

Jelly, Jam, Spreads

Canning Procedures

Prepare products as described on the following pages. All products should be filled while hot into sterile half-pint or pint canning jars, leaving $\frac{1}{4}$ inch of 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 for 10 minutes. Remove and drain hot, sterilized jars one at a time and fill with food. Food residue should be removed from the sealing edge of the jar 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 or atmospheric steam 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 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.

When processing is complete, turn off the heat and remove canner lid. Wait 5 minutes. Remove jars from the canner with a jar lifter and place on a towel or rack. Do not retighten screw bands. Air-cool jars for 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, or refrigerate or freeze. Wash screw bands and store separately. Jelly, jam, and spreads are best if consumed within a year and are safe as long as lids remain vacuum sealed.

To Process in an Atmospheric Steam Canner

Preheat the base of a steam canner that has been filled with the amount of water designated in the instruction manual that comes with the canner (usually about 2 quarts). Set the rack in the base of the canner. Heat water in the base of the canner to 180°F. As each jar is filled, place it on canner rack, keeping the cover or lid on the atmospheric steam canner as you work. When all jars are in the canner, bring the canner to a boil over medium to medium-high heat until a steady column of steam at least 6 inches long escapes from the vent hole(s). Processing time begins when there is a steady column of steam 6 to 8 inches long. Slowly adjust the heat to maintain a steady column of steam throughout the processing time. When processing is complete, remove the canner lid or cover. Allow the jars to sit in the canner for 5 minutes before removing them from the canner with a jar lifter to a towel-covered counter. Do not retighten screw bands. Cool, inspect, label, and store jars as described above in boiling water canner instructions.



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Preparing Juice for Jelly

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.

Cooked Jelly, Jam, and Spreads

Fresh fruits and juices, as well as some commercially canned or frozen fruit juices, may be used with commercially prepared powdered or liquid pectin. Powdered and liquid pectin products are not interchangeable (you cannot substitute one for another). Low-sugar and no-sugar pectins are also available. Note: Because sugar has a preservative effect on jellies and jams, those made with less or no sugar may have a softer set and may not hold their color as well as higher-sugar types. The order of combining ingredients depends on the type of pectin

CAUTION: USDA and Penn State Extension recommend a boiling water or atmospheric steam canning process for all cooked jelly, jam, and fruit spreads. Outdated practices such as paraffin, open kettle, and inverting jars after filling risk bacterial, mold, and yeast growth in the product.



used. Complete directions for a variety of fruits are provided with packaged pectin.

Be sure to use mason canning jars and self-sealing, two-piece lids and process the jars in boiling water or atmospheric steam as described on page 1. Purchase packaged pectin needed each year. Old pectin may result in poor gels. Check the expiration date on the package. The following special jelly and jam recipes use regular packaged pectin. Do not use low- or no-sugar pectin in these recipes. If using pectin that is sold in a jar or by bulk, check with the manufacturer for the amount equivalent to one box.

Grape-Plum Jelly with Pectin

3½ lb ripe plums
3 lb ripe Concord grapes
1 cup water
½ tsp butter or margarine (optional ingredient to reduce foaming)
8½ cups sugar
1 box (1¾ oz) powdered pectin
Yields approx. 10 half-pints

PROCEDURE. 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 for 10 minutes. Strain juice through a jelly bag or double layer of cheesecloth. Measure sugar and set aside. Combine 6½ cups of juice with butter and pectin in a 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, skim off foam, and quickly fill into sterile half-pint jars, leaving ¼ inch of headspace. Adjust lids and process the jars as given in Table 1.

Blueberry-Spice Jam with Pectin

2½ pints ripe blueberries
1 Tbsp lemon juice
½ tsp ground nutmeg or cinnamon
5½ cups sugar
¾ cup water
½ tsp butter or margarine (optional ingredient to reduce foaming)
1 box (1¾ oz) powdered pectin
Yields approx. 5 half-pints

PROCEDURE. Wash and thoroughly crush blueberries, one layer at a time, in a large saucepan. Add lemon juice, spice, butter, 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 ¼ inch of headspace. Adjust lids and process the jars as given in Table 1.



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Pear-Apple Jam with Pectin

2 cups peeled and crushed fully ripe pears
1 cup peeled and finely chopped apples
¼ tsp ground cinnamon
6½ cups sugar
½ cup bottled lemon juice
6 oz liquid pectin (2 pouches)
Yields approx. 7 to 8 half-pints

PROCEDURE. 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 apples to pears and stir in cinnamon. Thoroughly mix sugar and lemon juice into fruits and bring to a boil over high heat, stirring constantly. Immediately stir in pectin. Bring to a full, rolling boil and boil for 1 minute, stirring constantly. Remove from heat, quickly skim off foam, and fill into sterile half-pint jars, leaving ¼ inch of headspace. Adjust lids and process the jars as given in Table 1.

Uncooked Jam or Jelly with Pectin

Uncooked jams and jellies are easy to prepare and have a fresh fruit taste. They can be made from most fresh or frozen fruits or fruit juices. They must be stored in the refrigerator or freezer. Follow pectin directions for when to refrigerate or freeze. Some are refrigerated immediately, while others must not be refrigerated or frozen until the gel is set, which could take up to 24 hours. After the gel has formed, they can be kept up to 3 weeks in a refrigerator or up to a year in a freezer. Freezer storage is best for maintaining natural color as well as flavor. Room temperature is not recommended because uncooked jellied products will mold or ferment in a short time.

Uncooked Berry Jelly

3 cups unsweetened berry juice, fresh or frozen (strawberry, raspberry, or blackberry)
 4½ cups sugar
 1 box (1¾ oz) powdered pectin
 ½ cup water
 Yields approx. 6 half-pint jars

PROCEDURE. Add sugar to 1¼ cups of berry juice. Stir thoroughly. Set aside. Add the pectin slowly to the water. Heat pectin and water almost to boiling, stirring constantly. Pour the pectin mixture into the remaining 1¾ cups of berry juice. Stir until pectin is completely dissolved. Let the pectin mixture stand for 15 minutes. Stir occasionally. Mix the reserved sugar-juice mixture with the pectin mixture. Stir until all sugar is dissolved.

Pour into freezer containers or canning jars, leaving ½ inch of headspace. Cover with a tight lid. Let stand at room temperature until set (up to 24 hours). Store in refrigerator or freezer.

Uncooked Blackberry or Raspberry Jam from Fresh Fruit

3 cups crushed blackberries or raspberries (about 1½ quarts)
 5½ cups sugar
 1 box (1¾ oz) powdered pectin
 ¾ cup water
 Yields approx. 7 half-pint jars

PROCEDURE. If blackberries are very seedy, put part of them

through the sieve or a food mill. Measure 3 cups of prepared berries. Place in an extra-large mixing bowl. Add sugar, mix well, and let stand for 10 minutes, stirring occasionally. Dissolve the powdered pectin in the water, bring to a boil, and boil for 1 minute. Add pectin to berries and sugar and stir for 3 minutes. Pour the jam into freezer containers or canning jars, leaving ½ inch of headspace. Cover the container. Let stand at room temperature until set (up to 24 hours). Freeze or refrigerate.

Recipes with Reduced Amounts of Sugar

Several pectin products are available that require low to no sugar or may be used with artificial sweeteners. Use recipes that come with the low- or no-sugar-needed pectin products. Read labels carefully and follow directions exactly. The texture of these products may be different than that of products made with sugar. Some weeping may occur.

Remaking Soft Jams and Jellies

Before remaking jellied products, it is best to wait 3 days while the product rests in a cool place; jelying sometimes takes time. Remake a trial batch using 1 cup of jam or jelly first. Do not remake more than 8 cups at a time.

Remaking Soft Cooked Jams or Jellies

To Remake Soft Jam or Jelly with Powdered Pectin

Measure jam or jelly to be recooked. Work with no more than

Table 1. Recommended processing times in a boiling water or atmospheric steam canner.

Product	Style of pack	Jar size	Process time (in minutes) at an altitude of		
			0–1,000 ft	1,001–6,000 ft	Above 6,000 ft
All jellies and jams with or without added pectin	Hot	Half-pints and pints	5*	10	15

*Use sterile jars.

Table 2. Measurements for preparing juice for jelly.

Product	Cups of water per pound of fruit	Minutes to simmer before extracting juice
Apples	1	20 to 25
Blackberries	0 to ¼	5 to 10
Crab Apples	1	20 to 25
Grapes	0 to ¼	5 to 10
Plums	½	15 to 20

4 to 6 cups at a time. For each quart of jam or jelly, mix $\frac{1}{4}$ cup of sugar, $\frac{1}{2}$ cup of water, 2 tablespoons of bottled lemon juice, and 4 teaspoons of powdered pectin. Bring to a boil while stirring. Add jam or jelly and bring to a rolling boil over high heat, stirring constantly. Boil hard for $\frac{1}{2}$ minute. Remove from heat, quickly skim foam off jam or jelly, and fill sterile jars, leaving $\frac{1}{4}$ inch of headspace. Adjust new lids and process as recommended in Table 1.

To Remake Soft Jam or Jelly with Liquid Pectin

Measure jam or jelly to be recooked. Work with no more than 4 to 6 cups at a time. For each quart of jam or jelly, measure $\frac{3}{4}$ cup of sugar, 2 tablespoons of bottled lemon juice, and 2 tablespoons of liquid pectin. Bring jam or jelly only to a 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 $\frac{1}{4}$ inch of headspace. Adjust new lids and process as recommended on Table 1.

Remaking Soft Uncooked Jam or Jelly

To Remake Freezer Jam or Jelly with Liquid Pectin

Mix jam or jelly in a bowl and for each 1 cup of jam or jelly add 3 tablespoons of sugar and $1\frac{1}{2}$ teaspoons of lemon juice. Stir well until sugar is dissolved (about 3 minutes). Add $1\frac{1}{2}$ teaspoons of liquid pectin per cup of jam or jelly and stir until well blended (about 3 minutes). Pour into clean containers. Cover with tight lids. Let stand in refrigerator until set. Store in refrigerator or freezer.

To Remake Freezer Jam or Jelly with Powdered Pectin

Mix jam or jelly in a bowl and add 2 tablespoons of sugar for each cup of jam or jelly. Stir well until dissolved (about 3 minutes). Measure 1 tablespoon of water and $1\frac{1}{2}$ teaspoons of powdered pectin for each cup of jam or jelly. Place in a small saucepan over low heat, stirring until pectin is dissolved. Add this mixture to the sugar and fruit mixture and stir until thoroughly blended (about 2 to 3 minutes). Pour into clean containers. Cover with tight lids. Let stand in refrigerator until set. Store in refrigerator or freezer.

Stiff Jams or Jellies

Stiff jams or jellies may result from:

- overcooking
- adding too much pectin
- using too little fruit and/or juice
- using too little sugar or too much underripe fruit

Stiff jams or jellies can be thinned with water or fruit juice and reprocessed. However, they may or may not form a gel again once they are reheated since overcooking pectin can reduce or destroy its ability to form a gel structure. An alternative use for hard-gelled preserves is to carefully melt them on the stove or in the microwave before using them as a meat glaze, a spread for pancakes, or a topping for ice cream.



For additional information about food preservation, visit the Penn State Extension Home Food Preservation website at extension.psu.edu/food/preservation or contact Penn State Extension in your county.

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