

4.H CANNING



QUALITY CANNED FOODS

When canned fruits and vegetables are judged, the following points are taken into consideration: natural color of fruit or vegetable, clearness of liquid, natural flavor of food, texture of product, ripeness and freedom from defects, sorted sizes, attractiveness of pack, and uniformity of containers. Labels should be placed under the bottom of the jar.

When fresh, high-quality products are properly packed and processed, the 4-H club member can then make a display of which she can be justly proud. Canning can be lots of fun and satisfaction, if good products are produced. A little study and attention to details will enable any 4-H member to do excellent canning. There is a great deal of joy in helping others, once the job has been thoroughly learned.

For information on canning other fruits and vegetables, write for Extension Circular No. 271 by Mary L. McAllister. The basic information of that circular was used in developing this special 4-H publication.

4-H CANNING

of

Fruits and Vegetables

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Canning can be lots of fun, if the best products of the garden and orchard are used; if correct canning methods are followed; and if high quality canned fruits and vegetables result.

There are two methods of canning; one is the boiling water bath canner, and the other is the pressure canner. The first method is used for fruits and tomatoes. The tomato is an acid vegetable and it is canned just like the fruits.

Such vegetables as beans, beets, corn, and peas—all of which are non-acid—must be canned with the pressure canner. This is a safety measure. Tiny organisms like molds, yeasts, and bacteria cause fresh food to spoil. By canning fruits and vegetables at a high enough temperature and for the required length of time, these organisms are made harmless and the food will keep.

The temperature is high enough for fruits and tomatoes at the boiling point of 212 degrees Fahrenheit. To thoroughly process the non-acid vegetables, the temperature should be carried to 240 degrees F. or 10 pounds of pressure, as shown on the gauge of the pressure canner.

WHY CAN?

Of course, fresh fruits and vegetables are best, but some provision must be made for the winter months when they are not in season. When the surplus of summer fruits and vegetables is canned, the family is provided with food to improve the winter diet and to bring better health. Canning also saves dollars.

The body requires seven basic foods for health and three of these food groups can be supplied through fruits and vegetables. Plan 2 servings of fruit and 3 servings of vegetables each day.

The three basic foods in which 4-H club canners are interested are those that furnish liberal quantities of vitamins A, B₁, and C, and also minerals.

Such green and yellow vegetables as asparagus, okra, green peas, string beans, spinach, turnip greens, carrots, squash, and wax beans furnish vitamin A.

Apples, cherries, all berries, peaches, pears, plums, beets, corn, lima beans, and the soup mixture furnish vitamin B₁, and minerals.

Tomato juice and raw green salads give vitamin C, other vitamins, and minerals.

EQUIPMENT

The boiling water bath canner can be a wash boiler, a bucket or a lard pail. Any vessel that has a tight fitting cover and a false bottom of slatted wood or coarse mesh screen wire to hold the jars off the bottom of the canner will serve. It should be tall enough to allow for one inch of water to cover the jars after they are placed on the false bottom of the canner.

The pressure canner is made of strong metal to hold steam under pressure and thus give a higher temperature than boiling. The canner is composed of a kettle, rack, and a lid. On the lid of most pressure canners there is a gauge and a combination safety valve and petcock. On some of the canners the safety valve and petcock are separate. The lid is made tight to the kettle by thumb nuts, a screw band, a slide closure with lugs, or by a lock closure to hold in all the steam.

Other pieces of equipment needed are pans for washing and preparing the products, kettles for pre-cooking the vegetables, paring knives, a tablespoon, a teaspoon, a measuring cup, clean cloths, and a clock.

THREE TYPES OF JARS

There are three kinds of jars for canning: the lightning type, the standard Mason, and the commercial jar.

LIGHTNING TYPE. — In using the lightning type jar, fit the wet rubber ring in place on ledge at top of jar. Put on the glass lid and then push the long wire clamp tight over the top of the lid. Be sure to leave the short wire loose while processing. After the jar of food has been processed and taken out of the canner, push the short wire down to complete the seal.

MASON JAR. — The Mason jar has four kinds of lids. The first two, as shown in the photograph, are of the two-piece vacuum seal type. They have a flat metal lid with "made on" rubber or sealing compound and a metal screw band. Place the wet metal lid, with the rubber side down, on the top of the



The three types of jars, from left to right, are the lightning type, the standard Mason, and the Commercial. Note that the Mason has four different kinds of lids. The first two are the two-piece vacuum seal lids. The next is the three-piece lid, consisting of rubber ring, glass lid, and metal band. The fourth type of lid for the Mason jar consists of a rubber ring and a metal cap with a porcelain lining. Study carefully the instructions for sealing each of these jars under the heading, "Three Types of Jars."

filled jar. Screw the band on firmly and **do not tighten it again, even after the jar of food is taken from the canner.** When the jar has cooled for 12 to 24 hours, take the metal band off the jar.

The three-piece lid is composed of a rubber ring, a glass lid, and a metal band. Place the lid, with the rubber side down, on top of the filled jar and screw the metal band on firmly. Then, **turn the band back one-fourth way around the jar.**

After the jar of food has been processed and taken out of the canner, screw the band on tight. After the jar has cooled for 12 to 24 hours, take the metal band off the jar.

The last type of lid for the Mason jar has a metal cap with a porcelain lining and a separate rubber ring. Place the wet rubber ring on the shoulder of the jar, screw the metal cap tightly in place, and **then turn the metal cap back one-fourth of an inch.** Immediately after removing the jar from the canner, tighten the cap.

COMMERCIAL JAR. — The commercial jar requires a No. 63 lid and this lid should be bought new. This new lid is held in place by the original screw lid that came with the jar. Before

using, remove the paper lining or sealing compound from the metal lid, and punch one or two holes from inside, so that the lid will act as a screw band. In canning with commercial jar, follow the directions already given for the two-piece vacuum seal lids.

GET JARS READY

Pint jars are used for such vegetables as corn, lima beans, and peas, and also for meat. Quart jars are used for fruits, tomatoes, and other vegetables. Wash the jars in hot, soapy water, and then rinse them well.

Place the jars in a pan of warm water or in the water bath canner with the rack in the bottom. Bring the water to boiling and allow the jars to boil for 10 minutes. Remember to keep the water hot until the jars are removed, one by one, for filling.

STEPS IN CANNING

1. Can only fresh and sound products. Wash thoroughly. With tomatoes, for example, be sure that they are firm and free of any disease spots.

2. Check the canner to see that it is in good working order. Assemble all your equipment.

3. Wash the jars thoroughly, boil for 10 minutes, and keep them in hot water.

4. Precook the fruits or vegetables, as the directions require, but not more than 2 to 3 quarts at a time.

5. Pack the hot products into hot jars. Add water or syrup as the jars are filled to prevent air bubbles.

6. Allow one-half inch head space at the top of the jar for all foods except such starchy vegetables as corn, lima beans, and field peas. These vegetables require one inch head space. (An exception—when using the three-piece lid allow one inch head space for all foods.)

7. Wipe the rim of the jar, adjust the rubber ring and top, and seal as directed under the heading, "Three Types of Jars."

8. Place the jars on the false bottom or rack in the canner.

9. In the use of the Boiling Water Bath Canner, begin to count the processing time from that moment when the water boils vigorously. With the Pressure Canner, count the processing

time from the minute the gauge registers the number of pounds of pressure desired.

10. Adjust the heat to keep the water boiling constantly in the boiling water bath canner. Maintain steady pressure in the steam pressure canner by giving more or less heat.

11. Remove the jars from the boiling water bath canner, when the processing time is up, one at a time and seal at once, except for the two-piece vacuum lid and the commercial lid, which should not be tightened again.

Remove the pressure canner from the heat, when the processing time is up, and allow the canner to cool until the gauge registers zero. Open the petcock cautiously, or take off the weighted gauge. Remove the lid away from you as a safety measure. Remove jars and seal at once.

12. Cool all jars right side up.

13. If a jar has a faulty seal, replace the rubber ring with a new one and process the jar of food for an extra 5 minutes.

14. Never use canning powders because they may be harmful.

USE OF PRESSURE CANNER

1. Pour about 2 to 3 inches of water into the canner and place the canner on the stove. If the canner leaks steam, more water should be added.

2. Place each jar in the canner as soon as it is packed.

3. When the canner has been filled, fasten the top securely.

4. Allow the petcock to remain open until the steam has been escaping in a steady stream for at least 10 minutes.

5. Then close the petcock, or put on the weighted gauge. Allow the pressure to rise slowly until the gauge on the pressure canner reads 10 pounds.

6. When this pressure has been reached, begin to count the time for processing.

7. Process for the length of time required for the size of the container and the product.

8. Adjust the heat to hold steady pressure.

9. At the close of the processing period, remove the canner from the heat.

10. Do not open the petcock until the canner has been allowed to cool and the gauge registers zero. Then, open the petcock

cautiously, or take off the weighted gauge. Remove the lid carefully. Failure to follow these precautions may result in severe burns.

11. Remove the jars from the canner one at a time. Self-sealing tops—the two-piece vacuum lids—do not need to be tightened again. Jars with other types of tops should be completely sealed.

12. Cool jars right side up.

13. Then store in a clean, dark, and well ventilated place.

14. Wash the canner thoroughly. Clean the safety valves and be sure that it is dry. A safety valve that fails to operate may cause an accident.

SYRUPS FOR FRUITS

Fruits can be canned without sugar. On the other hand, sugar helps canned fruit to hold its flavor, color, and shape. To make syrups, boil sugar and water together in the proportions given below, and allow $\frac{3}{4}$ to 1 cup of syrup for each quart of fruit.

SYRUP	SUGAR	WATER or JUICE
Thin	1 cup	2 cups
Moderately thin	1 cup	1 cup
Medium	1 cup	3 cups

DIRECTIONS FOR PROCESSING

FRUITS AND TOMATOES

Only fresh, high-quality products should be used for canning. Study all previous information given on equipment, types of jars and sealing, and the steps to be followed in canning.

APPLES.—Peel, cut, and drop into a solution made of 2 quarts of water, 1 tablespoon of vinegar, and 1 tablespoon of salt. This keeps the fruit from darkening. Then, drain the apples. Drop them into a boiling, thin syrup and boil for 5 minutes. Fill the hot jars, cover with boiling syrup, and adjust the lid in accordance with instructions given under "Three Types of Jars." Process pints and quarts for 15 minutes.

PEACHES.—Wash thoroughly and sort as to color, ripeness, and size. To peel put the peaches in a piece of cheese cloth and

dip into boiling water for a minute or two, and then in cold water. Peel, cut into halves, and remove the pit. To prevent darkening, use the solution given under "apples." Drop peaches into boiling syrup and then boil for 1 minute. Pack hot fruit into hot jars. Pack in jars in overlapping layers, with the pit side down and the stem end toward the center of the jar. Cover the fruit with boiling syrup and adjust the lid of the jar in accordance with instructions already given. Process pints and quarts for 20 minutes.

PEARS.— Wash, peel, cut into halves, and core. Remove all hard portions around the seed. To prevent darkening, use the solution given under "apples." Place the halves in boiling, medium syrup and allow them to cook until almost tender. If Kieffer pears are used, cook until tender in water and then add fruit to the syrup for 1 minute. Pack hot fruit into hot jars, and cover fruit with syrup. Process pints and quarts for 20 minutes.

ALL BERRIES EXCEPT STRAWBERRIES.— Remember to use only ripe but firm berries. Precook for 1 minute in thin or medium syrup. Pack hot berries into hot jars, and cover with hot syrup. Adjust lids properly and process pints and quarts for 15 minutes.

TOMATOES.— All tomatoes should be ripe, firm, and free of any disease spots. Put them in a thin muslin sack and dip into boiling water for 1 minute. Dip quickly into cold water, and peel and core at once. Cut into quarters. Bring tomatoes to a rolling boil, stirring slightly to distribute the heat. Pack hot tomatoes into hot jars, add 1 teaspoon of salt to each quart. Adjust the lid of the jar in accordance with instructions given. Process pints and quarts for 15 minutes.

PROCESSING NON-ACID VEGETABLES WITH PRESSURE CANNER

LIMA BEANS.— Wash the beans before shelling. After shelling, sort as to size and cover the beans with boiling water. Then bring to a boil and pack hot into hot jars, to 1 inch of top. Cover with fresh boiling water leaving 1 inch of head space, and add 1 teaspoon of salt to each quart. Adjust lids in accordance with instructions previously given. Process pints for 35 minutes and quarts for 60 minutes, at 10 pounds pressure (240° F.),

SNAP BEANS. — Use only young, tender beans, and wash thoroughly. String and cut into 1 inch pieces. Cover with boiling water and boil for 5 minutes. Pack hot beans into hot jars to $\frac{1}{2}$ inch of top. Add 1 teaspoon of salt to each quart. Cover with hot cooking liquid or fresh boiling water, leaving $\frac{1}{2}$ inch head space. Adjust lids in accordance with instructions already given. Process pints for 20 minutes and quarts for 25 minutes, at 10 pounds pressure (240° F.).

BEETS. — Use only young, tender beets. Trim the tops so as to leave 1 inch of stem, and do not trim the roots. Wash thoroughly. Put the beets into boiling water and cook until the skin slips easily—15 to 25 minutes according to size. Skin, trim, and grade as to size. Can baby beets whole; medium beets cut in $\frac{1}{2}$ -inch slices, halve or quarter, if necessary. Pack hot beets into hot jars to $\frac{1}{2}$ inch of top and cover with boiling water leaving $\frac{1}{2}$ inch of head space. Add 1 teaspoon of salt to each quart jar. Adjust lids in accordance with instructions already given. Process pints for 25 minutes and quarts for 55 minutes at 10 pounds pressure (240° F.).

CORN (Whole Grain) — Use only freshly gathered corn. Shuck, silk, wash. Cut the corn from the cob to get most of the kernel. Work quickly. To each quart of corn, add 1 pint of boiling water. Bring to a boil and pack the hot mixture into hot jars to 1 inch of top, dividing hot cooking liquid among the jars. Leave 1 inch head space. Add 1 teaspoon salt to quarts. Adjust lids of jars in accordance with instructions already given. Process pints for 55 minutes and quarts for 85 minutes, at 10 pounds pressure (240° F.).

CORN (Cream Style) — Prepare like whole-grain, except cut kernels slightly farther from cob and scrape cob. Pack hot to 1 inch of top of pint glass jars, dividing hot cooking liquid among the jars. Leave 1 inch head space. Add $\frac{1}{2}$ teaspoon salt. Adjust jar lids. Do not use quart glass jars. Process pint glass jars 85 minutes at 10 pounds pressure (240° F.).

GARDEN PEAS. — Wash thoroughly. Shell and cover peas with boiling water. Bring to a boil. Pack hot peas into hot jars to 1 inch of top and then cover them with boiling water, leaving 1 inch head space. Add $\frac{1}{2}$ teaspoon of salt to each pint jar. Adjust lids of jars in accordance with instructions already given.

Process pints and quarts for 40 minutes at 10 pounds pressure (240° F.).

SOUP MIXTURE. — A soup mixture is made in the following proportions: 5 quarts of tomatoes, 2 quarts of corn, 2 quarts of okra or lima beans, 2 level tablespoons of sugar, and 2 level tablespoons of salt. Scald tomatoes as given under the heading "Tomatoes," peel, and cut out all hard or green spots. Chop and measure out 5 quarts. Cut tender corn from cob and measure 2 quarts. Slice okra into rings one-half inch thick and measure 2 quarts. Lima beans may be used in place of okra. Place all the products into an open agate kettle, and add the 2 level tablespoons of sugar and 2 level tablespoons of salt. Boil for 10 minutes. Put the hot mixture into hot jars. Adjust lids of jars in accordance with instructions given. Process pints for 60 minutes and quarts for 70 minutes.

CANNING BUDGET

In making up the canning budget for the family, remember that each member should have 32 quarts of vegetables and 24 quarts of fruits.

To obtain a varied diet, each person can be provided with the following number of quarts of vegetables: asparagus, 1; snapbeans, 4; lima beans, 1; beets, 2; carrots, 1; corn, 1; greens, 1; okra, 1; garden peas, 2; soup mixture, 6; and tomatoes, 12. A typical budget for fruits follows: apples 3 quarts; blackberries, 3; dewberries, 2; huckleberries, 2; cherries, 1; grapes, 2; peaches, 4; pears, 4; plums, 2; and fruit juices, 1.

Additional products suggested for each person are: canned meats, 10 quarts; kraut, 1; pickle, 1; relish, 1; preserves, 2; jam, 2; jelly, 1; dried vegetables, 10 pounds; and dried fruits, 8 pounds.

For Western Carolina, where the growing season is limited to 3 to 4 months, increase the budget by one-half or more.

MARCH, 1947

(REVISED) 4-H CLUB SERIES No. 55

NORTH CAROLINA STATE COLLEGE OF AGRICULTURE AND ENGINEERING
OF THE
UNIVERSITY OF NORTH CAROLINA
AND
U. S. DEPARTMENT OF AGRICULTURE, CO-OPERATING
N. C. AGRICULTURAL EXTENSION SERVICE
I. O. SCHAUB, DIRECTOR
STATE COLLEGE STATION
RALEIGH

DISTRIBUTED IN FURTHERANCE OF THE ACTS OF CONGRESS OF
MAY 8 AND JUNE 30, 1914

The photograph on the cover is of Norma Jean McLamb, outstanding 4-H club members of Halls 4-H Club in Sampson County. Photo by Elsie Lee Smith.