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UCCE Master Food Preservers of Sacramento County

Sacramento County Master Food Preservers
Monthly Wednesday Night Demonstration

Jams & Jellies Class

May 18, 2022



Resources:

- Please visit the National Center for Home Food Preservation at <http://nchfp.uga.edu> for detailed information about research-based methods of home food preservation.
- UC ANR Catalog (<http://anrcatalog.ucanr.edu>)

Should you need assistance or require special accommodations for any of our educational programs, please contact us at 916-875-6913.

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LOW SUGAR STRAWBERRY JAM

<https://www.ballmasonjars.com/pectin-calculator.html>

Yield: 4 half-pint jars

INGREDIENTS

2 2/3 cups hulled and crushed strawberries (use potato masher to crush)

2/3 cup water

3 Tablespoons Ball RealFruit Low or No-sugar Needed Pectin

1 cup granulated sugar

PROCESS

1. Prepare water bath canner and jars according to manufacturer's instructions. Prepare and measure ingredients for recipe.
2. Combine crushed strawberries (with their juice) and water in a large saucepan.
3. Gradually stir in Ball RealFruit Low or No-Sugar Needed Pectin.
4. Over high heat, bring mixture to a full rolling boil that cannot be stirred down, stirring constantly.
5. Add sugar. Return mixture to a full rolling boil. Boil hard 1 minute, stirring constantly.
6. Remove from heat. Skim foam if necessary.
7. Ladle hot jam into hot jars, one at a time, leaving 1/4 inch headspace.
8. Wipe rims. Center lids on jars. Apply bands and adjust to fingertip tight.
9. Place filled jars in canner, ensuring jars are covered by 1-2 inches of water. Place lid on canner. Bring water to gentle, steady boil.
10. Process jars for 10 minutes. Turn off heat, remove lid and let jars stand for 5 minutes.
11. Remove jars and cool. Check lids for seal after 24 hours. Lid should not flex up and down when center is pressed.
12. Clean and store jars according to manufacturer's instructions.

JALAPEÑO JELLY

<https://www.ballmasonjars.com/blog?cid=jalape%C3%B1o-jelly-0>

Yield: 5 half-pint jars

INGREDIENTS

12 oz. jalapeño peppers (about 12 medium)
2 cups cider vinegar, divided
6 cups sugar
2 3-oz pouches of Ball® RealFruit Liquid Pectin
Green food coloring, optional

PROCESS

1. Prepare boiling water canner. Heat jars in simmering water until ready for use. Do not boil. Wash lids in warm soapy water and set bands aside.
2. Purée peppers in a food processor or blender with 1 cup cider vinegar until smooth. Do not strain purée.
3. Combine purée with the remaining 1 cup cider vinegar and sugar. Bring to a boil over high heat. Boil for 10 minutes, stirring frequently.
4. Add Ball®RealFruit™ Liquid Pectin, immediately squeezing entire contents from pouches. Continue to boil hard for 1 minute, stirring constantly. Remove from heat. Add food coloring, if using, and skim foam if necessary.
5. Ladle hot jalapeño jelly into hot jars leaving 1/4 inch headspace. Wipe rim. Center lid on jar. Apply band until fit is fingertip tight.
6. Process in a boiling water canner for 10 minutes, adjusting for altitude. Remove jars and cool. Check lids for seal after 24 hours. Lid should not flex up and down when center is pressed.

TIP 1: For extra heat, do not discard all of the seeds from the jalapeno peppers.

Variation: *Easy Red Pepper Jelly:* Substitute 2 cups coarsely chopped seeded red bell peppers for the jalapeno peppers. Adjust the color as desired, using red and yellow food coloring.

HABANERO-APRICOT JELLY

<https://www.ballmasonjars.com/blog?cid=habanero-apricot-jelly>

Yield: 6 half-pint jars

INGREDIENTS

- 1 1/2 cups white vinegar (5% acidity)
- 2/3 cup finely chopped dried apricots
- 6 cups sugar
- 1/2 cup finely chopped red bell pepper
- 1/2 cup finely chopped red onion
- 1/4 cup finely chopped seeded habanero pepper
- 1 3-oz pouch Ball® Liquid Pectin or another liquid pectin.

PROCESS

1. Combine the white vinegar and chopped apricots in a medium bowl. Cover and let stand at room temperature for at least 4 hours or overnight.
2. Stir together apricot mixture, sugar, red bell pepper, red onion, and pepper in a 6-qt. stainless steel or enameled Dutch oven. Bring mixture to a full rolling boil that cannot be stirred down, over high heat, stirring frequently.
3. Add pectin, immediately squeezing the entire contents from the pouch. Continue hard boil for 1 minute, stirring constantly. Remove from heat. Skim foam, if necessary.
4. Ladle hot jelly into a hot jar, leaving 1/4 inch headspace. Wipe jar rim. Center lid on jar. Apply band and adjust to fingertip-tight. Place jar in a boiling-water canner. Repeat until all jars are filled.
5. Process jars for 10 minutes, adjusting for altitude. Turn off the heat; remove the lid, and let the jars stand for 5 minutes.

Tips: To make the most attractive jelly, cut fruit and vegetables into 1/8 in slices, then cut the slices into 1/4 pieces.

To make a tamer yet still tasty version of this beautiful apricot-red pepper suspension, substitute a mixture of jalapeno and scotch bonnet peppers for the habanero peppers. When cutting or seeding wear, rubber gloves to keep your hands from being burned and wash your hands immediately after removing gloves.

STRAWBERRY JAM

National Center for Food Preservation

https://nchfp.uga.edu/how/can_07/strawberry_jam_powder.html

Yield: 9-10 half-pint jars

INGREDIENTS

5 1/2 cups crushed strawberries (about 3-quart boxes of strawberries)

1 package powdered pectin

8 cups sugar

PROCESS

1. To prepare the fruit. Sort and wash fully ripe strawberries; remove stems and caps. Crush berries.
2. To make jam. Measure crushed strawberries into a kettle. Add pectin and stir well. Place on high heat and, stirring 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. Boil hard for 1 minute, stirring constantly. Remove from heat; skim.
3. Fill hot jam immediately into hot, sterile jars, leaving 1/4 inch headspace. Wipe rims of jars with a dampened clean paper towel; adjust two-piece metal canning lids. Process in a Boiling Water Canner.

Table 1. Recommended process time for **Strawberry 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

GRAPE JELLY

<https://pomonapectin.com/>

Yield: 7-8 half-pint jars

INGREDIENTS

4 cups Concord grape juice

1/4 cup lemon juice

4 teaspoons prepared calcium water (Pomona's: premade in small jar)

3/4 cup to 2 cups sugar **OR** 1/2 to 1 cup honey

4 teaspoons Pomona's Pectin

PROCESS

1. Prepare water bath canner and jars according to manufacturer's instructions. Prepare and measure ingredients for recipe.
2. Combine grape juice and lemon juice into large saucepan.
3. Add the prepared calcium water into pan; stir well.
4. Place sugar or room temperature honey into a separate bowl.
5. Thoroughly mix the Pomona's pectin powder into sugar or honey.
6. Bring juice to a full boil.
7. Add pectin-sweetener mixture.
8. Stir vigorously for 1-2 minutes to dissolve pectin, while mixture returns to full boil.
9. Remove from heat.
10. Ladle hot jam into hot jars, one at a time, leaving 1/4 inch headspace
11. Wipe rims. Center lids on jars. Apply bands and adjust to fingertip tight
12. Place filled jars in canner, ensuring jars are covered by 1-2 inches of water. Place lid on canner. Bring water to gentle, steady boil.
13. Process jars for 10 minutes. Turn off heat, remove lid and let jars stand for 5 minutes
14. Remove jars and cool. Check lids for seal after 24 hours. Lid should not flex up and down when center is pressed.
15. Clean and store jars according to manufacturer's instructions.

PEACH MELBA FREEZER JAM

freshpreserving.com 2018

Yield: 5 half-pint jars

INGREDIENTS

5 Tablespoons Ball Instant Pectin

1 1/2 cups sugar

2 1/2 cups finely chopped pitted peeled peaches (about 4 medium)

1 cup crushed raspberries (about 1 6-ounce container)

1 tablespoon lemon juice

PROCESS

1. Prepare and measure ingredients for recipe.
2. Stir instant pectin and sugar in a bowl until well blended
3. Add peaches, raspberries, and lemon juice. Stir 3 minutes.
4. Ladle jam into clean jars, leaving 1/2-inch headspace. Apply lids.
5. Let stand until thickened, about 30 minutes.
6. Refrigerate up to 3 weeks or freeze up to 1 year.

BOILING WATER CANNING PROCESS

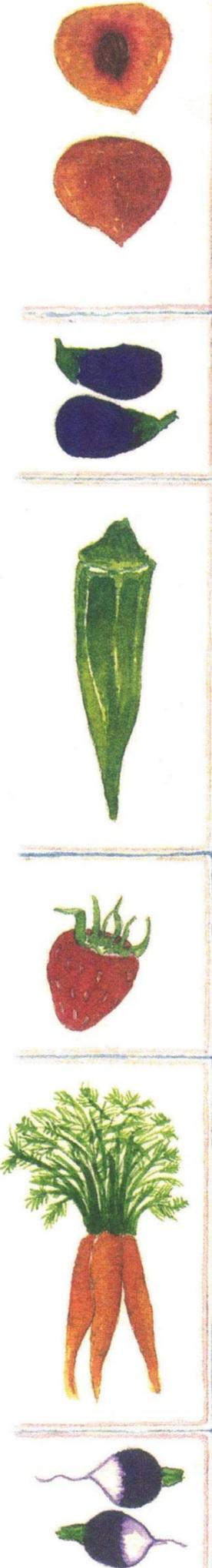
1. Before you start preparing your food, fill the canner halfway with clean water. This is approximately the level needed for a canner load of pint jars. For other sizes and numbers of jars, adjust the amount of water in the canner so it will be 1 to 2 inches over the top of the filled jars.
2. Preheat water to 140°F for raw-packed foods and to 180°F for hot-packed foods. Food preparation can begin while this water is preheating. Do not have the water boiling when you add the jars.
3. Fill, fit with lids, load onto the canner rack and use the handles to lower the rack into the water; or fill the canner with the rack in the bottom, one jar at a time, using a jar lifter. When using a jar lifter, make sure it is securely positioned below the neck of the jar (below the screw band of the lid). Keep the jar upright at all times. Tilting the jar could cause food to spill into the sealing area of the lid.
4. Add boiling water, if needed, so the water level is at least 1 inch above jar tops. Pour the water around the jars, not on them. For process times over 30 minutes, the water level should be at least 2 inches above the tops of the jars.
5. Turn heat to its highest position, cover the canner with its lid, and heat until the water in the canner boils vigorously.
6. Set the timer for the total minutes required for processing the food, adjusting for altitude.
7. Keep the canner covered and maintain a boil throughout the process schedule. The heat setting may be lowered a little as long as a complete boil is maintained for the entire process time. If the water stops boiling at any time during the process, bring the water back to a vigorous boil and begin the timing of the process over, from the beginning.
8. Add more boiling water, if needed, to keep the water level above the jars.
9. When the jars have boiled for the recommended time, turn off the heat and remove the canner lid. Wait no more than 5 minutes before removing jars.
10. Using a jar lifter, remove the jars without tipping and place them on a towel, leaving at least 1-inch spaces between the jars during cooling. Let jars sit undisturbed to cool at room temperature for 12 to 24 hours.



ATMOSPHERIC STEAM CANNING PROCESS

1. Use a research tested recipe and processing time developed for a boiling water canner when using an atmospheric steam canner. An atmospheric steam canner may be used with recipes approved for half-pint, pint, or quart jars.
2. Add enough water to the base of the canner to cover the rack. (Follow manufacturer recommendations.)
3. Preheat water to 140°F for raw-packed foods and to 180°F for hot-packed foods. Food preparation can begin while this water is preheating. Do not have the water boiling when you add the jars.
4. . Heat jars prior to filling with hot liquid (raw or hot pack). Do not allow the jars to cool before filling.
5. Load filled jars, fitted with lids, onto the canner rack and place the lid on the canner base.
6. Turn heat to its highest position to boil the water until a steady column of steam (6-8 inches) appears from the vent hole(s) in the canner lid. Jars must be processed in pure steam environment.
7. If using a canner with a temperature sensor, begin processing time when the temperature marker is in the green zone for your altitude. If using a canner without a temperature sensor, begin processing time when a steady stream of steam is visible from the vent hole(s).
8. Set the timer for the total minutes required for processing the food, adjusting for altitude. Processing time must be limited to 45 minutes or less, including any modification for elevation. The processing time is limited by the amount of water in the canner base. When processing food, do not open the canner to add water.
9. Monitor the temperature sensor and/or steady stream of steam throughout the entire timed process. Regulate heat so that the canner maintains a temperature of 212°F. A canner that is boiling too vigorously can boil dry within 20 minutes. If a canner boils dry, the food is considered under-processed and therefore potentially unsafe.
10. At the end of the processing time, turn off the heat and wait 2 to 3 minutes. Carefully remove the lid, lifting the lid away from you.
11. Using a jar lifter, remove the jars without tipping and place them on a towel, leaving at least 1-inch spaces between the jars during cooling. Let jars sit undisturbed to cool at room temperature for 12 to 24 hours.





Preserving Food: Uncooked Jams *and* Jellies

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. The other ingredients needed are commercial pectin, sugar and in some cases, lemon juice.

Uncooked jams and jellies must be stored in the refrigerator or freezer. But do not store them in the freezer until after the gel is formed. This could take up to 24 hours. Placing them in the freezer too soon will prevent the jam or jelly from “setting.”

After the gel has formed, they can be kept up to three 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. Once a container is opened, the product should be kept refrigerated and used within a few days.

UNCOOKED BERRY

RECIPE

JELLY (about 6 half-pint jars)

3 cups unsweetened berry juice, fresh* or frozen (strawberry, raspberry, or blackberry)
4-1/2 cups sugar
1 box regular powdered pectin
1/2 cup water

Add the sugar to 1-1/4 cups of berry juice. Stir thoroughly. Add the pectin slowly to the water. Heat almost to boiling, stirring constantly. Pour the pectin mixture into the remaining 1-3/4 cups of berry juice. Stir until pectin is completely dissolved. Let the pectin mixture stand 15 minutes. Stir occasionally. Mix the juice mixture with the pectin mixture. Stir until all sugar is dissolved.

Pour into clean, dry freezer containers or half-pint canning jars, leaving 1/2-inch headspace. Cover with a tight lid. Let stand at room temperature until set (up to 24 hours). Store in refrigerator or freezer.

* To extract juice from fresh berries, crush the berries in a saucepan. Bring to a boil over high heat, stirring to prevent scorching. Reduce heat and cook until soft, about 10 minutes.

Pour the cooked product into a damp jelly bag or bag made from several layers of cheesecloth. Allow the juice to drain undisturbed. For the clearest jelly, do not press or squeeze.

RECIPE**GRAPE JELLY***(about 5 half-pint jars)*

2 cups lukewarm water
 1 box regular powdered pectin
 1 6-ounce can frozen grape juice concentrate
 3-1/4 cups sugar

Mix the pectin slowly into the lukewarm water in a two-quart mixing bowl. Stir constantly until completely dissolved. Let stand 45 minutes. Stir occasionally but do not beat.

Thaw juice by placing unopened can in cold water. When juice is thawed, pour into a one-quart mixing bowl. Add 1-3/4 cups sugar. Mix thoroughly. All the sugar will not be dissolved. Add the remaining 1-1/2 cups of sugar to the dissolved pectin. Stir until all sugar is dissolved. Mix the juice mixture with the pectin mixture. Stir constantly until all sugar is dissolved.

Pour into clean, dry freezer containers or half-pint canning jars, leaving 1/2-inch headspace. Cover with a tight lid. Let stand at room temperature until set (up to 24 hours). Freeze or refrigerate.

RECIPE**UNCOOKED ORANGE JELLY***(about 6 half-pint jars)*

1 box regular powdered pectin
 2 cups lukewarm water
 1 6-ounce can frozen orange juice concentrate
 4-1/2 cups sugar
 1/4 cup fresh lemon juice

Mix the pectin slowly into the lukewarm water in a two-quart mixing bowl. Stir occasionally until completely dissolved. Let stand 45 minutes. Stir occasionally but do not beat.

Thaw juice by placing can in cold water. When juice is thawed, pour into a one-quart bowl. Add the lemon juice and 2-1/2 cups of the sugar. Mix thoroughly. All the sugar will not dissolve. Add the remaining two cups of sugar to the pectin mixture. Stir constantly until all sugar is dissolved.

Pour into clean, dry freezer containers or half-pint canning jars, leaving 1/2-inch headspace. Cover with a tight lid. Let stand at room temperature until set (up to 24 hours). Freeze or refrigerate.

RECIPE**UNCOOKED STRAWBERRY JAM FROM FRESH FRUIT***(about 4 half-pint jars)*

1-3/4 cups crushed strawberries (about 1 quart)
 4 cups sugar
 2 tablespoons lemon juice
 1 pouch liquid pectin

Measure 1-3/4 cups crushed strawberries. Place in an extra large bowl. Add sugar, mix well and let stand for 10 minutes. Measure lemon juice into a small bowl. Add liquid pectin and stir well. Stir into fruit and continue stirring for 3 minutes. Pour jam into clean, dry freezer containers or half-pint canning jars, leaving 1/2-inch headspace. Cover container. Let stand at room temperature until set (up to 24 hours). Freeze or refrigerate.

RECIPE**UNCOOKED BLACKBERRY OR RASPBERRY JAM FROM FRESH FRUIT***(about 7 half-pint jars)*

3 cups crushed blackberries or raspberries
 (about 1-1/2 quarts)
 5-1/4 cups sugar
 1 box regular powdered pectin
 3/4 cups water

If blackberries are very seedy, put part or all of them through a sieve or 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 one minute.

Add pectin to berries and sugar and stir for 3 minutes.

Pour the jam into clean, dry freezer containers or half-pint canning jars leaving 1/2-inch headspace. Cover container. Let stand at room temperature until set (up to 24 hours). Freeze or refrigerate.



Edited by Elizabeth L. Andress, Ph.D., and Judy A. Harrison, Ph.D., Extension Foods Specialists.

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Is It Jam or Jelly?

What is the difference between jam and jelly? The difference is in the way they are prepared, the proportions of different ingredients and the method of cooking.

 ARTICLES | UPDATED: APRIL 28, 2020



Martha Zepp, Penn State University

Jelly, jam, preserves, conserves and marmalade are usually fruit products that are jellied or thickened to some extent. Traditionally they contained adequate amounts of sugar to serve as a preservative agent.

- Jelly is a clear product firm enough to hold its shape when turned out of the jar, but quivers when moved.
- Jam is a thick, sweet spread made with crushed or chopped fruits. The pieces of fruit are very small. Jams tend to hold their shape but are less firm than jelly.
- Preserves are small whole fruit (such as cherry preserves) or uniform-size pieces

(such as peach preserves) cooked in a clear, slightly gelled syrup. The fruit should be tender and plump.

- Conservés are jam-like products that may be made with a combination of fruits and often contain nuts, raisins and/or coconut.
- Marmalades are soft fruit jellies containing small pieces of fruit or peel evenly suspended in the transparent jelly. They often contain citrus fruit as in orange marmalade.

While not truly a jelly or jam; butters, honeys and syrups are other fruit spreads made by cooking fruit and/or juice and sugar to the desired consistency.

- Fruit butters are made by cooking fruit pulp with sugar to a thick consistency. Spices may be added. Perhaps apple butter is the most common example.
- Honeys and syrups are made by cooking fruit juice or pulp with sugar to the consistency of honey or syrup. They are much thinner than the other spreads.

Researched based recipes and directions for making these products can be found in Penn State [Let's Preserve: Jelly, Jam, Spreads](#) and at the [National Center for Home Food Preservation](#).

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.

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

CAUTION: USDA and Penn State Extension recommend a boiling water 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.



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. 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.

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 used. Complete directions for a variety of fruits are provided with packaged pectin. The following recipes are normally available with packaged pectin:

- Jellies—apple, crab apple, 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 pectin needed each year. Old pectin may result in poor gels. 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
- 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, 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.

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.



Strawberry-Rhubarb Jelly with Pectin

- 1½ lb red stalks of rhubarb
- 1½ qt ripe strawberries
- ½ tsp butter or margarine
(optional ingredient to reduce foaming)
- 6 cups sugar
- 6 oz liquid pectin (2 pouches)

Yields approx. 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. Combine and mix 3½ 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 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. Add the pectin slowly to the water. Heat 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 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 jelling agents cause jams and jelly to thicken. Several pectin products are available that require low to no sugar or may be used with artificial sweeteners. Read labels carefully. The texture of these products may be different than that of products made with sugar. Some weeping may occur. The following recipes use reduced amounts of sugar.

Grape Jelly with Gelatin

- 2 Tbsp unflavored gelatin powder
- 1 bottle (24 oz) unsweetened grape juice
- 2 Tbsp bottled lemon juice
- 2 Tbsp liquid artificial sweetener (saccharin is acceptable)

Yields approx. 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 for 1 minute and remove from heat. Stir in sweetener. Fill quickly into hot, sterile half-pint jars, leaving ¼ inch of headspace. Adjust lids. Do not process or freeze; store in refrigerator and use within 4 weeks.



Apple Jelly with Gelatin

- 2 Tbsp unflavored gelatin powder
- 1 qt bottled unsweetened apple juice
- 2 Tbsp bottled lemon juice
- 2 Tbsp liquid saccharin sweetener
- Food coloring, if desired

Yields 4 half-pints

PROCEDURE. In a saucepan, soften gelatin in apple and lemon juices. To dissolve gelatin, bring to a full, rolling boil and boil for 2 minutes. Remove from heat. Stir in sweetener and food coloring, if desired. Pour into sterile half-pint jars, leaving $\frac{1}{4}$ inch of headspace. Adjust lids. Do not process or freeze; store in refrigerator and use within 4 weeks.

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.

Peach-Pineapple Spread

- 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)

Yields 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 much as 2 cups of sugar. Non-nutritive sweeteners may be added; however, the sweetening power of aspartame may be lost within 3 to 4 weeks.

PROCEDURE. 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 for 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 of headspace. Adjust lids and process the jars as given in Table 1.

Remaking Soft Jams and Jellies

Before remaking jellied products, it is best to wait 3 days while the product rests in a cool place; jelling 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 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.



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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.

Prepared by Luke LaBorde, associate professor of food science; Nancy Wiker, senior extension educator in Lancaster County; and Martha Zepp, extension project assistant.

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

Product	Style of pack	Jar size	Process time (in minutes) at altitudes 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
Peach-pineapple spread	Hot	Half-pints	15	20	25
	Hot	Pints	20	30	35

*Use sterilized 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



Pectin Facts

Regular Pectin Products (*Powdered and Liquid*)

- Use ripe fruit
- Do not reduce sugar
- Measure accurately
- Do not double recipe (except as instructed with "Flex Batch" products from Ball.)
- Follow cooking instructions
- Process in a boiling water canner
- Best to use ½ pint or pint jars (Larger jars may not set up because they cool too slowly.)

Powdered Pectin Products (*Usually made from citrus fruit*)

- **Sure-Jel Pectin** - cooked/freezer, Kraft Heinz Foods - 1-800-437-3284
6:00 a.m.-4:00 p.m. PDT
- **MCP Pectin** - cooked/freezer, Kraft Heinz Foods, 1-800-437-3284
6:00 a.m. - 4:00 p.m. PDT
- **Mrs Wages Fruit Pectin** - 1-800-647-8170
6:00 a.m. - 3:00 p.m. PDT
- **Ball RealFruit® Classic Pectin** - Jarden Home Brands, Consumer Affairs Dept.,
PO Box 3729, Muncie, IN 47307-0729, 1-800-240-3340

Liquid Pectin (*Made from apples*)

- **Certo** - cooked/freezer, Kraft Heinz Foods, 1-800-437-3284
6:00 a.m. - 4:00 p.m. PDT
Be sure to observe expiration date. (Using pectin packages with expired dates often results in runny products, refrigeration helps maintain freshness.)
- **Ball RealFruit® Liquid Pectin** - cooked/freezer, Home Canner's Helpline, 1-800-240-3340, M-F 8:30 a.m. – 5:00 p.m. ET.
(Observe expiration date, refrigeration helps maintain freshness.)
- **Mrs. Wages Liquid Fruit Pectin** - Cooked/freezer jam.
<http://www.mrswages.com/> or 1-800-647-8170

Low/No Sugar Pectin Products

Low-Methoxyl Pectin and Special Modified Pectin Products

- Are used for cooked jams/jellies usually
- Can be used for both low and no sugar products
- Can be sweetened with sucrose (table sugar), fructose or artificial sweetener, or natural juices like concentrated apple juice
- Do not freeze well
- Should be processed for longer term storage
- Should not be used for low acid preserves (such as jalapeno zucchini, or pumpkin)
- Have a shorter shelf life than regular jams or jellies

- **Mrs. Wages - Lite Fruit Pectin**, 800-647-8170
6:00 a.m.–3:00 p.m. PDT
- **Ball Real Fruit® Low or No-Sugar Needed Pectin** cooked, Jarden Home Brands, Consumer Affairs Dept., PO Box 3729, Muncie, IN 47307-0729, 800-240-3340.
- **Sure-Jel for Lower-No Sugar Recipes** - cooked/freezer, Kraft Heinz Foods, 1-800-437-3284, 6:00 am - 4:00 p.m. PDT. Modified regular pectin. Sets up with at least ¼ less sugar than regular pectin. Do not reduce sugar more than instructed. Now includes several recipes for using Splenda and concentrated grape or apple juice in place of sugar. These products will have a different texture and may take time to set up. Processing in boiling water canner recommended
- **Pomona's Universal Pectin** - cooked (available at Health/Natural food stores/garden stores and some grocery stores). Has low-methoxyl pectin plus a packet of calcium included in box. Recipes are included.
Can also use recipes in SP 50-765, "Low Sugar Fruit Spreads."
- **Note:** Ball "Low or no-sugar pectin" and Pomona's pectin can be used with honey as the sweetener.

Other Reduced Sugar Products

- **Ball Instant Fruit Pectin**- no cook (freezer jam). Uses ⅓ the sugar of regular freezer jam. Can also be made with sugar substitutes such as Splenda.
- **Mrs. Wages – No Cook Freezer Jam Fruit Pectin**. Using 1½ cups sugar to 4 cups crushed fruits.
- **Kanten Flakes** (agar) another form of seaweed thickener. Can be frozen, but not canned. Available at health food stores.
- **Clear-Jel** - cooked. Modified food starch. Fruit spread has limited shelf life. Make small batches and store in refrigerator or freezer.

Web Sites:

- Certo, Sure-Jel, MCP: www.kraftfoods.com
- Ball and Kerr: www.homecanning.com
- Mrs. Wages: www.mrswages.com
- Pomona's <http://www.pomonapectin.com/>

Source: OSU Master Food Preserver Program



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