

**COOPERATIVE EXTENSION WORK IN
AGRICULTURE AND HOME ECONOMICS**

UNIVERSITY OF MISSOURI COLLEGE OF AGRICULTURE AND THE UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING

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LEADER'S GUIDE*

FOOD PRESERVATION ✓

(To Be Used With 4-H Club Circulars 33, 40, and 60)

CONTENTS

	Page
Objectives	2
Project Organization	3
Exhibits	11
Records and Reports	11

This Leader's Guide has been prepared to assist the leader in planning the 4-H preservation program for the year. It is hoped that this guide will assist the leader in planning a detailed program for each club meeting so that the boys and girls may gain the maximum amount from their club work.

Preservation literature has been planned on a progressive basis to meet the individual differences in age and experience of club members. For this reason your preservation club may consist of preservation I, II and III members. This means that subject matter meetings have been planned for general information for entire groups and specific information for specific groups.

If your club is large it is possible that an assistant will be needed to work with one division. Older club members who have had or are carrying the third year of preservation work might serve as an assistant leader leading younger girls in Preservation I Club work.

In making your individual project program plan you may use the suggested meetings and apply them to your club. You are encouraged to use any supplementary material which is available to you through high school texts or other extension publications. The meetings planned are planned on a yearly basis since community clubs will be organized or reorganized during September or October. Subject matter plans are, therefore, planned beginning October or November. These are merely suggested and can be adapted to your program needs.

The leader should keep in mind the following objectives as she plans the project program and leads the club members in these projects:

*Prepared by Helen Church, State Club Agent, in collaboration with Flora Carl and Ruth Foster, Nutrition Specialists, to be used with 4-H Club Circulars 33, 40 and 60.

OBJECTIVES

Food Preservation I. Objectives of the Food Preservation I club work are as follows: To encourage club member to eat an adequate amount of tomatoes and other fruits through the winter; to assist club member in acquiring information and skills in the better methods of canning fruits, storing vegetables and making preserves, jams and conserves, and to do the work involved with greater ease, skill and pleasure; to provide an opportunity for members to work together and with other people.

To assist club members in attaining these objectives, the following activities are suggested:

- (1). Select, use and care for the utensils needed for canning acid foods and for making preserves, jams, and conserves.
- (2). Select, prepare and can at least 10 quarts of tomatoes.
- (3). Select, prepare, and can at least 10 quarts of fruit (3 varieties).
- (4). Store at least 3 vegetables and one fruit.
- (5). Make at least 5 glasses of preserves, jams or conserves.
- (6). Serve at least one of the foods preserved.

Food Preservation II. Objectives of the Food Preservation II club work are as follows: To encourage and assist club members in establishing good food habits, especially in regard to eating an adequate amount and a wide variety of fruits and vegetables; to assist club members in planning, preserving and using efficiently their fruit and vegetable budget; to help club members acquire information and skill in the better methods of canning and drying vegetables and fruits and in the making of pickles, butters, conserves and marmalades, and to do the work involved efficiently and happily; to encourage club members to want to save and to use efficiently the surplus fruit and vegetables from the orchard and garden; and to provide opportunities for club members to work alone, together and with other people on a desired and useful activity.

To attain these objectives the following activities are suggested:

- (1). Make a list of the canned fruits and vegetables one will need during the winter for positive health. (It is preferable to include in this list only the fruits and vegetables which will be available.)
- (2). Prepare and can at least 5 quarts of tomato juice.
- (3). Select, prepare and can at least 5 quarts of a combination of fruits which might well be used for a salad, a fruit cup or a dessert.
- (4). Prepare and can at least 2 kinds of fruit juice.
- (5). Care for and use a pressure cooker.
- (6). Select, prepare and can at least 15 quarts of vegetables (3 varieties).
- (7). Dry a vegetable or fruit—at least 2 pounds.
- (8). Make at least 3 quarts of pickles.
- (9). Make at least 5 pints of butter, conserve or marmalade.
- (10). Plan and serve at least one meal using at least 2 of the preserved products.

Food Preservation III. Objectives of the Food Preservation III club work are as follows: To encourage and assist club members in establishing good food and health habits and in learning to enjoy a wide variety of fruits and vegetables; to assist club members in acquiring information and skill in making a food preservation budget for their families, canning fruits, vegetables and meats, and in making sauerkraut, relishes and jelly, and in doing the work involved efficiently and happily; to encourage the club members to want to can according to a plan and to use the home produced foods in satisfying family meals; and to assist club members to appreciate the value of having a surplus of home produced foods; to have joy in working alone and with others.

To attain these objectives the following activities are suggested:

- (1). Make a list of the different kinds and amounts of fruits, vegetables and meats needed for your family for the year.
- (2). Select, prepare and can at least 5 different vegetables, including a soup mixtures.

- (3). Prepare and can at least 2 different meats.
- (4). Do any three of the following—make 3 different kinds of jelly; make 3 different relishes; make 3 pints of catsup; 3 qts. sauerkraut or 4 pints chili sauce.
- (5). Plan 5 meals using the foods you have preserved and prepared and serve at least one of the meals.

It is suggested that the club group give some products they preserve to an organization or some one less fortunate or that they serve some of the preserved foods to some special group.

Project Organization

The project leaders and assistants with a committee of club members will want to plan the progress of the project for their club. These plans could be placed in a project program book of some kind. Their plans will include place of meetings, individual demonstration by members, discussion, subjects, tours, and work to be done at meetings. The following should be done at the first meeting:

1. If the club is part of a community organization a junior chairman will be selected.
2. If the group forms the only 4-H project of the community, then regular officers will be selected.
3. A committee will need to be named to plan the project program with the leader for the year.
4. Specific goals will be set up in each group to satisfy the group and meet the objectives of the project.
5. Literature will be distributed and reports explained.

Suggested Meetings

Sept.-Oct.—Topic for Preservation I, II and III Club Members—Storage of Fruits and Vegetables.

Problem 1. How can we have fresh vegetables and fruits when they are out of season?

Points to remember in discussion:

- (1). Storage of fresh vegetables and fruits in cellars, caves or pits is economical and easily done.
- (2). Freezer lockers that supply places for freezing and keeping foods are available in many communities.

Problem 2. What vegetables can be stored successfully?

Points to remember in discussion:

- (1). Root vegetables such as beets, carrots, turnips, and parsnips can be stored in pits, cellars or caves.
- (2). Onions, beans, peas and sweet potatoes can be stored in dry places.
- (3). Mature tomatoes can be stored until midwinter.

Problem 3. What fruits can I store.

Points to remember in discussion:

- (1). Apples can be easily stored for winter use.
- (2). Pears picked before ripened may be wrapped and stored.

Things to do at meetings and at home:

- (1). Discussion of problems of storage at meeting.
- (2). Visit any storage cellars, pits or special freezer locker storage centers in your community.
- (3). Either in a group or as individuals store some available fruits or vegetables at home.

Suggested Demonstrations:

- (1). Preparing vegetables for storage.
- (2). Building a storage pit or bins for storing vegetables.

Suggested References:

Home Storage of Vegetables. Farmers Bulletin 879, U.S.D.A.

Nov.-Dec.—Topic for Preservation I and II—How to Make Preserves and Jams for Christmas.

Problem 1. What can be used for jam, conserves and jellies?

Points to remember in discussion:

- (1). Dried fruits will make good conserves.
- (2). Fruit juices which were canned during summer months can be used.
- (3). Cranberries on the market make nice jelly for Thanksgiving and Christmas.
- (4). Citrus fruits, such as oranges, grapefruit and lemons make good marmalade.
- (5). Other jams, jellies and preserves may be made when in season.

Problem 2. How can these preserves, jams and jellies be made into attractive gifts?

Points to remember in discussion:

- (1). If you desire, small attractive glasses and pottery dishes may be used.
- (2). Wrap these glasses in bright cellophane or attractive tissue paper and tie them attractively.
- (3). Christmas stickers can be placed on the glasses to give them a festive appearance.

Things to do at meetings and at home:

- (1). Preserves, jellies and conserves may be made by club members at home or at meeting.
- (2). Individual gifts or group gifts may be given to less fortunate families or organizations in community.

Suggested Demonstrations:

- (1). How to wrap Christmas packages.
- (2). How to make any jellies, jams or preserves.

Suggested References:

Home made Jams, Jellies and Preserves, U.S.D.A.—1800.

Nov.-Dec.—Topic for Preservation III Members—How to Can Meat.

Problem 1. Why can meat and what meats can be canned?

Points to remember in discussion:

- (1). If freezer locker is not available canning is a method of keeping some meats.
- (2). Ready for use.
- (3). All kinds of meats and meat products, fish, chicken and game can be canned.

Problem 2. What method of canning is preferable?

- (1). The hot pack method, using a pressure cooker is preferable for all non-acid foods including meat.
- (2). Pre-cooking is necessary if hot pack method is used.
- (3). Follow directions in time-table carefully in canning meats.
- (4). Store meats in dry dark cool place.

Problem 3. What methods may be used for pre-cooking?

- (1). Flavor is changed.
- (2). Difficult to process unless cooked.
- (3). Frying is not the best method as it becomes dry and hard.
- (4). Cooking in water, or in oven, are the best methods.
- (5). The meat should be covered with liquid in cans.

Things to do at meetings and at home:

- (1). Use a pressure cooker at meeting and can some kind of meat.
- (2). Let girls prepare and can some type of meat, either at home or at meeting.
- (3). Have girls score canned products when canning is completed.

Suggested Demonstrations:

- (1). How to cut and prepare meats for canning.
- (2). How to can chicken (or any other fowl).
- (3). How to can beef or pork.
- (4). How to can internal organs such as liver, tongue and heart.

Suggested References:

- "Home Canning of Fruits, Vegetables and Meats", U. S. Department of Agriculture Bulletin No. 1762.
 "Pork on the Farm", U.S.D.A. Bulletin 1186.
 "Cutting, Curing and Canning Pork and Beef", Missouri Extension Bulletin 318.
 "Canning Meat, Fish and Chicken", Missouri Extension Bulletin 394.

January—Topic for Preservation I—Collecting and Using Canning Equipment.

Problem 1. What equipment is necessary?

Points to remember in discussion:

- (1). Usual kitchen equipment such as knives, bowls, colander, brushes, etc., are needed.
- (2). Some type of canner or kettle, the kettle for water bath, steam cooker, and the pressure cooker.
- (3). Water bath container used for fruits and acid foods can be easily constructed from some container on hand, page 4, Circular I.
- (4). Pressure cookers are necessary for safe canning of non-acid vegetables and meats.
- (5). Jar lifter, shown on page 9, Circular I, is helpful in lifting jars from processing kettles.

Problem 2. What kind of container shall be used in canning?

Points to remember in discussion:

- (1). Glass jars are preferable to most people since they have them and you can see the contents.
- (2). Glass jar should be selected so that it will allow you to easily pack food into it, preferably, wide mouth for whole fruits and vegetables.
- (3). Tin cans are inexpensive but require special apparatus for sealing.
- (4). Only the best lids should be used for jars.
- (5). Always use a *new* rubber ring—make a test of the rubber before using.
- (6). The size of jar used will depend upon the size of the family and also the kind of product canned.
- (7). Non-acid vegetables such as corn, lima beans, peas, meat, etc., should be canned in small containers—pints preferably.
- (8). Self sealing lids should not be tightened while hot.

Things to do at meetings and at home:

- (1). Have several girls bring different kinds of jars and lids. Test rubbers and cans for canning.

Suggested Demonstrations:

- (1). How to test a jar before canning.

January—Topic for Preservation II and III—How to make a Canning Budget for Individual and Family.

Problem 1. What is a canning budget and why make it?

Points to remember in discussion:

- (1). A canning budget is merely a plan for canning the needed fruits and vegetables for an individual for one year.
- (2). Budgeting makes for economy of time, energy and money.

(3). If a canning budget isn't made too many or too few vegetables or fruits may be canned for the year.

(4). Left-over products become less palatable.

Problem 2. How many vegetables and fruits shall I can?

Points to remember in discussion:

- (1). Some vegetables needed can be stored and will be considered in the plan.
- (2). Fruits and vegetables should be based upon at least five servings daily, preferably, 2 fruits, potatoes and 2 other vegetables.
- (3). Variety of both fruits and vegetables will not allow us to become tired of any one.
- (4). Tomatoes, oranges or other citrus fruits or fresh raw fruits or vegetables each day.
- (5). A chart is given in project circular giving amounts of preserved food for an individual.
- (6). One should have dark green leafy or yellow vegetables daily.

Problem 3. How can we plant a budget for a family?

Points to remember in discussion:

- (1). Multiply amount for one person by number in family.
- (2). Circular III gives adequate food preservation budget for Missouri family of five, page 5.
- (3). Pickles, relishes, jams, conserves, and jellies are listed in luxury class of foods, but they do add an accent of color and flavor to starchy foods, meats and some vegetables.
- (4). The meat canned will depend upon other methods of preservation used, the availability of a freezer locker and the amount of fresh meat which you may desire to purchase.

Things to do at meetings:

- (1). Have girls list vegetables which they and their family like. If there isn't at least 15 vegetables ask girls to can at least one new vegetable.
- (2). List fruits available from your farm and then the plentiful fruit in the community.
- (3). Make individual vegetable budgets which will be a basis for garden planning meeting.

Feb.-Mar.—Topic for Preservation I, II and III Club Members—Planning the Family Garden so that there will be a surplus to fulfil our preservation budget.

Problem 1. What vegetables grow in my locality to best advantage?

Points to remember in discussion:

- (1). Possibly you do not grow as great a variety as you could.
- (2). Climatic conditions make possible growth of certain vegetables.
- (3). Gardens can be improved by fertilizing.

Problem 2. What vegetables shall we grow for canning and storing?

Points to remember in discussion:

- (1). Keep in mind that vegetables which you can store, should be stored rather than canned.
- (2). Be sure that you have great enough variety—10 different vegetables may be canned. Eight or ten stored.

Problem 3. Will it be wise for me to buy vegetables for canning if they cannot be grown?

Points to remember in discussion:

- (1). Supply will determine price. Also the price of commercially canned products should be considered.
- (2). Equipment and time should be considered.

- (3). You may want to plan on buying some fresh vegetables during winter months.
- (4). The quality of vegetables or fruits will determine whether or not you will make the purchase. Inferior products are just as inferior when placed in cans.

Problem 4. How can I plant garden to have superior quality foods for canning?

Points to remember in discussion:

- (1). It is necessary to plan garden for preservation. Successive planting gives you fresh superior products for canning.
- (2). Canning when vegetables are at the correct stage is important.
- (3). Canning vegetables after you have had all the fresh ones you need or canning those left-over may give you inferior products to go into your jars.

Things to do at meetings and at home:

- (1). Have girls list vegetables which they grow in their garden.
- (2). Make an estimate of the amount needed in the garden for the individual or the family budget. Draw garden plot.
- (3). Mothers and fathers of girls may want to help with planning. This might be a guest meeting and the planning might be done together.
- (4). Use Extension Circular 311, Missouri College of Agriculture, "The Family Garden" for basis of garden discussion.
- (5). If girls desire they may carry garden project with preservation or if there is a boy of club age in the family a joint project might be carried.
- (6). Score some canned vegetables which girls have on hand.

Suggested Demonstrations or topics for discussions:

- (1). How to plan a garden that the preservation budget may be met.

Suggested References:

"The Family Garden", Extension Circular 311. Missouri College of Agriculture.

Apr.-May—Preservation III—Canning Early Vegetables (Pressure Cooker).

Problem 1. What method of canning will be used for vegetables.

Points to remember in discussion:

- (1). Pressure cooker should be used for non-acid vegetables or food should be dried or brined (Non-acid vegetables such as corn, peas, beans, spinach, etc.).

Problem 2. When should vegetables be canned?

Points to be remembered in discussion:

- (1). Only best quality of vegetables should be canned, vegetables should be picked from garden when at best stage of maturity.

Problem 3. How can vegetables be canned so that they keep color, texture and flavor.

Points to remember in discussion:

- (1). If vegetables which are green are pre-cooked without a lid at a slow simmering temperature 160° to 180°F. the color will be set so that processing will not fade the food badly.

Problem 4. What may cause spoilage?

Points to remember in discussion:

- (1). Check any spoilage with Preservation II literature, page 18.

Things to do at meetings and at home:

- (1). If a pressure cooker is available in the community or if girls have a pressure cooker, the leaders and girls should demonstrate canning of vegetables which are in season. Pressure cooker could be loaned to different members for doing their work.
- (2). Score canned goods when canning is finished.

Suggested Demonstrations:

- (1). How to can corn (any other vegetable).
- (2). How to use a pressure cooker.
- (3). How to prepare vegetables before processing.

Suggested References:

"Home Canning of Fruits, Vegetables and Meats", Farmer's Bulletin 1762, U. S. Department of Agriculture.

June—Topic for Preservation I-II-III Club Members—How to Can Fruits.

Problem 1. What methods should be used for fruit canning?

Points to remember in discussion:

- (1). Since fruits are acid they are more easily canned.
- (2). Cold pack method gives soft fruit more natural form, texture and flavor than open kettle or hot pack method.
- (3). Hot pack method is preferable if jar space is limited.

Problem 2. How heavy a syrup should be used in canning?

Points to remember in discussion:

- (1). Too heavy syrup covers taste of fruit.
- (2). Different kinds of fruits will require different sweetness.
- (3). The amount of sugar used should vary with the way the fruit is to be served.

Problem 3. How will canned fruits be used.

Points to remember in discussion:

- (1). If they are whole then we may use certain fruits for salads.
- (2). For pies or cooked desserts, fruits may be canned with very little sugar added.

Problem 4. How can fruit combinations for salads, desserts and cocktails be canned.

Points to remember in discussion:

- (1). Same process is used that is used for other fruits.
- (2). Fruit combinations will not need a very heavy syrup.

Things to do at meetings and at home:

- (1). Girls may try different methods of canning fruit possibly for experimental purposes.
- (2). If girls find it more interesting to can in groups it may be easier for younger girls.
- (3). Have girls examine canned fruits which they buy on the market to note difference in syrup, texture and flavor of fruit.
- (4). Score canned products.

July—Topic for Preservation I Club Members—How to Can Tomatoes.

Problem 1. Why can so many tomatoes?

Points to remember in discussion:

- (1). Tomatoes retain vitamin A and C when canned.
- (2). May be source of vitamin C during winter months.

Problem 2. What causes spoilage of tomatoes?

Points to remember in discussion:

- (1). Do not allow them to stand too long in warm room before preparing them.
- (2). Remove hard spots and the green hard core.
- (3). Soft spoiled spots on tomatoes cause spoiling.

Problem 3. What method will be used?

Points to remember in discussion:

- (1). May be cold packed or hot packed and processed in hot water bath.
- (2). Tomato juice may be used to cover tomatoes or may be so closely packed that own juice will cover.
- (3). Tomatoes are canned as a fruit since they are acid.
- (4). Hot packing shrinks tomatoes before processing.

Things to do at meetings:

- (1). Have girls can tomatoes which they bring from home. Some may want to hot pack and others may cold pack.
- (2). Preservation II members may make tomato juice.

Suggested Demonstrations:

- (1). How to pack tomatoes into a jar. (Individual)
- (2). How to cold pack tomatoes. (Team)
- (3). How to hot pack tomatoes.
- (4). How to make tomato juice.

July—Topic for Preservation II and III Club Members—How to Dry Fruits and Vegetables.

Problem 1. What are advantages of drying foods.

Points to remember in discussion:

- (1). Cheap method, requires very little storage space.
- (2). Adds variety and flavor is changed in drying.

Problem 2. How are dried foods stored?

Points to remember in discussion:

- (1). Dried products need to be conditioned before storing.
- (2). Light, dust, moisture and insects must be kept out.
- (3). Pack in heavy paper bags, or tin cans or glass containers.
- (4). Store in a cool dry place.

Problem 3. What vegetables and fruits can be most successfully dried in Missouri?

Points to remember in discussion:

- (1). Sweet corn, mature beans and peas and okra are vegetables most successfully dried.
- (2). Apples, pears, peaches and apricots are fruits that can be dried.
- (3). Definite directions should be followed to have the best products.

Things to do at meetings and at home:

- (1). Each girl might bring some sweet corn or some other vegetable she has for drying and start drying process.
- (2). Have girls collect labels from cans which have been purchased and examine label for syrup content and weight.

Suggested Demonstrations:

- (1). How to prepare sweet corn for drying.

August—Topic for Preservation II Club Members—How to Make Pickles and Relishes.

Problem 1. What kinds of vegetables will be used for pickling?

Points to remember in discussion:

- (1). Cucumber pickles will be used for making sweet and dill pickles.
- (2). Onions when very small make nice pickles.
- (3). Pears, peaches or apricots may be used for fruit pickles.
- (4). Crab apples are also very good pickled.

Problem 2. What relishes can I make?

Points to remember in discussion:

- (1). Tomatoes, ripe or green, peppers, onions, cabbage and cauliflower may be used in relishes.

- (2). Sauerkraut can be made when cabbage is plentiful or least expensive.

August—Preservation III—How to Make Jelly.

Problem 1. What fruit juices can be used for jelly?

Points to remember in discussion:

- (1). Fruits must contain a substance called pectin and acid in correct proportion.
- (2). Too ripe fruits contain less pectin than under-ripe fruit but more flavor. Choose some under-ripe fruit with the ripe.
- (3). Prepared pectin or acid fruit juice may be added to some fruit juices to make them jell.

Problem 2. What precautions must be followed to have good jelly?

Points to remember in discussion:

- (1). Make in small quantities to insure good jelly.
- (2). Be careful not to overcook jelly as this makes it gummy and gives a strong taste.
- (3). Jelly to be clear should be strained through a finely woven cloth bag.

Problem 3. How can I store jelly?

Points to remember in discussion:

- (1). The large amount of sugar in jelly keeps bacteria from growing.
- (2). Paraffin may cover jelly to keep it from losing moisture.
- (3). Label and store in dark place so that it will retain color.

Things to do at meetings and at home:

- (1). Girls may make jellies or relishes at meetings and if they are made at home they might bring a can to be judged at next meeting.

Suggested Demonstrations:

- (1). How to make jelly.
- (2). How to make tomato catsup.
- (3). How to make peach pickles.
- (4). How to make cucumber pickles.

Suggested References:

Home Made Jellies, Jams and Preserves. Farmers Bulletin 1800.

Achievement Program.

At the end of the project the club may want to plan and serve a meal using canned products. If this is done the menu should be scored according to information in Dinner Club work. The community club will probably plan some kind of an achievement program, and the food preservation project will be represented by demonstrations, exhibits, etc., as planned by the community club.

Exhibits:—Food preservation club members often desire to exhibit their products at county or State Fairs and other community places. It is well to select uniform jars, for such an exhibit. Then all jars should be labeled correctly. If they are going to the State Fair the following type label should be pasted upon each jar. The State Fair Catalog is available to your home demonstration agent. Find out from the fair catalog the correct Lot and Class number which you should use.

Department
Lot -----
Class -----
Mary Jones
Lincoln County

Records and Reports.—Each club member has a project record blank in the back of his circular. At the beginning of the project work the report blank should be studied and should be a guide in setting up individual and club goals. Members will want to keep records carefully during the progress of the club, as the completion of the work is based upon the record.

When the work is completed the project leader approves the report by signing her initials after the name of each member. If the report is not satisfactory the leader should hand back the report with suggestions for improvement. It is most important that boys and girls keep their reports of each year's club work as an accumulated record may be needed to show the member's accomplishments over a period of time.