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Modern Methods of Canning



Jar on left ready for boiling and not tightly sealed. Jar on right tightly sealed after being taken from boiler.

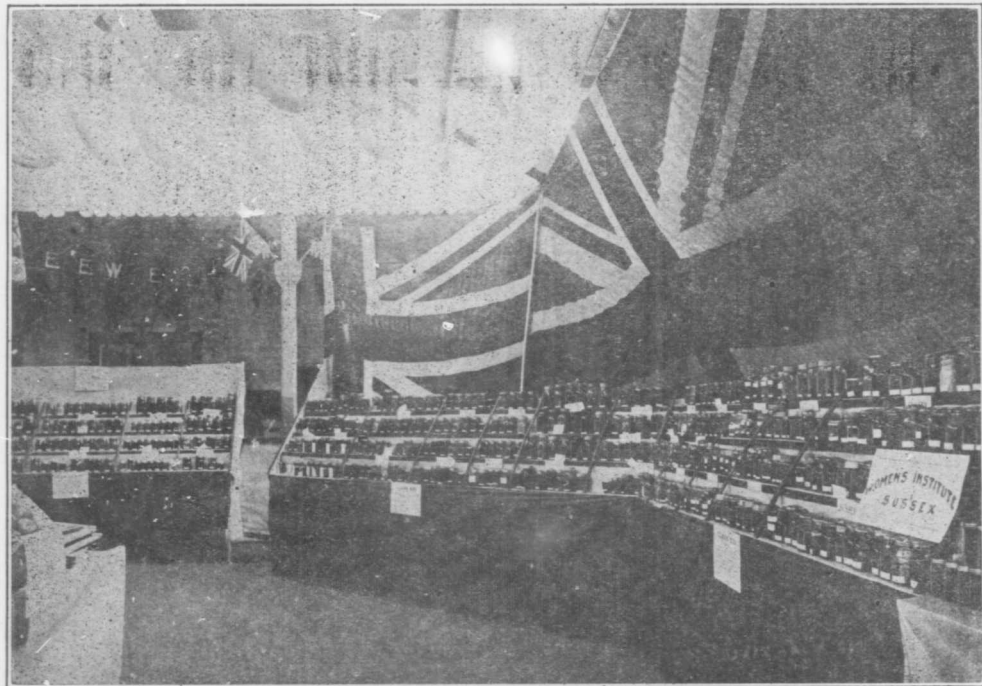
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Household Science Demonstrator

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View showing Women's Institute Exhibit of Canned Fruits and Vegetables at Third New Brunswick Apple Exhibition, St. John, October 31, November 1, 2, 3, 1916.

MODERN METHODS OF CANNING

INTRODUCTION.

We do well to take a lesson from the bees and in the long summer days store up food for the winter. If we can kill bacteria in food and then seal tightly, it will keep indefinitely. This we do in canning. The growth of bacteria in the food is prevented by sterilization and is kept sterile by hermetically sealed jars.

With the whole country calling for economy as well as increased food production, it becomes a problem of national importance to prevent the waste of food. This may be done by canning and thus put to profitable use the surplus products of vegetable gardens and orchards and in this way insure a supply of fruits and vegetables for a time when the fresh products are not available. It gives the much needed variety to the winter menu and very materially reduces the high cost of living.

It is natural for the thrifty person in prosperous times to give some thought to a possible time of need and thus preparation is made for the future. Winter's diet need no longer be distinguished by lack of fruit and vegetables. Not only has nature been persuaded to prolong her period of production, but also ways have been perfected for the preservation of the perishable crops of summer. Preservation of food in the home, particularly in the farm home, is a very important part of the housekeeper's responsibilities. The thrifty housekeeper will make a greater effort than usual this year to have her shelves well stocked with provisions of many kinds for the coming winter. Prices that soared to a dizzy height last year will again soar; also, now it is a patriotic demand that the garden surplus be canned, thus releasing other foodstuffs for consumption overseas.

IN GRANDMOTHER'S DAY.

Many of the important factors of food preservation were known years ago, and food was kept by drying, salting, smoking and by a low temperature. It has been left to civilization and to the advance of science to give reasons and perfect methods.

Our grandmothers believed that air caused foods to spoil, for they learned by experience that when fruit was cooked and put away in sealed jars from which all air was excluded, it seemed to keep fairly well; if food spoiled after such careful treatment it was believed to be owing to some failure to exclude air. We know now that merely removing air will not secure the keeping qualities of foods. When the canned foods of olden times kept, it was not because air had been removed, but because all life processes had been destroyed in the cooking and further entrance of more organisms had been prevented by keeping the food in air-tight jars. The presence of air in a jar will not cause food to spoil, provided the air is sterile, that is, provided it has been freed from all living organisms.

WHY FOODS SPOIL.

If foods are to be kept successfully from one season to another, it is necessary to have as nearly as possible exact knowledge of the conditions that interfere with their preservation.

Food spoils because of the presence on it of minute living organisms that make it undesirable and even harmful. To prevent food from spoiling it is necessary to protect it from invasion by these invisible as well as visible enemies.

All micro-organisms need warmth, food, moisture and air to make them grow. It is now known that some micro-organisms that cause food to spoil may assume two forms, the spore form and the active form. In the spore form these organisms are very difficult to destroy and may live even after being subjected to the boiling temperature, unless this temperature is kept up the proper length of time to complete sterilization.

STERILIZATION.

The secret of success in canning depends upon two things: First, complete sterilization, that is the destruction by heat of all germ life on the food and on all parts of the jar that come in contact with the food. Second, care to prevent further entrance of these organisms that cause foods to spoil.

SOME TERMS EXPLAINED.

Scalding—Boiling water is poured over the fruit or vegetable and allowed to stand a few minutes, then drained. This is done to loosen the skin and eliminate objectionable acids.

Blanching—The vegetables are covered with boiling water and boiled according to length of time given in time table. This is to remove objectionable flavors, to reduce the bulk and aid in sterilization.

Cold Dip—Dip fruit or vegetable in cold water. This is to harden the pulp under the skin, set the color and make it easier to handle the product in packing.

Scalding and blanching are always followed by cold dip.

PREPARATION OF JARS.

1. Test each jar before using by partly filling it with water with rubber ring adjusted. Seal tightly and invert on a dry surface. If no traces of moisture can be seen, the jar may be used.

2. Sterilize jars and covers by putting them in a vessel of cold water, bring water to boiling point and boil 15 minutes. Remove jars from water and fill at once with the prepared fruit or vegetables. Do not allow jars to stand any length of time after being sterilized.

TEST FOR RUBBERS.

A good rubber will stand considerable pulling and will return to its original shape. A good rubber will also stand several hours boiling when placed on jars, without being affected. Sterilize rubbers by pouring boiling water over them and allowing them to stand for a few seconds before using. Never use rubber rings more than one season.

EQUIPMENT FOR CANNING.

The equipment for canning is simple. An ordinary wash boiler may be used for the work, but it must be fitted with a false bottom or slats of wood to prevent the jars coming too near the direct heat.

COLD PACK METHOD.

The fruit or vegetable is partially sterilized by scalding, blanching and cold dipping, then packed in jars and the jar filled with water or syrup, according to food canned. This cold pack method is used when a natural flavor is the object and a rich, highly sweetened product is not desired.

The advantages of the cold pack method are many. In the case of vegetables, it makes it possible to can successfully many more varieties than in the old way. In the case of fruits, the flavor is better and the shape is more successfully retained. One of the greatest advantages is that most of the work may be done away from the stove. The food may be carefully and leisurely packed in the jars near some cool window and thus the hot work is reduced to a minimum.

PRACTICAL POINTS IN CANNING.

1. Select firm, well grown, but not over-ripe fruit.
2. Choose vegetables that are young and have made a quick growth.
3. Best results are obtained by grading the fruit or vegetables with reference to size and quality, so that the contents of each jar will be uniform.
4. Can all fruit and vegetables as soon as possible after being picked; very often failure to do this results in spoilage.
5. Avoid very dirty fruit or vegetables.
6. If the fruit or vegetable is a kind that discolors after being pared, cover with slightly salted water until ready to can.
7. Prick skins of plums or cherries to prevent them from bursting.
8. When packing food in sterile jars, consider the appearance of the finished jar and arrange the food carefully.
9. Never use tin or iron utensils for canning, as the acid in the food acts on them, causing a bad color and taste. Use a silver knife in preference to steel as the steel discolors the food.
10. Do not seal jar tightly until the cooking is complete. Seal as soon as taken from boiler.
11. To make the syrup for canning, use 4 cups sugar and 6 cups of water. The western method is 6 cups sugar and 4 cups water. It is well to use as thin a syrup as possible, as flavor is lost in some fruits with the increase in the proportion of sugar. Canned fruit, not "preserves," is being made, and only sugar enough to make the fruit palatable is necessary. The amount of syrup from 4 cups sugar and 6 cups water is sufficient for about four quart jars of raspberries or other closely packed fruit, or three quart jars of halved pears or peaches, or two quart jars of large whole fruit. With only a few ex

ceptions, the same strength of syrup is used for all fruits. The amount of syrup added to each jar adjusts itself according to whether the fruit packs loosely or closely in the jar. It so happens that the sweeter fruits, such as berries, pack closely and so require less syrup than the large, loosely packed acid fruits.

12. Do not allow jars to come in contact with one another in boiler. Excelsior or folded paper will prevent this.

CANNING OF FRUITS AND VEGETABLES.

Canning may begin in June, as some of the greens are ready at this season. Rhubarb is the first product of the garden to find its way into cans, and it may be canned without heat. Wash the tender stalks of rhubarb, cut into half-inch pieces, and pack them as closely as possible into sterilized jars. Do not peel the rhubarb, it is a waste of time since it does not add to the appearance or affect the flavor. Fill jars with cold water, allow to stand a few minutes, drain and fill again, making sure that no air bubbles remain. Then adjust the covers and seal. This rhubarb will lose its color, but it is as delicious for winter sauce and pies as when first cut.

FRUITS.

The following method is used for apples, peaches and pears. All varieties of plums can be cooked with the skins on. If it is desired to remove the skins, treat same as other fruits.

In the case of fruits for canning, scald, dip in cold water and when necessary peel. Cut in pieces the desired size. Pack closely into sterile jars, fill jars with hot syrup, put on rubber ring and glass top, adjust clamp, but do not seal tightly. Place jars in boiler, fill with tepid water to top of jar, cover and boil length of time given in table. Remove from boiler and seal.

CANNED PEACHES.

Scald peaches 1 minute and plunge quickly in cold water. Remove skins. Pack whole, quartered or sliced, as desired. Add hot syrup to fill jars. Place rubbers and tops in position and sterilize length of time given in table.

BERRIES.

The following method is used for berries: Gooseberries may be canned in cold water the same as rhubarb; if cooked they require more sugar than other berries, the proportion being 6 cups sugar and 4 cups of water.

Clean berries carefully, put in colander or bowl strainer and wash. Pack in jars, fill with syrup and proceed as with fruit.

CANNED STRAWBERRIES.

Stem berries, wash in cold water. Pack berries closely in jar and fill jar with syrup. Place rubbers and top in position and sterilize length of time given in table.

VEGETABLES.

All vegetables except tomatoes should be blanched and cold-dipped before being packed in jars. Tomatoes are scalded and cold dipped. This treatment makes unnecessary the three days' sterilization method which is given in so

many of the canning instructions. The boiling water followed by the cold water treatment is very effective in destroying bacteria spores and moulds. After blanching and dipping, pack closely, add 1 teaspoonful salt to every quart jar, pour boiling water down through the vegetables until the jar is full. Adjust rubbers and covers loosely and sterilize the proper length of time for each vegetable. Remove from boiler and seal.

CANNED BEANS.

Can same day vegetables are picked. String, cut in small pieces if desired, or leave full length. Blanch 5 to 10 minutes, then plunge quickly in cold water. Pack in sterile jars, fill with hot water, add 1 teaspoonful salt to each quart jar. Place in boiler and sterilize length of time given in table.

CANNING OF SOUPS AND MEATS.

After learning how to can fruits and vegetables successfully, the next step is to can meats, buying them in the winter, when they are comparatively cheap. Bones that are very often discarded may be made into delicious soup stock and canned. It will be a delight to the housewife to be able to take from her supplies a jar of home-canned soup and serve it within a few minutes' time.

CANNED MEAT.

Cut meat in small pieces, pack in jars, add salt, adjust rubbers and covers and steam $3\frac{1}{2}$ hours. Or roast or boil meat for half an hour, then cut in small pieces, removing bone, gristle and excessive fat, and pack directly into jars. Fill with gravy from roasting pan or pot liquid, concentrated to one-half its volume, put rubber and cover in position, and sterilize 3 hours. Seal.

CANNED POULTRY.

Boil fowl until meat can be removed from bones, remove meat from bones and pack in jars. Fill jars with pot liquid after it has been concentrated one-half, add 1 teaspoonful salt per quart jar of meat, put rubber and cover in position and sterilize 3 hours. Another way to pack fowl in jars before cooking, adjust covers and sterilize $3\frac{1}{2}$ hours.

SOUP STOCK.

Secure 25 lbs. of beef hocks, joints and bones containing marrow. Break bones, place in a thin cloth sack and simmer 6 or 7 hours in five gallons of water, putting bones on in cold water. Do not salt while simmering. Skim off all fat, pack while hot in jars, adjust rubbers and covers and sterilize 40 minutes.

CANNED SALMON.

Make a brine of salt and water that will support a potato, and after cleaning the fish properly, place in the brine for one-half hour. Remove from brine, cut into convenient sections and pack in glass jars. Add 1 teaspoonful salt per quart; adjust covers and sterilize for three hours.

TIME TABLE FOR BLANCHING, COOKING, ETC.

The following table shows the necessary time for blanching and scalding and also for sterilizing the various fruits and vegetables:

	Blanch or Scald	Time of Cooking 212 degrees F.
Apples	2 minutes	15 to 20 minutes
Blackberries .....	.....	15 "
Blueberries .....	.....	15 "
Cherries .....	.....	15 "
Crabapples	2 "	20 "
Currants .....	.....	15 "
Grapes .....	.....	15 "
Gooseberries .....	.....	15 "
Peaches	1-2 "	15 "
Pears	1-2 "	15 "
Plums .....	.....	15 "
Raspberries .....	.....	15 "
Rhubarb	1-3 "	20 "
Strawberries .....	.....	15 "
Beans, Lima and string	5-10 "	90 "
Beets	6-10 "	60 "
Beet greens	10 "	90 "
Carrots	5 "	60 "
Corn	5-15 "	240 "
Dandelion greens	10-20 "	90 "
Parsnips	3-10 "	90 "
Peas	5-10 "	90 "
Pumpkin	5-10 "	60 "
Spinach	10-15 "	60 to 90 minutes
Swiss Chard	10 "	90 "
Tomatoes	1-2 "	22 "

TO TEST CANNED FOOD.

After several days loosen the clamp and grasp the jar by the edges of the glass top. If sterilization is not complete, if the can leaks, or if decomposition has set in, the top will come off. If the top stays on, tighten the clamp and the food is ready for storage.