



“Teaching research-based practices of safe home food preservation to the residents of Solano and Yolo Counties.”

STRAWBERRY TIME



Strawberries have adapted well in many areas of California. Perhaps some of you are picking them out of your gardens now. Produce wholesalers say that California strawberries are available at least 50 weeks out of the year! Weather conditions will greatly determine the price we pay for strawberries, but even when they cost more, everyone enjoys an occasional treat of a fresh strawberry. Loaded with Vitamin C, they are a great snack for children and adults alike. Spring and summer are typically the best time to buy lots of them because strawberry quality is at its peak while the price is at its low for the year.

The following recipes provide various ways to preserve strawberries.

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Strawberry-Lemon Pomona Pectin® Marmalade

Strawberry-Lemon Marmalade is a low-sugar cooked marmalade made with Pomona's Universal Pectin®. Pomona's Pectin® contains no sugar or preservatives and jells reliably with low amounts of any sweetener. Yield: 5-6 (1 cup or half-pint) jars.

Ingredients

- 2¼ pounds strawberries or about 2 level quarts
- 1/3 cup lemon peel from 2 to 3 medium to large lemons
- 2 teaspoons calcium water see step #1
- ¼ cup lemon juice bottled
- ¾ cup up to 2 cups sugar
- 2 teaspoons Pomona's Pectin mixed with sweetener

Instructions

1. Before you begin, prepare calcium water. To do this, combine ½ teaspoon calcium powder (in the small packet in your box of Pomona's pectin) with ½ cup water in a small, clear jar with a lid. Shake well. **Extra calcium water** should be stored in the refrigerator for future use.
2. Wash jars, lids, and ring bands. Most lids do not require further treatment; check you box to be sure.
3. Wash lemons thoroughly. Using a vegetable peeler or lemon zesting tool, remove the yellow part of the peel from the lemons, leaving the white pith behind or scraping it off the peel if necessary. Then slice the peel into thin strips about 1-inch long.
4. When you have 1/3 cup of lemon peels (no white pith), place the peels in a saucepan and add water to cover. Bring to a boil, reduce heat, and simmer covered for 5 minutes, stirring occasionally. After 5 minutes, remove the mixture from the heat and drain.
5. Wash, hull, slice, and mash the strawberries. Measure 4 cups mashed strawberries into saucepan with the drained lemon peel.
6. Add calcium water and lemon juice and mix well.
7. Measure sugar into a bowl. Thoroughly mix pectin powder into sugar. Set aside.
8. Bring fruit mixture to a full boil. Add pectin-sugar mixture, stirring vigorously for 1 to 2 minutes to dissolve the pectin while the marmalade comes back up to a boil. Once the marmalade returns to a full boil, remove it from the heat.
9. Fill hot jars to ¼" of top. Wipe rims clean with a clean cloth or paper towel. Add canning lid and screw on ring band to finger tightness.
10. Place jars in a prepared Boiling Water Canner that has been heated to simmering (180° F). Make sure that the water covers the jars by 1 to 2 inches. Cover the canner and bring the water to a boil. Process for 10 minutes at sea level to 1000-foot elevation. Follow Table 1 for altitudes above 1000 feet altitude.
11. When process time is complete, turn off the heat and remove the canner's lid. Let the jars sit in the hot water for 5 more minutes. Then carefully removed the jars to a rack or towel to cool. Let jars cool for 12-24 hours. Check seals. If sealed, remove the ring bands and wash the jars and under the rings. Dry well and label the jars with product name and date. Product is best if used within 1 year. Once opened, store in the refrigerator and use within 3 weeks.

Table 1. Recommended process time for Jams and Jellies in this handout requiring a boiling-water canner to process.

		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	10	15	20

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Less Sugar Strawberry Jam

- Purchase: 3 quarts or 6 pints strawberries
Prepare fruit: Wash, remove stems and crush berries
- Ingredients: 6 cups crushed strawberries
4 cups sugar
1 package *Sure-Jell® for Lower-Sugar Recipes*



Directions:

1. Wash 9 half-pint jars, canning lids and rings in hot soapy water, rinse and air dry or wash in dishwasher. Prepare fruit by crushing the berries, one layer at a time. Measure 6 cups crushed berries. Place crushed berries into 8-quart kettle.
2. Measure sugar into separate bowl. Remove $\frac{1}{4}$ cup of the measured sugar and mix with the box of *Sure-Jell for Lower-Sugar Recipes* fruit pectin in a small bowl.
3. Stir the fruit pectin/sugar mixture into the crushed berries. Add $\frac{1}{2}$ teaspoon of butter, margarine or vegetable oil, if desired to reduce foaming if desired. Stir the mixture until well blended. Bring the mixture to a full rolling boil over high heat, stirring constantly. (A full rolling boil is a boil that cannot be stirred down.)
4. Quickly add remaining pre-measured sugar to the mixture. Bring to a full, rolling boil, and boil **exactly** 1 minute, stirring constantly.
5. Remove from heat. Skim off any foam. To reduce fruit floating, skim off foam and stir gently for five minutes.
6. Fill waiting half-pint jars to $\frac{1}{4}$ inch from the top. Wipe rims of jars with a clean cloth. Place prepared sealing lids on the jars and firmly screw on the ring bands.
7. Place filled jars into a boiling water canner that is $\frac{1}{3}$ full with hot water. Heat water to 180 degrees F. Put prepared jars into the canner. Add more water, if necessary, so that tops of jars are covered with at least 1 inch of water.
8. Place the canner on high heat and bring the temperature of the water to boiling. When the temperature has been reached, process the jam for 10 minutes. Remove lid of Boiling Water Canner and let jars sit for 5 minutes in hot water. See Table 1 for processing times for higher altitudes on page 3 of this handout.
9. Remove the jars from canner and place on cooling rack for 12-24 hours undisturbed. To store the jam, remove the rings, wash the jars and rings and dry well. Label and date them. Store in a cool, dark location.

Strawberry Freezer Jam –Low sugar-no cook

using Ball® RealFruit Instant or Freezer Pectin

For 2 (1-cup size containers):

- 1 $\frac{2}{3}$ cups crushed fruit (with stems, pits, peels, etc. removed as appropriate)
- $\frac{2}{3}$ cup sweetener (granulated sugar or Splenda®)
- 2 Tablespoons Ball® RealFruit Instant Pectin
- 1 Tablespoon lemon Juice (only if using peaches)

Directions:

1. Stir sugar and pectin together in a bowl.
2. Add crushed fruit. Stir the mixture together for 3 minutes
3. Ladle jam into clean freezer jars and let sit for 30 minutes.
4. Enjoy now or freeze for later use.
5. Keep the product in the refrigerator between uses.
6. When ready to use the freezer jam, allow it to thaw before serving.



For 4 (1-cup size containers):

- 3 $\frac{1}{2}$ cups crushed fruit with stems, pits, peels, etc. removed as appropriate)
- 1 $\frac{1}{3}$ cup sweetener (granulated sugar or Splenda®)
- 4 Tablespoons Ball® RealFruit Instant Pectin
- 2 Tablespoon lemon Juice (only if using peaches)

Directions: follow directions above

For 6 (1-cup size containers):

- 5 cups crushed fruit with stems, pits, peels, etc. removed as appropriate)
- 2 cups sweetener (granulated sugar or Splenda®)
- 6 Tablespoons Ball® RealFruit Instant Pectin
- 3 Tablespoons lemon Juice (only if using peaches)

Directions: follow directions above.

STORE: In refrigerator for up to three weeks.

FREEZER JAM: Can be stored in the freezer for one year.

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Strawberry Marmalade

Master Food Preserver, Lorna Easter, shared this recipe with us. Citrus fruits and strawberries combine to produce a distinctive flavor.

1 medium orange
1 medium lemon
1/2 cup water
1/8 teaspoon baking soda
1 quart fully ripe strawberries
7 cups sugar
1 pouch liquid pectin

Directions:

1. Cut orange and lemon in quarters and remove the seeds. Grind, finely chop or slice crosswise, wafer thin. (Some people like to chop or grind the fruit and slice the peel; you can choose to do whatever you like.)
2. Add water and baking soda. Bring to a boil and simmer over very low heat, covered, for about 30 minutes. Stir frequently as the mixture scorches easily.
3. Thoroughly crush strawberries, one layer at a time. Combine the fruits and juices and measure; there should be about 4 cups of crushed fruit and juice.
4. Place measured fruits and juices into a large Dutch oven pan (8 quarts). Thoroughly mix sugar into the fruit. Place the mixture over high heat and bring to a full rolling boil; boil hard for 1 minute, stirring occasionally.
5. Remove the marmalade from the heat and stir in the pectin immediately. Skim off the foam with a metal spoon. Ladle into hot, clean 1-cup canning jars. Wipe rims of jars and seal with lids and rings according to manufacturer's instructions.
6. Place prepared jars in a Boiling Water Canner and process for 10 minutes once the water boils. Follow **Table 1** for processing times for altitudes above 1000 feet found on page 3 of this handout.
7. Remove lid of canner and let jars sit for another 5 minutes in hot water. Remove the jars from canner and place on cooling rack for 12-24 hours undisturbed. To store the jam, remove the rings, wash the jars and rings and dry well. Label and date them. Store in a cool, dark location.

Strawberry-Pineapple Jam

- 2 cups cleaned, stemmed, crushed strawberries
- 1 can of unsweetened, crushed pineapple (8 oz., including juice)
- 2 Tablespoons lemon juice
- 5 cups sugar
- 1 pouch liquid fruit pectin (3 ounces)

Directions:

1. Crush strawberries. Place into large pot. Add pineapple and lemon juice. Stir in the sugar, mixing thoroughly. Place mixture over high heat; bring to a full rolling boil (one that cannot be stirred down). Boil at rolling boil for 1 minute.
2. Remove mixture from the heat and at once add the liquid pectin. Skim off the foam with a metal spoon. Ladle quickly into hot jars and seal with hot lids and ring bands. Process in a Boiling Water Canner for 10 minutes. Follow **Table 1** for processing times for altitudes above 1000 feet found on page 3 of this handout.
3. Remove the jars from canner and place on cooling rack for 12-24 hours undisturbed. To store the jam, remove the rings, wash the jars and rings and dry well. Label and date them. Store in a cool, dark location.

Strawberry Jam with No Added Pectin

- 8 cups crushed strawberries (about 3 to 4 quarts fresh strawberries)
- 6 cups sugar

Wash jars, canning lids and rings in hot, soapy water and rinse. Combine berries and sugar, bring slowly to boiling stir & occasionally until sugar dissolves. Cook rapidly until thick, about 40 minutes. As mixture thickens, stir frequently to prevent sticking. Pour hot jam immediately into canning jars, leaving ¼-inch headspace. Wipe jar rims clean with a damp cloth or towel. Add canning lids and ring bands. Process 10 minutes in a boiling water bath canner at altitudes up to 1,000 feet. Follow **Table 1** for processing times for altitudes higher than 1000 feet found on page 3 of this handout. When processing time is complete, turn off the heat and remove the canner's lid. Let the jars sit in the hot water for 5 more minutes. Then carefully remove the jars to a rack or towel to cool. Let jars cool for 12-24 hours. Check seals. If sealed, remove the ring bands and wash the jars and under the rings. Dry well and label the jars with product name and date. Product is best if used within 1 year. Once opened, store in the refrigerator and use within 3 weeks.

Source: So Easy to Preserve, University of Georgia, 6th edition 2019.

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Strawberry Jam Variations

can be used for any of the recipes as desired.

Vanilla Strawberry Jam: Add half a vanilla bean, split in half lengthwise, to the crushed strawberries. Cook as directed and remove vanilla bean before ladling jam into jars. The resulting jam will be enhanced with subtle, yet distinct vanilla overtones.

Lemony Strawberry Jam: Add the grated zest of 1 large lemon to the crushed strawberries.

Peppered Strawberry Jam: Stir ½ tsp freshly ground black pepper into the cooked jam just before ladling it into the jars. Pepper accents and compliments strawberries' sweet flavor. Be sure to use freshly ground pepper, which delivers a fresher-quality flavor.

Source: **Ball®** *Homemade Strawberry Jam*

Strawberry Balsamic Jam:

Balsamic vinegar accents the strawberry flavor and gives the jam a robust taste.

5 cups crushed strawberries (about 5 lbs)

1 Tablespoon lemon juice

3 Tablespoons balsamic vinegar (5%)

6 Tablespoons Ball® RealFruit™ Classic Pectin

7 cups granulated sugar

Directions:

1. Wash jars, canning lids and rings in hot soapy water and rinse or wash in dishwasher. Prepare boiling water canner.
2. Combine strawberries and lemon juice in a 6 or 8-quart saucepan. Gradually stir in pectin. Bring mixture to a full rolling boil that cannot be stirred down, over high heat, stirring constantly.
3. Add entire measure of sugar, stirring to dissolve. Return mixture to a full rolling boil. Boil hard 1 minute, stirring constantly. Remove from heat. Skim foam if necessary.
4. Ladle hot jam into hot jars leaving ¼ inch headspace. Wipe rim. Center lid on jar. Apply band until fit is fingertip tight. Process in a boiling water canner for 10 minutes, adjusting for altitude. See Table 1 found on page 3 of this handout for altitude above 1000-foot elevation.
5. When processing time is complete, turn off the heat and remove the canner's lid. Let the jars sit in the hot water for 5 more minutes. Then carefully remove the jars to a rack or towel to cool. Let jars cool for 12-24 hours. Check seals. If sealed, remove the ring bands and wash the jars and under the rings. Dry well and label the jars with product name and date.

Source: **Ball®** www.freshpreserving.com

Strawberry-Rhubarb Jelly with liquid pectin

- 1-1/2 pounds red stalks of rhubarb
- 6-7 cups ripe strawberries
- ½ teaspoon butter, margarine, or vegetable oil to reduce foaming (optional)
- 6 cups sugar
- 6 ounces liquid pectin

Yield: About 7 half-pints

Please read [Using Boiling Water Canners](#) before beginning. If this is your first time canning, it is recommended that you read [Principles of Home Canning](#).

Procedure:

1. 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 sugar and the butter, margarine or oil if desired, thoroughly mixing into juice.
2. 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 clean, warm jars, leaving ¼ inch headspace.
3. Wipe glass rims of jars with clean wet cloth or paper towel. Add lids and rings prepared per package instructions. The Boiling Water Canner should be filled with enough water to cover the jars. Heat the canner to simmering. Place filled jars into the Boiling Water Canner. Add more water, if necessary, so that tops of jars are covered with at least 1- 2 inches of water.
4. Place the canner on high heat and bring the temperature of the water to boiling. When the water boils, process as recommended as recommended in Table 1 found on page 3 of this handout adjusting for altitude as necessary.
5. Once the processing time is complete, remove the lid and let the jars for 5 minutes in hot water. Remove the jars from canner and place on cooling rack for 12-24 hours undisturbed.
6. To store the jam, remove the rings, wash the jars and rings and dry well. Label and date them. Store in a cool, dark location.

Source: This document was adapted from the "Complete Guide to Home Canning," Agriculture Information Bulletin No. 539, USDA, revised 2015. Reviewed February 2018.

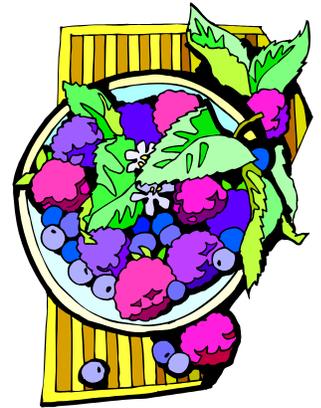
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Jams with Artificial Sweetener

Jellied products without sugar or with reduced sugar cannot be made by leaving the sugar out of regular jelly recipes. Look for a pectin product that says “light”, “less sugar”, or “no sugar needed”, or use a recipe that specifically calls for a sugar substitute. Carefully follow pectin manufacturer’s instructions for making and storing jam. Choose between making a cooked jam processed in a boiling water canner that is shelf-stable until opened, or a no-cook jam that stores in the freezer. Here is one example which the Solano Master Food Preservers have tested and found to be tasty.

Sugar Free Triple Berry Freezer Jam

- 4 cups strawberries
- 2 cups raspberries
- 1 cup blueberries
- OR 7 cups of any combination of berries
- 1¾ oz. package pectin for no or low-sugar preserves (low-methoxyl pectin)
- 20 packets Splenda® or 2 Tablespoons Splenda® or more to taste



Directions:

1. Mash strawberries, raspberries, and blueberries to make **4 cups of fruit pulp**. Follow directions on the low-methoxyl pectin box. The methods vary from brand to brand; therefore it is important to follow the directions on the box of pectin you are using.
2. Ladle into freezer containers or jars, leaving 1/2-inch headspace. Seal the jars or containers and label the product with name and date of preparation. Let stand at room temperature 4 to 6 hours or till set but no longer than 24 hours.
3. This jam may be stored up to 3 weeks in the refrigerator or 6 months in the freezer.
4. Makes about 4 cups

64 (One-Tablespoon servings) *Nutrition information per serving: 9 cal, 0 g pro., 2 g carbo., 0 g fat, 0 mg chol, 3 mg sodium Diabetic Food Exchanges: Free food.*

Cottage Food Strawberry Jam made with Ball Classic Pectin® RealFruit®

-- Crushed Fruit to Sugar Calculation Formula

California's CFO Law requires using the fruit-to-sugar proportions as specified in the Code of Federal Regulations (CFR), Title 21, Part 150 for various preserved products: fruit butters, jams, jellies and other fruit preserves. These proportions are based on the weight of the fruit and sugar, rather than volume (cups) as most home-based recipes for these products instruct. See link: [CFR - Code of Federal Regulations Title 21 \(fda.gov\)](http://www.fda.gov)

For example, when making Ball Classic Pectin® Strawberry Jam, the Cottage Food Operator would check this regulation and find that strawberries are classified as a Group 1 fruit (see CFR 21, Part 150. Group I fruits require that Cottage Food allowable jams made must have 47 parts of fruit by weight to 55 parts of saccharine (nutritive sweetener) by weight.

This recipe calls for 4 cups of hulled and crushed strawberries; so one must first weight the fruit and then calculate the amount of sugar required for an Allowable Cottage Food product.

1. Measure 34 ounces of crushed strawberries (about 4 cups of strawberries)
2. Calculate the ratio of 47 parts fruit to 55 parts sugar: $47 / 55 = .85$
3. Let S be the number of ounces of sugar that need to be calculated.
4. State the equivalent ratios: $34 / S = 47 / 55 = .85$
5. To solve for S, multiply both sides by S: $S \times 34 / S = .85S$
6. Simplify to $34 = .85S$
7. Divide both sides by .85: $34 / .85 = .85S / .85$, which simplifies to 40 ounces of sugar = S which is about $5\frac{3}{4}$ cups of sugar.

Follow the rest of the recipe as written adding 1.5 ounces ($4\frac{1}{2}$ Tablespoons) Ball® RealFruit® Classic Pectin. The recipe is written on the next page.

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Traditional Strawberry Jam with Cottage Food Proportions

1. PREPARE boiling water bath canner, jars and lids according to manufacturer's instructions.
 2. Wash, hull and crush strawberries. Prepare and measure ingredients for recipe (34 ounces which is about 4 cups crushed strawberries).
 3. Place crushed measured strawberries in an 8-quart saucepan. Measure 4½ Tablespoons Ball® RealFruit® Classic Pectin. Gradually, stir it into the strawberries.
 4. Bring mixture to a full rolling boil that cannot be stirred down, over high heat, stirring constantly.
 5. ADD entire amount of pre-measured sugar (40 ounces—about 5¾ cups), stirring to dissolve. Return mixture to a full rolling boil. Boil hard 1 minute, stirring constantly. Remove from heat. Skim foam if necessary.
 6. LADLE hot jam into clean jars, one at a time, leaving 1/4-inch headspace. (Today's recipe makes about 6-7 (8 ounce) jars.
 7. Wipe rims with a damp paper towel or clean cloth.
 8. Place pre-heated sealing lids on the jars.
 9. Apply ring bands and adjust to fingertip tight.
 10. PLACE filled jars in canner, ensuring jars are covered by 1 to 2 inches of water.
 11. Place lid on canner. Bring water to a steady boil.
 12. PROCESS jars for 10 minutes, adjusting for altitude. Follow **Table 1** for processing times for altitudes above 1000 feet found on page 3 of this handout.
 13. Turn off heat, remove lid and let jars stand for 5 minutes.
 14. REMOVE jars from the canner and let cool in a draft free location. 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.
 16. Label as required.
- If you are preserving at an altitude higher than 1,000 feet above sea level, adjust processing time as indicated by the [altitude chart](#).