recipe.
7. Seal pickles airtight and store in a cool, dry, dark place.

You may use the recipes in Food Preservation IV or try others that you may have.

PLANNING DINNER MENUS—USING YOUR PRESERVED FOODS

Much of the pleasure of food preservation work comes when an appetizing meal can be prepared for the family or for guests. This means a variety of foods—meats, vegetables, fruits and fruit juices, and maybe pickles or relish as well as something sweet. Jars of home canned foods are just the thing when unexpected company arrives.

A good hostess often has a special dish or basic meal that can be prepared easily. Some guides in meal preparation are:

1. Check the foods which you have such as left-overs, fresh fruits and vegetables and preserved vegetables, fruits and meats.
2. Plan a menu that can be prepared easily and is nutritious and appetizing.
3. Plan the work involved so that those things requiring a longer cooking or cooling time are started first. Getting dishes ready, setting the table and other work may be planned before starting the meal or during the cooking.
4. All the food should be ready for the table when it is to be served.
5. Cold food that should be hot or overcooked food is less appetizing than food that is served as soon as cooked.

Samples of Some Menus Prepared

Canned Foods

Chicken
Green Beans
Pimento
Red Plums

Canned Foods

Tomato Juice
Beef
Carrots
Pears
Mixed Pickles
Raspberries

Browned Chicken

Mashed Potatoes Green Beans
Cabbage Slaw with Pimento
Bread and Butter
Red Plums
Milk, Tea, or Coffee

Tomato Juice

Roast Beef
Browned Potatoes—Carrots—Onions
Pear Salad
Bread—Butter Mixed Pickles
Raspberries and Cream
Milk, Tea, or Coffee

SCORE CARD FOR MEAL

	Perfect Score	Score
I. Selection of Food.....	30	_____
1. Variety in type of food		
2. Texture—Does the meal provide something crisp? Something soft?		
3. Flavor—variations		
4. Color—variations—but harmonious		
5. Adaptation		
a. Season		
b. Occasion		
6. Value in relation to cost		
II. Preparation of Food	30	_____
1. Cooking not overcooked or undercooked		
2. Seasoning—to bring out natural food flavors		
3. Organization—was the work well planned and organized to save time and energy		
4. Economy of time and energy		
III. Service of Food	25	_____
1. Punctuality—was the meal served on time?		
2. Appearance		
a. Table—was the table neat and orderly?		
b. Food—did the food look attractive and palatable?		
c. Waitress—quiet and efficient (or server)		
3. Quietness		
4. Correctness		
5. Skill		
IV. Atmosphere and Hospitality.....	15	_____
1. Responsibility of hostess		
a. Table manners		
b. Conversation		
c. Consideration of others		
2. Responsibility of host		
a. Table manners		
b. Conversation		
c. Consideration of others		
3. Responsibility of other family members		
a. Table manners		
b. Conversation—Did they share in helping toward the success of the meal?		
c. Consideration of others		
Score	100	_____

CHECK SHEET FOR YOUR CANNED FOODS

	Fruit	Toma- toes	Vege- tables
I. Quality of canned product..... 80			
A. Solid product 45			
1. Color 10 (Natural for cooked product, not faded or darkened to a great degree.)			
2. Quality 25 (Should show good original product, canned at proper stage of ripeness, showing no defects and having an agreeable odor and flavor.)			
3. Uniformity 10 (Should be of about the same size and all of same maturity or ripeness.)			
B. Liquid 25			
1. Color 10 (Clear and bright natural to that of the fruit or vegetable. Tomatoes should be red but not clear, corn should have a milky appearance.)			
2. Quality 15 (Should be good consistency and have an agreeable flavor and odor.)			
C. Pack 10 (Space should be full but the jar not crowded. Product not <i>fancy packed</i> . The liquid should cover the product but there need not be an excessive proportion of liquid to product.)			
II. Selection of Product 10 (Should be a product that is economical to can, also one that can be obtained at home or a local market.)			
III. Appearance of Jar and Label..... 10 (Jar and lid should be <i>clean</i> , free from sediments and lime from water bath or any other dirt. Label should be neatly written.)			
Total No. Points.....100			

PLANNING A HOME GARDEN

(Sub-division B)

The Garden Project is one project in which every 4-H Food Preservation member should be interested. It is possible to have fresh products to eat in season and some at the proper stage of maturity for food preservation. One-tenth acre of garden for each member of the family is the area generally recommended for an adequate supply. Plan the garden so that all of the area will be used during the entire season. Select the varieties of seeds for planting that are recommended for the type of food preservation you plan to use as well as those varieties that are disease and insect pest resistant.

For gardening helps ask your Extension Agent or 4-H Club Leader for Extension Bulletin No. 238, "Helps for the Home Garden".

PLANNING A FAMILY FOOD BUDGET

(Sub-division C)

A variety of foods is necessary to help the body maintain strength, health and vitality. The diet for each day should include: *milk* (at least one pint), *vegetables* (two or more servings other than potatoes—one leafy if possible), *Fruits* (fresh, canned, or dried, in addition to orange or tomato juice), some *whole cereals* (brown bread or whole grain breakfast food), some *meat*, an *egg*, *butter*, and 8-10 glasses of *water*.

Food should move freely in the jars to avoid over-packing; however, too much liquid is a waste of jar space.



Arrange equipment conveniently before starting to can. Fruits and vegetables should be at their prime stage, neither green nor over-ripe. Jars must be filled immediately after being sterilized and put at once into the canner. Work quickly and carefully.



To plan the amount of food needed by a family for a year, multiply the number of adults in the family by the amount of food needed for one person. The estimated food needs are planned for the months when the foods are not in season locally.

No. in family _____	Needed for one person	Family Needs	Amount Preserved
1. Leafy, Green or Yellow Vegetables, Kale Mustard Greens, Spinach, Beet Tops, or Swiss Chard	12 pt. 4 pt.		
Green Lima Beans	8 pt.		
Green Beans	9 pt.		
Cabbage	30 lb.		
Peas	8 pt.		
Carrots	½ bu.		
Squash	1 pk.		
2. Other Vegetables			
Potatoes	2½ to 3 bu.		
Sweet Potatoes	½ bu.		
Corn	10 pt.		
Beets	1 pk.		
Onions	1 pk.		
Parsnips	1 pk.		
Pumpkin	4 pk.		
Turnips	1 pk.		
Dried Beans and Peas	7 lbs.		
3. Tomatoes	45 qts.		
(Includes tomato juice needed as source of Vitamin C.)			
4. Small Fruits	8 qt.		
(Currants, Gooseberries, Grapes, Berries)			
5. Tree Fruits	42 qts.		
(Peaches, Plums, Pears, Apricots, Cherries)			
Apples	2 bu.		

Some of these foods may be stored, others canned or frozen or preserved by other methods. In case the family does not have all the foods listed, similar foods may be used. Some families plan to supplement home preserved foods with fresh foods from the markets.

COMMERCIAL FOOD PRESERVATION

(Sub-division D)

Commercial food preservation has become a profitable, as well as useful, industry. On the markets today, may be found fresh carefully selected, washed and packaged fruits and vegetables, in addition to those foods preserved by canning (either in tin or glass), freezing, drying and other methods. Commercial products vary in quality, taste and flavor, just as food preserved at home may vary. This is usually due to the kind of food used (variety, stage of maturity, and quality), the method of handling, and processing. If your family is using any commercially packed food products, you may compare the quality and cost with your home packed products.

The Federal Food and Drug Law provides for inspection and includes many regulations regarding food preservation. Two general requirements for canned fruits and vegetables apply to head space and liquid. Head space (distance from the underside of the can cover to the top of the product) must not be more than 10 per cent of the inside height of the can. There must not be an excessive amount of water, brine, sugar solution or other liquid packing medium.

Canned foods which are not according to these standards must be labelled as a sub-standard product. If there is too much head space or if short of drained weight, the label must be marked: *Slack Fill*. If the can contains too much liquid, the label must be marked "*Contains Excess Added Liquid*."

Many food products on the market today are sold according to grade standard and the label carries the grade. Grades of products vary according to the standard. For example:

U. S. Grade A (Fancy) Product well ripened, uniform in color, size and shape; practically no defects; firm, tender, fleshy texture; normal flavor; and scores not less than 90 points on score card for canned foods.

U. S. Grade B (Choice) Product ripe, reasonably uniform in color, size and shape; reasonably free from defects; firm and reasonably tender texture; normal flavor; scores not less than 75 points.

U. S. Grade C (Standard) Product fairly uniform in size and color; relatively free from defects; texture not quite the same throughout; possesses normal flavor; scores not less than 60 points.

U. S. Grade D (Seconds) Product not uniform in color, size and shape; has noticeable difference in normal texture and flavor.

U. S. Grade E (Fruits Only—Water Pack) Similar to "D" except defects may be more noticeable.

U. S. Grade F (Fruits Only—Pie) Products not suitable for above grades, but has normal flavor. The pieces may be whole or broken and lack even ripeness.

CHECK SHEET FOR COMPARING COMMERCIAL AND HOME PACKED PRODUCTS

	Product	Brand and Packer	Cost	Weight	Cost per Serving	Uniformity of Size	Natural Color	Free from Defects	Tenderness and Texture	Natural Flavor
Home canned										
Commercially canned										
Home canned										
Commercially canned										
Home canned										
Commercially canned										
Home canned										
Commercially canned										
Home canned										
Commercially canned										

*Allow about 4 ounces (approximately ½ cup).