

Preserve at Home: Jams & Jellies

Remaking Soft Jellies

Measure jelly to be recooked. Work with no more than 4 to 6 cups at a time.

To Remake With Powdered Pectin

For each quart of jelly, mix $\frac{1}{4}$ cup sugar, $\frac{1}{2}$ cup water, 2 tablespoons bottled lemon juice, and 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 $\frac{1}{2}$ minute. Remove from heat, quickly skim foam off jelly, and fill sterile jars, leaving $\frac{1}{4}$ -inch headspace. Adjust new lids and process as recommended in Table 1. For more information on how to sterilize jars see "Sterilization of Empty Jars".

To Remake With Liquid Pectin

For each quart of jelly, measure $\frac{3}{4}$ cup sugar, 2 tablespoons bottled lemon juice, and 2 tablespoons liquid pectin. Bring jelly only to 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 headspace. Adjust new lids and process as recommended in Table 1.

To Remake Without Added Pectin

For each quart of jelly, add 2 tablespoons bottled lemon juice. Heat to boiling and boil for 3 to 4 minutes. Use one of the tests described in Testing Jelly without Added Pectin to determine jelly doneness. Remove from heat, quickly skim off foam, and fill sterile jars, leaving $\frac{1}{4}$ -inch headspace. Adjust new lids and process as recommended in Table 1.

Table 1. Recommended process time for **Remade Soft Jellies** 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

Preserve at Home: Jams & Jellies**Causes and Possible Solutions for Problems with Jellied Fruit Products****Jelly and Jam**

Problem	Cause	Prevention
Formation of crystals	Excess sugar.	Use a tested recipe and measure ingredients precisely
	Undissolved sugar sticking to sides of saucepot.	Dissolve all sugar as jelly cooks. If necessary, wipe side of pan free of crystals with damp cloth before filling jars.
	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.
	Mixture cooked too slowly or too long.	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.
Bubbles	Air became trapped in hot jelly.	Remove foam from jelly or jam before filling jars. Ladle or pour jelly quickly into jar. Do not allow jelly or jam to start gelling before jars are filled.
	May denote spoilage. If bubbles are moving, do not use.	Follow recommended methods for applying lids and processing. (See Mold or Fermentation, below.)
Too soft	Overcooking fruit to extract juice.	Avoid overcooking as this lowers the jelling capacity of pectin.
	Using too much water to extract the juice.	Use only the amount of water suggested in the instructions.
	Incorrect proportions of sugar and juice.	Follow recommended proportions.
	Undercooking causing insufficient concentration of sugar.	Cook rapidly to jelling point.
	Insufficient acid.	Lemon juice is sometimes added if the fruit is acid deficient.
	Making too large a batch at one time.	Use only 4 to 6 cups of juice in each batch of jelly.
	Moving product too soon.	Do not move jellied products for at least 12 hours after they are made.
	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 the longer time.

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

Table: National Center for Home Food Preservation, nchfp.uga.edu

Preserve at Home: Jams & Jellies

Jams and Jellies Recipes

Blueberry Spice Jam –with Pectin¹

Ingredients

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

Yield: About 4 or 5 half-pint jars

To make jam:

1. Wash and thoroughly crush blueberries, one layer at a time, in a saucepan.
2. Add lemon juice, spice, and water.
3. Stir in the pectin and bring mixture to a full, rolling boil over high heat, stirring frequently.
4. Add the sugar and return to a full rolling boil.
5. Boil hard for 1 minute, stirring constantly. Remove from heat, quickly skim off foam, and fill sterile jars, leaving 1/4-inch headspace

Canning Instructions:

1. Sterilize canning jars.
2. Pour hot jam immediately into hot, sterile jars, leaving ¼ inch headspace.
3. Wipe rims of jars with a dampened clean paper towel; adjust two-piece metal canning lids.
4. Process in a **Boiling Water Canner**.
5. Cool; remove screw bands after about 12-24 hours. Label and date product.
6. Store in a dark, dry, cool location. Use within one year for best quality of product.

Recommended process time for Apple Jelly 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 mins	10 mins	15 mins

Note: 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.

¹ This document was 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.

Preserve at Home: Jams & Jellies

Apple Jelly - without Added Pectin²

Ingredients

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

Yield: About 4 or 5 half-pint jars

To prepare juice:

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

To make jelly:

1. Measure apple juice into a kettle.
2. Add lemon juice and sugar and stir well.
3. Boil over high heat to 8 degrees F. above the boiling point of water, or until jelly mixture sheets from a spoon.
4. Remove from heat; skim off foam quickly.

Canning Instructions:

7. Sterilize canning jars.
8. Pour hot jelly immediately into hot, sterile jars, leaving ¼ inch headspace.
9. Wipe rims of jars with a dampened clean paper towel; adjust two-piece metal canning lids.
10. Process in a **Boiling Water Canner**.
11. Cool; remove screw bands after about 12-24 hours. Label and date product.
12. Store in a dark, dry, cool location. Use within one year for best quality of product.

Recommended process time for Apple Jelly 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.
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Note: 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.

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Strawberry Jam with Powdered Pectin³

Ingredients

- 5½ cups crushed strawberries (about 3 quart boxes strawberries)
- 1 package powdered pectin
- 8 cups sugar

Yield: About 9 or 10 half-pint jars

To prepare berries:

1. Select fully ripe berries, but not overly ripe berries for best flavor.
2. Sort, wash and rinse thoroughly before cooking. Do not soak and drain-off excess water.
3. Remove stems and blossoms before crushing.

To make jam:

1. Measure crushed strawberries place into kettle.
2. Add pectin and stir well. Place on high heat and, stirring constantly, bring quickly to a full boil with bubbles over the entire surface.
3. Add sugar, continue stirring, and heat again to a full bubbling boil.
 - (Optional) To decrease the amount of foam that is formed during the cooking process, add ¼ teaspoon butter or margarine.
4. Boil hard for 1 minute, stirring constantly.
5. Remove from heat and skim off foam, which forms from the boiling process.

Canning Instructions

1. Sterilize canning jars.
2. Fill hot jam immediately into hot, sterile jars, leaving ¼ inch headspace.
3. Wipe rims of jars with a dampened clean paper towel; adjust two-piece metal canning lids.
4. Process in a Boiling Water Canner
5. Cool; remove screw bands after about 12-24 hours. Label and date product.
6. Store in a dark, dry, cool location. Use within one year for best quality of product.

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 mins	10 mins	15 mins

Note: 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.

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Grape Jelly⁴

Ingredients

- 5 cups grape juice (3 ½ pounds concord grapes and 1 cup water)
- 1 package powdered pectin
- 7 cups sugar

Yield: About 8 or 9 half-pint jars

To prepare juice:

1. Sort, wash, and remove stem from fully ripe grapes.
2. Crush grapes. Add water, cover, and bring to boil on high heat
3. Reduce heat and simmer for 10 minutes.
4. Extract juice. Prevent formation of tartrate crystals in the jelly by letting juice stand in a cool place overnight, then strain through two thicknesses of damp cheesecloth to remove crystals that have formed.

To make jelly:

1. Measure juice into a kettle.
2. Add pectin and stir well.
3. 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.
4. Remove from heat; skim off foam quickly.

Canning Instructions:

1. Sterilize canning jars.
2. Pour hot jelly immediately into hot, sterile jars, leaving ¼ inch headspace.
3. Wipe rims of jars with a dampened clean paper towel; adjust two-piece metal canning lids.
4. Process in a **Boiling Water Canner**.
5. Cool; remove screw bands after about 12-24 hours. Label and date product.
6. Store in a dark, dry, cool location. Use within one year for best quality of product.

Recommended process time for Grape Jelly 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 mins	10 mins	15 mins

Note: 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.

⁴ This document was 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.

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45 Questions from Webinar

1 Where can I find the handouts or previous webinars?

On the Extension website: <https://extension.illinois.edu/>

2 I just purchased a new pressure canner. Do I need to have the gauge tested if it has never been used?

They are calibrated and ready to use. If it has been stored in an unheated space you might want to have it checked. After use have the gauge tested annually, call your local Extension office.

3 What should be done if the open kettle method was used for raspberry jam? I proceed to a hot water bath even though it has been 24 hours since making the jam?

If you are within a 48 hour window you can process the jars, longer than that you should throw it out.

4 Can you reuse the jars and just use the new lids every time, right?

Yes, as long as there are no nicks or cracks jars can be reused for years.

5 If the rings are a little rusty, can you still reuse?

A few spots of rust will not cause a problem but try to use bands that are not rusty.

6 For water bath canning, can you just use a large pot?

Yes, as long as you have a barrier (you can even use jar rings) between the bottom of the pot and the jars, and the jars are covered with 1-2 inches of water with an additional 1-2 inches of free space above that to accommodate the vigorous action of the boiling water.

7 Is Weck glass, okay?

I am not familiar with Weck glass. The images on the internet look as though the jars have a rubber gasket between the jar and glass lid and will not accommodate a 2 piece lid/ring sealing mechanism. The gasket seal would be good for dry or refrigerated food storage not for processing shelf stable food.

8 Does the rack holding the jars in the pot need to be a certain distance for the bottom? Or any height as long as water flows all the way around? The jars should not touch the bottom of the pot and there must be room for water circulation around the jars.

9 Explain the difference between a flat top, ceramic, and electric stove.

Please find more information here:

<https://nchfp.uga.edu/publications/nchfp/factsheets/smoothtops.html>

10 Can I use an electric canner? Is it safe?

Yes, if it is a commercial **canner**, not a cooker with a “canning” setting.

11 I was told I need to sterilize everything due to COVID 19, is that true?

We have not received any information as regards to canning and COVID 19 regulations. You would need to continue to follow the existing safety guidelines.

12 What do you suggest as a reasonable alternative if you have a smooth top electric stove?

Please go to the National Center for Home Food preservation for more information:

https://nchfp.uga.edu/publications/nchfp/factsheets/canning_portable.html

13 Electric stoves go off and on also. Do not use that either?

Please go to the National Center for Home Food preservation for more information:

<https://nchfp.uga.edu/publications/nchfp/factsheets/smoothtops.html>

14 How do I keep rings from rusting?

Store them in a cool dry place. Some people put newspaper between layers of rings.

15 IF you overfill the jars, is there an easy way to remove the product or just use a spoon? Just wondering because of sterilization,

A spoon is fine

16 We have people who use propane stoves/camping stoves to do the boiling water bath outside of their homes which seems unsafe to me? Any suggestions on the camping propane stoves for canning outside?

Please go to the National Center for Home Food preservation for more information:

https://nchfp.uga.edu/publications/nchfp/factsheets/canning_portable.html

17 I am unaware of removing rings. What rings can I take off and why?

USDA recommends removing rings for storage in order to better observe any signs of spoilage or sealing issues that might occur. This also allows you to reuse the rings—money saving!

18 Assuming the jar is properly sealed and stored how long can you store them?

Properly canned food stored in a cool, dry place will retain optimum eating quality for at least 1 year. Canned food stored in a warm place near hot pipes, a range, a furnace, or in indirect sunlight may lose some of its eating quality in a few weeks or months, depending on the temperature. Dampness may corrode cans or metal lids and cause leakage so the food will spoil.

19 Can you use the steam canning setting on an instant pot or is that considered unsafe even though it is marketed to be able to do that?

No, the USDA has not determined any setting on an electric pressure cooker to be a safe method of food preservation.

20 Is the set of jam effected by low sugar recipes?

Always follow approved recipes. Sugar is necessary for the preservation in these methods. These products cannot be made without the sugar, or with sugar substitutes. The sugar should not be reduced, either. If you want reduced sugar preserves, try jams made with purchased pectins sold specifically for reduced- or no-sugar-added jams and jellies.

21 Is this recipe from the video in the handouts?

The recipe in the video is from the box of commercial pectin.

22 Can you use vegan margarine?

True margarine is 80% vegetable oil and 20% water (by law) and therefore inherently vegan. Read the label of the product you choose to use.

23 Why remove the foam? What creates the foam?

Foam is air trapped in the sugar solution. If not removed it may shorten the life of the jam/jelly because the air trapped in the bubbles may not be exhausted during the canning process.

24 Do you have any recipes that are sugar free? Where can I find them?

You can find low sugar recipes on the package of the low sugar pectin or go to https://nchfp.uga.edu/how/can7_jam_jelly.html

25 Couldn't you just life the rack out of the pot rather than lift each individually? Or is that not a safe?

The jars need to be removed from the pot vertically, the rack might tip the jars as you lift it.

26 How much pectin do I need for strawberry jam?

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

27 How and when should I sterilize jars? Can I sterilize in the dishwasher?

Sterilize jars by immersing them in boiling water for 10 minutes when the recipe calls for a processing time less than 10 minutes.

https://nchfp.uga.edu/how/can_01/sterile_jars.html

28 Are pears or currants high in pectin? Is there a difference in red and black currants?

Currants are higher in pectin while pears are not

29 Is there a reason that I see more liquid pectin in recipes vs. powdered? Is one better than the other?

No, but recipes are specific in the type of pectin used.

30 I put several jars in the fridge once cooled to try to help them set more quickly. They are still sealed. Is it safe to pull them out and put them on the shelf or will that affect the seal?

Yes, however that is an unnecessary step. Make sure you remove the rings and dry both lids and rings thoroughly as the “sweating” as the jars warm up may lead to rust developing on the rings and lids. And can ultimately compromise the seal if the rust is allowed to develop.

31 You had one product in the blue box (Paloma) that uses calcium water. What's the difference?

This is from the paloma website: Pomona's Pectin is activated by calcium, so calcium has to be present in the mixture either naturally or added by you. Since most people don't know the calcium content of their fruit, we recommend a calcium water amount in every recipe to be sure there is calcium in the mixture. If your fruit has calcium in it naturally, you don't need to add the calcium water.

I am unfamiliar with this brand—it was purchased to show different brands available.

32 Is there a place to borrow the pots and tools?

Call your local Extension office or look for a “shared or incubator” kitchen in your area.

33 Thinking we may not have a farmers market, is it okay to buy frozen fruit and used thawed in these recipes?

Canned or frozen fruit or fruit juice can be used to make jellied products. If you use commercially canned or frozen products, select those that have no added sugar. It's best if canned fruits are canned in their own juice. Because commercial canned or frozen products are made from fully ripe fruit (which are lower in pectin than under-ripe fruit), pectin must be added.

34 If I don't use all the cooked fruit, cause I ran out of jars can I refrigerate and use later?

Yes, but it must be reheated and processed. Or just keep it in the refrigerator and enjoy it now!

35 If a jar lid popped back up while in storage, should it automatically be thrown out, or is there a way to tell that it's really compromised?

Yes, throw it out.

36 If you have canned using an instant pot for a batch, what should you do with those products at this point?

Throw it out (sorry).

37 If the top half inch or so of a light colored jam (like peach) darkens over time, is it safe to eat?

This is not a safety issue. Lighter fruits are more prone to darkening.

38 While butter is used to reduce foam, does the dairy product reduce the shelf life?

No.

39 Do I have to use a canning rack in my pot to hold, raise, and lower jars? I'm having trouble finding a rack that fits my pot.

The rack or barrier on the bottom is to prevent the jars from rocking during the canning process which could cause the jars to crack. The jars should not touch the bottom of the pot and there must be room for water circulation around the jars.

40 Is this process talked about in the webinar the same for all (jams/jellies/marmalades)?

Follow an approved recipe (USDA, Extension, Ball, Kehr, Mrs. Wages) exactly each time you make a jam or jelly.

41 Can you use bananas or papayas to do jam? I like to do tropical fruit flavors.

No, it is not recommended. See

https://nchfp.uga.edu/publications/usda/GUIDE02_HomeCan_rev0715.pdf

42 My mom just lets the jars sit on the counter after filling (she sterilizes the jars and lids) and waits for the lids to pop. If they don't pop, she stores in the refrigerator. Is this safe? She's been doing as Grandma did. No, that is the "open kettle" method that is no longer safe. All canned products must be processed in a boiling water or pressure canner according to an approved recipe. (USDA, Extension, Ball, Kehr, Mrs. Wages)

43 I have heard the Elderberry jams and jellies recipes now need to be careful because of the pH. University of Wisconsin posted something about elderberries.

See here:

<https://fyi.extension.wisc.edu/safefood/2020/06/05/elderberries-beautiful-to-look-at-not-for-canning/>

44 How do you get the jars hot in the beginning?

If the jars do not require sterilization you can keep them hot by immersing them in the canner in simmering water. Fill and then place them back into the water—then proceed with the processing.

45 Are recipes by volume or weight?

Either depending on the recipe