

## Food Preservation: Basics for Canning Fruit

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Family and Consumer Sciences

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Fruits can be canned with the boiling water bath method because they contain high enough acid levels to prevent the growth of *Clostridium botulinum* spores and the production of botulism toxin. Additionally, when fruits are properly canned, they are heated long enough at high enough temperatures to destroy spoilage-causing microorganisms.

### Equipment

A **water bath canner** can be any large metal container with a fitted lid deep enough to fit a rack on the bottom, the jars, 1 to 2 inches of water above the jars, and 2 to 4 inches of space to allow for boiling.



A **pressure canner** also may be used in place of a water bath canner if it is deep enough. Place the lid, but do not fasten it. Leave the petcock and/or vent open so steam can escape and pressure does not build up during heating. As with a water bath canner, the jars need to be covered with 1 to 2 inches of water during processing, and space for boiling should be considered.

Use **standard canning jars and lids**. Commercial food jars, such as mayonnaise and coffee jars, are not recommended because they might not properly seal and are more likely to break than standard canning jars. Check jars, ringbands and lids for defects. Look for chips, cracks, dents, rust and anything else that will prevent airtight seals. Wash jars in hot soapy water and rinse well.

Prepare two-piece metal lids according to manufacturer's directions. Ringbands may be reused if they are not rusted, dented or damaged; lids may be used only once.

## Preparing the Produce

Choose fresh, firm fruits for canning. Wash all fruit thoroughly regardless of whether or not it will be pared. Do not soak; soaking might cause the fruit to lose flavor and nutrients. Handle gently to avoid bruising.

## Preventing Darkening

Some fruits darken when peeled or cut and then exposed to air. Choose one of these treatments to retard this natural occurrence while preparing fruit for canning:

- Use a commercial ascorbic acid mixture—available in grocery and drug stores—prepared according to package instructions.
- Drop fruit in a solution of 1 teaspoon or 3,000 milligrams ascorbic acid (vitamin C) and 1 gallon water. Vitamin C tablets also may be used. Drain fruit before proceeding.
- Drop fruit into a citric acid or lemon juice solution (1 teaspoon food-grade citric acid or  $\frac{3}{4}$  cup lemon juice to 1 gallon water). Drain fruit before proceeding.

## Sweetening Options

Sugar helps canned fruit hold its shape, color and flavor, but it is not needed to prevent spoilage. Fruits also can be packed in hot water or juice. Processing is the same for unsweetened and sweetened fruit. Any of the following may be used to provide sweetness.

### *Sugar Syrup*

Mix sugar with water and heat until the sugar dissolves; skim if necessary. Use proportions for the sweetness you desire. The table below may be used as a guide and makes enough syrup for a 9-pint canner load.

Water	Sugar	Type Syrup
6½ cups	$\frac{3}{4}$ cup	Very Light (10 percent sugar)
5¾ cups	1½ cups	Light (20 percent sugar)
5¼ cups	2¼ cups	Medium (30 percent sugar)
5 cups	3¼ cups	Heavy (40 percent sugar)

### *Juice*

Unsweetened apple juice, pineapple juice or white grape juice may be good options, depending upon the type of fruit being processed. These juices can be added either diluted or undiluted, based upon personal preference. Juice can also be extracted from the fruit itself. To extract juice, thoroughly crush ripe, sound, juicy fruit. Heat to simmering (185°F to 210°F) over low heat. Strain through a jelly bag or cheese cloth.

### *Sugar Mixed Directly With Fruit*

Add  $\frac{1}{4}$  to  $\frac{1}{2}$  cup sugar to each quart of prepared fruit. Bring to a simmer over low heat. Pack fruit while it's hot in the hot juice that cooks out.

### ***Sweeteners Other Than Sugar***

Light corn syrup, light brown sugar or mild-flavored honey can replace as much as half of the sugar used in canning fruit. It is best not to use molasses, sorghum or other strong-flavored syrups; their flavors overpower the fruit flavor and might darken the fruit.

### ***Artificial Sweeteners***

Some artificial sweeteners can be added to liquids before canning. Other sweeteners should be added to fruit canned in plain water just before serving. Saccharin-based sweeteners can turn bitter during processing. Aspartame-based sweeteners lose their sweetening power during processing. Check labels for equivalents to the amount of sweet flavor desired.

## **Canning Juice**

### ***Grape Juice***

Choose fruit of good quality for eating fresh and cooking. Sweet, well-colored, firm, mature fruit work well. An average of 24.5 pounds will produce 7 quarts; 16 pounds will produce 9 pints. Follow directions for preparation of juice as outlined in the table at the end of this fact sheet.



### ***Apple Juice***



Good quality apple juice is made from a blend of varieties. For best results, purchase fresh juice from a local cider-maker within 24 hours after it has been pressed. Follow directions for preparation of juice as outlined in the table at the end of this fact sheet.

## Filling Jars

### *Raw Pack Method*

Place raw prepared fruit into jars and cover with hot syrup, juice or water. Pack tightly because raw fruit shrinks during processing. Raw packed fruit is more likely to float. Check the table at the end of this fact sheet for the correct amount of headspace to leave between the top of the fruit and the jar lid.

### *Hot Pack Method*

Heat fruit in syrup, water, extracted juice or steam before placing it in jars. Pack loosely and cover with desired hot liquid. Check the table at the end of this fact sheet for the correct amount of headspace to leave between the top of the fruit and the jar lid.

## Sealing Jars

Remove trapped air bubbles by sliding a nonmetallic spatula around the inside of the jar walls. If needed, add more liquid. Wipe the jar rim with a clean, dampened paper towel to remove any food particles. Place prepared lids on jars and metal ringbands. Screw metal bands down, fingertip tight. Avoid overtightening.

## Preparing the Canner

Fill canner halfway full with water. To prevent jar breakage, preheat the water to 140°F for raw packed fruits or to 180°F for hot packed fruits. Place closed jars in canner and add boiling water as needed to bring water 1 to 2 inches over the jar tops. Cover the canner with the lid and turn burner to highest heat setting. Bring the water to a vigorous boil. Lower the heat setting to maintain a gentle boil, and start timing. See the table at the end of this fact sheet for specific processing times. Add boiling water as needed during the processing. When processing is complete, turn off heat and let stand for 5 minutes. Remove canner lid and use a jar lifter to remove jars. Then place them on a rack, dry towel or newspaper. Avoid placing jars on a cool surface as this might cause them to break. Do not tighten ringbands or touch the lids until jars have cooled. Allow the jars to cool, undisturbed, away from drafts for 12 to 24 hours.

## Checking Seals and Storage

Listen for the familiar "ping" and look for the slight depression in the lid's center to know that it has properly sealed. Remove the ringbands, wipe jars with a damp cloth, and add labels. Store in a cool, dry, dark place.

## Signs of Spoilage

If a jar does not seem completely normal before or after opening, do not use. This includes leaking jars, bulging lids and jars that spurt when opened. If the food looks spoiled, foams or has an off odor during preparation, discard it.

<b>Canning Directions for Preparing and Processing Fruit Using a Boiling Water Bath</b>					
<b>Fruit</b>	<b>Style of Pack</b>	<b>Jar Size</b>	<b>Minutes of Processing Time at Altitudes of...</b>		<b>Preparation</b>
			<b>0–1,000 ft</b>	<b>1,001–3,000 ft</b>	
Apples (sliced)	Hot	Pints or Quarts	20	25	Prepare syrup if desired. Pare, core, and slice apples. Use anti-darkening treatment. Drain. Boil apples 5 minutes in 1 pint syrup, juice or water per 5 pounds apples; stir occasionally. Fill jars with hot slices and hot liquid; leave one-half inch headspace.
Apple Juice	Hot	Pints or Quarts	5	10	Refrigerate fresh (purchased) juice for 24–48 hours. Without mixing, carefully pour off clear liquid and discard sediment. Strain clear liquid through a paper coffee filter or through double layers of damp cheesecloth. Heat quickly, stirring occasionally, until juice begins to boil. Fill immediately into sterile pint or quart jars, or fill into clean, hot half-gallon jars, leaving one-fourth inch headspace.
		Half-Gallon	10	15	
Applesauce	Hot	Pints	15	20	Prepare applesauce (sweetened or unsweetened). Heat to simmering. Pack hot applesauce into jars; leave one-half inch headspace.
		Quarts	20	25	
Apricots (halved or sliced)	Hot	Pints	20	25	Prepare same as peaches, but leave the skins on if you like.
		Quarts	25	30	
Berries, whole (blueberries, blackberries, currants, dewberries, elderberries, gooseberries, huckleberries, logan berries, mulberries, strawberries, raspberries)	Raw	Pints	15	20	Wash berries in cold or ice water to firm fruit. Use scissors to snip off “heads and tails” of gooseberries. Drain. Prepare and boil syrup, if desired. Add ½ cup syrup, juice or water to each jar. Pack berries into jars; leave one-half inch headspace. Shake jars while filling to get a full pack. Fill jars to one-half inch from top with boiling syrup or water.
		Quarts	20	25	
	Hot	Pints or Quarts	15	20	(Best for firm berries that hold their shape well.) Wash and drain berries. Use scissors to snip off “heads and tails” of gooseberries.

					Prepare and boil syrup, if desired. Add ½ cup syrup, juice or water to each jar. In a saucepan, cover berries with water and heat to boiling for 30 seconds. Drain. Pack hot fruit in jars and cover with boiling liquid; leave one-half inch headspace.
Cherries, whole (sweet or sour)	Raw	Pints or Quarts	25	30	Wash and drain cherries; remove pits if desired. Add ½ cup hot water, juice or syrup to each jar. Pack fruit in jars and cover with hot liquid; leave one-half inch headspace.
	Hot	Pints	15	20	Wash and drain cherries; remove pits if desired. In large saucepan add ½ cup water, juice or syrup for each quart of drained fruit and bring to a boil. Fill jars with cherries and cover with cooking liquid. Leave one-half inch headspace.
		Quarts	20	25	
Fruit purees (except figs, melons, papayas, ripe mangos, coconuts, tomatoes)	Hot	Pints or Quarts	15	20	Use sound, ripe fruit. Wash. Remove pits, if necessary. Cut large fruit in pieces. Measure fruit into large saucepan. Add 1 cup hot water for each quart of fruit. Simmer until soft, stirring frequently. Press through a strainer or food mill. Add sugar to taste, if desired. Reheat to simmering. Pack hot into jars, leaving one-fourth inch headspace.
Grape Juice	Hot	Pints or Quarts	5	10	Wash and stem grapes; place in saucepan and add boiling water to cover grapes. Simmer slowly until skin is soft. Strain through damp jelly bag. Refrigerate juice for 1–2 days. Carefully pour off clear liquid and save; discard sediment. Add juice to saucepan and sweeten to taste. Heat and stir until sugar dissolves and juice begins to boil. Fill immediately into sterile pint, quart or half-gallon jars, leaving one-fourth inch headspace.
		Half-Gallon	10	15	
Grapes, whole	Raw	Pints	15	20	Wash, drain and remove stems from grapes. Pack grapes into jars and cover with boiling water, syrup
		Quarts	20	25	

					or juice; leave one inch of headspace.
Grapefruit and Orange Sections	Raw	Pints or Quarts	10	15	Wash and peel fruit; remove white tissue to prevent a bitter taste. Fill jars with sections and cover with hot syrup, citrus juice or boiling water; leave one-half inch headspace.
Peaches or Nectarines	Raw	Pints	25	30	Wash fruit. Submerge in boiling water 30–60 seconds to loosen skins. Dip in cold water and peel. Cut in half, remove pits. Slice, if desired. Use an anti-darkening treatment. Drain. Pack drained fruit into jars, then cover with boiling syrup, juice or water; leave one-half inch headspace.
		Quarts	30	35	
	Hot	Pints	20	25	Wash fruit. Submerge in boiling water 30–60 seconds to loosen skins. Dip in cold water and peel. Cut in half, remove pits. Slice, if desired. Use an anti-darkening treatment. Drain. Heat drained fruit in hot syrup or water. Pack hot fruit in jars and cover with boiling syrup, juice or water; leave one-half inch headspace.
		Quarts	25	30	
Pears	Hot	Pints	20	25	Wash pears. Peel, cut in halves or quarters, and core. Use an anti-darkening treatment. Drain. Boil drained pears for 5 minutes in syrup, juice or water. Pack hot fruit in jars and cover with boiling syrup, juice or water; leave one-half inch headspace.
		Quarts	25	30	
Pineapple	Hot	Pints	15	20	Select firm, ripe pineapples. Wash and peel, removing eyes and tough fibers of core. Slice or cube. In large saucepan, add pineapple to hot syrup, water or juice; simmer 10 minutes. Fill jars with hot pieces and cover with cooking liquid; leave one-half inch headspace.
		Quarts	20	25	
Plums (halved or whole)	Raw	Quarts	25	30	Wash and stem. To can whole plums, prick skins. Freestone varieties may be halved and pitted. Pack fruit into jars and cover with

					boiling syrup, juice or water; leave one-half inch headspace.
	Hot	Pints	20	25	Wash and stem. To can whole plums, prick skins. Freestone varieties may be halved and pitted. Add plums to hot syrup, juice or water and boil 2 minutes. Cover saucepan and let stand 20–30 minutes. Fill jars with hot plums and cover with cooking liquid; leave one-half inch headspace.
		Quarts	25	30	
Rhubarb, stewed	Hot	Pints or Quarts	15	20	Wash rhubarb and cut into one-half inch pieces. Place pieces in saucepan. Add ½ cup sugar to each quart rhubarb and let stand to draw out juice. Bring to a boil. Pack hot into jars and cover with hot cooking liquid; leave one-half inch headspace.

### References

Andress, E., and J. Harrison. So Easy to Preserve. 6th ed. Athens: University of Georgia Cooperative Extension Service, 2014.

United States Department of Agriculture. Complete Guide to Home Canning, Agriculture Information Bulletin No. 539. 2009.

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