

Food Preservation

Jam and Jellies



Making jelly and jam from fresh produce is an easy food preservation method requiring only fruit, sugar, pectin, and a few basic kitchen tools.

Canning Knowledge

Read resources from the [National Center for Home Food Preservation](#) for best practices. Read [Using Boiling-Water Canners](#) before beginning to make jam or jelly at home. Read the [USDA Complete Guide to Home Canning: Guide 1, Principles of Home Canning](#), if new to canning.

Processing

Use a boiling-water canner to process all recipes contained in the following pages.

Style Pack	Jar Size
Hot	Half-pints or pints

Processing Times

At Altitude	Time
0 - 1,000 feet	5 minutes
1,001 to 6,000 feet	10 minutes
Over 6,000 feet	15 minutes

Remaking Soft Jellies

If the jelly does not set properly and is too soft, remake the jelly using the following directions. Measure the jelly to be recooked and work with no more than 4 to 6 cups at a time.

To remake with powdered pectin:

For each quart of jelly, mix:

- ¼ cup sugar
- ½ cup water
- 2 tablespoons bottled lemon juice
- 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 for ½ minute. Remove from heat, quickly skim the foam off the jelly, and fill sterile jars, leaving ¼-inch headspace. Adjust new lids and processes as recommended below.

To remake with liquid pectin:

For each quart of jelly, mix:

- ¾ cup sugar
- 2 tablespoons bottled lemon juice
- 2 tablespoons liquid pectin

Bring the jelly only to boil over high heat while stirring. Remove from heat and quickly add 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 ¼-inch headspace. Adjust new lids.

To remake without added pectin:

For each quart of jelly, add 2 tablespoons of bottled lemon juice. Heat to a boil, and boil for 3 to 4 minutes. Use one of the tests described in [Testing Jelly Without Added Pectin](#) by the National Center for Home Food Preservation to determine jelly doneness. Remove from heat. Quickly skim off foam and fill sterile jars, leaving ¼-inch headspace. Adjust new lids and processes as recommended.



STRAWBERRY JAM

Yields about 9 or 10 half-pint jars.

Ingredients:

- 5 ½ cups crushed strawberries, about three 1-quart boxes
- 1 package of powdered pectin
- 8 cups sugar

To prepare berries:

- Wash hands with soap and water.
- Select fully ripe berries, not overly ripe, for the best flavor.
- Sort, wash, and rinse thoroughly before cooking. Do not soak and drain off excess water.
- Remove stems and blossoms before crushing.

To make jam:

- Measure crushed strawberries and place them into a kettle.
- Add pectin and stir well. Place on high heat.
- Stir constantly; bring quickly to a full boil with bubbles over the entire surface.
- Add sugar, continue stirring, and heat again to a full bubbling boil. Optional: To decrease the foam formed during the cooking process, add ¼ teaspoon butter or margarine.
- Boil hard for 1 minute, stirring constantly.
- Remove from heat, and skim off the foam.
- Follow the canning and processing directions below.

Source: [National Center for Home Food Preservation](#), University of Georgia Extension.

BLUEBERRY SPICE JAM

Yield: about 4 or 5 half-pint jars.

Ingredients:

- 2 ½ pints fresh blueberries
- 1 tablespoon lemon juice
- ½ teaspoon nutmeg or cinnamon
- 5 ½ cups sugar
- ¾ cup water
- 1 box pectin

To make jam:

- Wash hands with soap and water.
- Wash and thoroughly crush blueberries in a saucepan, one layer at a time.
- Add lemon juice, spice, and water.
- Stir in the pectin and bring the mixture to a full, rolling boil over high heat, stirring frequently.
- Boil hard for 1 minute, stirring constantly. Remove from heat, quickly skim off foam, and fill sterile jars, leaving ¼-inch headspace.

- Follow the canning and processing directions below.

Source: [National Center for Home Food Preservation](#), University of Georgia Extension.

Recipes adapted from How to Make Jellies, Jams, and Preserves at Home. Home and Garden Bulletin No. 56. Extension Service, United States Department of Agriculture. 1982 reprint. National Center for Home Food Preservation, June 2005.

Canning Instructions

Read resources from the [National Center for Home Food Preservation](#) for best practices. Read [Using Boiling-Water Canners](#) before beginning to make jam or jelly at home. Read the [USDA Complete Guide to Home Canning: Guide 1, Principles of Home Canning](#), if new to canning.

- Sterilize canning jars in boiling water for 10 minutes.
- Pour hot jelly immediately into hot, sterilized jars, leaving ¼-inch headspace.
- Wipe rims of jars with a dampened, clean paper towel; adjust two-piece metal canning lids.
- Process the filled, lidded jars in a boiling water canner.
- Carefully remove jars from boiling water; let cool.
- Remove screw bands after about 12 to 24 hours.
- Label and date the product.
- Store the product in a dark, dry, cool location.

Processing Details

Determine processing times at altitude using a **boiling-water canner**:

Jar Size	Pack
Half-pints or pints	Hot

Processing Times

At Altitude	Time
0 - 1,000 feet	5 minutes
1,001 to 6,000 feet	10 minutes
Over 6,000 feet	15 minutes

PECTIN-FREE APPLE JELLY

Yields about 4 or 5 half-pint jars.

Ingredients:

- 4 cups apple juice, about 3 pounds of apples, and 3 cups water
- 2 tablespoons strained lemon juice if desired
- 3 cups of sugar

To prepare juice:

- Wash hands with soap and water.
- Select about one-fourth under-ripe and three-fourths fully ripe tart apples.
- Sort, wash, and remove stem and blossom ends; do not pare or core.
- Cut apples into small pieces. Add water, cover, and bring to a boil on high heat.
- Reduce heat and simmer for 20 to 25 minutes or until the apples are soft.
- Extract juice.

To make jelly:

- Measure apple juice into a kettle.
- Add lemon juice and sugar and stir well. Boil over high heat to 8 F above the boiling point of water or until the jelly mixture sheets from a spoon.
- Remove from heat, skim off foam quickly.
- Follow the canning and processing directions below.

Source: [National Center for Home Food Preservation](#), University of Georgia Extension.

GRAPE JELLY

Yields about 8 or 9 half-pint jars.

Ingredients:

- 5 cups grape juice, 3 ⅓ pounds concord grapes, and 1 cup water
- 1 package of powdered pectin
- 7 cups of sugar

To prepare juice:

- Wash hands with soap and water.
- Sort, wash, and remove stems from fully ripe grapes.
- Crush grapes. Add water, cover, and bring to a boil on high heat. Reduce heat and simmer for 10 minutes.
- Extract juice. Prevent the formation of tartrate crystals in the jelly by letting juice stand in a cool place overnight; strain through two thicknesses of damp cheesecloth to remove crystals that have formed.

To make jelly:

- Measure juice into a kettle.
- Add pectin and stir well.

- Place on high heat, stirring constantly. Bring quickly to a full rolling boil that cannot be stirred down.
- Add sugar, continue stirring, and heat again to a full rolling boil.
- Boil hard for 1 minute; remove from heat; skim off foam quickly.
- Follow the canning and processing directions below.

Source: [National Center for Home Food Preservation](#), University of Georgia Extension.

Recipes adapted from How to Make Jellies, Jams, and Preserves at Home. Home and Garden Bulletin No. 56. Extension Service, United States Department of Agriculture. 1982 reprint. National Center for Home Food Preservation, June 2005.

Canning Instructions

Read resources from the National Center for Home Food Preservation for best practices. Read Using Boiling-Water Canners before beginning to make jam or jelly at home. Read the USDA Complete Guide to Home Canning: Guide 1, Principles of Home Canning, if new to canning.

- Sterilize canning jars in boiling water for 10 minutes.
- Pour hot jelly immediately into hot, sterilized jars, leaving ¼-inch headspace.
- Wipe rims of jars with a dampened, clean paper towel; adjust two-piece metal canning lids.
- Process the filled, lidded jars in a boiling water canner.
- Carefully remove jars from boiling water; let cool.
- Remove screw bands after about 12 to 24 hours.
- Label and date the product.
- Store the product in a dark, dry, cool location.

Processing Details

Determine processing times at altitude using a **boiling-water canner**:

Jar Size	Pack
Half-pints or pints	Hot

Processing Times

At Altitude	Time
0 - 1,000 feet	5 minutes
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Causes and Possible Solutions for Problems With Jellied Fruit Products

Problem	Cause	Prevention
Formation of crystals	Excess sugar	Use a tested recipe and measure ingredients precisely.
Formation of crystals	Undissolved sugar is sticking to the sides of the saucepot	Dissolve all the sugar as the jelly cooks. If necessary, wipe the side of the pan free of crystals with a damp cloth before filling the jars.
Formation of crystals	Tartrate crystals in grape juice	Extract grape juice and allow tartrate crystals to settle out by refrigerating the juice overnight. Strain juice before making jelly.
Formation of crystals	Mixture cooked too slowly or too long	Cook at a rapid boil. Remove from heat immediately when the jelling point is reached. Make small batches at a time; do not double a tested recipe.
Bubbles	Air became trapped in hot jelly	Remove foam from jelly or jam before filling jars. Ladle or pour jelly quickly into the jar. Do not allow jelly or jam to start gelling before jars are filled.
Bubbles	May denote spoilage. If bubbles are moving, do not use	Follow recommended methods for applying lids and processing. See Mold or Fermentation on the following page.
Too Soft	Overcooking fruit to extract juice	Avoid overcooking; this lowers the jelling capacity of pectin.
Too Soft	Using too much water to extract the juice	Use only the amount of water suggested in the instructions.
Too Soft	Incorrect proportions of sugar and juice	Follow recommended proportions.
Too Soft	Undercooking causes insufficient concentration of sugar	Cook rapidly to the jelling point.
Too Soft	Insufficient acid	Lemon juice is sometimes added if the fruit is acid deficient.
Too Soft	Making too large a batch at one time	Use only 4 to 6 cups of juice in each batch of jelly.
Too Soft	Moving product too soon	Do not move jellied products for at least 12 hours.
Too Soft	Insufficient time before using	Some fruits take up to 2 weeks to set up completely; plum jelly and jellies or jams made from bottled juices may take a longer time.
Syneresis or “weeping”	Excess acid in juice makes pectin unstable	Maintain proper acidity of juice.
Syneresis or “weeping”	Storage place too warm or storage temperature fluctuated	Store processed jars in a cool, dark, and dry place. Refrigerate after opening.
Darker than normal color	Overcooking sugar and juice	Avoid long boiling. Make smaller batches and cook rapidly.
Darker than normal color	Stored too long or at too high of temperature	Store processed jars in a cool, dark, and dry place; use within one year. Refrigerate after opening.

[Causes and Possible Solutions for Problems with Jellied Fruit Products](#), National Center for Home Food Preservation.

Causes and Possible Solutions for Problems With Jellied Fruit Products

Problem	Cause	Prevention
Cloudiness	Starch green fruit	Use firm, ripe fruit or slightly underripe.
Cloudiness	Imperfect straining of homemade juice	Do not squeeze juice; let it drip through the jelly bag.
Cloudiness	Jelly or jam allowed to stand before it was poured into jars or poured too slowly	Pour into jars immediately upon reaching the gelling point. Work quickly.
Mold or fermentation: Denotes spoilage	Yeasts and molds grow on jelly	Process in a boiling water canner. Test the seal before storing. Pre-sterilize when processed for less than 10 minutes in boiling water.
Mold or fermentation: Denotes spoilage	Imperfect sealing. Common also with paraffin-covered jellies	Use new flat lids for each jar; make sure there are no flaws. Pre-treat lids per the manufacturer's directions. Use ring bands in good condition: no rust, dents, or bends. Wipe the sealing surface of the jar clean after filling before applying the lid.
Mold or fermentation: Denotes spoilage	Improper storage	Store processed jars in a dark, dry, cool place. Refrigerate after opening.
Too stiff or tough	Overcooking	Cook the jelly mixture to a temperature 8 F higher than the boiling point of water or until it "sheets" from a spoon.
Too stiff or tough	Too much pectin in fruit	Use ripe fruit. Decrease the amount if using commercial pectin.
Too stiff or tough	Too little sugar, which requires excessive cooking	When pectin is not added, use $\frac{3}{4}$ cup sugar to 1 cup juice for most fruits.

TABLE 1 (Continued): [Causes and Possible Solutions for Problems with Jellied Fruit Products](#), National Center for Home Food Preservation.

Resources

[So Easy to Preserve](#), University of Georgia Extension

[Complete Guide to Home Canning](#), USDA

[The Ball Blue Book](#)

[National Center for Home Food Preservation](#),
University of Georgia

[What's Cooking with Mary Liz Wright](#), YouTube.com

[Cottage Food](#), University of Illinois Extension

[Food Preservation](#), University of Illinois Extension

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