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UCCE Master Food Preservers of Sacramento County



University of California
Agriculture and Natural Resources

*Sacramento County Master Food Preservers
Monthly Wednesday Night Demonstration*

*May 19, 2021
Preserving Berries, Pectin
and more*



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.

Table of Contents

LOQUAT JELLY.....	1
BLACKBERRY JELLY	2
BLUEBERRY PIE FILLING	3
FRUIT SHRUB	4
STRAWBERRY VINAIGRETTE DRESSING.....	5
HOW TO FREEZE FRUIT FOR THE BEST FLAVOR	6
Quick facts.....	6
Freeze as soon as possible	6
Storage temperature and length	6
Use high quality containers.....	6
Fruit pack methods.....	6
Steps to freeze fruit	7
Special tip for cleaning berries:	7
Special tip for packing whole berries:.....	7
Recommended preparation of fruit for freezing.....	7
BOILING WATER CANNING PROCESS	8
ATMOSPHERIC STEAM CANNING PROCESS	9
FRUIT SPREADS: Problems and Solutions	10

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LOQUAT JELLY

Source: So Easy to Preserve

Makes about 4 or 5 half-pint jars

4 cups loquat juice

4 cups sugar

To Prepare Juice – Select full-size loquats that are still hard. Wash, remove blossom ends. Place in a saucepan and barely cover with cold water. Cook slowly until pulp is very soft. Extract juice.

Extracting the Juice:

- Place fruit into a flat-bottomed saucepan and add cold water. For apples and other hard fruits, add up to 1 cup per pound of fruit. For berries and grapes, use only enough water to prevent scorching. Crush soft fruits to start the flow of juice.
- Bring to a boil on high heat. Stir to prevent scorching.
- Reduce heat.
- Grapes and berries need 10 minutes or less to cook until soft. Apples and other hard fruits may need 20 to 25 minutes, depending on the firmness of the fruit. Do not overcook, excess boiling will destroy the pectin, flavor and color.
- Pour everything into a damp jelly bag and suspend the bag to drain the juice. The clearest jelly comes from the juice that has dripped through a jelly bag without pressing or squeezing.
- If a fruit press is used to extract the juice, the juice should be restrained through a jelly bag.

NOTE: Juicy berries may be crushed and the juice extracted without heating.

To Make Jelly – Sterilize canning jars. Cook juice down until thick and cherry colored. Measure juice into a saucepan, add sugar and still well. Boil over high heat to 8°F above the boiling point of water, or until jelly mixture sheets from spoon. Remove from heat, skim off foam quickly. Pour jelly immediately into hot canning jars, leaving 1/4-inch headspace. Wipe jar rims and adjust lids. Process 5 minutes in a Boiling Water Bath.

BLACKBERRY JELLY

Source: So Easy to Preserve

Makes 4 or 5 half-pint jars

4 cups blackberries juice (about 2-1/4 quart boxes berries and 3/4 cup water)

3 cups sugar

To Prepare Juice – Select about 1/4 firm-ripe and 3/4 fully ripe berries. Sort and wash; remove any stems or caps. Crush berries, add water, cover and bring to boil on high heat. Reduce heat and simmer for 5 minutes. Extract juice.

Extracting the Juice:

- Place fruit into a flat-bottomed saucepan and add cold water. For apples and other hard fruits, add up to 1 cup per pound of fruit. For berries and grapes, use only enough water to prevent scorching. Crush soft fruits to start the flow of juice.
- Bring to a boil on high heat. Stir to prevent scorching.
- Reduce heat.
- Grapes and berries need 10 minutes or less to cook until soft. Apples and other hard fruits may need 20 to 25 minutes, depending on the firmness of the fruit. Do not overcook, excess boiling will destroy the pectin, flavor and color.
- Pour everything into a damp jelly bag and suspend the bag to drain the juice. The clearest jelly comes from the juice that has dripped through a jelly bag without pressing or squeezing.
- If a fruit press is used to extract the juice, the juice should be restrained through a jelly bag.

NOTE: Juicy berries may be crushed and the juice extracted without heating.

To Make Jelly – Sterilize canning jars. Measure juice into saucepot. Add sugar and stir well. Boil over high heat to 8°F above the boiling point of water, or until jelly mixture sheets from spoon.

Remove from heat, skim off foam quickly. Pour jelly immediately into hot canning jars, leaving 1/4-inch headspace. Wipe jar rims and adjust lids. Process 5 minutes in a Boiling Water Bath.

BLUEBERRY PIE FILLING

Source: National Center for Home Preservation

Quality: Select fresh, ripe, and firm blueberries. Unsweetened frozen blueberries may be used. If sugar has been added, rinse it off while fruit is still frozen.

Yield: 1 quart or 7 quarts

Procedure: See [Table 1](#) for suggested quantities. Wash and drain fresh blueberries.

For fresh fruit, place 6 cups at a time in 1 gallon boiling water. Boil each batch 1 minute after the water returns to a boil. Drain but keep heated fruit in a covered bowl or pot. Combine sugar and Clear Jel® in a large kettle. Stir. Add water and, if desired, food coloring. Cook on medium high heat until mixture thickens and begins to bubble. Add lemon juice and boil 1 minute, stirring constantly. Fold in drained berries immediately and fill jars with mixture without delay, leaving 1 inch headspace. Adjust lids and process immediately according to the recommendations in [Table 2](#).

Table 1. Blueberry Pie Filling.

	Quantities of Ingredients Needed For	
	1 Quart	7 Quart
Fresh or thawed blueberries	3-1/2 cups	6 quarts
Granulated sugar	3/4 cup + 2 tbsp	6 cups
Clear Jel®	1/4 cup + 1 tbsp	2-1/4 cup
Cold water	1 cup	7 cups
Bottled Lemon Juice	3-1/2 teaspoons	1/2 cup
Blue food coloring (optional)	3 drops	20 drops
Red food coloring (optional)	1 drop	7 drops

Table 2. Recommended process time for **Blueberry Pie Filling** in a boiling water canner.

		Process Time at Altitudes of			
Style of Pack	Jar Size	0-1,000 ft	1,001-3,000 ft	3,001-6,000 ft	Above 6,000 ft
Hot	Pints or Quarts	30 min	35	40	45

FRUIT SHRUB

Source: freshpreserving.com

Preserving Method: Refrigeration

Makes about 1 pint

A shrub is a fruit syrup mixed with vinegar. Historically, shrubs were made as a way to preserve fruit to drink, mixed with soda or water. Today, with the addition of different vinegars, sugars, spices, and herbs, shrubs have become a way to preserve and enhance fruit flavor. Use the shrub traditionally with soda water over ice or mix creatively into cocktails. Each sip will be reminiscent of an era when ingenuity surpassed the simple desire to preserve a summer bounty.

Recipe excerpted from The All New Ball® Book of Canning and Preserving, published by Oxmoor House (2016).

You will need

- 1 cup crushed fruit (such as strawberries, peaches, apricots, grapes, plums, berries, or cherries)
- 1 cup sugar
- 1 cup vinegar (such as unfiltered apple cider, balsamic, sherry, or red wine vinegar)
- 1-quart canning jar
- 1-pint canning jar

Directions

1. Combine crushed fruit and sugar in a 1-quart canning jar. Cover and shake to combine. Chill 1 to 3 days or until sugar dissolves and fruit releases its juice.
2. After 1 to 3 days, pour fruit mixture through a wire-mesh strainer into a 2-cup glass measuring cup, pressing with the back of a spoon to release as much juice as possible (about $\frac{3}{4}$ cup); discard solids. Stir in vinegar. Transfer mixture to a 1-pint jar. Cover with lid and chill 2 weeks before serving.

Quantity 40-4-ounce jars (1 pint=16 oz)

- 10 cups of fruit
- 10 cups of sugar
- 40-4 oz jars
- 10 cups of vinegar

Quantity 60-4 ounce jars (1 pint=16 oz)

- 15 cups of fruit
- 15 cups of sugar
- 60-4 oz jars
- 15 cups of vinegar

STRAWBERRY VINAIGRETTE DRESSING

Preserving Method: Water-Bath-Canning

Makes about 6 (8 oz) half pints

A refreshing addition to your fresh salads, this vinaigrette can be preserved through waterbath canning. Enjoy it on the accompanying Strawberry Romaine Salad recipe. Provided By DeeDee Grooms of Plant City, FL

You will need

5 quarts (25 cups) fresh whole strawberries, washed and stemmed

1-quart (4 cups) white distilled vinegar

Sugar equal to strawberry vinegar per directions

6 Ball® Collection Elite Platinum (8 oz) Jars

Directions

1. PLACE strawberries in a large stainless steel sauce-pot or plastic container.
2. POUR vinegar over strawberries. Cover container tightly with plastic wrap and let stand overnight in a dark, cool place (70°F to 75°F).
3. 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.
4. STRAIN liquid from strawberries, collecting in a large liquid measure. Liquid should be red and clear (no pulp). Measure liquid.
5. PLACE strawberry vinegar in a clean, large stainless steel saucepan. Add an equal amount of sugar, stirring to combine. Bring mixture just to a boil. Remove from heat and skim foam if necessary.
6. LADLE hot vinaigrette into hot jars leaving 1/4 inch headspace. Wipe rim. Center lid on jar. Apply band until fit is fingertip tight.
7. PROCESS jars 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.

Strawberry Romaine Salad Provided By DeeDee Grooms of Plant City, FL Makes about 8 servings 2 large heads romaine lettuce 1 to 2 pints (about 2-1/2 – 5 cups) strawberries, hulled and sliced 1 cup grated Monterey jack cheese 1/2 cup toasted chopped walnuts, optional Strawberry Vinaigrette Dressing (see recipe above) Note: If you don't have Strawberry Vinaigrette Dressing on hand, DeeDee recommends the following recipe. 1 cup vegetable oil 3/4 cup sugar 1/2 cup red wine vinegar 2 cloves garlic, minced 1/2 tsp paprika 1/2 tsp salt 1/4 tsp white pepper 1 Ball® Quart Glass Preserving Jar with lid and band WASH romaine lettuce and dry. Tear into pieces. Place into clear salad bowl. ADD sliced strawberries on top of romaine lettuce. Sprinkle with cheese and chopped walnuts. DRIZZLE with Strawberry Vinaigrette Dressing just before serving. OR COMBINE oil, sugar, vinegar, garlic, paprika, salt and pepper in jar. Apply lid and band. Shake until thickened. Drizzle over salad just before serving.

HOW TO FREEZE FRUIT FOR THE BEST FLAVOR

Source: <https://extension.umn.edu/preserving-and-preparing/how-freeze-fruit-best-flavor>

Quick facts

When freezing fruit, follow these guidelines to minimize color and flavor changes.

- Freeze fruit as soon as possible after harvesting.
- Pre-treat with vitamin C.
- Use high-quality containers.
- Keep frozen fruit below zero degrees F for a maximum of 8-12 months.
- Unsweetened fruit loses quality faster than fruit packed in sugar or sugar syrups.

Freeze as soon as possible

When harvested, fresh fruit continues to undergo chemical changes that can cause spoilage and deterioration. Fruit should be frozen as soon after harvest as possible and at their peak degree of ripeness.

Pre-treating fruit before freezing

Fresh produce contains chemical compounds called enzymes that cause the loss of color, loss of nutrients, flavor changes and color changes in frozen fruit. These enzymes can cause brown colors and the loss of vitamin C.

To prevent these effects, follow the recipe to pre-treat fruit by adding ascorbic acid (vitamin C), blanching or other recommended pre-treatment options.

Storage temperature and length

To maintain top quality, frozen fruit should be stored at zero degrees F or lower. Most frozen fruit maintains high quality for 8 to 12 months.

Use high quality containers

Use high quality containers which are moisture and vapor proof so moisture is kept in the product and air kept away from it. Rigid containers made of plastic are suitable for all packs and are especially good for liquid packs. Freezer bags work well for whole fruit.

Fruit pack methods

There are three ways to pack fruit for freezing: sugar pack, syrup pack, and unsweetened pack. Keep in mind, unsweetened fruit loses quality faster than fruit packed in sugar or sugar syrups.

1. **Sugar pack:** Sprinkle the required amount of sugar over the fruit. Gently stir until the pieces are coated with sugar and juice.

2. **Sugar syrup:** Dissolve the needed amount of sugar in cold water. Stir the mixture and let stand until the solution is clear.
3. **Unsweetened pack:** Wash fruit, dry well. Place in container and freeze.

Steps to freeze fruit

1. Wash and sort fruit carefully. Discard poor quality fruit or use for another purpose.
2. Prepare fruit as you will use it when you remove it from the freezer.
3. Check the chart below to see if an anti-browning treatment is suggested. Use ascorbic acid preparation as recommended in the chart or in the manufacturer's instructions.
4. Use dry sugar, or sugar syrup in proportions suggested in the chart.
 - Dissolve sugar needed in cold water.
 - Stir.
 - Allow to stand until sugar is completely dissolved. Do not heat.
 - You may hold sugar syrup 2 days in the refrigerator.
 - If you are preparing a sugarless pack of fruit that browns, be sure to treat with ascorbic acid or other anti-browning agents.
5. Pack into plastic freezer bags, freezer containers or freezer jars.
 - Allow ½-inch headspace for expansion.
 - Pack fruit, such as peaches which darken easily, in rigid containers and cover with syrup.
 - Place crumpled wax paper between lid and fruit to help prevent browning.

Special tip for cleaning berries: Do not soak berries in water to clean. Instead, place the berries in a colander, dip into cool water, and gently swish, rinse and drain well.

Special tip for packing whole berries: Whole berries pack well using the tray pack method.

- After cleaning and drying berries, place on a tray in a single layer.
- Place tray in freezer for 30 minutes.
- Remove tray from freezer and pack berries in freezer bags or freezer containers.
- Freeze.
- When ready to use, pour out the amount needed and return container to the freezer.

Recommended preparation of fruit for freezing

Freezing instructions for specific fruit, <https://extension.umn.edu/preserving-and-preparing/how-freeze-fruit-best-flavor>, scroll down to bottom of page.

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.



FRUIT SPREADS: Problems and Solutions

Source: Fundamentals of Consumer Food Safety and Preservation, Master Handbook

Problem	Cause	Prevention
<p>Mold growth or fermentation. Moldy jams and jellies are not safe to eat. They should be discarded.</p>	1. Failure to process in boiling water canner, allowing yeasts and mold to grow on jam or jelly.	1. Process in boiling water canner. Test seal before storing. Pre-sterilize jars when processed less than 10 minutes in boiling water canner.
	2. Imperfect sealing. (Common with paraffin-covered products and inversion method for settling.	2. Use new flat lids for each jar and pre-treat the lids per manufacturer's directions. Process in boiling water canner. Test seal before storing.
	3. Too little sugar.	3. Follow processing and storage recommendations for low-sugar jellied products.
	4. Improper storage.	4. Store processed jars in a dark, dry, cool place. Refrigerate after opening.
<p>Too soft or runny. Product is safe to eat.</p>	1. Overcooking fruit to extract juice.	1. Avoid overcooking, as this lowers the jelling capacity of pectin.
	2. Using too much water to extract juice.	2. Use only the amount of water suggested in the instructions.
	3. Incorrect proportions of sugar and juice.	3. Follow recommended proportions.
	4. Undercooking causing insufficient concentrate of sugar.	4. Cook rapidly to jelling point.
	5. Insufficient acid.	5. Lemon juice is sometimes added if the juice is acid deficient.
	6. Making too large a batch at one time.	6. Use only four to six cups of juice in each batch of jelly.
	7. Moving product too soon.	7. Do not move jellied products for at least 12 hours after they are made.
	8. Insufficient time before using.	8. Some fruits take up to two weeks to set up completely; apricot jam, plum jelly and jellies or jams made from bottled juices may take longer to set.

Fruit floats in jam. Products are safe to eat.	1. Under rip fruit.	1. Use ripe fruit.
	2. Not thoroughly crushed.	2. Crush fruit uniformly.
	3. Undercooking.	3. Cook rapidly, following instructions.
Bubbles. Safe to eat unless bubbles are moving or product is spoiled.	1. Air became trapped in hot jelly	1. Remove foam from jelly or jam before filling jars. Ladle or pour quickly into jar. Do not allow spread to start to gelling before jars are filled.
	2. May denote spoilage. If bubbles are moving, do not use.	2. Follow recommended methods for applying lids and processing.
Formation of crystals. Product is safe to eat.	1. Excess sugar.	1. Use a tested recipe and measure ingredients precisely.
	2. Undissolved sugar sticking to sides of saucepan.	2. Dissolve all sugar as jelled cooks. If necessary, wipe sides of pan free of crystals with damp cloth before filling jars.
	3. Tartrate crystals in grape juice.	3. Extract grape juice and allow tartrate crystals to settle out by refrigerating the juice overnight. Strain juice before making jelly.
	4. Mixture cooked too slowly or too long.	4. Cook at a rapid boil. Remove from heat immediately when jelling point is reached. Make small batches at a time; do not double tested recipes.
Crystals in grape jelly.	1. Tartrate crystals.	1. Formed from the tartaric acid naturally present in grapes. To minimize crystal formation, let the freshly-extracted grape juice stand in the refrigerator two to five days. Pour or decant and strain the clear juice again through a jelly bag or coffee filter before making the jelly.

Synersis or weeping. Product is safe to eat.	1. Excess acid is product makes pectin unstable.	1. Maintain proper acidity of product.
	2. Storage place too warm or storage temperature fluctuated.	2. Store processed jars in a cool, dark and dry place. Refrigerate after opening.
	3. Product was sealed with paraffin.	3. Seal with lids and process in boiling water canner.
Darker than normal color. Dark products are safe to eat, but may not have top-quality flavor.	1. Overcooking sugar and juice.	1. Avoid long boiling. Best to make small quantity of jelly and cook rapidly.
	2. Stored to long or at too high a temperature.	2. Store processed jars in a cool, dry, dark place and use within one year. Refrigerate after opening.
Cloudiness. Safe to eat unless there are moving bubbles or product appears spoiled.	1. Green fruit (starch).	1. Use firm, ripe, or slightly under ripe fruit.
	2. Imperfect staining of homemade juice.	2. Do not squeeze juice, but let it dip through jelly bag.
	3. Jelly or jam allowed to stand before it was poured into jars or poured too slowly.	3. Pour into jars immediately upon reaching gelling point. Work quickly.
	4. If product dose not have airtight seal, may denote spoilage.	4. Seal with lids and process in boiling water canner.
Dark surface. If there is no mold on or in the jelly, it is safe to eat.	1. Air in jar.	1. Indicates the product was not processed, had to much headspace or the seal failed.
Wine-like flavor or odor.	1. Inadequate heat processing or stored too long in the refrigerator.	1. Caused by yeast fermentation of the sugar to alcohol and carbon dioxide.