

GUIDE 7: Preparing and Canning Jams and Jellies¹

United States Department of Agriculture Extension Service

MAKING JELLY WITHOUT ADDED PECTIN

Use only firm fruits naturally high in pectin. Select a mixture of about 3/4 ripe and 1/4 underripe fruit. Do not use commercially canned or frozen fruit juices. Their pectin content is too low. Wash all fruits thoroughly before cooking. Crush soft fruits or berries; cut firmer fruits into small pieces. Using the peels and cores adds pectin to the juice during cooking. Add water to fruits that require it, as listed in the table of ingredients below. Put fruit and water in large saucepan and bring to a boil. Then simmer according to the times below until fruit is soft, while stirring to prevent scorching. One pound of fruit should yield at least 1 cup of clear juice.

Extracting Juices and Making Jelly

When fruit is tender, strain through a colander, then strain through a double layer of cheesecloth or a jelly bag. Allow juice to drip through, using a stand or colander to hold the bag. Pressing or squeezing the bag or cloth will cause cloudy jelly.

Using no more than 6 to 8 cups of extracted fruit juice at a time, measure fruit juice, sugar, and lemon juice according to the ingredients in the table and heat to boiling. Stir until the sugar is dissolved. Boil over high heat to the jelling point. To test jelly for doneness, use one of the following methods.

Temperature test: Use a jelly or candy thermometer and boil until mixture reaches the following temperatures at altitudes of:

Sheet or spoon test--Dip a coop metal spoon into the boiling jelly mixture. Raise the spoon about 12 inches above the pan (out of steam). Turn the spoon so the liquid runs off the side. The jelly is done when the syrup forms two drops that flow together and sheet or hang off the edge of the spoon.

Remove from heat and quickly skim off foam. Fill sterile jars with jelly. Use a measuring cup or ladle the jelly through a wide-mouthed funnel, leaving 1/4-inch headspace. Adjust lids and process.

MAKING JAM WITHOUT ADDED PECTIN

Wash and rinse all fruits thoroughly before cooking. Do not soak. For best flavor, use fully ripe fruit. Remove stems, skins, and pits from fruit; cut into pieces and crush. For berries, remove stems and blossoms and crush. Seedy berries may be put through a sieve or food mill. Measure crushed fruit into large saucepan using the ingredient quantities specified in the table below.

Add sugar and bring to a boil while stirring rapidly and constantly. Continue to boil until mixture thickens. Use one of the following tests to determine

1. This document is Section 7 of the "Complete Guide to Home Canning," Agriculture Information Bulletin 539, United States Department of Agriculture. For more information contact your county Cooperative Extension Service office. Revised 1994.

To Extract Juice					
Fruit	Cups of Water to be Added per Pound of Fruit	Minutes to Simmer Fruit before Extracting Juice	Ingredients Added to Each Cup of Strained Juice		Yield from 4 Cups of Juice (Half-pints)
			Sugar (Cups)	Lemon Juice (Tsp)	
Apples	1	20 to 25	3/4	1-1/2 (opt)	4 to 5
Blackberries	None or 1/4	5 to 10	3/4 to 1	None	7 to 8
Crab Apples	1	20 to 25	1	None	4 to 5
Grapes	None or 1/4	5 to 10	3/4 to 1	None	8 to 9
Plums	1/2	15 to 20	3/4	None	8 to 9

Sea Level	1,000 ft	2,000 ft	3,000 ft	4,000 ft	5,000 ft	6,000 ft	7,000 ft	8,000 ft
220° F	218° F	216° F	214° F	212° F	211° F	209° F	207° F	205° F

Recommended process time for Jelly without Added Pectin in a boiling water canner				
		Process Time at Altitudes of		
Style of Pack	Jar Size	0 - 1,000 ft	1,001 - 6,000 ft	Above 6,000 ft
Hot	Half-pints or Pints	5 min	10	15

Ingredient Quantities				
Fruit	Cups Crushed Fruit	Cups Sugar	Tbsp Lemon Juice	Yield (Half-pints)
Apricots	4 to 4-1/2	4	2	5 to 6
Berries*	4	4	0	3 to 4
Peaches	5-1/2 to 6	4 to 5	2	6 to 7

* Includes blackberries, boysenberries, dewberries, gooseberries, loganberries, raspberries, and strawberries.

when jams and jellies are ready to fill. Remember to allow for thickening during cooling.

Temperature test--Use a jelly or candy thermometer and boil until mixture reaches the temperature for your altitude.

Refrigerator test--Remove the jam mixture from the heat. Pour a small amount of boiling jam on a cold plate and put it in the freezing compartment of a refrigerator for a few minutes. If the mixture gels, it is ready to fill.

Remove from heat and skim off foam quickly. Fill sterile jars with jam. Use a measuring cup or ladle the jam through a wide-mouthed funnel, leaving 1/4-inch headspace. Adjust lids and process.

MAKING JAMS AND JELLIES WITH ADDED PECTIN

Fresh fruits and juices as well as commercially canned or frozen fruit juice can be used with commercially prepared powdered or liquid pectins. The order of combining ingredients depends on the type of pectin used. Complete directions for a variety of fruits are provided with packaged pectin. Jelly or jam made with added pectin requires less cooking and generally gives a larger yield. These products have more natural fruit flavors, too. In addition, using added pectin eliminates the need to test hot jellies and jams for proper gelling. Adding 1/2 teaspoon of butter or margarine with the juice and pectin will reduce foaming. However, these may cause off-flavor in a long-term storage of jellies and jams. Recipes available using packaged pectin include:

Jellies--Apple, crab apple, blackberry, boysenberry, dewberry, currant, elderberry, grape,

Recommended process time for Jams without Added Pectin in a boiling-water canner				
		Process Time at Altitudes of		
Style of Pack	Jar Size	0 - 1,000 ft	1,001 - 6,000 ft	Above 6,000 ft
Hot	Half-pints or Pints	5 min	10	15

Recommended process time for Jellies and Jam with Added Pectin in a boiling-water canner				
		Process Time at Altitudes of		
Style of Pack	Jar Size	0 - 1,000 ft	1,001 - 6,000 ft	Above 6,000 ft
Hot	Half-pints or Pints	5 min	10	15

Recommended process time for Pear-Apple Jam in a boiling water canner				
		Process Time at Altitudes of		
Style of Pack	Jar Size	0 - 1,000 ft	1,001 - 6,000 ft	Above 6,000 ft
Hot	Half-pints or Pints	5 min	10	15

mayhaw, mint, peach, plum, black or red raspberry, loganberry, rhubarb, and strawberry.

Jams--Apricot, blackberry, boysenberry, dewberry, loganberry, red raspberry, youngberry, blueberry, cherry, currant, fig, gooseberry, grape, orange marmalade, peach, pear, plum, rhubarb, strawberry, and spiced tomato.

Be sure to use Mason canning jars, self-sealing two-piece lids, and a 5-minute process (corrected for altitude, as necessary) in boiling water.

Purchase fresh fruit pectin each year. Old pectin may result in poor gels. Follow the instructions with each package and process as below:

Following are a few additional jelly and jam recipes for use with packaged pectin.

Pear-Apple Jam

2 cups peeled, cored, and finely chopped pears (about 2 lbs)

1 cup peeled, cored, and finely chopped apples

6-1/2 cups sugar

1/4 tsp ground cinnamon

1/3 cup bottled lemon juice

6 oz liquid pectin

Yield: About 7 to 8 half-pints

Procedure: Crush apples and pears in a large saucepan and stir in cinnamon. Thoroughly mix sugar and lemon

juice with fruits and bring to a boil over high heat, stirring constantly. Immediately stir in pectin. Bring to a full rolling boil and boil hard 1 minute, stirring constantly. Remove from heat, quickly skim off foam, and fill sterile jars leaving 1/4-inch headspace. Adjust lids and process.

STRAWBERRY-RHUBARB JELLY

1-1/2 lbs red stalks of rhubarb

1-1/2 qts ripe strawberries

1/2 tsp butter or margarine to reduce foaming (optional)

6 cups sugar

6 oz liquid pectin

Yield: About 7 half-pints

Procedure: Wash and cut rhubarb into 1-inch pieces and blend or grind. Wash, stem, and crush strawberries, one layer at a time, in a saucepan. Place both fruits in a jelly bag or double layer of cheesecloth and gently squeeze out juice. Measure 3-1/2 cups of juice into a large saucepan. Add butter and sugar, thoroughly mixing into juice. Bring to a boil over high heat, stirring constantly. Immediately stir in pectin. Bring to a full rolling boil and boil hard 1 minute, stirring constantly. Remove from heat, quickly skim off foam, and fill sterile jars, leaving 1/4-inch headspace. Adjust lids and process.

Recommended process time for Strawberry-Rhubarb Jelly in a boiling-water canner				
		Process Time at Altitudes of		
Style of Pack	Jar Size	0 - 1,000 ft	1,001 - 6,000 ft	Above 6,000 ft
Hot	Half-pints or Pints	5 min	10	15

Recommended process time for Blueberry-Spice Jam in a boiling-water canner				
		Process Time at Altitudes of		
Style of Pack	Jar Size	0 - 1,000 ft	1,001 - 6,000 ft	Above 6,000 ft
Hot	Half-pints or Pints	5 min	10	15

Blueberry-Spice Jam

2-1/2 pints ripe blueberries
 1 tbsp lemon juice
 1/2 tsp ground nutmeg or cinnamon
 5-1/2 cups sugar
 3/4 cup water
 1 box (1-3/4 oz) powdered pectin

Yield: About 5 half-pints

Procedure: Wash and thoroughly crush blueberries, one layer at a time, in a saucepan. Add lemon juice, spice, and water. Stir pectin and bring to a full, rolling boil over high heat, stirring frequently. Add the sugar and return to a full rolling boil. Boil hard for 1 minute, stirring constantly. Remove from heat, quickly skim off foam, and fill sterile jars, leaving 1/4-inch headspace. Adjust lids and process.

Grape-Plum Jelly

3-1/2 lbs ripe plums
 3 lbs ripe Concord grapes
 1 cup water
 1/2 tsp butter or margarine to reduce foaming (optional)
 8-1/2 cups sugar
 1 box (1-3/4 oz) powdered pectin

Yield: About 10 half-pints

Procedure: Wash and pit plums; do not peel. Thoroughly crush the plums and grapes, one layer at a time, in a saucepan with water. Bring to a boil, cover, and simmer 10 minutes. Strain juice through a jelly bag or double layer of cheesecloth. Measure sugar and set aside. Combine 6-1/2 cups of juice with butter and pectin in large saucepan. Bring to a hard boil over high heat, stirring constantly. Add the sugar and return to a full rolling boil. Boil hard for 1 minute, stirring

constantly. Remove from heat, quickly skim off foam, and fill sterile jars, leaving 1/4-inch headspace. Adjust lids and process.

MAKING REDUCED-SUGAR FRUIT SPREADS

A variety of fruit spreads may be made that are tasteful, yet lower in sugars and calories than regular jams and jellies. The following are recipes for reduced-sugar fruit spreads. Gelatin may be used as a thickening agent, as indicated in two of the following recipes. Sweet fruits, apple juice, spices, and/or a liquid, low-calorie sweetener are used to provide the sweet flavor of the fruit spreads. When gelatin is used in the recipe, the jars of spread should not be processed. They should be refrigerated and used within 4 weeks.

Peach-Pineapple Spread

4 cups drained peach pulp (procedure as below)
 2 cups drained unsweetened crushed pineapple
 1/4 cup bottled lemon juice
 2 cups sugar (optional)

This recipe may be made with any combination of peaches, nectarines, apricots, and plums.

This recipe may be made without sugar or with up to 2 cups, according to taste or preference. Non-nutritive sweeteners may be added. If aspartame (a low-calorie nutritive sweetener) is used, the sweetening power of aspartame may be lost within 3 to 4 weeks.

Yield: 5 to 6 half-pints

Procedure: Thoroughly wash 4 to 6 pounds of firm, ripe peaches. Drain well. Peel and remove pits.

Recommended process time for Grape-Plum Jelly in a boiling-water canner				
		Process Time at Altitudes of		
Style of Pack	Jar Size	0 - 1,000 ft	1,001 - 6,000 ft	Above 6,000 ft
Hot	Half-pints or Pints	5 min	10	15

Recommended process time for Peach-Pineapple Spread in a boiling-water canner					
		Process Time at Altitudes of			
Style of Pack	Jar Size	0 - 1,000 ft	1,001 - 3,000 ft	3,001 - 6,000 ft	Above 6,000 ft
Hot	Half-pints	15 min	20	20	25
	Pints	20	25	30	35

Recommended process time for Remade Soft Jellies in a boiling-water canner				
		Process Time at Altitudes of		
Style of Pack	Jar Size	0 - 1,000 ft	1,001 - 6,000 ft	Above 6,000 ft
Hot	Half-pints or Pints	5 min	10	15

Grind fruit flesh with a medium or coarse blade, or crush with a fork (do not use a blender). Place ground or crushed fruit in a 2-quart saucepan. Heat slowly to release juice, stirring constantly, until fruit is tender. Place cooked fruit in a jelly bag or strainer lined with four layers of cheesecloth. Allow juice to drip about 15 minutes. Save the juice for jelly or other uses. Measure 4 cups of drained fruit pulp for making spread. Combine the 4 cups of pulp, pineapple, and lemon juice in a 4-quart saucepan. Add up to 2 cups of sugar, if desired, and mix well. Heat and boil gently for 10 to 15 minutes, stirring enough to prevent sticking. Fill jars quickly, leaving 1/4-inch headspace. Adjust lids and process.

Refrigerated Apple Spread (made with gelatin)

2 tbsp unflavored gelatin powder
1 qt bottle unsweetened apple juice
2 tbsp bottled lemon juice
2 tbsp liquid low-calorie sweetener
Food coloring, if desired

Yield: 4 half-pints

Procedure: In a saucepan, soften the gelatin in the apple and lemon juices. To dissolve gelatin, bring to a full rolling boil and boil 2 minutes. Remove from heat. Stir in sweetener and food coloring, if desired. Fill jars, leaving 1/4-inch headspace. Adjust lids. Do not process

or freeze. **Caution:** Store in refrigerator and use within 4 weeks.

Optional: For spiced apple jelly, add 2 sticks of cinnamon and 4 whole cloves to mixture before boiling. Remove both spices before adding the sweetener and food coloring.

Refrigerated Grape Spread (made with gelatin)

2 tbsp unflavored gelatin powder
1 bottle (24 oz) unsweetened grape juice
2 tbsp bottled lemon juice
2 tbsp liquid low-calorie sweetener

Yield: 3 half-pints

Procedure: In a saucepan, soften the gelatin in the grape and lemon juices. Bring to a full rolling boil to dissolve gelatin. Boil 1 minute and remove from heat. Stir in sweetener. Fill jars quickly, leaving 1/4-inch headspace. Adjust lids. Do not process or freeze. **Caution:** Store in refrigerator and use within 4 weeks.

REMAKING SOFT JELLIES

Measure jelly to be recooked. Work with no more than 4 to 6 cups at a time.

To remake with powdered pectin: For each quart of jelly, mix 1/4 cup sugar, 1/2 cup water, 2 tablespoons bottled lemon juice, and 4 teaspoons powdered pectin. Bring to a boil while stirring. Add jelly and bring to a rolling boil over high heat, stirring constantly. Boil hard 1/2 minute. Remove from heat, quickly skim foam off jelly, and fill sterile jars, leaving 1/4-inch headspace. Adjust new lids and process.

To remake with liquid pectin: For each quart of jelly, measure 3/4 cup sugar, 2 tablespoons bottled lemon juice, and 2 tablespoons liquid pectin. Bring jelly only to boil over high heat, while stirring. Remove from heat and quickly add the sugar, lemon juice, and

pectin. Bring to a full rolling boil, stirring constantly. Boil hard for 1 minute. Quickly skim off foam and fill sterile jars, leaving 1/4-inch headspace. Adjust new lids and process.

To remake without added pectin: For each quart of jelly, add 2 tablespoons bottled lemon juice. Heat to boiling and boil for 3 to 4 minutes. Use one of the tests described on page 5 to determine jelly doneness. Remove from heat, quickly skim off foam, and fill sterile jars, leaving 1/4-inch headspace. Adjust new lids and process.