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FOOD PRESERVATION



Jams and Jellies from Native (Wild) Fruits

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Many types of fruit and juices can be used to make jams and jellies. This guide provides recipes for several wild fruits, including buffalo berries, chokecherries, gooseberries, ground cherries, pin cherries, rose hips and sand cherries. You may need to experiment a bit to get an acceptable product because of variations in the growing conditions and varieties of wild fruits.

For more information about making jams and jellies, see these NDSU Extension publications available at www.ag.ndsu.edu/food:

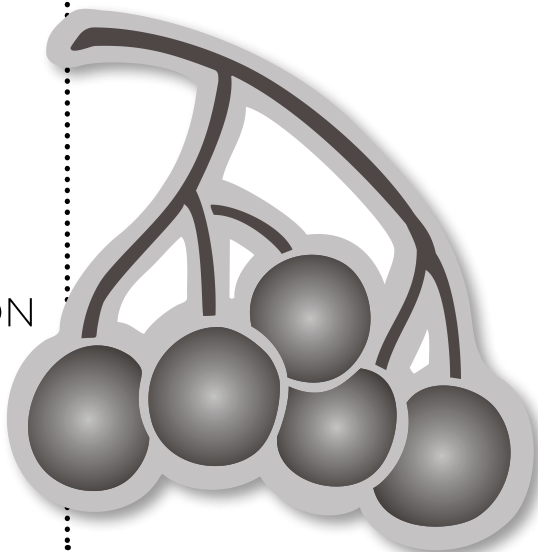
FN172, "Jams, Jellies and Spreads"

FN590, "Jams and Jellies from North Dakota Fruits"

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Fargo, North Dakota



Ingredients

Making jams and jellies successfully depends on having the right proportion of the main ingredients: fruit, acid, sugar and pectin, the gelling agent. Measuring carefully will help ensure success. Good jelly depends upon the acid and pectin content of fruit plus the addition of sugar. The acid content can be detected by taste — it compares with the tartness of a good, tart apple. One to 2 teaspoons of lemon juice per cup of fruit juice may be added if extra tartness is needed. Or use one-quarter to one-half apple juice for the total juice in the jelly recipe.

Testing for Pectin

Pectin in fruit decreases as the fruit ripens. Select a mixture of about three-fourths ripe and one-fourth underripe fruit when making jelly without added pectin.

To test for pectin, place 1 tablespoon of cooked, cooled fruit juice in a dish and add 1 tablespoon of grain alcohol or denatured alcohol. Stir slightly to mix. Juice rich in pectin will form a solid, jellylike mass. Juices low in pectin will form small particles of jellylike materials. **NOTE:** Dispose of this mixture without tasting. Use 1 cup of sugar for each cup of juice if the test indicates the juice is rich in pectin.

If the mass is slightly broken, use $\frac{3}{4}$ cup of sugar to 1 cup of juice. If only a small amount of pectin is present, use $\frac{1}{2}$ cup of sugar to 1 cup of juice. This is only a guide. Commercial pectin or fruit juice rich in pectin may be added if the mass does not hold together. Read and follow carefully the directions on commercial pectin products. The order in which the ingredients are combined depends on the form of pectin. Powdered pectin is mixed with unheated fruit juice. Liquid pectin is added to a boiling juice and sugar mixture.

Pulp can be reheated. Add water just to cover, reheat, strain and test for pectin. This juice can be used with the first juice if you obtain good pectin test results or used alone with added commercial pectin.

Follow These Tips for Safety and Quality

- Paraffin or wax seals are no longer recommended for **any** sweet spread.
- Process all sweet spreads that will be stored at room temperature in a water-bath canner.
- Use only two-piece, self-sealing lids, which have a flat metal disc and sealing compound and a separate metal screw band. The lids can be used only one time, but the screw band can be reused. After the canned goods have sealed, remove the screw bands to prevent them from rusting on the jars.
- Use sterile jars and a five-minute process time whenever possible. If unsterile jars are used, the process time is 10 minutes. The additional processing time may cause weak gels in some products.
- Sweet spreads that develop mold growth should not be used.
- Do not overcook. Overcooking may break down pectin and prevent proper gelling.
- Make one batch at a time using up to 4 cups of juice. Increasing the quantities often results in soft gels.
- Use the jar size specified in the recipe. Use of larger jars may result in excessively soft products.

General Directions

Use only 3 or 4 cups of juice per batch. The amount of sugar varies — 1 cup of juice to 1 cup of sugar is satisfactory but using $\frac{3}{4}$ cup of sugar to 1 cup of juice may give better quality jelly and a more natural flavor. The amount of sugar is determined by the amount of pectin present. Juice for jelly making can be stored for about one week in the refrigerator if you aren't able to use it right away. Juice can be frozen several months in containers; leave $1\frac{1}{2}$ inch of head space. Thaw slowly.

Satisfactory jam can be made from many of the fruits if you have enough pulp. One pound of fruit usually yields at least 1 cup of clear juice. See publication FN-172, "Jellies, Jams and Spreads" for more information about extracting juice.

1. Wash and remove hulls and stems. Cut firm, larger fruits into small pieces. Crush soft fruits or berries.
2. Add enough water to cover the fruit. Put the 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.
3. Mash the fruit through a sieve.
4. Measure the pulp. Add sugar in a proportion of $1\frac{1}{2}$ pounds of sugar to 2 pounds of pulp. Continue to cook slowly until thick.
5. To strain, place three layers of damp cheesecloth or a jelly bag in a large bowl. Pour prepared fruit into the cheesecloth. Tie the cheesecloth closed; hang it and let it drip into a bowl until the dripping stops. Press gently. Note: The juice can be frozen or canned at this point for later use.

6. Add ingredients as directed and cook.
7. If you plan to store the jelly or jam at room temperature, process it in a water-bath canner to help prevent mold growth.
 - Pour the jelly, jam or syrup into hot, sterilized jars, leaving $\frac{1}{4}$ inch of head space.
 - Remove bubbles with a bubble freer or spatula; clean the rims and jar threads carefully before applying lid and ring.
 - Use two-piece lids. Do not overtighten the lids, which may lead to buckling and a poor seal. Consult the manufacturer's directions; most recommend "finger tight."
 - Place the jars in a canner filled with simmering water. The water should be 1 to 2 inches over the top of the jars.
 - Begin timing when the water is boiling gently. At the end of the recommended processing time, remove the jars carefully with a jar lifter and place on a rack or protected surface away from drafts.
 - Do not disturb the jars for at least 12 hours. Sealed lids will be concave. You may hear them "pop."
 - For best quality, use home-preserved jellies within one year.

NOTE: Using paraffin is **not** recommended as a way to seal jellies and jams. Turning jars upside down to seal also is not recommended. The U.S. Department of Agriculture recommends processing jams, jellies and syrups in a boiling water-bath canner to inactivate molds that may be present. Unsterilized jars may be used if the jelly or jam is processed for 10 minutes.

Table 1

Recommended water bath process time for jams and jellies in a boiling water-bath canner.

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 min.	15 min.

RECIPES

American Black Current – Golden or Missouri

For jelly, follow general directions.

VARIATIONS: You can use half apple juice.

Missouri currant and buffalo berry combined is a good jelly. Using half currents, one-fourth rhubarb and one-fourth apple makes a good jam.

Buffalo Berry or Bull Berry Jelly

Wash and stem the berries. Use 3 cups of water for 1 pound of fruit. Boil eight to 10 minutes; mash fruit. Strain the fruit through a damp jelly bag. **NOTE:** The juice has a disagreeable aroma. Pectin is high. Use $\frac{3}{4}$ cup of sugar for 1 cup of juice and follow general jelly directions. One tablespoon of lemon juice per cup of juice may be added.

Or use:

- $\frac{1}{2}$ cup berry juice
- $\frac{1}{2}$ cup crabapple juice
- $\frac{3}{4}$ cup sugar

Follow general directions. Pour into hot, sterilized jars and seal with two-piece, self-sealing lids. Process according to the directions in Table 1. Note: The jelly becomes firmer and color fades on storage.

Buffalo Berry and Crabapple Jelly

- 2 cups buffalo berry juice (rich in pectin)
- 2 cups crabapple juice (rich in pectin)
- 3 cups sugar

Follow general directions. Pour into hot, sterilized jars and seal with two-piece, self-sealing lids. Process according to the directions in Table 1. Makes about eight 7-ounce glasses.

Chokecherry Jelly With Liquid Pectin

Extract the juice using enough water to cover the washed fruit and cook about 15 minutes or until the fruit is soft. Do not crush or grind the seeds, which contain a cyanide-forming compound that can be toxic.

- 3 cups chokecherry juice
- $6\frac{1}{2}$ cups sugar
- 2 pouches (6 fluid ounces) liquid pectin
- $\frac{1}{4}$ teaspoon almond extract (optional)

Pour the juice into a large, heavy kettle. Add sugar and stir to mix. Place over high heat. Bring to a boil, stirring constantly. Stir in pectin. Bring to a full, rolling boil and boil hard for one minute, stirring constantly. Remove from the heat. Stir and skim for five minutes. Add almond extract.

Follow general directions. Pour into hot, sterilized jars and seal with two-piece, self-sealing lids. Process according to the directions in Table 1.

Source: Farm Journal Freezing and Canning Cookbook, 1978.

Chokecherry Jelly With Powdered Pectin

Extract juice.

- 3½ cups chokecherry juice
- 4 cups sugar
- 1 (1¾-ounce) package powdered pectin

Stir pectin into the juice. Bring this mixture to a rolling boil (one that does not stop when stirred) over high heat, stirring constantly. Quickly add sugar to the juice mixture. Bring to a full, rolling boil and boil one minute, stirring constantly. Remove from the heat. Skim off any foam. Pour into hot, sterilized half-pint jars; leave ¼ inch of head space. Cover with two-piece lids and process in a boiling water-bath canner according to Table 1.

Gooseberry Jam

- 4½ pounds fully ripe gooseberries to make 5½ cups gooseberry juice
- 1 cup water
- 1 (1¾-ounce) package pectin
- ½ teaspoon butter or margarine
- 7 cups sugar, measured into separate bowl

Crush gooseberries thoroughly, one layer at a time, or grind them. Place them in a saucepan; add water. Bring to a boil. Reduce the heat to low; cover and simmer 10 minutes. Strain. Measure exactly 5½ cups of juice into a 6- or 8-quart saucepot. Stir pectin into the juice in the saucepot. Add butter to reduce foaming. Bring the mixture to a full, rolling boil (a boil that doesn't stop bubbling when stirred) on high heat, stirring constantly. Stir in the sugar. Return to a full, rolling boil and boil exactly one minute, stirring constantly. Remove from the heat. Skim off any foam with a metal spoon. Pour into hot, sterilized jars, filling to within ⅛ inch of the tops; wipe jar rims and threads and seal with two-piece, self-sealing lids. Process according to the directions in Table 1.



Ground Cherry Jam

- 8 cups husked ground cherries
- ½ cup water
- 8 cups sugar
- Rind and juice of 1 lemon

Check cherries for insect infestation. Cook cherries in water until tender. Add sugar and thinly sliced rind and juice of lemon. Simmer over low heat for 10 minutes. Pour into hot, sterilized jars and seal with two-piece, self-sealing lids. Process according to the directions in Table 1.

Ground Cherry Preserves

6 cups husked ground cherries
1 cup water
8 cups sugar
¼ cup lemon juice, bottled
1½ cups light corn syrup

Put the prepared fruit in a large kettle. Add water. Bring to a boil and simmer for 10 minutes. Add sugar, lemon juice and syrup. Bring to a boil again and simmer 30 minutes. Remove from the heat and let cool overnight. The next morning, heat to boiling and pour into hot, sterilized jars and seal with two-piece, self-sealing lids. Process according to the directions in Table 1.

NOTE: If thicker preserves are desired, the boiling mixtures again may be cooled overnight, heated to boiling and processed in a canner the second morning. Makes about eight half-pints.

High Bush Cranberry Juice

Fill a 6-quart kettle two-thirds full of berries and cover with water. Cut one-half orange into quarters and add to the kettle. The orange and peel improve the aroma while cooking. Simmer the berries about three minutes and crush with a potato masher. Stir to loosen any pulp that has stuck to the bottom and cook two minutes more. Strain through a jelly bag or two thicknesses of cheesecloth. Proceed to making jelly or reheat the juice to just boiling and pour it into sterilized jars and seal with two-piece, self-sealing lids. Process according to the directions in Table 1.

Ground Cherry Marmalade

3 cups husked ground cherries
2 cups cooked pears, drained, diced
¾ cup water
½ cup crushed pineapple, drained
¼ cup lemon juice, bottled
7 cups sugar
1 pouch liquid fruit pectin

Husk and wash the ground cherries. Combine with pears and water; simmer 25 minutes. Add pineapple, lemon juice and sugar; bring quickly to a full, rolling boil. Add pectin; boil rapidly for three minutes. Remove from the heat and alternately skim and stir for three minutes.

Pour into hot, sterilized jars and seal with two-piece, self-sealing lids. Process according to the directions in Table 1. Makes about seven half pints.

High Bush Cranberry Jelly

4 cups juice
1 (1¾-ounce) package powdered pectin
5 cups sugar

Cook berries as directed for juice.

Mix the juice and pectin. Bring the mixture to a rolling boil. Add sugar and boil hard for one minute. Pour into sterilized jars and seal with two-piece, self-sealing lids. Process according to the directions in Table 1.

Pin Cherry or Wild Red Cherry Jelly

Extract juice, using 1 cup of water to 1 pound of fruit. Strain the juice through a jelly bag. The pulp may be reboiled and strained two or three times. Use just enough water to make stirring easy.

Use 4 cups of pin cherry juice and 4 cups of sugar. Follow general directions. Pour into hot, sterilized jars and seal with two-piece, self-sealing lids. Process according to the directions in Table 1. (If pectin is very high, use 1¼ cups of sugar to 1 cup of juice.)

Pin Cherry and Crabapple Jelly

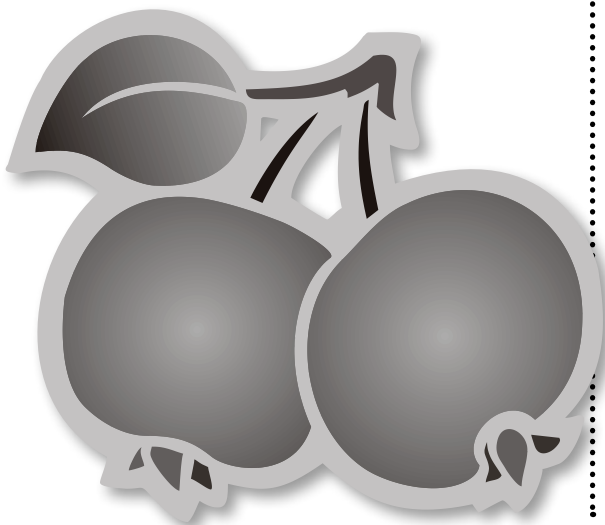
2 cups pin cherry juice (high in pectin)

2 cups crabapple juice (high in pectin)

Boil three minutes and test for pectin. If the pectin level is adequate, then add:

4 cups sugar

Boil briskly and follow general directions. Pour into hot, sterilized jars and seal with two-piece, self-sealing lids. Process according to the directions in Table 1.



Rose Hip Jam

Prepare hips by cutting off both the stem and the blossom ends. Cut in half and remove seeds and any insect spots. Or slit the hips down one side and knock out the seeds or use a pin to push out the seeds before cooking the hips for jelly. Rose hips have little or no pectin; therefore, a gel is difficult to achieve without added pectin.

1 cup prepared rose hips

¾ cup water

4 Tablespoons lemon juice, bottled

Put the above ingredients in a blender and blend until perfectly smooth. Gradually add 3 cups of sugar and blend together about five minutes more so all the sugar is dissolved completely. Stir one package of powdered pectin in ¾ cup of water and bring the mixture to a boil. Boil hard for one minute. Pour the mixture into a blender and blend for one minute more. Pour the mixture into small screw-cap jars immediately and seal. This jam may be kept in your refrigerator one month or otherwise stored in the freezer.

Rose Hip and Apple Jelly

1 cup rose hip juice (about 1 quart hips)

1½ cups apple juice (about 3 to 4 ripe medium-tart apples)

3 cups sugar

½ package powdered pectin (about 0.9 ounce)

⅛ to ¼ teaspoon mace (optional)

5 drops red food coloring (optional)

1 drop yellow food coloring (optional)

Measure sugar and set aside. Mix mace and pectin into the juice. Bring to a hard boil, stirring constantly; add coloring and sugar. Boil hard one minute. Remove from the heat, skim foam and pour into hot, sterilized jars and seal with two-piece, self-sealing lids. Process according to the directions in Table 1.

Sand Cherry Jelly

To extract juice, use 1 pound of fruit and 1 cup of water. Heat and strain in a damp jelly bag.

2 cups cherry juice

1 cup tart apple juice

$\frac{3}{4}$ cup sugar for each cup of juice

Follow general directions. Pour into hot, sterilized jars and seal with two-piece, self-sealing lids.

Process according to the directions in Table 1.

Sand Cherry Jam

Cook the fruit with just enough water to cover until soft. Press through a sieve. Measure. Add an equal quantity of sugar and cook gently until thickened. Follow general directions. Pour into hot, sterilized jars and seal with two-piece, self-sealing lids. Process according to the directions in Table 1.

Wild Plum Jam

Red wild plums

$\frac{1}{2}$ package powdered pectin (about 0.9 ounce)

4 cups sugar

Select firm, ripe plums. Wash and put the plums in a pan; cover with water. Boil until the skins are loose and the flesh is soft. Put the fruit through a fruit press for jam or strain it through a jelly bag for jelly. Measure 3 cups of juice. Add pectin. Cook the juice over high heat, stirring to a boil that cannot be stirred down. Immediately add sugar; let the mixture come to a full, rolling boil. Boil one minute. Skim and pour into sterilized jars and seal with two-piece, self-sealing lids. Process according to Table 1.

For more information on this and other topics, see www.ag.ndsu.edu/food.

(Click on "Food Preservation")

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