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Canning Club Work Michigan State University Cooperative Extension Service 4-H Club Bulletin Barbara Van Heulen, Assistant State Club Leader Issued August 1922 44 pages

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Michigan Agricultural College and U. S. Department of Agriculture co-operating. Printed and distributed in furtherance of the purposes of the cooperative agricultural extension work provided for in the Act of Congress, May 8, 1914. OUR GOAL

"Enough For The Family"

# OUR MOTTO

"To Make The Best Better"

# CANNING CLUB WORK

# BARBARA VAN HEULEN, Assistant State Club Leader

Every girl is a potential home-maker. As such she should hold as her ideal, perfection in every phase of home-making. Much concerning the standards of the housekeeper is told by a peep into her canning and preserving cupboard, for well filled shelves indicate not only a general pride in all phases of household duties, but a regard for the health and consequent happiness of the family. The canning club offers to a girl the double opportunity to learn this type of home work in a pleasurable and scientific way, and at the same time to relieve her mother of some of the busy season's duties.

Canning, drying and brining are the principal methods resorted to in the preservation of food stuffs; of these, canning is the most desirable, for it keeps the products in a condition more like that of food freshly cooked, and furthermore, ready to be served on short notice.

The One-Period Cold-Pack method of canning, which is considered the best and safest for all meats, vegetables and fruits, is outlined in the bulletin for the use of the canning club members. In this process the products are sterilized in the closed jar, thus retaining their original flavor and form.

## THE USES OF VEGETABLES IN THE DIET

Vegetables, as well as milk, are listed as "protective" foods necessary to health.

First, vegetables constitute our main mineral supply for they contain many mineral salts such as iron, calcium and phosphorus, which are needed by the bones, muscles, nerves and blood.

Second, many of them contain vitamins which promote growth, protect us against such diseases as scurvy and some nerve disorders, and which help to prevent general malnutrition.

Third, the cell walls of the vegetable are bulky, and they increase our bodily efficiency by the laxative action which they induce.

Spinach, turnip tops, young carrots and tomatoes rank high among the vegetables, for canned as well as dried or fresh, they fill some essential diet requirements.

# THE USES OF FRUITS IN THE DIET

Hand in hand with vegetables in our diet plans go the fruits. They yield mineral salts for the proper functioning of the blood, and their acids stimulate the digestion of the rest of our food. Their color lends attractiveness to he meal, and they make ideal simple desserts.

Since vegetables and fruits are so necessary to our diet needs, we should so plan our meals that we have at least some fruit and a generous serving of vegetables other than potatoes, at least once a day. Furthermore, since it is not economical to buy fresh products throughout the year, we must try to can, dry or otherwise preserve them preceding the eight months during which the high prices prevail.

# MICHIGAN AGRICULTURAL COLLEGE

# CANNING CLUB REQUIREMENTS

# GIRLS' CANNING CLUBS

First Year Canning Club Members-

Junior Class—Age 10 to 14 years inclusive.

a. 30 jars fruits and vegetables.

b. Exhibit.

c. Report and story.

Senior Class—Age 15 to 20 years inclusive.

a. 50 jars.

b. Exhibit.

c. Report and story.

Second Year Canning Club Members-

Junior and Senior Class.

a. 50 jars.

This amount is to include the following:

16 glasses jelly, jam or marmalade (4 glasses equivalent to 1 quart).

4 quarts pickles.

4 quarts vegetable mixture.

b. Exhibit.

c. Report and story.

Third Year Canning Club Members-

Junior and Senior Class.

a. 50 jars.

This amount is to include the following:

16 glasses jelly, jam or marmalade.

4 quarts pickles.

4 quarts vegetable mixture.

4 quarts meat, fish or fowl.

b. Exhibit.

c. Report and story.

Fourth Year Canning Club Members-

Junior and Senior Class.

a. Same canning requirements as third year.

b. Leadership of local club, or training of demonstration team. (To be decided by county or state club leaders.)

c. Exhibit.

d. Report and story.

# MOTHER-DAUGHTER CANNING CLUB

- a. 100 jars fruits and vegetables.
- b. Exhibit.
- c. Report and story.

The Mother-Daughter Canning Club is made up of teams of Mothers and Daughters, who work together as partners in the home kitchen. Often ladies with no daughter "adopt" one of the Canning Club girls for the canning season. The girls in the Mother-Daughter Canning Club are responsible for the keeping of the records.



The Mother-Daughter canning team works together in the home kitchen.

# BASIS OF AWARD

The work of the Canning Club Members will be judged on the following basis:

1. Quantity of products canned	. 35%
2. Quality of products canned and neatness of exhibit.	. 35%
3. Character of canning report	. 15%
4. Character of story on "How I Did My Canning"	. 15%

# ORGANIZATION

For the details of organization send for Club Bulletin No. 13. Every Club Leader should fill out an enrollment blank, furnished by the Boys' and Girls' Club Department at East Lansing, and send this immediately to the County Club Agent, County Agricultural Agent, or Home Demonstration Agent in the County. If there is no one in charge of club work in the county, send the enrollment direct to the State Club Leader, East Lansing.

# PROGRAM OF WORK FOR CANNING CLUBS

Meetings should be held regularly for the purpose of discussing problems relative to the canning project and to receive instructions from Local, County or State Club Leaders. These meetings are held usually every two weeks, and the program may consist of demonstrations, discussions, talks by outsiders, or by club members, games and songs. Every Club meeting should have some time given over to recreation. Suggestions for meetings will be found on pages 38, 39, 40 of this bulletin.

# THE CANNING BUDGET

Set your GOAL before you start your season's work. If possible make it to fit the needs of your family rather than to achieve only the actual project requirements for your age or year of work. We should all try unselfishly to measure all home-making projects in terms of the family rather than the individual.

In the first part of the bulletin, mention was made of the fact that we should plan for at least one serving of fruits and one serving of vegetables other than potatoes for each day of the eight months when fresh products are not readily available.

The budget outlined here, approved by the nutrition specialist of the College, is based upon that principle. In this chart you will notice that one column is given over to the needs of a single person. In the second column which is now blank, substitute the number of quarts of each product your own family will need. THIS WILL HELP YOU SET YOUR GOAL. It will help you, too, in planning your garden.

# BUDGET SHEET

Product	Per Person for 30 Weeks	For Family for 30 Weeks
Greens Spinach Dandelions Chard Other greens	5 qts. (one serving per week)	
2. Tomatoes	10 qts. (two servings per week)	
3. Other Vegetables Peas Beans Beets Carrots	15 qts. (two servings per week)	

Supplement canned vegetables with stored ones, such as cabbage, rutabagas, onions.

4. Fruits (including Jellies)	30 qts.	
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Supplement canned fruits with dried or stored ones, such as prunes and apples.

5. Meats	30 qts. Through warm months, beginning Ap- ril through October.	× .
Total	95 quarts	

### Ratio of Uncooked to Canned Products

1	1 bu. peaches	
1	1 bu. pears	
1	1 bu. plums	
1	1 crate blackberries (16 qts.)	
1	1 crate strawberries (16 qts.)	
1	1 bu. tomatoes	
1	1 bu. string beans	
1	1 bu. sweet corn	d one pint)
1	1 bu. shelled peas	
1	1 bu. spinach or other greens	
1	1 bu. small beets or carrots16 qts.	

Any reliable seed catalog will give you the amount of seed necessary for producing the vegetables you need.

# MICHIGAN AGRICULTURAL COLLEGE

# EQUIPMENT



Simple Canning Equipment may be made in the home:

- 1.
- 3.
- Lard can with false bottom. Garbage pail with wire rack. Improvised holder and rack for wash boiler. Wash boiler with metal and wooden racks. Simple utensils for removing jars from canner.

1. Hot Water-bath Outfit: A home-made outfit may be made by using a wash boiler, a new garbage pail, a lard pail, a tin pail or any other receptacle with a tight-fitting cover, deep enough to permit the water to stand at least one inch over the top of the jars. A false bottom or rack should be made to fit the canner. This should be so constructed as to permit free circulation of water beneath the jars. It should keep the jars one inch from the bottom of the canner. For a wash boiler, the simplest rack is made of strips of lath with a cleat nailed across the under side at each end. Attaching a small piece of iron will aid materially in weighting down the wooden frame. For round canners a false bottom may be made by punching holes in an ordinary tin kettle cover or cake tin.

Avoid using straw or towels in the bottom, which will not permit water to circulate under jars. In using this type of canner, the water should be heated before the filled jars are put in place. If the cover for your canner does not fit tightly, place a cloth over the canner and press the cover over this. If the water boils away during the processing, replace with boiling water.

2. Steamers: Any steamer which maintains a temperature equal to that of boiling water may successfully be used as a canner. Be sure that the steamer is practically air tight and allows no escape of steam, otherwise to low a temperature will result. These cookers do not exert pressure. Therefore the time for processing products in these cookers is the same as that required for hot water bath outfits, and the processing time is counted FROM THE TIME THE LIQUID BOILS IN THE JARS.

The principal advantages are:

- 1. Easier handling of jars.
- 2. Economy of fuel, since not so much water must be raised to boiling point, as in the hot water-bath.
- 3. Less heat in the kitchen.

(a). Home-made steamers may be made from a wash boiler, garbage can, or other household utensil, the cover of which fits inside the body. In order to prevent the loss of heat and escape of steam, cover the top with a piece of heavy cloth, such as outing flannel. Shape this large enough so that it will come about two inches below the cover of the flange itself. Cut a slit in the top to admit the handle, and tie a cord about the cloth over the flange in order that the cover may be more closely fitted to the container. The cover must not be so tight that it is wedged in, as the steam inside might form sufficient pressure to force the cover off.



The home-made steamer is simple in construction. If desired the cloth may simply be spread across the top of the boiler and the cover pressed down on top.  $_{i}$ 

The rack in this boiler should be high enough to keep the jars from touching the water, and also to permit enough water to be put in at the beginning so that the supply will not need to be replenished before the jars are completely processed. The rack should stand about three inches high. This type of steamer does very well for products needing not greater than one and one-half hours processing. The unavoidable loss of water through evaporation makes it impractical to use for products requiring two or more hours of processing, as the height of the rack needed in these cases would have to adwit too large a quantity of water.

(b) **Commercial Steamers:** There are several commercial steamers on the market. These are a little more complete than the home-made article as they are provided with a whistle which blows when the water has boiled away, thereby making it unnecessary to look into the vessel and thereby release the steam present. This also permits of refilling, which is usually done through the whistle tube. 3. Water-Seal Outfit: This is a commercial canner, and by means of a jacket of water surrounding the jars the processing is done with steam. It enables one to process in less time than is necessary with the hot water-bath outfits. These are not commonly used.

4. Steam Pressure Outfit: Various types of steam pressure canners are on the market. They are built solidly and permit the use of steam pressure, which makes it possible to process in shorter periods.

The principal advantage is the shortening of the time required for processing.

In general, the time required for processing under five pounds of steam pressure is one-half the time required for the hot water-bath method. Ten pounds of steam pressure usually requires one-third the time called for with the hot water.

Five pounds pressure is best for glass jars. Tin cans may be given ten to fifteen pounds pressure for vegetables, and fifteen pounds always for meats.

In processing glass jars under steam pressure, allow the pressure gauge to drop back to zero and remain so for about five minutes before lifting the lid. This prevents loss of liquid in the jars. This precaution is not necessary for tin.

Steam pressure is not recommended for soft berry fruits and tomatoes.



Commercial canners are increasingly popular.



Several Club Members own an Up-to-date Canning Equipment.

# TYPES OF CONTAINERS

Most Canning Club Members will use glass jars for home canning, though many second and third year members are beginning to can in tin.

# Glass Jars

There are three types of glass jars in common use. Use the jars which you have in your home, but learn to select the best jars for your purposes. A good jar is one which is simple in construction and has a mouth wide enough to enable one to can whole products.



1. Screw top jar. 2. Glass top jar. 3. Vacuum seal jar.

1. Screw-Top Jars: This is the type of jar most commonly used, and usually goes by the trade name of "Mason." The tops for these jars should be used only one year. Test tops carefully before using. Screw the top on the jar without the rubber. Run the thumb nail around between the top and the glass. If the thumb nail can be inserted it is an indication that the top does not fit; either press down edge of cover or use another.

Tops for screw-top jars must not be screwed on tightly during the processing. Screw the tops as tightly as possible, using only the thumb and little finger, or until juice does not run out when jar is inverted. Screw top tightly after jars are taken from the canner.



A good top should not permit thumb nail to be inserted

2. Glass-Top Jars: This type of jar does not permit any of the fruit or /egetable juices to come in contact with metal. Test all jars before using. Run finger around top of jar to detect breaks or nicks. Also run finger around cover for the same reason. The wire bail which holds the cover in position should go in with a sharp snap. If it does not fit tightly, remove and bend down in the center and press in at the sides. This adjustment should be made each year.



During the processing, the tops and rubbers are in position and the metal bail is adjusted over the top. The metal spring at the side is left up. Force this spring or clamp down immediately upon taking jars from the canner.

3. Lacquered-Top Jars: This type of jar is fitted with a gold-lacquered top, which is not affected by fruit and vegetable acids. A very common type goes by the trade name "Economy." The covers should be examined closely to see if the gold-lacquer covers all portions of the inside of the cover; be sure that the layer of composition rubber has not been removed or broken. The tops can be used only one year. The iron clamp which accompanies this type of jar should be in position during processing; it may be removed after jars have been removed from canner and are completely cooled. Do not touch tops until cool.

4. Hermetically Sealed Jars: This type of jar has a metal top which is put on by means of a capping machine, and the jar is thus hermetically sealed ready for the canner. This jar is used especially in community canning centers, or by those Club Members who are canning for the commercial trade. The "Thrift" jar is one of this type.

#### Rubbers

It is economy to buy the best rubbers obtainable. Rubbers should not be used a second year. The following tests should be applied to rubbers used for the Cold Pack Method of Canning:



A good rubber can be stretched without breaking.

a. A rubber should stand a reasonable amount of stretching and pulling without breaking or permanently losing shape.

b. Rubbers should be about 1/12 of an inch thick. A pile of one dozen rings should measure one inch.

c. The inner diameter of the rubber ring should be  $2\frac{1}{4}$  inches; the flange 5/16 of an inch. This size does not blow out.

d. A rubber should stand pinching between the thumb and forefinger, and when the pressure is removed should not show the effects.

e. The color of the rubber ring is no index to the quality. Good rings may be either red, white or black.

# Canning in Tin

Canning in tin is becoming increasingly popular among club members. This is particularly true since the advent of a simple type of can and sealing machine upon the market.



Club members do not find tin canning difficult.

There are several advantages in canning in tin:

- a. No danger of breakage.
- b. Rapid cooling.
- c. Minimum handling.
- d. No loss of liquid.
- e. No danger of fading.

Tin cans may be had in either the sanitary or cap-and-hole type.

a. Cap-and-hole type. This can has a large mouth, which is fitted with a flat disk. This disk has a small opening in the center, and is soldered to the can after filling. Before processing, the tiny hole must also be soldered. This type is rapidly giving way to

b. The Sanitary or rim sealed can. This can consists of a can and cover

pressed into a definite shape. A simple machine is made for the sealing of these cans. No heat or solder is required in making the seal.

Both these types come in either plain or enamelled (lacquered) tin. The enamelled tin is used for cherries, plums, beets, berries, pumpkin, squash, and for meats which have been pickled in vinegar. The plain cans are used for all other products.

The products are prepared as for a glass jar, but, instead of partially sealing for processing, the seal is completed as soon as the jar is packed. This minimizes the handling and danger of spoilage. Type B can with new covers may be used for three years, for the sealing machine is provided with an opener and reflanger. This materially reduces the cost of tin cans below that of glass jars.

# MAKING MONEY THROUGH THE CANNING PROJECT



This Wayside Sales Cabin is an outgrowth of a Wayne County girls' canning club experience.



The Club members may use the 4H label.



Members of the Boys' and Girls' Canning Clubs may market their canned products in standard packs under the 4H brand label. Requirements for standard packs may be obtained from the State Club Leader, East Lansing, Michigan.

Club members who market their canned products must obtain a license from the Michigan State Department of Agriculture, Bureau of Foods and Standards, Michigan State Office Building, Lansing, Michigan, and must also conform to state regulations relative to marketing canned products.

# STEPS IN CANNING

Step Number 1. Select and Grade Products to be Canned. Use only sound products free from disease and injury. Can the same day products are picked and as soon after picking as possible. Pack the products of the same size and degree of ripeness in the same jar.

Step Number 2. Clean Products Thoroughly. For special preparation of products see recipes.

Step Number 3. Blanch. This means plunge the products into a kettle of boiling water or place in steamer and allow to remain for the time specified in the When products are plunged recipe. into boiling water the water will stop boiling. Count time when the product is put in the boiling water. (Water boils in an open kettle when it "jumps.") The products may be placed in a wire vegetable basket or a piece of cheese-cloth (about one yard square) the corners of which are tied to form a bag. ALL VEG-GREENS ETABLES AND ARE BLANCHED, BUT SOME FRUITS ARE NOT. FOLLOW DIRECTIONS.



The products are blanched in boiling water.



Step Number 4. Cold Dip. After the products have been blanched, plunge them immediately into a kettle or pail of cold water, or hold products under a pump or faucet until the cold water comes in contact with all parts of the product. This takes about thirty seconds. DO NOT ALLOW PRODUCTS TO REMAIN IN THE COLD WATER.

Cold dip by plunging up and down in cold water.

Step Number 5. Prepare for Packing in Jars. For special directions see recipes.

Step Number 6. Pack in Hot Jars. Place jars in canner when water is put on to heat. Leave jars in boiling water for a period of from ten to twenty minutes. This will temper or toughen the glass. Remove jars from canner and pack with products while jars are still hot.



The Canning Club member packs the products with skill.



Add one teaspoon of salt to each quart.



Step Number 7. Add the Liquid. a. For all vegetables and greens, add one teaspoonful of salt to the quart and fill jar with boiling water to within three-

eighths of an inch of the top.

b. For all fruits add boiling syrup to within three-eighths of an inch of the top. (See directions for making syrup.) Boiling water may be substituted for the syrup if desired. In this case add 5 minutes to the time for processing.

Fill the jar with boiling liquid to within three-eighths of an inch of the top.

Step Number 8. Place Rubber and Top in Position. (See directions for adjusting tops.) Turn top until you need to use force. Step Number 9. Place Jars in Canner. Process for the length of time given in the recipe. Do not begin to count time until you are sure the water is boiling or the product boiling in the jars.



Step Number 10. Remove Jars from Canner, Tighten Tops and Examine for Leaks. If rubber or top is defective, replace and return to canner and process a few minutes longer. (See direction 5, Points to Remember, page 21.)

Always test the seal for possible leakage.

# POINTS TO REMEMBER

1. Use absolutely fresh products only.

2. Read directions and follow them carefully.

3. Be sure your products are scrubbed or washed clean. It is dangerous to can dirty products.

4. Count time for blanching or processing from the time the water boils or jumps. This is important.

5. If the rubber or top proves defective when the jar is taken from the canner, replace with a new one and reprocess the product 5 minutes for fruits and 10 minutes for vegetables.

6. If the taste or odor of the products indicates spoilage, do not use. It is better to discard them than to run any risk. Do not swallow the portion of spoiled product which is tasted.

# GENERAL RULES FOR TIME

A practical cook does not like to continually consult a recipe. Therefore, every club member should be able to can without constant reference to the time table. This can be achieved by learning the following simple classifications of the common vegetables and fruits.

# Blanching and Scalding

# VEGETABLES

GREENS—Blanched in steam until soft.

TOMATOES—Scalded until skins are loosened.

ALL OTHER VEGETABLES-5 minutes in boiling water or 10 minutes in steam.

## FRUITS

PEACHES—Scalded till the skins are loosened. HUCKLEBERRIES GOOSEBERRIES APPLES RHUBARB OTHER FRUITS not scalded.

# Processing

(Given in terms of hot water-bath or steamer not exerting pressure. For steam under pressure see statement of pressure cooker advantages on page 12.)

# VEGETABLES.

CORN, PEAS AND LIMA BEANS (hardest to can)—3 hours. Tomatoes (easiest to can)—25 minutes. All Other Vegetables—2 hours.

# FRUITS

HARD FRUITS (apples, pears, quinces)—20 minutes. PINEAPPLES (unnaturally ripened, tough fibered)—30 minutes. ALL OTHER FRUITS (berries, peaches, plums, etc.)—16 minutes.

# DETAILED CANNING DIRECTIONS

# VEGETABLES

General directions for canning all products are given under the heading "Steps to Take in Using the One-Period Cold-Pack Method of Canning," and the general time table. The following are more detailed directions for the various products. FOLLOW DIRECTIONS CLOSELY. (Steam pressure means using pressure cookers.)

#### ROOT AND TUBER VEGETABLES

# Carrots, Beets, Parsnips, Salsify, Sweet Potatoes, Turnips, etc.

1. Grade for size, color and degree of ripeness. 2. Scrub thoroughly with brush. 3 Blanch 5 minutes. 4. Cold-dip. 5. Scrape or pare. 6. Pack in jars whole or cut in convenient sections. 7. Add one teaspoonful of salt in boiling water to within  $\frac{3}{6}$  of an inch of the top. 8. Place rubber and top in position. 9. Process:

(a) Hot water-bath......120 minutes
(b) Steam pressure (5 lbs.). 60 minutes
(c) Steam pressure (10-15 lbs)... 40 minutes.

10. Remove from canner and tighten tops.

### POD VEGETABLES

# Wax Beans, String Beans, Green Peppers and Okra

1. Select and product. 2. Wash, cull and string. Cut into convenient lengths. 3. Blanch 5 minutes. 4. Cold-dip. 5. Omit step 5. 6. Pack in jars. 7. Add one teaspoonful of salt to each quart and boiling water to within 3% inch of the top. 8. Place rubber and top in position. 9. Process:

(a) Hot water-bath......120 minutes (b) Steam pressure (5 lbs)... 60 minutes

10. Remove jars from canner and tighten tops.

#### PEAS, LIMA BEANS

1. Select and grade product. 2. Shell. 3. Blanch 5 minutes. 4. Cold-dip. 5. Omit step 5. 6. Pack in jars, not tightly. 7. Add 1 teaspoonful of salt to each quart and boiling water to within  $\frac{3}{6}$  inch of the top. 8. Place rubber and top in position. 9. Process: (a) Hot water-bath.....120 minutes (b) Steam pressure (5 lbs.). 60 minutes

10. Remove jars from canner and tighten tops. It is best to can peas and lima beans in pint jars.

#### SWEET CORN

1. Select corn between milk and dough stage; grade for size, color and degree of ripeness; remove husk and silk. 2. Omit step 2. 3. Blanch not longer than 5 minutes. 4. Colddip. 5. Cut corn from cob with sharp knife, cutting from tip to butt. 6. Pack at once in jars, but not tightly. 7. Add teaspoonful of salt to each quart and boiling water to within 3% inch of the top. (The milk of the corn may be added to the boiling water.) 8. Place rubber and top in position. 9. Process:

10. Remove jars from canner and tighten tops. Corn may also be canned on the cob by following above recipe, omitting step number 5. Use only 2 inches of water in jars. This preserves flavor of corn. Corn cut from the cob should be put up in pint cans.

#### VINE VEGETABLES—PUMPKIN AND SQUASH

1. Clean, cut in convenient sections; core and remove skins. 2. Omit step 2. 3. Instead of blanching, cook for 30 minutes or until reduced to pulp. 4. Omit step 4 and 5. 6. Pack in jars. 7. Add one cup of sugar and one teaspoonful of salt to each quart of pulp. 8. Place rubber and top in position. 9. Process:

(a) Hot water-bath.....120 minutes (c) Steam pressure (10-15 lbs.).. 40 minutes (b) Steam pressure (5 lbs.). 60 minutes

10. Remove jars from canner and tighten tops.

If it is desired to can these products in pieces suitable for use in creamed or fried dishes, follow the general directions; blanch 10 minutes and cold-dip.

#### TOMATOES

1. Select and grade for size, color and degree of ripeners. 2. Wash thoroughly. 3. Blanch from 1 to 2 minutes or until skin begins to crack. 4. Cold-dip. 5. Remove skins, inserting point of knife at core end. 6. Pack in jars as tightly as possible. 7. Add one teaspoonful of salt to the quart; fill crevices with tomato juice. (If canning whole tomatoes for home use the jars may be filled with boiling water.) 8. Place rubber and top in position. 9. Process:

10. Remove jars from canner and tighten tops.

#### CABBAGE, BRUSSEL SPROUTS

1. Select small and firm heads; cut into convenient sections and remove core. 2. Wash. 3. Blanch 5 minutes. 4. Cold-dip in salt water. (Tablespoonful of salt to quart of cold water.) 5. Omit step 5. 6. Pack in jars as tightly as possible. 7. Add one teaspoonful of salt to the quart and fill with boiling water to within  $\frac{3}{6}$  inch of the top. 8. Place rubber and top in position. 9. Process:

(a) Hot water-bath......120 minutes
(b) Steam pressure (5 lbs.). 60 minutes
(c) Steam pressure (10-15 lbs.). 40 minutes

10. Remove jars from canner and tighten tops.

#### CAULIFLOWER

1. Select firm products; cut off and use flowered portion. 2. Wash thoroughly. Plunge into cold brine. ( $\frac{1}{2}$  lb. salt to 12 qts. water) and allow to remain in brine for one hour. 3. Blanch 3 minutes. 4. Cold-dip. 5. Omit step 5. 6. Pack in jars. 7. Add 1 teaspoonful of salt to the quart and fill with boiling water to within  $\frac{3}{8}$  inch of the top. 8. Place rubber and top in position. 9. Process:

10. Remove jars from canner and tighten tops.

#### EDIBLE GREENS AND POT HERBS

-

Asparagus, Swiss chard, Spinach, Dandelion, Beet Tops, Endive, Mushrooms, etc.

1. Select firm and fresh products. 2. Wash carefully. 3. Blanch 10 to 15 minutes in a kettle with a little water under false bottom or in a regular steamer. 4. Cold-dip. 5.

Omit step 5. 6. Pack loosely in jars. 7. Add one teaspoonful of salt to the quart and boiling water to within  $\frac{3}{8}$  inch of top. 8. Place rubber and top in position. 9. Process: (c) Steam pressure (10-15 lbs.).. 40 minutes

0. Remove jars from canner and tighten tops.

It is preferable to can greens in pint cans.

## FRUITS

# SYRUPS FOR FRUITS

There are various ways of obtaining the proper density for syrups. Two methods are given below:

- 1 part sugar, 2 parts water. Bring to a boil. I. a. Thin syrup. This may be used for such fruits as cherries, apples, and peaches.
  - b. Medium syrup. 1 part sugar, 1 part water. Bring to a boil. This syrup may be used for berry fruits, such as blackberries, dewberries, huckleberries and raspberries.
  - c. Heavy syrup. 2 parts sugar, 1 part water. Bring to a boil. This svrup may be used for more acid fruits such as gooseberries. appricate and sour apples.
- II. a. Thin syrup. 2 parts sugar, 3 parts water. Bring to a boil.
  - b. Medium syrup. 2 parts sugar, 3 parts water. Boil 5 minutes.
  - c. Thick syrup. 2 parts sugar, 3 parts water. Boil from 10 to 15 minutes. (Preferred method).

To avoid the scum in the making of syrup, first measure out the boiling water and stir the sugar into the boiling water the same as in the making of breakfast food.

If canning without sugar, cover fruit with boiling water as in the case of vegteables and add 5 minutes to the time of processing.

#### RHUBARB

1. Select fresh stalks. 2. Wash thoroughly and cut in pieces three-fourths inches in length. Do not remove skin. 3. Blanch 1 minute. 4. Cold-dip. 5. Omit step 5. 6. Pack tightly in jars. 7. Add medium-thick syrup to within 3% inch of top. 8. Place rubber and top in position. 9. Process:

(a) Hot water-bath..... 16 minutes 10. Remove jars from canner and tighten tops.

# SOFT FRUITS

Strawberries, Blackberries, Blue Berries, Cherries, Peaches, Apricots and Dewberries

1. Select and grade for color, size and degree of ripeness. 2. Rinse fruit and cull, seed or stem. 3. Omit steps 3 and 4. 5. Special: Peaches and apricots should be scalded for 30 seconds and cold-dipped; skins may then be removed with ease. 6. Pack in jars. 7. Add thin boiling syrup to within 3% inch of the top. 8. Place rubber and top in position. 9. Process:

(a) Hot water-bath ..... 16 minutes

10. Remove jars from canner and tighten tops.

**Special:** Strawberries and raspberries may be canned according to the following recipe: When these directions are followed the berries will not rise to the top of the jar: Use only fresh, ripe and firm berries. Prepare the berries. Add one cup of sugar per quart and let remain over night in the covered kettle. Pack the cold berries in sterilized glass jars. Put the rubber and top in position, not tightly. Process:

(a) Water-bath.... 16 minutes Remove the jars. Tighten the tops.

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## GRAPES

1. Use fresh and evenly-ripened fruit. 2. Pick from stems, wash. 3. Omit steps 3, 4 and 5. 6. Pack in jars. 7. Fill with thin syrup to within  $\frac{3}{6}$  inch of the top. 8. Place rubber and top in position. 9. Process:

(a) Hot water-bath..... 16 minutes 10. Remove jars from canner and tighten tops.

# HUCKLEBERRIES, GOOSEBERRIES, CRANBERRIES, CURRANTS

10. Remove jars from canner and tighten tops.

#### PLUMS

1. Select fruit for size, color and degree of ripeness. 2. Wash. 3. Prick skins with fork. Omit steps 4 and 5. 6. Pack in jars. 7. Add medium-thick boiling syrup to within  $\frac{3}{6}$  inch of the top. 9. Process:

(a) Hot water-bath..... 16-20 minutes 10. Remove jars from canner and tighten tops.

#### PINEAPPLES

1. Select sound and ripe fruit; peel, core and remove all eyes. 2. Omit steps 2, 3 and 4. 5. Cut into convenient sections, or strip with the grain. 6. Pack in jars. 7. Add thin boiling syrup to within 3% inch of top. 8. Place rubber and top in position. 9. Process: (a) Hot water-bath..... 30 minutes

10. Remove jars from canner and tighten tops.

#### HARD FRUITS

#### Apples, Pears, Quinces

1. Grade for size and degree of ripeness. 2. Wash. 3. Blanch  $1\frac{1}{2}$  minutes. 4. Colddip. 5. Core, pit and remove skins. (If apples are to be canned whole, skins need not be removed.) 6. Pack in jars as tightly as possible. 7. Add medium-thin boiling syrup to within  $\frac{3}{8}$  inch of the top. 8. Place rubber and top in position. 9. Process:

(a) Hot water-bath ..... 20 minutes

10. Remove jars from canner and tighten tops.

Special: If fruits are to be sliced they may be saved from discoloration by slicing in cold water which contains salt. (Tablespoonful of salt to a gallon of cold water.)

#### RECIPE FOR CANNING APPLES FOR APPLE-PIE FILLING OR FOR FRUIT SALADS

1. Select second grade windfalls or culls for apple-pie filling and best grade of culls of firm and tart varieties for fruit salad. 2. Wash. 3. Omit steps 3 and 4. 5. Core, pare and remove all decayed or injured spots. Slice or cut into quarters to drop quickly into cold, salt water. 6. Pack tightly in jars. 7. Add teacupful of thin boiling syrup to each quart of fruit. Place rubber and top in position. 9. Process:

(a) Hot water-bath ..... 12 minutes

10. Remove jars from canner and tighten tops.

# HOME PRESERVATION OF FRUIT JUICES

Alcoholic fermentation of fruit juices may be prevented in either of two ways: (1) By physical means, of which heat has so far proved to be the most satisfactory and most practical method. (2) By chemical methods, that is, the addition of a chemical which either kills the microorganisms or prevents their growth.

Of the two methods mentioned above, heat, or pasteurization, is the better method, as no chemicals are added. Sweet cider may be preserved by pasteurization either in cans, such as Mason, Sealfast, etc., or in bottles. Boil the cans and rubbers, or bottles, fill with cider, put on the covers or corks, which have also been boiled, loosely, and place in a wash boiler with a false bottom such as is used in the cold pack method of canning. Fill with cold water up to, or just above, the level of the cider and heat until the temperature of the cider reaches 145° F. A thermometer should be inserted in one can or bottle of cider for this purpose. Hold at this temperature for thirty minutes, tighten the covers or corks and cool as quickly as possible. Cider or any fruit juice prepared in this way should keep indefinitely if stored in a cool place. A dairy thermometer may be purchased for 75c.

Prepared by R. L. Tweed, Bacteriological Division, Michigan Agricultural College.

# SOUP AND VEGETABLE MIXTURES

During the canning season there are many times "odds and ends" of vegetables left in the garden which may very profitably be canned as soup or vegetable mixtures. (If meat stock is not available at the time when vegetables are in abundance, can the vegetable, and the soup stock, if desired, may be added in the winter time.)

Each second and third year club member is required to can 4 quarts of vegetable or soup mixtures.

# General Rules for Mixtures

Combine any vegetables you wish. The most frequent combinations are made from corn and tomatoes, peas and carrots, corn and lima beans. Celery, onions and peppers may be added to any of these to give flavor.

Blanch each vegetable as usual.

Cold-dip each vegetable as usual.

Prepare each for jars, mix, pack, add salt as usual, add boiling water except where tomatoes are used. (These should furnish the necessary liquid.) Partially seal and process.

Unless otherwise stated in a specific recipe, process for the period required for the longest timed vegetable contained. For example, if the mixture con-

tains peas, process 3 hours, if only underground vegetables,  $1\frac{1}{2}$  hours are sufficient.

#### Soup Mixture

Every Canning Club member should can soup mixtures for use during the winter months.

## VEGETABLE SOUP I

 $\frac{1}{4}$  lb. lima beans

1 lb. rice

 $\frac{1}{2}$  lb. pearl barley

1 lb. carrots

1 lb. onions

1. Soak the lima beans and rice for twelve hours. 2. Cook the pearl barley for two hours. 3. Blanch the carrots, onions, potato, red peppers for five minutes. 4. Cold-dip. 5. Pare the vegetables and cut into small cubes. 6. Mix these ingredients thoroughly. 7. Put into

1 medium sized potato 1 red pepper

- $\frac{1}{2}$  lb. flour
- 4 ounces salt

hot jars, add one teaspoonful salt to the quart. 8. Fill with boiling water to within  $\frac{3}{6}$  of an inch of the top. 9. Process: 

## VEGETABLE SOUP II

2 T. flour 2 T. butter  $1\frac{1}{2}$  qts. water salt, pepper

1	onion
<b>2</b>	potatoes
1	carrot
1	tomato
2	T. rice

Directions: Peel potatoes and slice. Scrape carrot and slice. Peel and cut onion into thin slices. Put butter into sauce pan, add onion and cook until a golden brown. Turn into soup kettle, add potatoes, rice, carrots, tomatoes, water, and cook slowly until vegetables are tender (about one hour). Press through a sieve, add the flour, let mixture boil up, pour into heated jars, leaving  $\frac{3}{5}$  of an inch space at the top, and 1 level teaspoonful salt to the quart. Seal and process one hour in hot water-bath, or 30 minutes under 5 pounds pressure. When ready to serve use 1 pint of milk to 1 pint of the mixture.

(MRS. MARY H. GROSVENOR).

#### BEAN SOUP

1 gt. white navy beans 12 large tomatoes

1 large onion (cut in small pieces) 2 lbs beef (cut in small pieces)

Salt to taste

1. Soak beans over night. 2. In morning add beef, tomatoes, onion, salt and two quarts of water. Boil slowly till thoroughly cooked. 3. Strain. 4. Pour into jars, partially seal. 5. Process 3 hours in hot water-bath; under 5 lbs pressure, 2 hours.

#### TOMATO SOUP

1. Cook tomatoes until tender, 2. Run through colander, 3. Concentrate  $\frac{1}{2}$  to  $\frac{1}{3}$  of former volume. 4. Pack in hot jars. 5. Process 30 minutes, in hot water, under 5 pounds pressure, 15 minutes.

#### TOMATO SOUP

14 gts. tomatoes (cut in pieces) 14 stalks celery (cut)

7 medium sized onions, chopped

21 cloves

2 cups corn

2 teasponfuls salt

1. Boil these together till thoroughly cooked. 2. Strain. 3. Melt one cup butter. 4. Mix with butter, 1 cup flour, 8 tablespoonsful salt, 16 teaspoonfuls sugar, 2 teaspoonfuls pepper. 5. Cook vegetable stock and this paste together until as thick as desired. 6. Pack in hot jars. 7. Process 10 minutes in hot water-bath, or 8 minutes under 5 pounds pressure. When ready to use, add <sup>1</sup>/<sub>4</sub> teaspoonful soda and 1 cup hot milk to each pint of tomato soup.-(Julia M. Ives).

#### TOMATO AND CORN SOUP

1 gt. thick tomato pulp

1 small onion, chopped

2 teaspoonfuls sugar

1. Cook altogether for ten minutes. 2. Pack in hot jars. 3. Sterilize 2 hours in hot water-bath, or one hour under 5 pounds pressure.

# Vegetable Mixtures

#### CORN AND TOMATO

Blanch corn on cob 5 minutes. Cold-dip. Cut from cob. Scald tomatoes. Cold-dip. 1. Skin, core, and cut in convenient sized pieces. 2. Mix, pack in jar. 3. Add 1 tea-sponful salt to the quart. Crush till tomato juice covers the mixture. 4. Partially seal. 5. Process 90 minutes in water-bath; 45 minutes at 5 lbs. pressure. (The acid of the tomatoes assists in the preservation.)

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#### SUCCOTASH

Use equal parts of corn and lima beans.

1. Blanch corn on cob 5 minutes, cold-dip. 2. Blanch lima beans 5 minutes, cold-dip. 3. Mix corn and beans, pack loosely in jar. 4. Add 1 teaspoonful salt to quart. 5. Add poiling water to within 3% inch of top of jar. 6. Partially seal. 7. Process 3 hours in hot water-bath; 1½ hours at 5 lbs. pressure.

## SPANISH SAUCE

#### (To be used with spaghetti or macaroni)

2 lbs. tomatoes 2 green peppers 3 onions 2 stalks celery

1. Scald tomatoes, cold-dip, skin, core and chop. 2. Blanch peppers, onions and celery together for 5 minutes, cold-dip and chop. 3. Mix all vegetables together, pack in jars. 4. Add 1 teaspoonful salt to quart. 5. Use tomato juice in place of boiling water, to within 3% inch of the top. 6. Partially seal. 7. Process 2 hours in hot water-bath, 1 hour under 5 lbs. pressure.

# CAMP RATIONS

RATION NO. 1—Products required for mixture.

4 lbs. rice

1 lb. fresh green peppers

4 Chili peppers

4 cloves or 2 garlic

4 quarts tomatoes

4 Red peppers 8 level teaspoonfuls salt 4 quarts water a food chopper. Mix with tom

1 lb. fresh pork

1 lb. cheese (or ½ lb. butter)

2 qts. water or milk (or 1 qt water

 $\frac{1}{2}$  lb. sweet green peppers cut fine

Season with celery salt or celery

and 1 qt. milk)

seed

1 pint strained tomatoes

Put the meat, peppers and garlic through a food chopper. Mix with tomatoes, water and salt. Cook on slow fire, simmering for 45 minutes. Soak rice in salted water for 20 minutes. Rinse with cold water at once. Mix this product with the sauce without straining. Grind or grate cheese and mix thoroughly with all the other products.

To can this ration, the mixture should be packed in hot glass jars or tin cans while hot. Place rubbers and caps of jars in position, not tight. Cap and seal tin cans completely. Sterilize for the length of time given below for the particular type of outfit used:

#### RATION NO. 2—Products required for mixture.

1 lb. rice or hominy, cracked

1 teaspoonful salt

 $\frac{1}{2}$  lb. bacon or chipped beef cut into small pieces

1 lb. mixed equal parts carrots, onions, beans Irish potatoes

Cook rice or hominy, water or milk, and salt in a double boiler until the rice or hominy is soft. Bacon or chipped beef, green peppers, and the strained tomatoes should be cooked or boiled separately. Then add to this mixture the 1-pound mixture of vegetables and season with mixed spices. Cook this vegetable combination until done. Mix at once rice, bacon, green peppers, etc. Stir this well into the mixture.

The product to be canned should be hot and thoroughly mixed. Pack mixture into hot glass jars or tin cans at once to one-eighth inch of top. Place rubbers and caps of jars in position, not tight. Seal tin cans completely. Sterilize for the length of time given below for the particular type of outfit used:

Water-bath, homemade or commercial	90	minutes
5 pounds steam pressure	50	minutes
10 pounds steam pressure	30	minutes
Remove jars: tighten covers: invert to cool and test joints. Wrap and	d st	ore.

#### BAKED BEANS

1. Wash and pick over white navy beans. 2. Soak from eight to fifteen hours (depend-

ing on the age of the beans. Change the water once.) 3. Blanch 5 minutes. 4. Place  $\frac{1}{4}$  ounce slice of bacon in the bottom of each pint jar, or  $\frac{1}{2}$  ounce slice in each quart jar. Add beans to shoulder of jar. Add plain sauce, chili sauce or catsup, finishing with another strip of bacon. 5. Partially seal. 6. Process 3 hours in hot water-bath; 70 minutes at 5 lbs. pressure. 7. Seal.

#### SAUCE

1 c. molasses  $\frac{1}{2}$  c. sugar

 $\frac{1}{3}$  c. salt 2 tablespoons cornstarch

Dissolve the cornstarch in water. Add salt, sugar, and molasses. Add water to make a gal. Reduce this recipe to the number of jars you are using.

## MEATS

The canning of meats on the farm is a very practical procedure. Beef, pork, mutton and poultry are typical farm products which "if canned" insure a meat supply through the warm summer months as well as in winter, and materially reduce the cost of the meals. The fact that the meat is ready to serve, thereby saving time and inconvenience, gives further reasons for its conservation.

In the lake regions commercial catches of undersized fish put this product on the market very cheaply. Canned, these fish may be used in fried form, turbot or creamed.

Rabbits, both wild and tame, may be canned to good advantage.

It is advisable for beginners in canning to learn the technique of the canning of fruits and vegetables before taking up the canning of meats.

# **General Directions**

Meat must be fresh, well bled, and well cooled before canning. There are two ways of canning meats: (a) canning raw meat. (b) partial cooking before canning—1. boiling, 2—roasting, 3—frying.

Method (a) canning raw meat, used for meat containing little or no bone; beef, mutton or pork.

5 pound steam pressure	2  hours
10-15 pounds steam pressure	1 hour
load and tost for loaks	

7. Seal and test for leaks.

Method (b) 1. Boiling. 2. Reasting. Used for meat containing bone; beef, mutton or pork. (Note: Pork bones rather detract from the canned product.

1. Cut into about  $\frac{3}{4}$  pound pieces, convenient to handle. 2. Roast or boil slowly for one-half hour. 3. Cut meat into small pieces, remove gristle, bone and excessive fat. 4. Pack immediately into hot glass jars or enameled tin cans. 5. Concentrate liquid in roasting pan or kettle to one-half. 6. Fill jars or cans with liquid to within  $\frac{3}{3}$  of an inch of the top. 7. Put rubber and cap in position. 8. Process:

(a) Hot water-bath	$\dots 2$ hours
(b) 5 pounds steam pressure	$\dots$ 1 hour
(c) 10 to 15 pounds steam pressure	$\dots 40 \text{ minutes}$
Pomerro song tighten tong and test for looks	,

9. Remove cans, tighten tops and test for leaks.

Method (b) 3. Frying. This method is often applied to pork, though hamburg steak and fish are also treated in the same manner. Many people consider this the preferre method for canning all meats, since it enriches the flavor.

1. Fry until well browned. 2. Pack in hot jars. 3. Cover with fat from the frying. Add water if necessary. 4. Partially seal. 5. Process:

	(a) Hot water-bath	hours
	(b) 5 pounds steam pressure1	hour
	(c) 10 to 15 pounds steam pressure	minutes
6.	Seal and test for leakage.	

#### CORNED BEEF

1. Soak beef, which has been properly corned, for two hours in clean water, changing water once or twice. Place in wire basket or cheese cloth and boil slowly one-half hour. . Cold-dip. 4. Remove gristle and excessive fat. 5. Cut meat into small pieces and pack in hot glass jars or enameled cans. 6. Place rubber and cap in position. 7. Process:

# FISH

Use method (a) or method (b)-3. 1. Clean fish as for the table. 2. If small, pack whole in jars, head ends alternating with tails. If large cut in 3 sections suitable for serving. 3. Follow method (a) omitting water altogether; or method (b)-3. Time table same as for beef.

Canned fish may be used in fried, cream or turbot form.

# Canning of Chicken

When the flock is culled, the birds discarded may profitably be canned. The bird should not be fed for at least 24 hours before killing. It should be killed by the approved method and picked dry. When the feathers have been removed and the pin feathers drawn, the bird should be cooled rapidly. This rapid cooling after killing is essential to a good flavor in canned meat. As soon as the bird has been properly cooled it should be singed and washed carefully with a brush and light soap suds if necessary.

#### CUTTING UP AND DRAWING THE BIRD

1. Remove the tips of the wings, cutting at the first joint. 2. Remove the wings. 3. Remove the foot, cutting at the knee joint. 4. Remove the leg, cutting at the hip or saddle joint. 5. Cut the removed portion of the leg into two parts at the joint. 6. Place the bird so the back of the head is toward the operator, cut through the neck bone with a sharp knife, but do not cut the wind-pipe or gullet. 7. With the index finger separate the gullet and wind-pipe from the skin of the neck. 8. Cut through the skin of the neck. 9. With a pointed knife cut through the skin from the upper part of the neck thus separated, to the wing opening made by removing the wing. 10. Leave the head attached to the gullet and wind-pipe and loosen these from the neck down as far as the crop. 11. With a sharp pointed knife cut around the shoulder blade, pull it out of position and break it. 12. Find the white spots on the ribs and cut through the ribs on these white spots. 13. Cut back to vent; cut around it and loosen. 14. Begin at the crop and remove the digestive tract from the bird, pulling it back toward the vent. 15. Remove the lungs and kidneys with the point of a knife. 16. Cut off the neck close to the body. 17. Cut through the back-bone at the joint or just above the diaphragm. 18. Remove the oil sack. 19. Separate the breast from the back-bone by cutting through on the white spots. 20. Cut the fillet from each side of the breast bone. 21. Cut in sharp at the point of the breast bone, turning the knife and cutting away the wishbone with the meat. Bend in the bones of the breast bone.

#### PACKING

Use a one quart jar. Caution: Do not pack the giblets with the meat. 1. Have the jar hot. 2. Pack the saddle with the thigh inside. 3. Pack the breast bone with the thigh inside. 4. Pack the saddle with the trigh inside. 5. Fack the breast bone with the thigh inside. 4. Pack the back-bone and ribs with a leg inside. 5. Pack the leg large end downward, alongside the breast bone. 6. Pack the wings. 7. Pack the wishbone. 8. Pack the fillets. 9. Pack the neck-bone. 10. Put in pieces of chicken fat or pour on boiling water to within one inch of the top; add a level teaspoonful of salt; place the rubber and cap in position, partially seal, and process for the length of time given below for the particular time of with the sale. below for the particular type of outfit used.

(a)	Hot	water-k	patl	1		.31/2	hours
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Remove jars; tighten covers; invert to cool and test joints. Wrap jars with paper to prevent bleaching.

#### MICHIGAN AGRICULTURAL COLLEGE

#### POULTRY

### Old fowl may require 4 or 5 hours (hot water bath) to thoroughly process the bones.

#### POULTRY

Recipe Number 2. 1. Kill fowl and draw at once. 2. Wash carefully, cool and cut into convenient pieces. 3. Place in a piece of cheese cloth or wire basket and boil until the meat may be removed from the bones. 4. Remove meat from the bones and pack closely in hot glass jars or enameled cans. 5. Boil the liquid until it has been concentrated one-half and then fill the jars to within three-eighths of an inch of the top. Roasting 45 minuets may replace boiling. 6. Add one teaspoonful of salt to each quart. 7. Put rubber and cap in position and process:

(a)	Hot water-bath
(b)	5 pounds steam pressure
(c)	10 to 15 pounds steam pressure

8. Remove from canner, tighten tops, test for leaks.

## SPRING CHICKEN, FRIED

Recipe Number 3. 1. Clean and prepare spring chicken, season and fry as in preparing for serving on table. 2. Cook meat until three-fourths done. 3. If a whole spring chicken, break the neck and both legs and fold around body. 5. Roll up tight, tie string around chicken and place immediately in hot jar. (A quart jar will hold two to four small chickens.) 5. Pour liquid from the frying pan over the chicken in the jar. 6. Place rubber and cap in position. 7. Process:

(a)	Hot water-bath	hours
(b)	5 pounds steam pressure1	hour
(c)	10 to 15 pounds pressure	minutes

#### RABBIT

Prepare as for chicken.

# PICKLES, CONSERVES, JAMS AND JELLIES ARE OPEN KETTLE PRODUCTS

## Pickles

It is the custom in pickling some vegetables to put them in a brine before adding the vinegar. This brine should not be too strong, as too strong a brine will soften the vegetables. Brine strong enough to float a fresh egg may be made by adding one-half to one-third cup of salt to one quart of water. The individual may depend upon the personal taste for the seasoning of the vinegar. Put cucumbers into brine as soon as gathered. If very dirty, wash and dry before putting into brine. The cucumbers should be weighted down so that the solution will completely cover them. Cover with a plate, using a glass jar filled with sand for a weight. Iron or lime discolor the cucumbers. When the jar is full and bubbles cease to rise to the top, seal the jar by pouring melted paraffin over the top. If paraffin breaks or cracks, remove, remelt and again pour over the top to exclude yeast spores and air.

To freshen: When ready for use, remove desired number of cucumber from brine and cover with boiling water. Set away until cold, drain an again pour on boiling water, repeating until desired freshness is obtained. To pickle, pour over boiling, spiced vinegar.

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## COLD VINEGAR PICKLES

2 gallons cucumbers 2 cups brown sugar 1 cup salt

1 gallon vinegar 1 cup ground mustard or mustard seed

Grape or horseradish leaves

Wash and dry cucumbers. Pour the cold vinegar mixture over the fresh cucumbers. Seal in hot glass jars.

# DILL PICKLES

Chili

Dill

Cucumbers-6 to 8 inches long Salt Vinegar

Place cucumbers in cold water for four hours; then drain and put into a clean 5 gallon earthenware jar; first a layer of grape or horseradish leaves, then a layer of cucumbers, a few pieces of dill, a few pieces of chili, one-half cup of salt, then another layer of cucumbers until the jar is full. On top of all put a layer of grape leaves; fill the jar with water and vinegar in the proportion of 1 cup of vinegar to 1 gallon of water. The water should be boiled for 20 minutes and allowed to cool before vinegar is added. Weight cucumbers down with a plate and glass jar filled with sand. Cover with a clean cloth. Examine the pickles every few days and remove the scum that rises. It will take two weeks for the pickles to be in good condition, if they are kept at room temperature,

#### MIXED PICKLES

4 cups sugar 1 tablespoonful white pepper

<sup>1</sup>/<sub>2</sub>teaspoonful tumeric

2 tablespoonfuls ground mustard 2 tablespoonfuls whole mustard 1 gallon vinegar

Pour this over a mixture of celery, cauliflower, white onions and cucumbers.-Mrs. F. C. Curtis, Charlotte, Mich.

#### PICKLES

1 quart sliced cucumbers 1 large onion sliced thin

1 small pepper chopped fine

4 tablespoons celery seed

4 quarts vinegar

1 cup salt

Sprinkle with salt and let stand three hours. Drain. Add one cup brown sugar, 1 tablespoon cloves, 1/2 teaspoon white mustard seed, 1 tablespoon horseradish chopped fine, vinegar enough to cover. Heat well but do not boil.

#### OIL PICKLES

100 cucumbers 3 to 4 inches long

25 medium onions

 $1\frac{1}{2}$  cups oil, olive oil, Mazola, or Wesson oil

1½ tablespoons white mustard seed

Slice cucumbers very thick. Do not peel. In a jar put a layer of cucumbers, a layer of salt, and a layer of onions until all are used. Weight and let stand for three hours; turn into a cheese cloth and drain for two hours or until well drained. Pack in glass jars and pour over the dressing of oil, seeds and vinegar. Seal. Do not cook.

#### SWEET CUCUMBER PICKLES

Ripe cucumbers 1 quart vinegar 1 ounce cinnamon Salt 1 pound sugar  $\frac{1}{2}$  ounce cloves

Peel and remove the seeds from ripe cucumbers. Cut into fourths, cutting lengthwise. Soak for 24 hours in salt solution, using 1 cup of salt to 1 gallon of water. Then soak in vinegar and water for 24 hours, using 1 cup of vinegar to 1 gallon of water. Drain, make a syrup of 1 quart of vinegar, 1 pound of sugar, 1 ounce cinnamon, 1/2 ounce cloves. Add cucumbers, cook until clear and tender. Place in hot jars and seal.

#### SPANISH PICKLES

4 heads of cauliflower

- 1 dozen large green cucumbers
- 6 bunches of celery

1 gallon vinegar

- 1 tablespoon tumeric
- 1/2 pound ground mustard
- 1 tablespoon whole cloves

1 peck tomatoes

- $\frac{1}{2}$  dozen large sweet peppers
- 1 quart small pickling onions
- 5 pounds brown sugar
- $\frac{1}{2}$  cup white mustard seed  $\frac{1}{2}$  cup wheat flour
- 1 tablespoon ground cinnamon

Coarsely dice vegetables, leaving onions whole. Soak for 12 hours in brine made up of 1 gallon of water and  $1\frac{1}{2}$  cups salt. Drain. Boil vegetables and vinegar and sugar for one-half hour. Then make a paste of spices, mustard, flour, and a little vinegar; add to boiling vegetables, boil for five minutes, stirring carefully until all is thickened. Seal hot in clean, hot jars.

#### SWEET PICKLED PEACHES

 $\frac{1}{2}$  peck peaches

2 pounds brown sugar

1 ounce stick cinnamon

Remove skins from peaches. Stick cloves into peaches, make a syrup by boiling the sugar, vinegar and cinnamon for twenty minutes. Add only one-half of the peaches at the beginning and cook until soft. Remove and put into jars and repeat for the other half of the peaches. Fill the jars with hot vinegar and seal.

#### SPICED CURRANTS

7 pounds currants

5 pounds brown sugar

3 tablespoons cinnamon

Pick over currants, wash, drain and remove stems, put in a preserving kettle, add sugar, vinegar and spices tied in a piece of muslin. Heat to boiling point and cook slowly one and one-half hours. Store in a stone jar in a cool place. Spiced currants are a delicious accompaniment to cold meat.

#### CHILI SAUCE

- 12 ripe tomatoes
- 1 red pepper
- 1 green pepper
- 1 large onion
- 2 cups vinegar

1 cup brown sugar

1 teaspoon whole allspice 1 reaspoon cinnamon

- 1 teaspoon ground nutmeg
- 1 teaspoon ground ginger

Remove skins from tomatoes and chop with the peppers and onions. Add the vinegar and spices and bring to a boil. Stir to prevent burning. Boil until sauce begins to thicken (about 1 hour). Pour the chili sauce into hot jars and seal at once.

#### CORN RELISH

18 ears corn 1 pepper, ground or chopped

3/4 cup sugar 4 onions, ground 1 cabbage, sliced very thin

desired

4 or 5 pieces of ginger root, more if

3 teaspoons mustard

1 quart vinegar

Cut corn from cob, mix with other ingredients and cook 30 minutes.

# GREEN TOMATO RELISH

1 peck green tomatoes

4 lemons

6 lbs. sugar or  $1\frac{1}{2}$  lbs. sugar and  $\frac{1}{2}$  lb. corn syrup.

Wash and cut tomatoes into pieces; slice lemons very thin; put all into acid proof kettle and cook until clear.-Elvis Alford.

3 tablespoons cloves

1 pint vinegar

Few Cloves

1 pint vinegar

1 tablespoon salt

# JELLY MAKING

# Requirements of a Good Jelly

Jelly should be clear, sparkling and transparent. When slipped from the glass it should retain its shape, but quiver. It should be firm but tender.

Fruit juice, to make jelly, must contain:

a. Pectin.

b. Acid.

A generous quantity of both are necessary. Study the lists of fruits given below as classified for pectin and acid. Slightly under ripe fruits usually contain more pectin than ripe ones. A mixture of juices may be necessary to insure the right amount of each ingredient necessary, e. g., sour apple juice is good to supply both acid and pectin to fruits low in them. It is therefore frequently combined with raspberries, peaches and similar fruits.

# COMMERCIAL PECTIN

Commercial pectin, made from fruits rich in pectin, is very helpful in making jellies, but it is expensive. A combination of juices as suggested above is more economical.

Some fruits rich in pectin: Currants, grapes, apples, gooseberries, citrus fruits.

Some fruits lacking in acid: Quinces, peaches, sweet apples, plums, pears, etc.

Some fruits rich in acid: Grapes, apples, crabapples, cherries, gooseberries, etc.

# EXTRACTION OF JUICE

a. Soft, juicy fruits, such as raspberries, blackberries, currants, etc., should be washed, crushed and placed in a kettle with just water enough to prevent their burning. (One cup of water to four quarts fruit).

b. Less juicy fruits, such as apples, quinces, etc., should be washed,

cut in convenient pieces (do not remove the skins, seeds, or core). placed in a kettle and covered with water.

Note: Do not use any more water than necessary. It delays "jellying."

**First Extraction:** Bring fruit to a boil. Drain the juice into a flannel bag, which has been dipped into boiling water and allow it to strain through this bag. This first extraction is rich in pectin and makes a high grade of jelly. Because of the high per cent of pectin, it requires more sugar than the second and third extractions.

Second Extraction: Cover the pulp left over from the first extraction with water, stir and bring to a boil. Strain as for the first extraction. This juice will not require as much sugar as the first extraction, because it does not contain as much pectin.

Third Extraction: The pulp left from the second extraction may be covered with water, brought to a boil again, and the juice allowed to drain. Mix this third extraction with the second.

It may be more economical to make fruit butters (See page 36) than to use the second and third extractions.

# MICHIGAN AGRICULTURAL COLLEGE

# THE TESTS FOR PECTIN

1. Alcohol Test: (ALCOHOL AS NOW SOLD IS A POISON.) It should be labeled as such and great care must be taken in its use.

Mix one tablespoonful of the cooked juice with one tablespoonful of alcoho, if pectin is present it will collect either in a solid mass (which indicates a large amount), or in small particles (which indicates a small amount). This test should be watched carefully as the alcohol tends to dissolve the pectin in a short time.

2. Epsom Salts Test: Mix together 1 teaspoon of cooked fruit juice,  $\frac{1}{2}$  teaspoon sugar and  $\frac{1}{4}$  teaspoon of Epsom Salts. Stir until all are dissolved and let stand 15 minutes. If the mixture sets into a jelly within this time it is a good jellying juice.

# PROPORTION OF SUGAR TO PECTIN

The pectin test will aid the jelly maker in deciding the proportion of sugar to be used. If the gelatinous mass obtained in the pectin test will slip from the liquid in one mass or clot, use equal parts of sugar and juice.

If the mass is divided, use  $\frac{3}{4}$  as much sugar as juice.

If the pectin is thin and hard to collect, use  $\frac{1}{2}$  as much sugar as juice.

Too little sugar makes tough jelly.

Too much sugar makes soft, shapeless, syrupy jelly.

Just enough sugar makes clear, tender, sparkling jelly.

# COOKING THE JELLY

After straining juice (not squeezing bag), boil juice rapidly. Skim before adding sugar.

When half through, add sugar slowly, stirring until dissolved. Warm sugar does not stop the boiling as much as cold sugar. Boil briskly so that the jelly "sparkles."

#### TIME OF COOKING

This is determined by (a) proportion of pectin to juice; (b) proportion of acid in juice.

Fruits high in pectin and acid, such as grapes or currants, form jelly in 8 to 10 minutes.

Fruits low in pectin and acid, such as raspberries or sweet apples, may require 20 to 30 minutes.

Boil briskly. Slow cooking spoils the flavor and destroys the action of the pectin.

## TEST FOR JELLY

These are various methods for testing jelly. The most widely used is the paddle test.

Take up a little of the boiling juice on a spoon or paddle. Allow it to cool slightly and then pour back into the pan. First stage, syrupy, runs from the spoon. Second stage, drops off of spoon or paddle in heavy drops. Third stage, drops run together and cleave off spoon in a sheet, leaving the spoon clean. When the third stage is reached, the jelly is done, and should be

quickly removed from the stove and poured into the jelly glasses. No time should be lost, or the jelly may harden in the pan.



1. In the second stage, heavy drops are formed. 2. The third stage (jelly stage) is reached when the liquid sheets off from the paddle or spoon.

# PREPARATION OF THE JELLY GLASSES

Have the jelly glasses clean and hot. It is well to set the glasses in boiling water when the jelly is poured.

# SEALING THE JELLY GLASSES

Allow the jelly to cool in the sun if possible. When cool pour melted paraffin over the top. Cover the glass with a tight fitting metal cover or with heavy paper ties over the top.

#### MINT JELLY

1 cup mint leaves (packed tightly) 1 cup apple juice 1 cup boiling water 34 cup sugar 1 cup boiling water 1 cup apple juice 34 cup sugar

Pour boiling water over clean mint leaves, allow to steep one hour. Press the juice from the leaves and add two tablespoons of the mint juice to the sugar and apple juice. Boil until the jelly test is obtained. Pour into hot glasses.

# JAMS

The berry fruits, which usually lack sufficient pectin for jelly making, or fruits not whole enough for preserves, are usually used for jam. The fruit does not stay whole in the cooking. Some pectin must be present to give the right consistency to jam.

General rules for jams:

1. Use  $\frac{3}{4}$  pound sugar to 1 pound fruit.

2. Cook rapidly over a hot fire to retain flavor and color.

3. Put fruit in preserving kettle with just water enough to prevent sticking. Add sugar gradually. Cook until the jam will stay in place when dropped from a teaspoon on a plate to cool.

# MARMALADES

Marmalade is a product which has a more jelly-like consistency than jam and contains the fruit in large pieces. General rule for marmalade:

To each pound of fruit add one-half pound sugar. Boil from one to three hours, or until the jelly stage is reached. Pour into hot glasses and seal at once.

# CARROT MARMALADE

2 cups ground carrot  $1\frac{1}{2}$  cups sugar

2 lemons

1 grape fruit

 $1\frac{1}{2}$  cups sugar 2 t ground ginger root Cook carrot until tender. Add the sugar and lemons, quartered and cut in thin slices. Cook slowly until thick. Pack in hot jars and process. The ginger root may be omitted if desired. This marmalade does not have the jelly-like consistency of orange marmalade.

#### ORANGE MARMALADE 3 lemons

12 thin skinned oranges sugar

Wash fruit, either slice or grind. To each pint of pulp add  $1\frac{1}{2}$  pints water. Let stand over night. In the morning cook from 2 to  $2\frac{1}{2}$  hours. Strain off liquid, measure pulp, add equal amount of sugar to pulp and liquid. Cook from  $\frac{1}{2}$  to 1 hour, or until the jelly test is obtained.

#### GRAPE FRUIT MARMALADE

# 1 orange

1 lemon

Wash, shred or grind the fruit, measure and add 3 parts water to 1 part fruit. Let stand over night. In the morning boil for 10 minutes. Let cool, measure and add an equal amount of sugar. Boil rapidly until jelly test is obtained. Pour into hot jars or jelly glasses. (Elvis Alford).

# FRUIT BUTTERS

Fruit butters are made from fruit cooked to a smooth consistency. It is frequently found to be cheaper to make fruit butters from fruit pulp left after the first extraction of the pectin in the jelly-making.

General rules for butters:

1. Put the pulp of the cooked fruit through a sieve; remove seeds and skins.

2. Use half as much sugar as pulp.

3. Cook altogether, slowly, until thick.

4. Store as for jelly or canned fruit.

## CONSERVES

Conserves are cooked like jam, but raisins or nuts, sometimes both, are added, together with oranges cut in small sections.

General rules for making conserves:

1. Cook rapidly.

2. Add nuts about five minutes before removing conserves.

3. Store as for jelly or canned fruit.

#### PLUM CONSERVE

6 pounds plums

2 oranges sliced

 $\frac{1}{2}$  pound nut meats 3 pounds sugar

 $1\frac{1}{2}$  pounds large table raisins, seeded

Prepare the oranges as for marmalade, let stand in water to cover over night. Cook the plums without water till soft and press the pulp through a sieve. Cook oranges till tender, add with raisins to the plums and sugar and let cook till the mixture is like marmalade. Add the nuts near the end of the cooking.

#### RHUBARB CONSERVE

3<sup>1</sup>/<sub>2</sub> pounds rhubarb 3 pounds sugar <sup>1</sup>/<sub>4</sub> pound nut meats 2 oranges or <sup>1</sup>/<sub>4</sub> pound candied peel Grated rind and juice of 2 lemons

If oranges are used prepare them as for marmalade. Chop the rhubarb fine, add the sugar, lemon juice and rind and set to cook. When the sugar is melted and the mixture is boiling throughout, add the nut meatss chopped fine and the orange peel shredded very fine and let cook about thirty minutes.

# PRESERVES

A preserved fruit is one which has been cooked in a cane sugar syrup until it is clear, tender and transparent. It will keep its form and plumpness and be crisp.

## PRESERVED SPICED PEACHES

1 peck peaches, peeled and cut in half1 oz. cloves3 pints cider vinegar $\frac{1}{2}$  oz. nutm $3\frac{1}{2}$  lbs. brown sugar1 oz. cinnan

 $\begin{array}{l} 1 \text{ oz. cloves} \\ \frac{1}{2} \text{ oz. nutmeg} \\ 1 \text{ oz. cinnamon} \end{array} \left\{ \begin{array}{l} \text{Tied in a cheese cloth} \\ \text{and boiled with} \\ \text{the peaches.} \end{array} \right.$ 

When the vinegar, spices and sugar are boiling, add the peaches. When transparent, seal in fruit jars. Serve one-half peach with juice for dessert.

# PRESERVED GINGER APPLES

4 lbs. apples, pared, cored and sliced thin 4 lbs. sugar 1 cup water 4 lemons, slice 2 oz. ginger root

Boil altogether until as thick as marmalade. Skim out the ginger root, and pack as you would jelly or jam.

## PRESERVED GINGER PEARS

Substitute pears for apples in recipe given above.



The Canning Cupboard yields highly desirable Christmas gifts.

# SUGGESTIONS FOR CANNING CLUB MEETINGS

Always have three sections to your meeting:

- (a) Business meeting.
- (b) Canning period.
- (c) Social hour.
- (a) Business meeting:
  - 1. Roll call.
  - 2. Reading of minutes of previous meeting.
  - 3. Reports of committees.
  - 4. Old or unfinished business.
  - 5. Discussion of any social or business event the club may wish to hold.
  - 6. Appointment of committees.
  - 7. Short appropriate program.
- (b) Canning period:

This may include demonstrations in canning or some method of preservation, by the local club leader, county leader, or some of the club members themselves.

(c) Social hour.

Games, songs, and light refreshments if desired. Plan to hold at least one big social event during the summer—a picnic is appropriate.

# SUGGESTIONS FOR PROGRAMS FOR CLUB MEETINGS

- 1. For roll call—
  - 1. Your goal.
  - 2. Name of vegetable and time required for blanching and processing.
  - 3. Same as 2—using fruits.
  - 4. Experiences in canning since last club meeting.
  - 5. Variety of products you have canned and number of quarts you have canned.
  - 6. Give a combination of vegetables you can can.
  - 7. Give a recipe for your favorite dish prepared from canned vegetables.
  - 8. Name a fruit, and its jelly making properties.
  - 9. Give your favorite pickle or preserve recipe.
  - 10. Give your parents' opinion of the club.
- 2. The demonstration (two or three girls).
  - 1. Making canning equipment.
  - 2. Canning of underground or tuber vegetables.
  - 3. Canning of pod vegetables.
  - 4. Canning of greens.
  - 5. Canning of fruits.
  - 6. Pectin testing and jelly making.
  - 7. Jelly making from fruits low in pectin.
  - 8. How to make pickles.
  - 9. Canning of meat.

10. Canning of fish.

11. Judging canned goods.

12. Judging jellies.

3. For talks:

1. Canning equipment.

2. Drying equipment.

3. Canning in tin.

4. Marketing of canned goods.

5. Open kettle and cold pack canning compared.

6. Ways of preparing canned goods for the table.

7. Kinds of glass jars.

8. Testing of rubbers.

9. Explain difference between jams, marmalades, conserves and butters.

10. When and why to can meats.

11. Use of canning budget.

Various farm and women's magazines furnish excellent material on the subjects of canning and home making which may be read on club programs.

# SUGGESTIVE OUTLINE FOR CANNING CLUB SEASON

## 1st Meeting (Organization).

Elect officers. Appoint committee on name, program, advisory board, etc. Look over canning directions and equipment. Decide on what equipment is to be used at home.

#### 2nd Meeting.

Work at canning budget for the family.

#### **3rd Meeting** (Canning Demonstration).

Canning demonstration: By county leader or someone who is familiar with the cold pack method of canning.

4th Meeting (Reports: Jars and Rubbers).

Study report blank and start filling it out. Study manufacture and method of using and testing various types of jars and rubbers.

# 5th Meeting.

Visit canning factory if possible. Demonstration in "Standard Packs." Canning in tin (demonstration if possible). Study "score card" for canning, and how to secure best results.

**6th Meeting** (a) first year, vegetable mixtures; (b) second year, jelly making; (c) third year, meat canning.

(a) Demonstration of simple mixtures.

(b) Practice pectin tests for jelly, using both alcohol and epsom salt tests.

(c) Can meat, using methods A and B.

### 7th Meeting (Pickling, Drying).

Demonstration in pickling. Exchange of recipes. Study "Drying" methods, equipment, etc. See Farmers' Bulletin 984, also No. 841.

## 8th Meeting (Picnic).

Suggestions for social events will be sent out later.

9th Meeting (Plans for exhibit).

Set date for exhibit. Appoint committee to plan program. Decide on labels; decide on kind and number of jars each member is to exhibit.

## 10th Meeting ("Finish-Up").

Finish reports and write story. Complete plans for exhibit.

### 11th Meeting (Exhibit).

Local exhibit. Each girl exhibits twelve, or some definite number of jars, and report and story. The work is judged and club champions decided upon.

# MEMBER'S RECORD OF CANNING WORK

1. Date enrolled......June 5, 1922.....

2. Date of completion.....October 20, 1922....

Below is given a sample record showing how the report should be filled out. This is much condensed, of course.

	Num- ber of Quarts	Cost of Labor									
Products Canned		Cost of Produ	t Raw icts Cost of jars, Rubbers, Sugar, Fuel, and Labor See Note 1			Total Cost		Value		Profit	
FRUITS Strawberries Raspberries Cherries	$\begin{array}{c} 44\\ 25\\ 5\end{array}$	Dollars 6 4 2	Cts. 14 00 50	$\begin{array}{c} \text{Dollars} \\ 4 \\ 2 \end{array}$	$\begin{vmatrix} Cts. \\ 40 \\ 50 \\ 50 \\ 50 \end{vmatrix}$	$\begin{array}{c} \text{Dollars} \\ 10 \\ 6 \\ 3 \end{array}$	$[]{Cts.}{54}\\50\\00]$	$\begin{array}{c} \text{Dollars} \\ 35 \\ 20 \\ 4 \end{array}$	Cts. 20 00 00	Dollars 24 13 1	Cts. 66 50 00
Totals	74	12	64	7	40	20	04	59	20	39	16
VEGETABLES Corn Red Beets	$3 \\ 27$	3	60 00	2	30 70	5	90 70	2 8	10 10	$\frac{1}{2}$	$20 \\ 30$
Totals	30	3	60	3	00	6	60	10	20	3	50

# My Canning Record.

Note 1—For cost of jars, rubbers, sugar, labor, fuel, etc., add 10c per qt. for fruits and vegetables. The cost of labor on fuel and vegetables offsets the cost of sugar for fruits.

JELLIES AND		Dollars	Cts.									
Apple Jelly Bhubarb	10	1	64	5	00	6	64	10	00	3	36	
Conserve	$31\frac{1}{2}$	7	60	15	75	23	35	31	50	8	15	
Totals	$41\frac{1}{2}$	9	24	20	75	29	99	41	50	11	51	
PICKLES Sweet Pickles	$68\frac{1}{2}$	9	00	10	28	19	28	44	80	25	52	
Totals	$68\frac{1}{2}$	9	00	10	28	19	28	44	80	25	52	
MEATS Chicken	3	1	50		30	1	80	3	00	1	20	
Totals	3	1	50		30	1	80	3	00	1	20	1
Grand Totals of Fruits, Vege- tables, Jams, Pickles, Meats.	217	35	98	41	73	77	71	158	70	80	99	

Note 2—For cost of jars, rubbers, labor, fuel, sugar, etc., add: 50c per qt. for jellies and jam. 15c per qt. for pickles. 10c per qt. for meats.



The Canning Exhibit is the climax of the season's work.

# THE CANNING EXHIBIT

The exhibit is held for the double purpose of showing the community the work which has been done by the girls, and to interest other girls in the project. An attractive display does much to gain the interest of outsiders.

The local exhibit should be held in the afternoon or evening, and at some place where a crowd can conveniently gather. The club colors, or plain background of white or soft colors, ornamented with the club motto or other insignia, gives a good setting for the products. The program should be appropriate and may very well be made up of numbers suggested on page 38 of this bulletin. In addition, the treasurer might read a report of the results of the season's work which is summarized from the reports handed in by the various members. The best story has a place on the program also. Suggestions for the story are given on the back of the record sheet.

It is preferable that each club should hold its own local exhibit, but circumstances sometimes arise which make it necessary for several clubs in a county to exhibit at the same time and place, usually the county fair. In this case, each individual club member must exhibit with the club in order to meet the project requirements, the number of jars being the same as for the purely local exhibit.

# Rules for Exhibits

1. All exhibits to be judged must be in glass containers.

2. Jars should be clean and nearly labeled. Labels may be placed near the bottom of the jar or on the bottom of the jar itself.

3. Each club member's exhibit should be placed by itself, together with the report and story.

## **Requirements for Individual Exhibits**

First Year members—

6 jars canned products (4 vegetables, 2 fruits).

Second Year Members—

8 jars canned products (2 vegetables, 2 fruits, 2 jelly, 1 pickle, 1 vegetable mixture).

Third and Fourth Year Members-

10 jars canned products (2 vegetables, 2 fruits, 2 jelly, 1 pickles, 1 vegetable mixture, 2 meat).

# Judging

The following points are considered in judging:

(a) Canned fruits and vegetables.

1. Product:

Condition—product should be firm.

Grading—product should be uniform in size.

Color—product should retain original color.

2. Liquid:

Clearness—Liquid should be clear.

3. Pack:

Uniformity—an even pack is desired.

Running—when jar is tipped liquid should run through product. Fullness of jar—the jar should be well filled with product and liquid.

(b) Jelly.

1. Flavor—it should have the flavor of the fruit from which it is made. It should be neither too sweet nor too sour.

- 2. Color—it should be clear and transparent and free from any particles of fruit.
- 3. Texture—it should be firm but not tough. It should slide freely from the spoon, and it should be free from crystals.

(c) Conserves, preserves, marmalades, jams and butters:

- 1. Flavor—should have a "tasty" flavor and should be neither too sweet nor too sour.
- 2. Consistency—it should be thick but not stiff.
- 3. Color—it should have a bright color.

## **Demonstration** Outlines

Outlines for demonstration teams on canning or jelly-making may be secured by writing to the Boys' and Girls' Club Department at East Lansing, Michigan. Score cards for judging canned products or jellies are also available.

## BIBLIOGRAPHY OF BULLETINS

tome Canning of Fruits and Vegetables—Farmers' Bulletin No. 1211.

Jrying Fruits and Vegetables in the Home—Farmers' Bulletin No. 841. Pork on the Farm, Killing and Curing—Farmers' Bulletin No. 1186.

Preserving Eggs—Farmers' Bulletin No. 1109.

Farmers' Bulletins secured from U. S. Dept. of Agriculture.

Home Canning of Meats and Sea Foods-S. R. S. Doc. 80, U. S. Dept. of Agriculture, States Relations Service, Washington, D. C.

#### OTHER STATES

Selecting, Dressing and Curing Pork on the Farm—Circular No. 61, Iowa State College, Ames, Iowa

Dressing and Cutting Lamb and Mutton on the Farm-Circular No. 71, Iowa State College, Ames, Iowa.

Slaughtering, Dressing and Curing Beef-Circular No. 73, Iowa State College, Ames, Iowa. Principles of Jelly Making—No. 31, University of Illinois, Urbana, Illinois, Jellies, Preserves and Marmalades,—No. 34, Florida State College of Agriculture, Talla-

hassee, Fla.

#### TECHNICAL

Relation of Initial Temperature to Pressure Vacuum and Temperature Changes in the Container During Canning Operations. U. S. Dept. of Agriculture—No. 1022.

A Study of the Factors Affecting Temperature Changes in the Container During the Canning of Fruits and Vegetables. U. S. Dept. of Agriculture-No. 956.

# CANNING OUTFITS, CANS, JARS, AND OTHER CANNING SUPPLIES MAY BE PURCHASED FROM THE FOLLOWING CONCERNS:

Northwestern Steel and Iron Works, Eau Claire, Wis. (National Pressure Cooker).

The Pressure Cooker Company, Denver, Colo. (Denver Pressure Cooker) Aluminum Steam Pressure Outfits, three sizes, \$10.50 to \$24. Hazel-Atlas Glass Company, Wheeling, W. Va. E. Z. Seal Jars, bottles, tumblers, etc.

The American Can Company, New York. Cans of all kinds. National Canning Supply Co., LaGrange, Ill. Boston Woven Hose and Rubber Company, Boston, Mass.

Ball Brothers Glass Mfg. Co., Muncie, Ind. Burpee Can Sealer Co., 215 W. Huron St., Chicago, Ill. Sanitary Tin Cans. Mechanical Sealer for Sanitary Tin Cans.

Christian Finance Association, 80 Maiden Lane, N. Y. C. Emblems and Pins. U. S. Printing and Lithograph Co., Cincinnati, Ohio. Labels. Dennison Mfg. Co., 1256 Fayette St., Baltimore, Md. Burpee Mfg. Company, Chicago, Ill. Jar Tongs.

# PAPER BOXES FOR MAILING AND SHIPPING

American Paper Products Co., 2nd and Bremen Ave., St. Louis, Mo.

Weis Mfg. Co., Monroe, Mich. For further information, bulletins, canning reports, club bulletins, enrollment blanks, etc., write to

#### COMMERCIAL PECTIN

"Certo"-Pectin Sales Co., Rochester, N. Y. Pectin-Tomato Products Co., Paoli, Indiana.

> STATE CLUB LEADER, EAST LANSING, MICHIGAN.

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# Processing Time Table for Common Fruits and Vegetables

Products to be canned	Sterilize hot water bath	Sterilize steam pressure (5 lbs.)	Sterilize pressure cooker (10-15 lbs
Apples (whole) Apples (sliced) Asparagus Beans (Lima) Beans (String). Beets	Minutes 20 12 120 180 120 120	Minutes  60 60 60 60 60	Minutes  40 40 40 40 40
Blackberries. Blueberries. Brussels Sprouts. Cabbage. Carrots.	16     16     120	 60 60 60	40 40 40
Cauliflower. Cherries (sour). Cherries (sweet). Corn. Cranberries.	$     \begin{array}{r}       60 \\       16 \\       16 \\       180 \\       16 \\       16     \end{array} $	30  90	20 60
Currants. Egg Plant. Grapes. Greens. Gooseberries.	$     \begin{array}{r}       16 \\       60 \\       16 \\       120 \\       16 \\       16     \end{array} $	45 60	30 40
Huckleberries. Mushrooms. Jkra Parsnips. Peas.	$     \begin{array}{r}       16 \\       120 \\       120 \\       90 \\       180     \end{array} $	60 60 60 90	$\begin{array}{c} \dot{40}\\ 40\\ 40\\ 60\end{array}$
Pears	$20 \\ 16 \\ 90 \\ 120 \\ 30$	60 60	40 40
Plums umpkin juinces. Asspberries. Ahubarb.	$     \begin{array}{r}       16 \\       120 \\       20 \\       16 \\       16 \\       16 \\       \end{array} $	60  	40 
quash trawberries weet Potatoes `omatoes `urnips	$120 \\ 16 \\ 90 \\ 25 \\ 90$	60 60 60	40 40 40

# Processing Time Table for Meats and Fish

Products	Hot water bath	Steam pressure 5 lbs.	Steam pressure 15 lbs.
Beef— uncooked boiling or roasting frying corned beef Chicken— uncooked boiled, roasted, or fried spring chicken—fried	3 hours 2 hours 2 hours 3 hours 3 hours 3 hours 2 hours	2 hours 1 hour 1 hour 2 hours 2 hours 2 hours 1 hour	1 hour 40 minutes 40 minutes 1 hour 1 hour 40 minutes
Fish Mutton. Pork. Rabbit	same as for	beef  chicken	