



LET'S PRESERVE

JELLIES, JAMS, SPREADS

General canning procedures

Prepare products as described in the following pages. All products should be filled hot into sterile half-pint or pint canning jars, leaving $\frac{1}{4}$ -inch headspace. To sterilize empty jars, put them open side up on a rack in a boiling water canner. Fill the canner and jars with hot (not boiling) water to 1 inch above top of jars. Boil jars 10 minutes. Remove and drain hot sterilized jars one at a time and fill with food. Food residue should be removed from the jar sealing edge with a clean, damp paper towel. New two-piece canning lids prepared according to manufacturer's directions should be added. After screw bands are tightened, jars should be processed in a boiling water canner.

To process in a boiling water canner, fill canner halfway with water and preheat to 180°F. Load sealed jars into the canner rack and lower with handles, or load one jar at a time with a jar lifter onto rack in canner. Add water if needed to a level of 1 inch above jars and add cover. When water boils vigorously, lower heat to maintain a gentle boil, and process jars of the product for the time given in Table 1.

Process times

Table 1. Recommended processing times in a boiling water canner for jellies, jams, and spreads.

Product	Style of pack	Jar size	Process time at altitudes of		
			0–1000 ft (min)	1001–6000 ft (min)	Above 6000 ft (min)
All jellies and jams with or without added pectin	Hot	Half-pints and pints	5	10	15
Peach-pineapple spread	Hot	Half-pints	15	20	25
		Pints	20	30	35

After processing is completed, remove jars from the canner with a jar lifter and place on a towel or rack. Do not retighten screw bands. Air-cool jars 12 to 24 hours. Remove screw bands and check lid seals. If the center of the lid is indented, wash, dry, label, and store jar in a clean, cool, dark place. If lid is unsealed, examine and replace the jar if defective, use new lids, and reprocess as before. Wash screw bands and store separately. Jelly, jam, and spreads are best if consumed within a year and safe as long as lids remain vacuum sealed.

Making jelly without added pectin

Use only firm fruits naturally high in pectin. Select a mixture of about $\frac{3}{4}$ ripe and $\frac{1}{4}$ underripe fruit. One pound of fruit should yield at least 1 cup of clear juice. Do not use commercially canned or frozen fruit juices because their pectin content is too low. Use of peels and cores adds pectin to the juice during cooking of the fruit and increases jelly firmness.

Wash all fruits thoroughly before cooking. Cut firm, larger fruits into small pieces. Crush soft fruits or berries. Add water to fruits as listed in Table 2. Put fruit and water in a large saucepan and bring to a boil. Simmer, stirring occasionally, for the amount of time listed or until the fruit is soft.

When fruit is tender, press lightly through a colander. Then, let juice drip through a double layer of cheesecloth or a jelly bag. Excessive pressing or squeezing of cooked fruit will cause cloudy jelly.

Using no more than 6 to 8 cups of extracted fruit juice at a time, measure and combine the proper quantities of juice, sugar, and lemon juice given in Table 2 and heat to boiling. Stir until the sugar is dissolved. Boil over high heat, stirring frequently, until the gelling point is reached.

To test jelly doneness, use one of the following methods:

Temperature test. Use a jelly or candy thermometer and boil to a temperature of 220°F at sea level, 218°F at 1000 feet, 216°F at 2000 feet, 214°F at 3000 feet, 212°F at 4000 feet, 211°F at 5000 feet, 209°F at 6000 feet, 207°F at 7000 feet, 205°F at 8000 feet altitude.

Sheet or spoon test. Dip a cool 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

When the jelly is done, remove it from heat and quickly skim off foam. Using a wide-mouth funnel, ladle the jelly into sterile jars, leaving $\frac{1}{4}$ -inch headspace. Adjust lids and process the jars as described in Table 1.

Table 2. Measures for preparing jellies without added pectin.

	To extract juice				Jelly yield from 4 cups of juice (half-pints)
	Cups water to be added per pound of fruit	Minutes to simmer before extracting juice	Add to each cup of strained juice:		
			Sugar (cups)	Lemon juice (optional)	
Apples	1	20 to 25	$\frac{3}{4}$	$1\frac{1}{2}$ tsp	4 to 5
Blackberries	0 to $\frac{1}{4}$	5 to 10	$\frac{3}{4}$ to 1	—	7 to 8
Crabapples	1	20 to 25	1	—	4 to 5
Grapes	0 to $\frac{1}{4}$	5 to 10	$\frac{3}{4}$ to 1	—	8 to 9
Plums	$\frac{1}{2}$	15 to 20	$\frac{3}{4}$	—	8 to 9

Preparing jams without added pectin

For best flavor, use fully ripened fruit. Wash and rinse all fruits thoroughly before cooking. Do not soak. 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 ingredients in Table 3. Add sugar and bring to a boil while stirring rapidly and constantly. Continue to boil until mixture thickens. As you test for thickness, remember to allow for thickening during cooling.

To test for thickness, use one of the following methods: *Temperature test.* Use a jelly or candy thermometer and boil to a temperature of 220 °F at 2000 feet, or 214 °F at 3000 feet altitude. *Refrigerator test.* Jam should be removed from heat for this test. Pour a small amount of boiling jam on a cold plate and put it in the freezer for a few minutes. The mixture gels when done.

When jam is done, remove it from heat and quickly skim off foam. Using a wide-mouth funnel, ladle the jam into sterile jars, leaving 1/4-inch headspace. Adjust lids and process the jars as described in Table 1.

Table 3. Measures for preparing jams without added pectin.

	Cups crushed fruit	Cups sugar	Tbsp lemon juice	Jam 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

Jellies and jams with added pectin

Fresh fruits and juices, as well as some commercially canned or frozen fruit juices, may 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, generally gives a larger yield, and has more natural fruit flavor. In addition, using added pectin eliminates the need to test for doneness. The following recipes are normally available with packaged pectins:

Jellies. Apple, crabapple, blackberry, boysenberry, dewberry, currant, elderberry, grape, 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 and self-sealing, two-piece lids, and process the jars in boiling water as described on page 1. Purchase packaged pectins needed each year. Old pectins may result in poor gels. The following special jelly and jam recipes use packaged pectin.

**Grape-plum jelly
with pectin**

3¹/₂ lbs ripe plums
3 lbs ripe Concord grapes
1 cup water
1/2 tsp butter or margarine
(optional ingredient to reduce foaming)
8¹/₂ cups sugar
1 box (1³/₄ ozs) powdered pectin

Yield—about 10 half-pints

Preparation. Wash and pit plums; do not peel. Thoroughly crush plums and grapes, one layer at a time, in a saucepan. Add 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 6¹/₂ cups of juice with butter and pectin in a large saucepan. Bring to a hard boil over heat, stirring constantly. Add the sugar and return to a full rolling boil. Boil hard for 1 minute, stirring constantly. Remove from heat, skim off foam, and quickly fill into sterile half-pint jars, leaving 1/4-inch headspace. Adjust lids and process the jars as given in Table 1.

**Blueberry-spice
jam with pectin**

2¹/₂ pints ripe blueberries
1 tbsp lemon juice
1/2 tsp ground nutmeg or cinnamon
5¹/₂ cups sugar
3/4 cup water
1 box (1³/₄ ozs) powdered pectin

Yield—about 5 half-pints

Preparation. Wash and thoroughly crush blueberries, one layer at a time, in a large saucepan. Add lemon juice, spice, and water. Stir in 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 into sterile half-pint jars, leaving 1/4-inch headspace. Adjust lids and process the jars as given in Table 1.

**Pear-apple jam
with pectin**

2 cups peeled and crushed fully ripe pears
1 cup peeled and finely chopped apple
1/4 tsp ground cinnamon
6¹/₂ cups sugar
1/3 cup bottled lemon juice
6 ozs liquid pectin

Yield—about 7 to 8 half-pints

Preparation. Wash, peel, and core pears. Crush well and measure 2 cups into a large saucepan. Wash, peel, core, and finely chop 1 cup of apples. Add apple to pears and stir in cinnamon. Thoroughly mix sugar and lemon juice

**Strawberry-
rhubarb jelly
with pectin**

into fruits and bring to a boil over high heat, stirring constantly. Immediately stir in pectin. Bring to a full rolling boil and boil 1 minute, stirring constantly. Remove from heat, quickly skim off foam and fill into sterile half-pint jars, leaving $\frac{1}{4}$ -inch headspace. Adjust lids and process the jars as given in Table 1.

$1\frac{1}{2}$ lbs red stalks of rhubarb
 $1\frac{1}{2}$ qts ripe strawberries
 $\frac{1}{2}$ tsp butter or margarine
(optional ingredient to reduce foaming)
6 cups sugar
6 ozs liquid pectin

Yield—about 7 half-pints

Preparation. Wash and cut rhubarb into 1-inch pieces and blend or grind. Wash, stem, and crush strawberries, one layer at a time, in a large saucepan and simmer 10 minutes. Strain juice with a jelly bag or double layer of cheesecloth. Combine and mix $3\frac{1}{2}$ cups of juice and sugar. Add butter if desired. 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 and quickly skim off foam, and fill sterile half-pint jars, leaving $\frac{1}{4}$ -inch headspace. Adjust lids and process the jars as given in Table 1.

The following recipes use reduced amounts of sugar:

**Grape jelly with
gelatin**

2 tbsps unflavored gelatin powder
1 bottle (24 ozs) unsweetened grape juice
2 tbsps bottled lemon juice
2 tbsps liquid artificial sweetener (Saccharin is acceptable)

Yield—3 half-pints

Preparation. 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 quickly into hot sterile half-pint jars, leaving $\frac{1}{4}$ -inch headspace. Adjust lids. Do not process or freeze—store in refrigerator and use within 4 weeks.

**Apple jelly with
gelatin**

2 tbsps unflavored gelatin powder
1 qt bottled unsweetened apple juice
2 tbsps bottled lemon juice
2 tbsps liquid Saccharin sweetener
Food coloring, if desired

Yield—4 half-pints

Peach-pineapple spread

Variation: For spiced apple jelly, add two 3-inch sticks of cinnamon and four whole cloves to mixture before boiling. Remove both spices before adding the sweetener and food coloring.

Preparation. In a saucepan, soften gelatin in 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. Pour into sterile half-pint jars, leaving $\frac{1}{4}$ -inch headspace. Adjust lids. Do not process or freeze—store in refrigerator and use within 4 weeks.

4 cups drained peach pulp obtained as directed below
2 cups drained, unsweetened, crushed pineapple
 $\frac{1}{4}$ cup bottled lemon juice
2 cups sugar (optional)

Yield—5 to 6 half-pints

Variation: The above recipe may also be made with any combination of peaches, nectarines, apricots, and plums. It may also be made without sugar or with as little as 2 cups sugar. Nonnutritive sweeteners may be added; however, the sweetening power of aspartame may be lost within 3 to 4 weeks.

Preparation. Thoroughly wash 4 to 6 pounds of firm, ripe peaches. Drain well. Peel and remove pits. 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 often. Fill quickly into jars, leaving $\frac{1}{4}$ -inch headspace. Adjust lids and process the jars as in Table 1.

Apple butter

Use Jonathan, Winesap, Stayman, Golden Delicious, MacIntosh, or other tasty apple varieties for good results.

8 lbs apples
2 cups cider
2 cups vinegar
 $2\frac{1}{4}$ cups white sugar
 $2\frac{1}{4}$ cups packed brown sugar
2 tbsps ground cinnamon
1 tbsp ground cloves

Yield—about 8 to 9 pints

Procedure: Wash, remove stems, quarter, and core fruit. Cook slowly in cider and vinegar until soft. Press fruit through a colander, food mill, or

strainer. Cook fruit pulp with sugar and spices, stirring frequently. To test for doneness, remove a spoonful and hold it away from steam for 2 minutes. It is done if the butter remains mounded on the spoon. Another way to determine when the butter is cooked adequately is to spoon a small quantity onto a plate. When a rim of liquid does not separate around the edge of the butter, it is ready for canning. Fill hot into sterile half-pint or pint jars, leaving 1/4-inch headspace. Quart jars need not be presterilized. To presterilize jars, see page 1. Adjust lids and process the jars as described in Table 1. Apple butter may also be canned in quart jars. Processing times for quarts are 10 minutes at less than 1000-foot elevation and 15 minutes for 1001–6000-foot elevation.

Fruit syrups

Syrups made from blackberries, huckleberries, raspberries, boysenberries, loganberries, sour cherries, and Island Belle grapes, as well as mixtures of berries, are of good flavor, color, and consistency (thin like maple syrup, medium-thick like corn syrup, or slightly jelled).

Syrups can be made with or without pectin and lemon juice. Lemon juice may improve color. Use of pectin will vary the consistency.

To prepare fruit puree

Sort, stem, and wash ripe fruit or thaw frozen, unsweetened fruit. Crush fruit thoroughly; measure crushed fruit.

Add 1 cup boiling water to each 4 cups crushed fruit and bring to a boil. Reduce heat and simmer to soften—about 5 minutes for soft fruits, about 10 minutes for firm fruits like cherries and grapes. Press through sieve.

Syrups made with puree

4 cups puree
4 cups sugar
1/2 package or less powdered pectin (if desired)
3 or 4 tablespoons lemon juice (if desired)

1. Mix puree, sugar, pectin, and lemon juice.
2. Bring to boil and stir for 2 minutes (or until jelly thermometer registers 218°F).
3. Remove from heat, skim off foam, and pour into 1/2-pint or 1-pint canning jars to within 1/2 inch of top.
4. Adjust lids and process in boiling water bath canner for 10 minutes.
5. Remove from canner and cool.
6. Check lids, label, and store in cool, dry place.

To prepare fruit juice

Standard method. Sort, stem, and wash ripe fruit, or thaw frozen, unsweetened fruit, crush fruit thoroughly. Place crushed fruit in dampened jelly bag and drain. For clearest juice, do not press bag to extract juice.

For firm fruits, heat is needed to start flow of juice. Add about 1/2 cup water to each 3 cups crushed fruit. Bring to a boil. Reduce heat and simmer 10 minutes. Place hot fruit in dampened jelly bag; drain.

**Syrups made
with juice**

4 cups juice
4 cups sugar
 $\frac{1}{4}$ cup lemon juice (if desired)
 $\frac{1}{2}$ package or less powdered pectin (if desired)

1. Mix juice, sugar, lemon juice, and pectin.
2. Bring to boil and boil 2 minutes.
3. Remove from heat, skim off foam, and pour into $\frac{1}{2}$ -pint or 1-pint canning jars to within $\frac{1}{2}$ inch of top.
4. Adjust lids and process in boiling water bath canner for 10 minutes.
5. Remove from canner and let cool.
6. Check lids, label, and store in cool, dry place.

College of Agricultural, Human, and Natural Resource Sciences

Issued by Washington State University Extension and the U.S. Department of Agriculture in furtherance of the Acts of May 8 and June 30, 1914. Extension programs and policies are consistent with federal and state laws and regulations on nondiscrimination regarding race, sex, religion, age, color, creed, national or ethnic origin; physical, mental or sensory disability; marital status, sexual orientation, and status as a Vietnam-era or disabled veteran. Evidence of noncompliance may be reported through your local Extension office. Trade names have been used to simplify information; no endorsement is intended. Reprinted January 2004. Subject code 665. A. EB 1665