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## Community canning projects in the South

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COMMUNITY CANNING PROJECTS  
IN THE SOUTH

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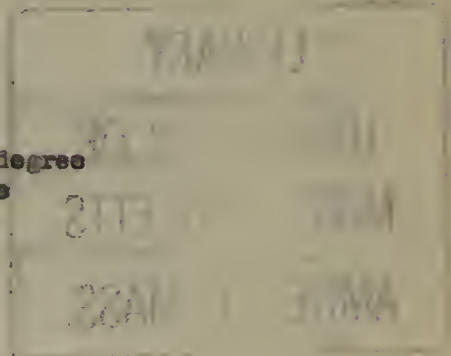
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**Community Canning Projects  
in the South**

**Leora Jones Spaulding**

**Thesis submitted for the degree  
of Master of Science**



**Massachusetts State College, Amherst  
May 15, 1935**

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## I Objectives and Needs of Community Food Preservation Projects

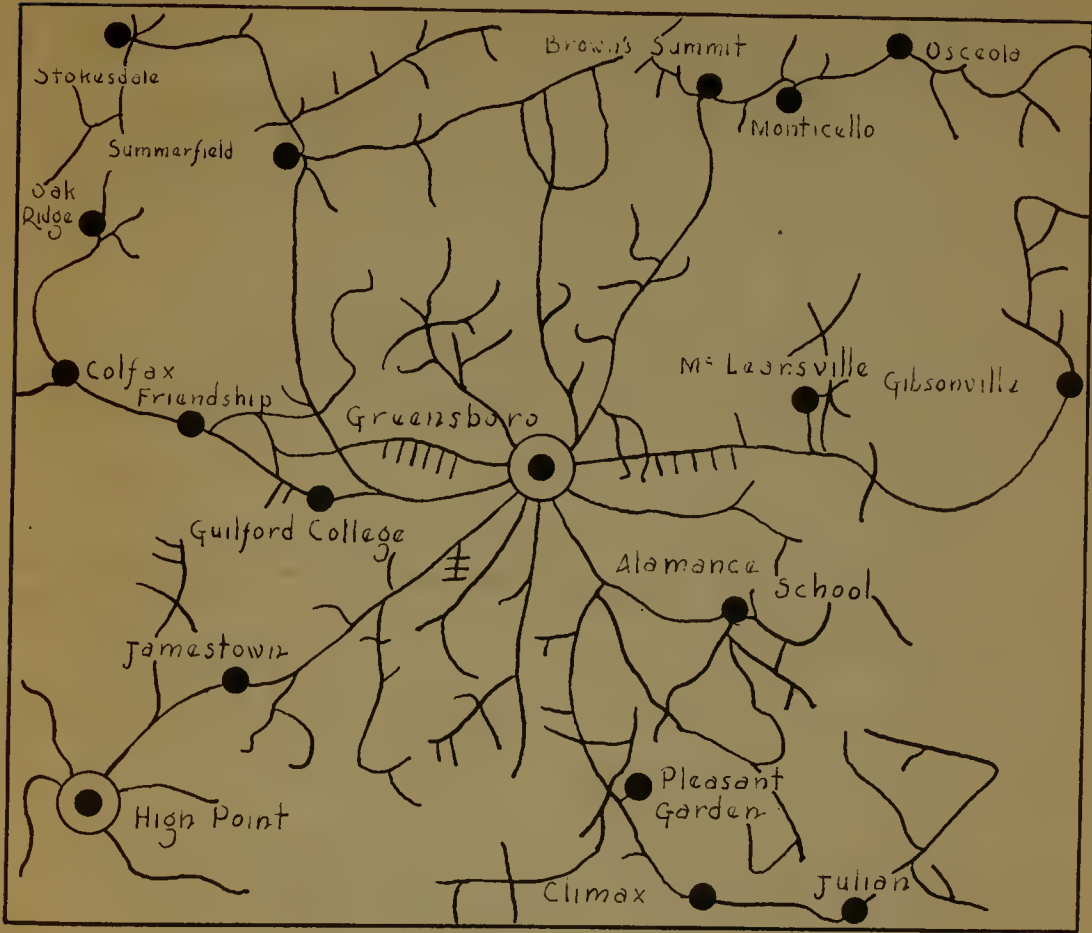
The purpose of this thesis is to bring together information on community food preservation and apply this information to definite projects to be carried out in Guilford County, North Carolina.

Food preservation centers are organized for several purposes. Sometimes they are used for demonstration of successful methods for home canning, drying, salting and otherwise preserving fruits, vegetables and meats. The purpose of some Food Preservation Clubs is to teach the importance of well cooked foods and planned, attractively served meals at a minimum cost as it has been recommended by authorities that not more than one fourth of the family income should be spent for food. Therefore, it is important to learn to select food wisely, economically and make meals serve best the body needs. Home or community canning aids greatly in giving variety and adequacy to the diet. The problem of the community cannery is entirely different from that of the commercial cannery or food preservation factory operating solely for profit. They are alike in that they use the necessary labor from the community and depend to a large extent on local crop production for preservation. In the home or community cannery, however, the canned foods remain in the community where grown and thus further aid the community. Canneries conserve large quantities of food materials which might otherwise be lost or sold at a sacrifice. They make available the summer fruits and vegetables in the non-producing seasons when the diet is likely to be deficient.

Often Community Canning Centers are organized for joint use in

PLATE I

# Rural Electrification Is Possibility For County



GUILFORD COUNTY NORTH CAROLINA

a neighborhood to save time, fuel and excess products under trained leadership.

They provide opportunity for the less experienced to learn how to can under supervision. The canning center becomes a center for educational work and makes canning equipment available for those who are unable to own the necessary equipment. This equipment is fairly expensive, and cannot be purchased by the farmers and poor people who most need to can foods for the winter months when both food and money to buy food and other necessities<sup>are</sup> scarce or even entirely lacking.

In many cases Food Preservation Centers are conducted for relief purposes by the local administration units such as the town or county by furnishing the raw materials to can and at times the necessary equipment and labor. Sometimes this labor is paid for at a nominal rate by welfare agencies. In fact this type of welfare project has been peculiarly successful in a number of states including Massachusetts. It is calculated that a dollar spent for welfare on a community canning project makes greater returns on the investment of the municipality, than any other form of direct relief.

## II. People Who Are To Be Served

With an increasing demand for relief the State Extension Service, Federal Emergency Relief Administration (F.E.R.A. and E.R.A.) Civil Works Administration Funds, State, County and Town Welfare Boards and other public and private organizations have projected and supported cooperative garden and community canning programs for needy

families in many communities. The live-at-home program is stressed for farm and city dwellers. This problem of feeding these families is being solved to some extent by the back-to-the-farm movement.

The Government has even leased idle farms in the country and has secured lands where land owners can use additional croppers and has encouraged the moving of dependent families from the city to the country. It also furnishes livestock, farming equipment, food and clothes when it is necessary.

In each county there are Farm Agents to give advice in farming and Home Demonstration Agents to teach the unprepared croppers and their families how to prepare and save their excess foods by the different ways of preservation as well as to improve their personal and community well being. In other cases, vacant lots in and around cities are rented and persons applying to the Welfare Board are placed under trained leaders and given a garden lot and tools to work with, seeds, etc. Thus the unemployed man has to raise a garden and he then can can his surplus products for the next winter.

In either case Community Canning Centers are widely organized in various sections of the United States with competent supervisors to oversee the preservation of foods to prevent waste of material, and time and to insure an attractive, safe pack of food.

### III. Community Types

Community types are many. For example, in the rural South, especially among the colored people, the community consists of a

loose rural association or canning club. Or, if it be a small village or urban group, a church or school organization, lodge, welfare and relief organization set up by the state, county or town, and finally individual home-canners who work without reference to any particular organization.

Naturally the type of food preservation project will vary with the community. There is need for careful organization regardless of whether the community is large or small, urban or rural. The general character of the organization and the basic equipment required will be the same in either case. In the larger projects, more supervision and larger personnel will be required.

Preserving stations may be set up in the Home Economics Departments of schools, in the kitchens or rural or city churches, in some of the larger homes or, entirely new layouts may be required occasionally.

The home food factories may be classed, according to their type of activities as special and general.

The general factory manufactures a large assortment of products made from fruit, vegetables, meat and poultry. This kind of factory may do active work the greater part of the year as when one product matures and is harvested and manufactured the next one in season may be done likewise. This is particularly true in the South. When most fruits and vegetables are out of season then the meat season begins. The greater number of home factories are of this type, although the number of products canned may be limited to three or four staples such as greens, snap beans, tomatoes and carrots. In other sections, other foods would be canned.

The special factory usually operates during the season for the product to be manufactured, such as cider making. The method of marketing the home factory products is an individual problem. They may be bartered, sold outright or, as is most often the case, consumed at home or given away. The middle man's profit is eliminated as the sales are usually direct to the consumer, at the factory or at a roadside stand.

Hotels, restaurants, boarding houses, private schools, hospitals, soda fountains and ice cream parlors are possible markets for home canned goods or manufactured goods. Many people believe home-prepared foods are superior in quality and appearance and will pay a little higher price for them. Some retailers have been glad to secure home-canned goods for their trade and they occasionally handle large quantities of these commodities in the South. Some of the 4-H Club members have special labels and grades for their canned foods, jams and jellies and their brands are well and favorably known in their own and nearby communities. This idea may be well copied by individuals.

The size and location of the factory will be determined by the kind and amount of work that is to be done. In some cases the home kitchen or screened porch may be used. The sources of heat and water constitutes the important problems in the establishment of a factory. In general, two or more processors of moderate size are more desirable for home canning than a single large processor. When building

and equipping a small cannery the leader should have in mind the kind and amount of work that he plans to do. He should also be prepared to increase the production to meet possible large crop surpluses and possibly increased needs for work and food in the community.

Community canning makes it possible to include fruits and vegetables in the diet all the year round. It saves surplus products and may help to prevent flooded markets and low prices. It also provides employment for both skilled and unskilled laborers and utilizes idle hands.

Garden projects improve the looks and sale of vacant lots and fields and make possible for a city or town to feed its needy at a saving of money. Such projects encourage thrift, self support, and make for greater self respect. They reduce the number of dependent families and afford splendid opportunity for a practical education. They likewise make possible an increase in the sale of tools, machinery of various kinds, cans, glass jars and canning equipment.

Canning and garden projects in time provide for a better distribution of wealth, make possible diversified and balanced diet which may improve health and happiness and possibly prolong life itself. It is important to keep people employed, happy and as near self-sustaining as possible. A combination of garden and canning kitchen is, to my mind, one of the best solutions for carrying out practically this idea in the South, particularly among the colored people.

There is always idle land in the city or country which can be secured for such projects at no or low cost. In the country, animals

for tillage are available but in the city, plowing and harrowing have to be hired. The seed is usually furnished free by Federal agencies though the cost is not high. In general, tillage is done by hand by men, women and children. They are kept busy in their gardens and this helps to keep them contented and well. Soon they derive much fresh food from the gardens. Then the canning season starts and continues until fall. The canning itself requires considerable work and helps to keep the family busy during the vegetable growing and harvesting seasons.

In some cases the foods for canning may be purchased by relief agencies directly from nearby farms or in other cases, in public markets. Probably, from an economic point of view, the best plan would be to have a consolidated community garden and canning project. In this way, the full value of the outdoor garden work, fresh vegetables and canned foods may be obtained. Economically there is much to say for the extension of the garden and canning relief programs.

#### IV. Nutritional Aspects

The aim of food production is to keep first class food in good condition from in-season to out-of-season. From a time of plenty and abundance to a time of scarcity and need. A home garden properly laid out and handled, will supply nearly all the vegetable needs of the family for the entire year. A good garden means good soil, well prepared, well fertilized, planted with good seed and well cared for.

Vegetables and fruits rank next to milk in the well balanced

food budget, as vegetables are not as expensive as fruits and are an excellent source of vitamins A, B, C, and E as well as minerals. It is a wise plan to grow and can enough for a year round supply. Before food preservation came into vogue there was a tendency, especially in the southern states, to eat fruits and vegetables in season: and salt pork, molasses, sweet potatoes, pickled fish, rice, beans, turnips, dried beef, and wild game in winter. When planning meals balanced nutrition was seldom thought of.

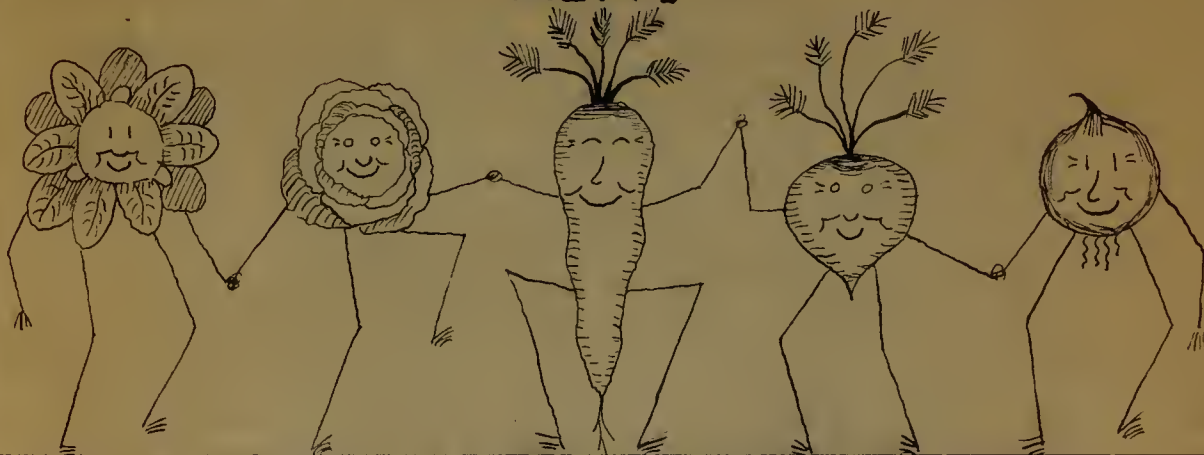
In canning, products should be cooked only enough to preserve them because cooking destroys some vitamins and possibly otherwise the quality of the food.

There are several advantages in using tin cans as they may be put into cold water to stop further cooking at the end of the processing period. They are easier to process, handle, store and ship and there is no breakage loss. Detection of spoilage is also easier in the tin cans.

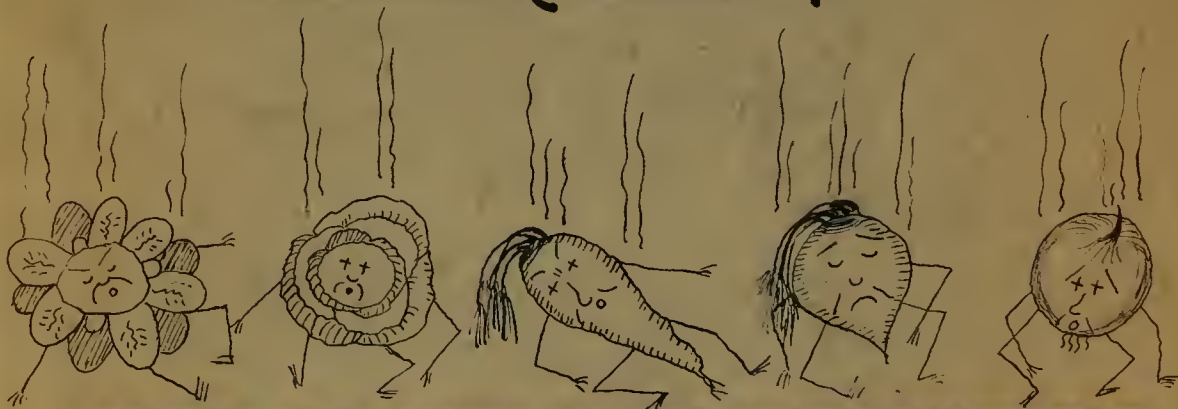
Very often products canned in glass are over-cooked because they cannot be cooled immediately and this may cause flat sours.

Canning Club members should know how to can and serve healthful nutritious and pleasing meals. Foods are classified into four groups, energy food, body builders, body regulators, and protective foods. To meet all body needs foods from each of these sources should be included in a days diet, but it is not necessary to include all four groups in each menu. Appearance, odor, flavor and temperature of foods served have much to do with the attractiveness and palatability of a meal. Hot things should be served hot and cold things served cold.

DO YOU EAT YOUR VEGETABLES  
ALIVE ~



OR DEAD - ?



LONG COOKING KILLS VITAMINE "C"

### Beverages

Water is the natural beverage and forms the greater part of all others. Fruit beverages contain food mineral and vitamins. Milk is considered the most complete food known and should be used freely in the diet. Cocoa contains much food but should not be used in excess as it is slightly stimulating.

Freshly boiled water should be used for making hot beverages and freshly drawn water for making cold ones.

### Fruits

Fruits should be used in the diet as they stimulate the action of digestion and have high vitamin and mineral and laxative values. In general they may be served cooked or uncooked. They add variety to the diet.

### Vegetables

Leafy vegetables are very valuable as body regulators as they have a high content of cellulose. They are rich in minerals, vitamins and starch. Two vegetables, other than potatoes should be served each day, though not necessarily at the same meal. Peas and beans are rich in protein and may be used as a substitutes for meat. The same is true for cottage or other cheeses.

### Cereals

Cereals are foods which furnish energy and heat, aid the body in

growth and act as regulators for the body organs. They contain large amounts of minerals, cellulose, and vitamins B, C, E, and sometimes A.

#### Milk

Milk is one of the best foods for health and growth, it contains milk sugar, high calcium and phosphorous content, vitamins A and D and casein, a protein of high nutritive value. Each person under 16 years should use one quart of milk a day and those over 16 should use at least 1 pint a day as fluid or evaporated milk or in milk dishes.

#### Eggs

Eggs contain all the properties necessary for growth, heat, and energy. They are high in mineral, vitamin A and D and protein content. The phosphorous of egg yolk is a particularly valuable constituent.

#### Salads

Salads made of a combination of fresh fruits or vegetables are high in vitamin and mineral content and correct constipation.

#### Meats

Meat is one of our main body building foods, but care must be taken not to use it in excess amounts for it may sometimes be harmful to the body. Meat furnishes high quality protein for muscle-building.

Meat is our most expensive food and for both health and economy it should not appear on our menu at every meal but we should have one serving of meat each day. Cheese, eggs, and beans may be used as meat substitutes.

A Typical Improvement Project Among the Negroes of Alamance  
County, North Carolina

In Alamance County, North Carolina under the supervision of Professor J. W. Jeffries, County Agent and Mrs. C.S. Wilson, Home Demonstration Agent for colored people, clubs have been organized to grow vegetables, fruits and meats. The object is to prepare nutritious school lunches in cans, etc., by students for the whole year. The lunch consists of soups, milk or milk substitute, meat or meat substitute, chicken, vegetables, fruits, salads, candy and deserts. Each year at the close of the food work a county wide school lunch contest is held and the various school lunches are exhibited and demonstrations in preparing and packing lunches are made. Prizes are awarded for the best and largest varieties. These clubs are financed by the County Council, the Womens Club, Girls Club, Community people, etc.

In Alamance County there were six hundred and sixty white relief families in 1933 and three hundred and thirty two Negro relief families. The negro relief clubs in that county put up 9,188 cans of product. The womens' clubs, county welfare, civic clubs, and state department, all cooperate in relief work. In relief work in canning

particularly members of the county council acted as club leaders in their communities and assisted the leaders in purchasing containers and sealing equipment for tin cans.

These leaders worked voluntarily without pay. The Department of Public Welfare furnished the equipment such as lard cans, etc. The most simple equipment was used to show the canners how simple and easy surplus foods can be saved. To improve this kind of work among the negroes of North Carolina there are state meetings and short courses held at the Agricultural and Technical College, Greensboro, North Carolina, at which delegates and club leaders attend.

Quite often out of the simple things, complex ones grow. In the above mentioned county some of the clubs in food preservation have become so interested that they have organized the following campaign for 'Home and Grounds Beautification' in 1934. There were 263 Summer Gardens, 185 Fall Gardens, planted and harvested by women. The smallest number of varieties grown in these gardens was six, and the largest number was 27. One hundred and sixteen different families had a flower yard and grew flowers, five families white-washed, four families painted, eight erected new mail boxes, landscaped their homes and one church and one school were greatly improved in appearance by tree and shrub plantings.

#### Market Gardens

Twelve families prepared fruits, vegetables, and other home grown products for market.

### Home Engineering

During the year three steam pressure cookers, eight washing machines, and five steam cookers have been purchased.

### Home Dairying

There are 58 families making surplus of butter, 58 making cottage cheese and 58 taking better care of milk and milk utensils.

### Home Marketing

Fifty six different families marketed products on local markets and received \$6,231.60 net for products sold. The products were all home grown.

### Selection and Preservation of Food

There are 183 families that are preparing better school lunches for their children. During the year there was conserved 88,451 quarts of home grown products and 2,412 pounds dried.

Twenty one kitchens were rearranged, fifteen families purchased labor saving kitchen utensils, ten families made fly traps, and twenty two families are making better soap.

### House Furnishings

Eight families have rebottomed chairs, refinished furniture and repaired tables.

### Sanitation

Trained leaders gave detailed instruction on how to spray and kill flies, encouraged the people to screen, build sanitary toilets, etc. In one community one hundred families cleaned up around their premises, 63 screened their homes and five families built sanitary toilets.

### Clothing

There were 315 garments made among relief families.

### Child Training and Care

Child training and care is taken up in some of the community clubs, several families have subscribed for bulletins, magazines and pictures on health, nutrition and training of children.

### Community or Country Life Activities

There are several communities in Alamance County that are well organized and have splendid leaders who plan interesting and educative activities which makes country life very satisfying, such as County Fairs, Debates, Cattle Racing, Fashion Shows, Community Sings, etc. These activities are made interesting by competing for prizes.

The Welfare Board of Pittsfield Massachusetts under the leadership of Professor W. R. Cole and County Agent Talmadge helped solve the problem of feeding 1200 or more needy families during the winter months of 1934 and 1935 by having 105,000 cans of food put up and

distributed to needy families. This food was grown and canned by many of the people who later consumed it.

The object was to give those who had received welfare an opportunity to repay the city with work for the aid received. Several similar projects are being carried out. Professor V. C. Turner, Colored State Agent for Alabama reports that there are established canning centers under the Federal Emergency Recovery Act in the State. The following report from Home Demonstration Agent A.I. Platts, Dallas County Alabama, shows the cooperation of the Extension Agent with F.E.R.A. and results.

"One of the biggest factors in the demonstration clubs this year is the preservation of foods. The Home Demonstration Agent helped place canning centers in the counties where they were most needed. The farmers have taken part in purchasing jars, rubbers and tops for the use of preserving food<sup>stuffs</sup>. Clubs have purchased cooperatively 1,094 jars, 144 jars have been given to persons competing in community fair contests, and 1,114 jars have been awarded as prizes in various community activities."

"Relief canning centers in the rural districts played an important part in the family canning budget. Where these centers were established, the club members took their produce and canned them, leaving half of the canned produce for the relief use and taking the other half home to be used later. Thirteen thousand cans have been placed upon the shelves of the club members who participated in the relief canning centers. The following number of quarts of produce

have been canned in Dallas County:

Fruits.....	18,560
Vegetables.....	14,008
Preserves.....	5,795
Meats (pork, beef, chicken, game)	4,101
Fruit juices.....	3,400
Jellies.....	3,091
Pickles.....	<u>2,325</u>
Total.....	<u>51,280</u>

VEGETABLE BUDGET FOR ONE PERSON FOR A YEAR

Product	Number of Servings	Amount To Be Used Fresh	Amount to Store or Can
Cabbage		10 lbs.	
Greens	Choose one five times a week	15 lbs.	15 pints 15 lbs.
String beans		8 lbs.	8 pints
Peas		$\frac{1}{2}$ bu.	6 pints
Celery		2 lbs.	5 lbs.
Lettuce or other salad greens		15 lbs.	
Tomatoes	Twice a week at least	25 lbs.	30 pints
Carrots	Choose on daily	15 lbs.	7 pints 20 lbs.
Beets		10 lbs.	5 pints 10 lbs.
Squash		10 lbs.	20 lbs.
Onions		12 lbs.	25 lbs.
Corn		30 ears	4 pints
Rutabagas Kohlrabi Parsnips		10 lbs.	25 lbs.
Potatoes	Once or twice daily	60 lbs.	180 lbs.

1. Multiply by the number in family to obtain family budget.
2. Some of the cabbage may be made into sauerkraut.
3. Greens include spinach, New Zealand spinach, Swiss chard, beet tops, and wild greens.
4. Estimate; allow 4 servings per pint of canned vegetables.

Estimate of Fresh, Canned, and Stored of the Following  
Kinds and Amounts for a Family of Five

	Amount to be Used Fresh	Amount to be Used Canned (Pints)#	Amount to be Stored (lbs.)
Cabbage	50		75
Greens	75	75	
String beans	40	40	
Peas	56	30	
Celery	10		25
Lettuce	75		
Tomatoes	125	150	
Carrots	75	35	100
Beets	50	25	50
Squash	50		100
Onions	60		125
Corn	150 ears	20	
Rutabagas			
	50		125
Parsnips			

# A pint of produce canned is equal to approximately one pound of fresh produce.



"You're a Good Pig Now  
But You'll be Good Canned Pork  
Next Winter"



- c Cool in water.
  - d Cut out cobs.
  - e Remove skins.
  - f Cut into pieces, halves or quarters.
3. Pack:
- a Fill jar one-half full, press.
  - b Keep on filling until full, with frequent pressing. Press out one-half cup of juice per pint jar.
  - c Add one-half teaspoon salt
4. Partly seal:
- a Wipe off jar top.
  - b Put on rubber and cover.
  - c Clamp over top.
5. Process:
- a Water hot. As hot as can be touched.
  - b Jars in.
  - c Water boils.
  - d Count time 25 minutes. Be sure water boils all the time.
6. Complete seal:
- a Push side clamp down.
  - b Set aside to cool. Keep out of drafts.
7. Store:
- a Label jars.
  - b Put in a cool place.

### Corn in Pint Jars

Five average ears of Golden Bantam corn for each pint jar. Do not try to handle more than 25 ears (5 jars) at one time.

1. Prepare:
- a Husk and remove silk.
  - b Trim off ends of cobs.
2. Blanch:
- a Put into boiling water, one quart of water for each four ears.
  - b Water boils again.
  - c Boil enough, five minutes average for fresh corn.
  - d Cool in cold water.
  - e Cut from cob. Use a sharp knife.
3. Pack:
- a One-half fill jar. Shake down.
  - b The top of corn should be one-half inch below top of jar.
  - c Add one-half teaspoon salt.
  - d Fill with hot water to top of corn.

4. Partly seal:
  - a Wipe off jar top.
  - b Put on rubber and cover.
  - c Clamp over top.
5. Process:
  - a Water hot.
  - b Jars in.
  - c Water boils.
  - d Count time 160 minutes. Be sure water boils whole time.
6. Complete seal:
  - a Push side clamp down.
  - b Set aside to cool. Avoid drafts.
7. Store:
  - a Label jars.
  - b Put in a cool place.

### Peaches in Pint Jars

Eight average size, yellow flesh, freestone peaches, will fill a pint jar.

1. Blanch
  - a Put into boiling water, one quart of water for each three peaches.
  - b Leave in the hot only long enough to loosen skins. One minute average.
  - c Cool in cold water.
2. Prepare:
  - a Remove skins.
  - b Cut in halves, remove stones.

Note: As fast as peeled and halved, put into brine made by dissolving 1 tablespoon salt in one gallon of water.

3. Pack
  - a Place each half peach in position carefully. Get a close pack.
  - b Fill jar.
  - c Add syrup. Release air bubbles by shaking.

For average peaches make syrup by dissolving one quart of sugar in  $2\frac{1}{2}$  quarts of water. Each pint jar of properly packed peaches will require about  $\frac{3}{4}$  cup of syrup. One cup of sugar and  $2\frac{1}{2}$  cups of water will give about three cups of syrup, enough for four or five pint jars. Syrups should not be boiled.

4. Partly seal:
  - a Wipe off jar top.
  - b Put on rubber and cover.
  - c Clamp over top.
5. Process:
  - a Water hot. As hot as can be touched.
  - b Jars in.
  - c Water boils.
  - d Count time 16 minutes. Be sure water boils all the time.
6. Complete seal:
  - a Push side clamp down.
  - b Set aside to cool. Avoid drafts.
7. Store:
  - a Label jars.
  - b Put in a cool dry place.

Raspberries or Blackberries, Pint Jars

Two quarts of fruit for each three jars to be filled.

1. Prepare:
  - a Carefully pick over.
  - b Discard small mis-shaped fruits. (Use them for jam).
  - c Wash if necessary.
2. Pack:
  - a Fill jars one-half full.
  - b Shake very gently. Press gently.
  - c Fill jar full.
  - d Shake again. Press gently.
  - e Fill.
  - f Add syrup. Release air bubbles by shaking.

Make syrup by dissolving one part of sugar in one part of hot water. One cup of syrup will be needed for each pint jar. Two cups of sugar and two cups of water will give about three cups of syrup; enough for three jars. Syrup should not be boiled.

3. Partly seal:
  - a Wipe off jar top.
  - b Put on rubber and cover.
  - c Clamp over top.
4. Process:
  - a Water bath. As hot as can be touched.
  - b Jars in.
  - c Water boils.
  - d Count time 12 minutes. Be sure water boils all the time.

5. Complete seal:
  - a Push side clamp down.
  - b Set aside to cool. Keep out of drafts.
6. Store:
  - a Label jars.
  - b Put in a cool dry place.

### CANNING FRUITS WITHOUT SUGARS

Sugars may be added or not as desired in canning of fruits, although shape, color, and flavor of the fruits are usually better retained when some sugar is added. Fruits for pie making or for use in diabetic diets are commonly canned without sugar.

Juicy fruits, such as berries, cherries, currants and plums may be canned in their own juices when sugar is omitted. Water is not required. The juice is extracted from the ripe fruits by crushing, heating and straining. The remaining fruits are closely packed into containers without preheating, and the boiling hot juice is poured over to cover. The glass jars are partially sealed and the tin cans exhausted before sealing and processing. Or the fruits may be given a short precooking, as 2 to 4 minutes simmering and poured into containers at once, sealed, and processed.

The less juicy fruits, such as apples, peaches, and pears require the addition of a small quantity of water. Preservation of natural fruit flavors is obtained by adding only a minimum of water.

Peaches are packed without precooking and boiling water is poured over them to cover; or the fruits are precooked by simmering in water a few minutes, packed hot and processed.

Pears are precooked by boiling four to eight minutes in water and

packed hot or precooked by baking, packed and covered with hot juice or water.

Apples are packed in quarters or eighths, into glass jars without cooking if desired and covered with boiling water. Special treatment is needed to remove acid from apples packed into tin cans without precooking. Apples shrink considerably when packed raw, and for this reason better filled containers are obtained by precooking the fruit. Apples are precooked in quarters, as apple sauce, or as baked apples.

#### Use of Sugar Substitutes

Honey, sirups, or similar sweetening agents may be substituted for part or all of the granulated sugar used for canning fruits. When the substitutes are rather strongly flavored, better results are obtained if not more than half of the regular sugar is replaced. A satisfactory fruit pack is obtained by the use of 30 to 50 percent of cerelese (corn sugar) for the syrup.

#### Canning Greens

To do a good job of canning greens, a special recipe is needed. They are not "blanched" in water but instead are precooked as for eating before being packed in the jars.

One and one-half pounds, one-half peck, needed for each pint jar.

1. Prepare:
  - a Pick over carefully.
  - b Wash and wash and wash.
  - c Remove hard, woody parts.
2. Blanch or precook:
  - a Have a saucepan or kettle that will hold enough for one or two jars.

- d Put in greens in saucepan or kettle with very little water.
  - e Set on fire.
  - d Cook until ready to eat. Do not let them burn.
3. Pack:
- a A few at a time. Use a fork or spoon to prevent burning hands.
  - b Press gently.
  - c Repeat a and b until jar is filled (full)
  - d With a sharp knife make two cuts cross the greens in the jar. These cuts cross in the middle of the jar. Be sure the cuts go to the bottom of the jar.
  - e Add one-half teaspoon salt to each pint.
  - f Fill the cuts with liquid from the blanching kettle. Work it down into the cuts with the knife. Be sure the cuts are full of liquid.
4. Partly seal:
- a Wipe off jar top.
  - b Put on clean tested rubber.
  - c Snap top wire into notch over cover.
5. Process:
- a Water hot. As hot as can be touched.
  - b Jars in.
  - c Water boils.
  - d Count time 100 minutes. Be sure the water boils whole time.
6. Complete seal:
- a Push side clamp down.
  - b Set aside to cool. Avoid drafts.
7. Store:
- a Label jars.
  - b Put in a cool dry place.

### Use of Acids in Canning Vegetables

It is well known that those vegetables containing little or no acids PH from 5.6 to 8.0, require the longest processing periods and are the most difficult to preserve. This is because these materials are well suited to the growth of heat resistant bacteria always associated with them.

We may destroy these resistant forms of bacteria in any one of the following ways:

1. Prolonged cooking at  $212^{\circ}\text{F}$ .
2. A shorter cooking period above  $212^{\circ}\text{F}$ .
3. By use of intermittent periods of cooking, either at or above  $212^{\circ}\text{F}$ .
4. By addition of chemicals that prevent bacterial growth or that aid in their destruction during the cooking period such as sugar, salt, vinegar, etc.

Among the chemicals used the acids are the most important. Much use was formerly made of salicylic and benzoic acids in commercial food preservation. These now come under the restrictions of the pure food laws and their use has been practically abandoned. They are, however, used to a considerable extent in home canning in some sections. They should be used with caution and had better be discarded altogether from a health view point.

The California Experiment Station has recommended the use of lemon juice in the following proportions: To each gallon of brine ( $2\frac{1}{2}$  ozs. salt per gal. water) add 5 to 7 ozs. of lemon juice. The cooking period at boiling temperature is 45 minutes for beans and peas, and 90 minutes for corn and 60 minutes for asparagus, all at  $212^{\circ}\text{F}$ .

Cornell University recommends the use of 1 tablespoonful of vinegar and  $1\frac{1}{2}$  teaspoonfuls of salt to each pint of corn and string beans, and processing for  $1\frac{1}{2}$  hours. It is thought this may also apply to peas and greens.

The use of lemon juice might not be practicable here on account of cost. However, if vinegar will function without affecting the quality of product it offers additional security in canning vegetables and will reduce the cost of cooking..

The amount of vinegar added gives an acidity of approximately .0016 % acetic acid.

### Bottling Fruit Juices

#### Preparing the Fruit

Pick over the fruit carefully, and then wash it thoroughly by one of the following methods:

- No. 1 Place the fruit in a wire basket or colander and wash with a light spray of water until the water runs clear.
- No. 2 Place the fruit in a bowl of water and then lift it out gently to another bowl of water, using the fingers as a sieve. This should be done two or three times until there is no dirt or sand in the bottom of the bowl.  
(Do not let the fruit stand in the water).

#### Extracting Juices from Berries and Other Small Fruits.

Mash a small portion of the washed fruit in a kettle and then stir while heating it quickly just to the boiling point. Remove at once from the fire. (It is important <sup>not</sup> to allow the fruit to boil because this spoils the flavor of the juice. Heating softens the framework of the fruit and makes the yield of clear juice greater than is obtained from raw fruit. Heating at a low temperature has the further

advantage of retaining the color and flavor).

Strain the heated juice through a heavy jelly bag. The juice that runs from the bag without pressure is called "free" juice. This is generally clearer than the juice obtained by pressure. It may be bottled separately or mixed with the juice extracted under pressure.

In extracting from the less juicy fruits, a little longer cooking at the simmering point is required, and a small amount of water is needed, about one-fourth cup to 1 pound of fruit.

#### Sweetening

Sugar may be added in the proportion of 1 cup to a gallon of juice. The sugar helps to retain the color and improves the flavor of the juice, but is not necessary for preservation. When used, it should be added to the strained juice and dissolved by stirring just before the juice is reheated for bottling.

#### Bottling

After the juice is strained and the sugar added, reheat to the simmering point (185°F.). If the thermometer is not available, heat the juice in a covered double boiler for about 10 minutes (or until thoroughly heated through). Pour the hot juice into hot sterilized bottles, filling to within one inch from the top to allow for expansion if crown caps are used for sealing, or two inches if corks are used.

Bottles must be sealed tightly before they are processed. A good grade of bottle cap is very satisfactory and is easy to seal by clamping it on securely with the aid of a simple, inexpensive

capper. If corks are used, the cork should be pushed in tightly and made safe by placing a double square of cheesecloth over it and tying this down with a string around the neck of the bottle below the collar. The cap-sealed, or tightly corked bottles of juice are then ready to process.

If small quantities of juice are desired at one time, it is well to use small bottles, since spoilage is likely to occur after opening, even if the juice is kept for only a few days.

#### Processing

Place the sealed bottles in a rack or on a false bottom in a large container of warm water on the stove. It is best to lay the bottles on their sides, not more than three layers deep and not crowded in the container. There should be enough water to come at least two inches over the top layer of bottles. Heat the water to the simmering point (185°f.) and hold this temperature for 10 minutes. (Boiling spoils the flavor and is not necessary for the sterilization of fruit juices). Remove at once and allow to cool.

#### Storing

If corks are used, dip the cork and top of the bottle in semi-liquid paraffin or sealing wax. Caps that have been clamped on securely before processing need no further attention. The bottles of sealed juice should be labeled and stored in a cool, dark, dry place.

### Uses of Enameled Tin Cans

For most foods, the plain tin can is entirely satisfactory, and it is cheaper than any other. At the present time the cost for the No. 2 can containing approximately 20 ozs. is 2.2¢. For certain other foods, however, enameled tin cans are used to preserve better appearance of the product. There are two kinds of enamel, prepared for special purposes. The cost of these is only slightly more than that of plain cans.

"Sanitary enamel", or "R enamel" or "fruit enamel" cans are of deep gold color with bright finish. They are used to prevent fading of color in red fruits and certain red vegetables, and to prevent corrosion with pumpkin and squash.

"C enamel" cans, of light gold color with dull finish, are used to prevent darkening of the food inside of the can. Certain proteinaceous foods when heated in plain tin, liberate volatile sulfur compounds. These react with the metal and form dark metallic sulfides which may be deposited on the can or on the food. These metallic sulfides are harmless, but they detract from the appearance of the food and of the can.

"C enamel" cans should not be used with acid foods like fruits, tomatoes, or sauerkraut, nor with meats or other products when these contain much fat. Acid or fat may cause "C enamel" to peel off and make the product unsightly, even though harmless. The "C enamel" cans contain zinc oxide in the enamel, when sulfides unite with the zinc, the white, unobjectionable zinc sulfide is formed.

The following list shows the type of can, enameled or plain tin, used for each food:

Beans, green or waxed	Plain tin
Beans, Lima	C enamel
Beans with pork	Plain tin
Beans with pork and tomato sauce	Plain tin
Beans, red kidney	C enamel or plain tin
Beets	Sanitary enamel preferred or C enamel
Beets pickled only in glass	
Berries, all kinds	Sanitary enamel
Carrots	Plain tin
Cherries	Sanitary enamel
Chicken and other meats	Plain tin
Clams	C enamel
Corn and succotash	C enamel
Cranberry sauce	Sanitary enamel
Greens, including spinach	Plain tin
Hominy	Plain tin
Onions	Plain tin
Peas	Plain tin
Peas and carrots	Plain tin
Pimentos	Sanitary enamel
Plums	Sanitary enamel
Pumpkin	Sanitary enamel
Rhubarb (glass preferred for home canning)	Sanitary enamel

1



slaughter the day before and cool.

2



have all equipment ready.

3



examine safety valve and gauge of pressure cooker. petcock, and

4



prepare and pack meat quickly.

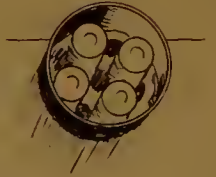
5



exhaust tins of raw or cold meat.

6

allow plenty of air space around containers.



7

let steam flow for 7 minutes before closing petcock.



8

count time after 15 pounds pressure is reached.



9

keep pressure constant.



10

let pressure return to zero, open petcock, and remove containers



# TEN STEPS IN MEAT CANNING

Sauerkraut	Sanitary enamel
Shell fish	C enamel
Squash	Sanitary enamel
Tomato juice	Plain tin
Tomato puree	Plain tin
Vegetables mixed	Plain tin

**Directions for Canning Meat at home, Beef, Veal, Mutton, Lamb, Pork, and chicken.**

Meats should be canned in a steam pressure cooker. The temperature required for sterilization (240° to 250° F.), corresponding to 10 and 15 pounds of steam pressure, cannot be obtained inside the can or jar by means of any other canning equipment. The process of canning in a steam pressure cooker is described in Farmers' Bulletin 1471, U. S. Dept. Agr., a copy should be obtained and used to supplement these directions.

Heating the meat in the can or jar to kill bacteria is called "processing?" This is the most important step in canning. Meat which is sufficiently processed will keep at any temperature. In meats packed in salt brine or improperly canned the percentage of spoilage will be greater and even when there are no visible signs of spoilage, certain bacteria will be present which can and do occasionally cause food poisoning.

The method of preserving meat by cooking it and packing it down in containers covered with a layer of melted fat depends for success upon the possibility of storing at a low temperature. This method

does not kill bacteria resistant to heat, but kills only the more susceptible forms, and the layer of fat keeps out others. The U.S. Bureau of Home Economics recommends such methods only during cold weather for home consumption and for short periods of time.

Canning the surplus fowls from the home poultry flock is often an economical practice, especially because the older birds may be used this way to better advantage than the young ones. Plump, well-fed hens, two years old and no longer at their best for egg production, have as good texture and better flavor than chickens six months old. Furthermore, practically the same canning processes are needed for sterilization, no matter what the age, and the meat from the young birds is more likely to become overcooked.

#### Preparing the Meat

Meat for canning should be fresh and in good condition, and may be used as soon as the animal heat is gone. Wipe the meat with a damp cloth, remove bone and leave enough fat to give flavor. Excess fat will retard penetration of heat. Cut the meat into pieces suitable in size for filling the containers without cramming.

Prepare the chickens as for cooking. Pick, singe, remove pin feathers, wash, and cut into the usual pieces for serving. Clean thoroughly, taking care not to break the gall bladder, which would make the meat unfit for use. The lungs, kidneys, eggs, and liver should not be used for canning, but the gizzard and heart may be, if desired. Trim off the large pieces of fat, so that it may not

interfere with the penetration of heat. Cut the white in large pieces from the breast bone and shoulders, but leave the meat on the bone in other pieces. Cut the neck off close to the body. Use the very bony pieces, such as the back, neck, and perhaps the feet after they have been skinned, for making broth to fill up the containers. Make the broth by covering the bony pieces with lightly salted cold water, bring to the simmering point, and simmer until the meat becomes tender.

#### Preheating and Packing

Preheating may be done in several ways, the aim in all of which, however, is to heat the meat thoroughly until no red color shows. It is neither necessary nor desirable to preheat until the meat is cooked completely, since a subsequent canning process will then overcook the meat. Either tin cans or pint glass jars may be used as containers. Wash glass jars, lids, and tin cans before using. Keep lids for tin cans dry.

Pack the chickens without cramming, and use some pieces with bone in each container. Leave space for liquid to circulate around the meat.

Preheating may be done by any one of the following methods:

Method 1. Place the meat in boiling water to cover or in the case of chicken in a small quantity of water, lower the heat and simmer. After heating thoroughly, pack in tin cans, or glass jars, bring the broth to boiling, and pour over the meat to within one-half inch from the top of the container. Add salt, one-half to

one teaspoon per pint. If it is desired, a small quantity of gelatin, one tablespoon per pint softened in cold liquid, may be added to the broth. Fully seal tin cans or partially seal glass jars, and place each as prepared in the hot cooker so the meat will not be cooled.

Method 2. Place the meat in a baking pan, add a little water, and heat in a moderate oven. If the drippings are not dark brown, dilute with boiling water or broth (from bony pieces of chicken), and pour boiling water or broth over the meat in the container. Add salt, and gelatin, if desired as above. Seal as described under Method No. 1.

Method 3. When tin cans are used the meat may be put directly into the containers. Add salt, but no liquid except broth in the case of chicken. Leave at least three-fourths inch space at the top of the can, for the meat will expand when heated. Preheat by placing the cans in a bath of boiling water which comes to within 1 to 1½ inches of the top of the cans. Or the cans may be heated in a steamer. Continue heating until the meat in the cans becomes steaming hot. This requires about 40 to 60 minutes according to the size of the can. Seal as described under Method No. 1.

### Processing

After preheating, packing, and sealing, the containers of meat should be immediately processed, or heated, in the steam pressure cooker as directed below. The time periods given apply to meat which is steaming hot, or about 170° F. when packed or sealed.

For beef, veal, pork, mutton and lamb the processes are:

- No. 2 plain tin cans 85 minutes at 15 pounds of pressure or 250° F.
- No. 2½ plain tin cans 110 minutes at 15 pounds of pressure or 250° F.
- No. 3 plain tin cans 120 minutes at 15 pounds of pressure or 250° F.
- Pint glass jars 85 minutes at 15 pounds of pressure or 250° F.
- Quart glass jars 120 minutes at 15 pounds of pressure or 250° F.

For canning chicken:

With bone:

- No. 2 plain tin cans 55 minutes at 15 pounds pressure, or 250° F.
- No. 2½ plain tin cans 65 minutes at 15 pounds pressure, or 250° F.
- No. 3 plain tin cans 70 minutes at 15 pounds pressure, or 250° F.
- Pint glass jars 65 minutes at 15 pounds pressure, or 250° F.
- Quart glass jars 75 minutes at 15 pounds pressure, or 250° F.

Boned chicken:

- No. 2 plain tin cans 85 minutes at 15 pounds pressure, or 250° F.
- No. 2½ plain tin cans 110 minutes at 15 pounds pressure, or 250° F.
- No. 3 plain tin cans 120 minutes at 15 pounds pressure, or 250° F.
- Pint glass jars 85 minutes at 15 pounds pressure, or 250° F.
- Quart glass jars 120 minutes at 15 pounds pressure, or 250° F.

### Cooling

After processing glass jars or No. 3 tin cans, allow the pressure gauge to reach zero before opening the petcock, then open it gradually so there is no sudden outrush of steam. Complete the seal on glass jars, and place them in the open air, but protected from drafts, until cooled.

When No. 2 or No. 2½ tin cans are used, open the petcock on

the pressure cooker gradually at the end of the processing period and allow the steam to escape. Place tin cans of all sizes in running water to cool.

A Partial List of Manufacturers of Home Canning Equipment

Pressure Cookers (Steam)

- American Aluminum Ware Co., 370 Jeliff Ave., Newark, N. J.
- Automatic Canning Devices, Inc., Merchandise Mart, Chicago, Ill.
- Burpee Can Sealer Co., 2635 N. Kildare Ave., Chicago, Ill.
- Dixie Canner Co., Inc., Little Rock, Ark.
- National Pressure Cooker Co., Eau Claire, Wis.
- Sprague-Sells Corp., 308 W. Washington St., Chicago, Ill.

Water Baths, Racks, Jar Holders, Etc.

- Hamblin & Russell Mfg. Co., Inc., Worcester, Mass.
- Rochester Can Co., 109 Hague, Rochester, N. Y.
- P. S. Stahl Mfg. Co., Quincy, Ill.

Glass Jars

- Ball Bros. Co., Muncie, Ind.
- Glass Containers, Inc., Santa Fe Ave. & 38th St., Los Angeles, Calif.
- Hazel Atlas Glass Co., Wheeling, W. Va.
- A. H. Kerr & Co., Sand Springs, Okla.
- Peerless Glass Co., 36-20 Vernon Blvd., Long Island City, N. Y.
- Salem Glass Works, West Salem, N. J.

Rubber Rings

- Acme Rubber Mfg. Co., Trenton, N. J.
- Ball Bros. Co., Muncie, Ind.

Boston Woven Hose & Rubber Co., Cambridge, Mass.

Diamond Rubber Co., Akron, Ohio

B. F. Goodrich Rubber Co., 450 S. Main St., Akron, Ohio

Jenkins Rubber, Rubber Division, Bridgeport, Conn.

#### Caps For Glass Jars and Bottles

Anchor Cap & Closure Corp., 22 Queens St., Long Island City, N. Y.

Ball Bros. Co., Muncie, Ind.

Bernardin Bottle Cap Co., Evansville, Ind.

Hazel Atlas Glass Co., Wheeling, W. Va.

Kerr Glass Mfg. Co., Sand Springs, Okla.

#### Tin Cans

American Can Co., N. Y. City; Maywood, Ill.; Baltimore, Md.

Automatic Canning Devices, Inc., Merchandise Mart, Chicago, Ill.

Burpee Can Sealer Co., 2615 N. Kildare Ave., Chicago, Ill.

Central Can Co., Inc., 4527 W. Lake St., Chicago, Ill.

Continental Can Co., Inc., 100 E. 42nd St., New York, N. Y.

National Can Co., 71 Locust St., Boston, Mass.

#### Sealers for Tin Cans

Automatic Canning Devices, Inc., 549 Randolph St., Chicago, Ill.

Burpee Can Sealer Co., 215 W. Huron St., Chicago, Ill.

Dixie Canner Co., Inc., Little Rock, Ark.

National Aluminum Mfg. Co., Peoria, Ill.

#### Jelly Glasses

Hazel-Atlas Co., Wheeling, W. Va.

Ball Bros. Co., Muncie, Ind.

Capatan Glass Co., Connellsville, Pa.

A. H. Kerr & Co., Sand Springs, Okla.

Canners Labels

Color Print Label Co., 125 S. 8th St., St. Louis, Mo.

Maryland Color Printing Co., Holliday & Hillen, Baltimore, Md.

U. S. Printing & Lithograph Co., 318 Beech St., Cincinnati  
418 Cross St., Baltimore, Md.

Fuller Label & Box Co., 444 Dargen, Pittsburgh, Pa.

If the answer to each of these questions is "yes" the canned product should be a good one.

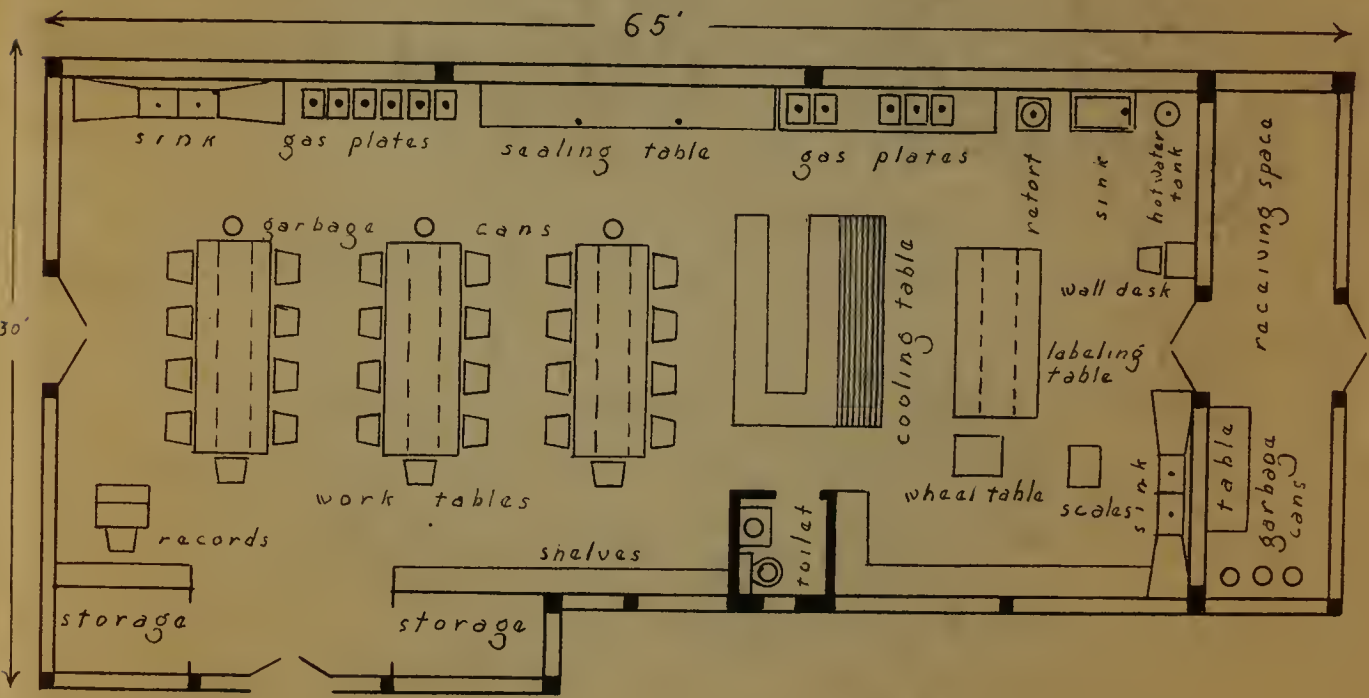
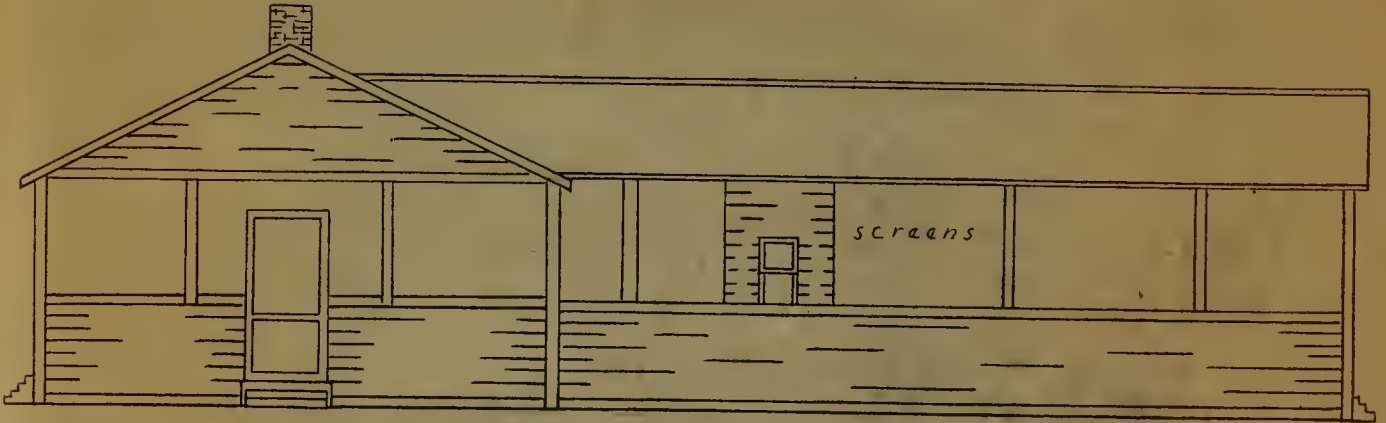
- 1 Is the jar clean? Without defects? Does the lid fit?
- 2 Is the rubber a good one? Is it clean?
- 3 Does the bail fit properly?
- 4 Is the material fresh?
- 5 Has the material been thoroughly washed, and properly prepared?
- 6 Is the blanching necessary and has it been properly done and in the right manner?
- 7 Was the material packed into jars promptly?
- 8 Is the jar properly packed? Enough but not too much?
- 9 Did you use hot liquid to fill the jars?
- 10 Did you shake or otherwise remove air bubbles?
- 11 Was the top of the jar rubber clean when lid was adjusted?
- 12 Was the bail over the lid and the side lever raised when the jar was ready for processing?

- 13 Was the jar placed in cooker very soon after packing?
- 14 If a hot water bath is used, then: Is the water hot, but cool enough so that jar will not break? (Approximately touch temperature)
- 15 Is there a rack in bottom of cooker? Does the water cover jars by at least an inch to two inches?
- 16 Did you start to count time when water was boiling vigorously and not before?
- 17 Did you reduce to moderate boiling after a full boil was reached?
- 18 Was water boiling for whole period?
- 19 Was the water over top of jars during the whole of processing period?
- 20 Was the jar processed the proper length of time?
- 21 Was the rubber in proper place when jar was taken from cooker?
- 22 Did you close the lever at once and examine for breaks or leaks?
- 23 Did you avoid setting hot jar on cold surface and in draft?
- 24 Were your products cooled before storing?
- 25 Were your products stored in a cool, dry place?

## VI. BUILDING AND EQUIPMENT

When planning and equipping a canning center the length of time it is to be used should be considered. The majority of projects are temporary and their main purpose are to conserve food, provide employment, save money and help provide food for needy families during the winter months rather than to run a permanent business for profit. Buildings especially designed for canning are advisable but old store

# A COMMUNITY FOOD PRESERVATION HOUSE



buildings, school houses, sheds or other structures can be equipped and used with satisfaction.

Every center is an individual but it is essential for all of them to have a supply of pure water, a good source of heat, cookers and other equipment, adequate and safe toilet facilities, good disposal of waste water and garbage, plenty of light and ventilation, screen doors and windows. Proper drainage around the building is essential, and the State sanitary code must be complied with.

The equipment should be arranged to save steps and avoid cross-travel. Sufficient heating surface and working space are essential.

The most commonly employed sources of fuel for canning are wood, coal, kerosene, gas, and electricity. Enameled cans are needed with some products to preserve color. There are two kinds of enameled cans.

(1) Sanitary enamel, which is bright gold in color and (2) C enamel, which is dull gold. The C enamel contains zinc oxide which overcomes sulfide discoloration.

Red colored fruits, beets, pumpkins and squash are packed in sanitary enamel cans to prevent discoloration due to the bleaching action of hydrogen formed by reaction between fruit acids and the iron.

In small centers, where a variety of products must be handled on the same day from a number of homes or gardens several small cookers ranging in size from 12 to 30 quarts in capacity are much more convenient and save time, heavy lifting and fuel.

Metal covering and rollers for tables should be used, floor trucks or wheel carts, ovens, brooms, mops, soap and cleaning powders.

Where retorts (pressure cookers) are used, time may be saved by having twice as many retort baskets as retorts. The use of cranes for lifting the filled baskets into and out of the retorts is also of great help.

Large steam pressure cookers called retorts are needed for processing meats and non-acid vegetables, which include all vegetables, except tomatoes, rhubarb and ripe pimientos. The 18 to 30 quart size of pressure cookers are suitable for both large households and small canning centers. For home use pressure cookers holding 6 to 12 quarts are most commonly used.

The gauges on pressure cookers are quite likely to get out of order and should be tested at the beginning of the canning season, and frequently thereafter. After all, a thermometer-equipped pressure cooker is safer and more satisfactory than one equipped with a pressure gauge.

Equipment Necessary for Canning

- |                  |                                    |
|------------------|------------------------------------|
| Stoves           | Kettles for heating water          |
| Sinks            | Kettles for precooking             |
| Table space      | Wire basket colanders              |
| Tin can sealers  | Funnels                            |
| Buckets          | Ladles or dippers, hooks on handle |
| Tubs for cooling | Can lifter tongs                   |

- |                        |                       |
|------------------------|-----------------------|
| Shallow pans           | Measuring cups        |
| Desk pans              | Paring knives         |
| Tablespoons            | Forks                 |
| Large handled spoons   | Hand or paper towels  |
| Teaspoons              | Wash basins           |
| Brushes for cleaning   | Pot holders or gloves |
| Scissors to cut leaves | Scales                |
| Thermometers           | First aid equipment   |
| Dish towels            | Garbage containers    |

Clock

Pressures and corresponding temperatures are as follows:

- |           |        |
|-----------|--------|
| 5 pounds  | 227°F. |
| 10 pounds | 239°F. |
| 15 pounds | 249°F. |

Water boiling vats may be used for processing the acid foods and fruits, that is those where the pH lies below 5.6. These vats must be deep enough to permit water to cover the food containers at least an inch deep. The containers must be placed on a rack in the water bath with space between for circulation of water. Cover the vats with lids to hold in the steam.

Commercial water bath cookers may be purchased from the Taylor Instrument Company, Rochester, New York, or the Bristol Instrument Company of Waterbury, Conn. Examine carefully and test seals on glass jars before using. Use only good quality new jar rubbers.

Use glass jar for products such as pickled beets, rhubarb and strawberries.

Average can size and their average net weight and capacity in cupfuls are given below:

8 ounce can contains 8 ounces or 1 cupful  
Picnic or No.1 can contains 11 ounces or 1-1/3 cupfuls  
No. 1 tall can contains 16 ounces or 2 cupfuls  
No. 2 can contains 20 ounces or 2½ cupfuls  
No. 2½ can contains 28 ounces or 3½ cupfuls  
No. 3 can contains 33 ounces or 4 cupfuls  
No. 10 can contains 6 pound and 10 ounces or 13 cupfuls.

The usual sizes used for home canning or in community canning work are No. 2, No 2½, and No. 3.

#### Tin Cans Vs. Glass Jars in Home Canning

There are several advantages in using tin for canning. Tin cans cost less, and have better heat penetration which shortens processing. They lose no liquid, may be immediately water cooled to prevent overcooking and are easier to handle and transport. There is no breakage loss.

The use of tin cans instead of glass jars in home canning is practical for the family "putting up" 400 or more packages per season. It is not recommended for those using less than this number.

Tin canned produce must go into the containers hot that is at a temperature not less than 160°F. in the centers of the can at the time the cover goes on. This means either preheating before filling, or exhausting by placing the filled but unsealed cans into hot water or steam until the interior of the can reached 160°F. or more. Except for this, tin can practice is much the same as glass jar practice.

The cost of heat varies with the type of fuel used, e. g. electricity, gas, coal, and oil. This item is more than 1¢ per pint on

"long process" goods such as corn or peas. Equally, it is less than 1¢ per pint on fruits.

Price of glass containers is based on "average life" shown by replies to questionnaires, which reported this as four years. An 8¢ jar lasting four years would cost 2¢ a year.

No charge is made for the use of the sealing machine necessary in tin can work. Such machines cost about \$12.00 and are good for probably ten years without replacing except for spare parts. Spreading this cost of \$1.20 per year over 500 to 1,000 cans makes it of little importance.

#### Tin Can Canning at Home

In using tin cans, the procedure is somewhat different than when using glass jars. Non-acid foods, as vegetables, should be canned in "plain" tin. Fruits, including tomatoes, in "fruit enamel" tins. Corn takes a special enamel and it is advised that glass be used for this crop. If the following outline is followed the results should be satisfactory.

1. Prepare the material as for use for glass jar work.

With beets, carrots, tomatoes, and peaches, blanch to loosen skins, and then peel.

2. Bring prepared material to boiling heat. Use little water, just enough to prevent scorching.
3. Pack into cans as hot as possible. Use a perforated spoon or dipper to move the product from the kettle to the can. Fill closely but loosely to one-quarter inch from top of can. Add

one half teaspoonful salt to 2 or 1 tsp. to No. 3 can of vegetables.

Fill to one-quarter inch from the top with boiling water. The temperature of the product in the can of vegetables must be 170<sup>0</sup>F. or higher.

Fruits, except tomatoes, may be packed cold, then filled to one quarter inch of the top with boiling syrup just before sealing.

- 4 Put the cover on the can and seal with the machine. Sealing must be done while the cans are hot so as to allow a good vacuum.
- 5 Place cans in boiler or cooker as fast as sealed. The water in the cooker should be boiling.
- 6 Boil, or otherwise process, the filled can for the time specified in any standard home canning bulletin.
- 7 At the end of the processing period remove the cans from the cooker at once and place in cold water for 1 or two hours.

## VII Personnel and Management

Naturally no one community plan will fit all localities and they should be worked out and based on the needs of the community to be served. There should be a manager to direct all work, see that records are kept, containers of foods properly labeled and that the employees are contented. Men are needed for heavy work.

For successful community canning centers the work is supervised by a man or woman trained in canning and preserving methods. The Home Demonstration Agent or Home Economics teacher are often

able to give good advice. The canners may work in teams in specified hours or days.

Daily records are needed, according to the center's requirements. The cannery should have appointment blanks by communities or families and a canning record to show when center was used by each family, number of hours and equipment used, and what products were prepared.

The records should show:

1. Product: Kind, owned or furnished.
2. Containers: Glass, number and size; tin, number and size, owned or furnished, what processing method used; number of containers taken home; number left for use of canner or relief agencies.
3. Cost record of products, supplies, containers, and all equipment purchased for the center and of repairs; also volunteer or paid help by manager or assistants.
4. Registration file showing the name, community and post office address of persons on relief rolls served by the center and an estimate of what they need in addition.

In return for the use of equipment, families who are not on the welfare or own a share in the equipment are charged a toll of a percentage of their finished product. Notices posted in large print and at appropriate places are suggested as follows:

1. Schedule for the center: working days; hours: days assigned to each community.
2. State sanitary regulations for the canning plants.

3. Directions for operating cookers.
4. Time tables for processing.
5. Rules for the care of the equipment.
6. Rules for the care and cleaning of waste.
7. Sample canning budget.
8. A statement of toll to be levied for use of equipment.
9. Bulletin board for special notices and assignments.

All canning centers should make provision for receiving and checking products to be canned. Foods to be canned should be of good quality and canned as soon as possible after they are gathered. Only what can be used in a day should be delivered at a time, preferably early in the morning. When all materials cannot be used place them in a cool place well ventilated or in a refrigerator.

The canning plant must provide facilities for:

1. Removing and disposing of water.
2. Washing products to be canned.
3. Washing of containers, equipment, utensils and towels.
4. Heating water.
5. Grading and preparing products for canning.
6. Sterilizing glass jars if open kettle method is used.
7. Scalding or pre-cooking products to be canned.
8. Marking containers before processing.
9. Filling products into containers.
10. Sealing while the headspace is filled with steam.

11. Processing glass jars
12. Cooling tin cans in running water; glass jars in air out of a draft.
13. Cleaning and labeling the finished products.
14. Cleaning up inside and out.
15. Toilet and hand washing provision.

Arrangements must be made for the financing of the canning center before it is put into operation. There must be arrangements made for housing the activities, purchase and installation of equipment, provisions for repairs, containers for food and the salary of a trained supervisor. In some cases everything is furnished by mill owners, factory managers, banks, county organizations, school boards, civic organizations, American Red Cross, or by state or county relief administrations. For use of the center a proportion of the product is canned, or a certain amount of the labor, is often required of the persons who put up foods for their own use. In this way many centers have stored up a large stock of canned goods for distribution to the needy or for sale.

#### VIII. Manufacturing Methods or Adaption of Existing to Local Conditions

The object of some community canning center is to give people an opportunity to repay the city with work for the aid received. Dependent families are given a garden and canning project, they grow fruits, vegetables and raise meat, then when it is time to harvest it the welfare or some relief organizations set up a cannery outfit in

the center of the community where the products are grown. Each family or group may set a time and date when it will be most convenient to can their product and about how much they will have.

A trained leader who will have charge of each center will make an estimate of time, containers needed, and make necessary arrangements. Each group receiving welfare aid will have a similar schedule or kitchen appointment blank, by committees and families. The financing of the canning center must be arranged before any plans can be put into operation. Housing activities, purchase of equipment, containers for the food and the salary of a trained supervisor are the most serious problems.

In return for the use of equipment, cans and labor, families who bring their own products to the center for canning are charged a toll in the form of a percentage of their finished product and in some cases the canning cooperative relief administration will take care of all expense.

#### IX. Storage and Distribution

Four factors should be taken into consideration in preparing canned products for the market:

1. Containers
2. Contents
3. Labels
4. Packing cases

In fruits and vegetables flavor and attractiveness are the factors which determine the continued sale of the product. Therefore a first grade should be put on the market.

The guarantee can be made effective by the label bearing the name of the product, and the name and address of the persons who packed the product, and the net weight of contents. The community cannery may have a label bearing its name with name or number of persons who canned the jar. This will help to reduce carelessness on the part of the employee.

Home canned goods are as good in quality as commercially canned and will sometimes bring better prices than the highest grade of commercial goods, if sold. Most successful cooperative canneries are those that run from May to December and put up a variety of products as they mature, unless they are canneries for a special kind of product.

Canning is not a by-product business and the cannery should be located close to production centers of the commodities, should have good sanitation, good drainage and ventilation.

If the products are to be sold it is necessary that the manager keep in close touch with the market demands, marketing conditions, trade preferences and improvements so he may market his products to the best advantage.

The products of the cannery packed in cardboard or wooden cases holding 24 cans ~~+~~ No. 2 or 2½ size are best stored in a basement or other cool place until distributed. The cooler the storage, the better, because in fruits and tomatoes deterioration in quality proceeds at a much more rapid rate at warm temperatures. In fact, for each 18°F. increase in temperature there is approximately double the corrosion or chemical reaction in the can. Thus cool storage greatly extends the storage life of many canned foods. If possible freezing should be avoided as it softens the texture of most vegetables and may injure the flavor as well.

There are many methods of distribution. The cooperative cannery may take their own products home with them on the same day as canned. This saves time. In welfare work, however, it is usually necessary to store the accumulated canned foods at the cannery itself or in a warehouse for later distribution. It may even be desirable to divide the products into lots and store them at several different places where they will be more accessible to the people who will use them during the winter.

SUMMARY

1. The functions of community canning centers are to: save surplus food and have a fresh supply of fruits and green vegetables in and out of season; give people who receive welfare aid an opportunity to repay for aid received and reduce the number of dependent families; make it possible for those who do not have equipment and the intelligence to can, to get their products canned; prevent the selling of fresh products at a loss; increase occupations; make possible a balanced diet which may increase health and prolong life; bring people together who live in isolated sections; automatically increase cooperation and social activity; influence the morals of the men and women who have been given jobs so that they will feel they are earning the food they eat, and that they are citizens and not wards of the city or county.
2. Plans are given relative to the type and design of buildings and equipment. A typical floor plan is presented.
3. In general, these canneries are most efficient when operated on a strictly business-like basis, with a well-trained local leader in a small community.

4. It is far better to concentrate attention on three or four fruits and vegetables than to attempt to pack everything which may be grown. Some of the products which lend themselves for this kind of work are snap beans, greens, sweet corn, strawberries, peaches and meats.
5. Working practical recipes and procedures for canning a variety of foods are described. The first aim is to produce a safe canned food. Attractiveness is also of paramount importance.
6. A community canning project, or a combined garden-canning project, is one of the most effective means of aiding families which are publicly supported. In addition to the work involved, good food is preserved and it may be later consumed by the very people who produced it.
7. For rural families, the toll method of paying for use of the cannery and its equipment is very satisfactory.
8. The educational and social aspects of community food preservation projects are important factors.
9. Community canning centers encourage farmers and urban dwellers to plant gardens and produce vegetables. The vegetables that cannot be consumed fresh may be conveniently canned. Better nutrition for the family thus results, particularly during the winter when the diet is normally poor and often actually defective.

10. In conclusion, the community canning center in negro communities in North Carolina seems to offer large returns in better food, quantity and variety, improved health, and greater economic independence. At the same time the knowledge of food preservation gained by the people will serve them well in the future.

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