THE UNIVERSITY OF TENNESSEE
AGRICULTURAL EXTENSION SERVICE

SP 325-C

Food Preservation

Canning Acid Foods

William C. Morris, Professor
Originally developed by Ivon E. McCarty, Professor Emeritus
Food Technology & Science

Fruits, berries, tomatoes, rhubarb, sauerkraut and other firm-textured, fermented foods make up the acid food group. Because foods in this group contain enough natural acidity to deter bacteria from growth, they can all be safely processed at 212 F (100 C) in a boiling water bath canner. See Extension PB724 for specific times and adjustments for altitudes. Individual instructions for canning each food are available from county Extension offices. The directions should be carefully followed to assure all canned foods are safe, wholesome and nutritious.

Selection of Fruits and Berries

Select fresh, firm, just-ripe fruits and berries, and process as soon as possible after harvest. Over-maturity and delayed processing both result in decreased acidity and loss of flavor and eating quality. If fruit and berries must be held for a time before canning, store them in a cool place.

Preparing Fruits and Berries

Work with only one canner batch at a time. Wash food thoroughly, but do not soak. Be extra gentle with berries. Remove stems, hulls, pits, skins and cores as described in instructions for individual foods. Remove all soft and bruised spots and any places where skin is broken on fruits and all over-ripe and mushy berries.

Peeled and sliced apples, apricots, nectarines, peaches and pears tend to darken while they are being prepared for canning and after they are in the jar. To prevent the darkening, use ascorbic acid or citric acid mixtures according to manufacturer's instructions.

For purposes of canning, berries (except strawberries) are divided into two classes according to their texture; soft berries - raspberries, blackberries, boysenberries, dewberries, loganberries and youngberries; firm berries - blueberries, cranberries, currents, elderberries, gooseberries and huckleberries. Pick all berries over carefully and wash them gently. Work with only a couple of quarts at a time because all berries, particularly the soft ones, break down quickly.

Sugar Syrups for Canning Fruits and Berries

All fruits and berries can be successfully canned without sugar. Sugar helps to retain color, texture, shape and enhance the flavor of canned fruits and berries. It does not keep fruit and berries from spoiling.

Prepare syrup before starting to prepare fruit by mixing the necessary amount of sugar with water or juice in a saucepan. Cook until sugar dissolves. Light corn syrup or mild-flavored honey may be substituted for up to one-half of the sugar listed in the table.

All fruits and berries may be canned for special diets by replacing the sugar syrup with other liquids. Water, the fruits' own juice or the juice of other fruits (peach, pear, pineapple, etc.) may be substituted for sugar syrup. Prepare and process all unsweetened fruits and berries the same as sweetened fruits.

Methods of Packing Jars

The raw pack or the hot pack methods of fill are both acceptable for most fruits and berries. The hot pack method is the preferred method for all fruits and firm berries. Raw packing is recommended for soft berries because they tend to break down during precooking.

Pack food firmly into jars when using the raw pack method because they shrink during processing. Pack hot foods fairly loosely because they are pliable and pieces fit close together. Cover food with boiling syrup, juice, water, brine or pickling solution. Leave recommended head space. Remove air bubbles and wipe top and threads of jar to remove particles of food. Attach lids according to manufacturer's instructions. When using two-piece vacuum closures, place lid on mouth of jar so the sealing compound rests on the top edge of the jar. Screw the band down firmly, so it is hand tight. Do not screw band down

Measures of Water and Sugar For 9-Pt Load* For 7-Qt Load						
Syrup Type%	Approx. Sugar	Cups Water	Cups Sugar	Cups Water	Cups Sugar	Fruits Commonly packed in syrup**
Very Light	10	6-1/2	3/4	1-=1/2	1-1/4	Approximates natural sugar level in most fruits and adds the fewest calories.
Light	20	5-3/4	1-1/2	9	2-1/4	Very sweet fruit. Try a small amount the first time to see if your family likes it.
Medium	30	5-1/4	2-1/4	8-1/4	3-3/4	Sweet apples, sweet cherries, berries, grapes
Heavy	40	5	3-1/4	7-3/4	5-1/4	Tart apples, apricots, sour cherries, goose berries, nectarines, peaches, pears, plums.
Very Heavy	50	4-1/4	4-1/4	6-1/2	6-3/4	Very sour fruit. Try a small amount the first time to see if your family likes it.

**This amount is also adequate for a 4-quart load.*

***Many fruits that are typically packed in heavy syrup are excellent and tasteful products when packed in lighter syrups. It is recommended that lighter syrups be tried, since they contain fewer calories from added sugar.*

too tightly. Place each jar, as it is filled, onto the rack in the canner. The rack holds the jars off the canner bottom and also prevents them from bumping together during processing.

Processing Fruits and Berries

Fill water bath canner half full with water, and place it on range to heat. For raw pack foods, have water hot but not boiling to prevent breakage. Have water boiling for foods that are hot-packed.

Put filled glass jars on rack in the canner. Add boiling water if needed to bring water 1 to 2 inches over tops of jars. Pour boiling water between jars, not directly on the jars. Put cover on canner and bring water to a rolling boil. Boil gently and steadily for the full time recommended for the food being canned. Add boiling water during processing if needed to keep jars covered. Remove jars from canner immediately when processing time is up.

Cooling Glass Jars

Set jars, top side up, on a rack or folded cloth to cool. Leave space between jars for air to circulate. Do not loosen or tighten screw bands where two-piece closures are used. Keep jars away from drafts, but do not cover.

Storing Jars of Canned Foods

Store canned foods in a cool, dry place. For best nutritive value and eating quality, use within one year. Canned foods stored in a warm place or in direct sunlight will lose eating quality quickly. Dampness may corrode lids and cause leakage which, in turn, will cause the food to spoil. Freezing will not cause the food to spoil unless the seal or jar is damaged. However, canned foods that have been frozen will not be as tasty as foods that have been properly stored.

FRUITS		
Raw Product	Approximate Weight Per Bushel (May vary from state to state)	Approximate Pounds Need for 1 Quart Jar
Apples	48 lbs.	2 1/2-3
Apricots	50 lbs.	2-2 1/2
Berries (except strawberries and cranberries)	36 lb. crate	1 1/2-3
Cherries	56 lbs.	2-2 1/2
Grapes	48 lbs.	4
Grapefruit	65 lb. box	4-6 fruit
Nectarines	18 lb. flat	2-3
Peaches	50 lbs.	2-2 1/2
Pears	50 lbs.	2-2 1/2
Plums	56 lbs.	2-2 1/2

For best quality canned foods should be used within a year, so plan your buying and canning accordingly.

SP325C-5M-7/96 (Rep) E12-2015-00-055-97
A State Partner in the Cooperative Extension System
The Agricultural Extension Service offers its programs to all eligible persons regardless of race, color, national origin, sex, age or disability and is an Equal Opportunity Employer.
COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS.
The University of Tennessee Institute of Agriculture, U.S. Department of Agriculture and county governments cooperating in furtherance of Acts of May 8 and June 30, 1914.
Agricultural Extension Service, Billy G. Hicks, Dean