

Food Preservation: Preserving Food With Less Sugar

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Whether by personal choice or due to special dietary needs, many people are looking for ways to reduce their sugar intake. Commercially prepared food suitable for those on special meal plans can be costly due to slightly different production procedures.

Preserving food at home can be a practical way to save money, even when reducing sugar if fresh produce and the necessary equipment are available.

Sugar is one form of carbohydrate in our diets. Since carbohydrates affect blood glucose levels more than any other nutrient, this fact sheet offers lower carbohydrate recipes that can be helpful for individuals with diabetes and those who simply want a diet lower in carbohydrates.

Products identified as “low in added sugar” or “no added sugar” may still contain carbohydrates. Many foods contain starches and natural sugars, which contribute to the total carbohydrate content of the product. Individuals with diabetes must consider the total carbohydrate content per serving, especially if they are on a carbohydrate-counting meal plan.

Granulated table sugar (sucrose) is the most frequently used sweetener in canning and freezing. Sugar helps preserve the color, texture, and flavor of the food. The sugar in jams and jellies helps the gel to form and increases the flavor. When large amounts of sugar are used in a recipe, the sugar also acts as a preservative by inhibiting microbial activity; thus, recipes should not be modified or adapted. While honey, corn syrup, and brown sugar can be used as substitutes for granulated sugar, these alternatives do not reduce the calorie or total carbohydrate content.

Some low-sugar foods can be easily and safely preserved at home; however, the color, texture, and flavor of these foods may be different than expected and may be less acceptable. It may be beneficial to try other recipes before preserving food in large amounts in order to determine if you and/or your family enjoys the final product.

Canning

Fruit can be safely canned without sugar for the diabetic or a reduced-calorie, reduced-carbohydrate meal plan. Added sugar does not act as a preservative in canned fruit.



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Granulated table sugar is the most frequently used sweetener in canning and freezing but other options are suitable for those with dietary needs.

However, fruit canned without added sugar can be somewhat softer than a similar product packed in sugar syrup.

Flavor changes and loss of color may also occur in fruit preserved without added sugar. The fruit still contains natural sugars that must be considered in the reduced-carbohydrate meal plan. To can fruit without added sugar, try some of the following options:

- Extract juice* from the fruit being canned and use it for the packing liquid.
- Extract juice* from other fruit, preferably a mild-flavored fruit, or use unsweetened apple, pineapple, or white grape juice for the packing liquid.
- Use water as the packing liquid.

Non-nutritive sweeteners such as saccharin, aspartame, or sucralose should be added just before serving home-canned fruit. Sucralose also can be added to canning liquids before they are added to fruits being canned. Bitterness and off-flavors may develop when saccharin is used during the canning process. The sweetness of aspartame decreases when heated.

**To extract juice, thoroughly crush ripe, juicy fruit. Heat the fruit to simmering (185–210 degrees Fahrenheit) over low heat. Strain through a jelly bag or cheesecloth*



Freezing

Fruits can be frozen without added sugar because sugar is not used as a preservative. Plan to use frozen fruit within one year for best quality. Serve fruit before it is completely thawed to maintain a firmer texture. This is especially important as fruit frozen without added sugar may have a softer texture.

Non-nutritive sweeteners may be used in place of sugar when freezing fruits. Labels on the products give the equivalents to a standard amount of sugar. Follow the directions to determine the amount of sweetener needed. These sweeteners give a sweet flavor but do not provide the beneficial effects of sugar, such as thickening the syrup and protecting the color.

Pickling

It is possible to pickle some foods without adding sugar; however, a heat-stable sweetener such as sucralose must be used. Remember, the naturally occurring carbohydrates (starches and sugar) still must be counted in a reduced-carbohydrate meal plan.

No-Sugar-Added Sweet Pickle Cucumber Slices

- 3½ lb of pickling cucumbers
- Boiling water to cover sliced cucumbers
- 4 cups of 5% cider vinegar
- 3 cups sucralose
- 1 tablespoon canning salt
- 1 cup water
- 1 tablespoon mustard seed
- 1 tablespoon whole allspice
- 1 tablespoon celery seed
- Four, one-inch cinnamon sticks

Yield: About 4–5 pint jars

1. Wash and rinse pint canning jars; keep hot until ready to use. Prepare lids according to the manufacturer's directions.
2. Wash cucumbers. Slice $\frac{1}{16}$ inch off the blossom ends and discard. Slice cucumbers into $\frac{1}{4}$ -inch slices. Pour boiling water over the cucumber slices and let stand 5–10 minutes. Drain off hot water and pour cold water over the cucumbers. Let cold water run continuously over the cucumber slices or change the water frequently until cucumbers are cooled. Drain slices well.
3. Mix vinegar, 1 cup water, sucralose, and all spices in a 10-quart Dutch oven or stockpot. Bring to a boil. Add drained cucumber slices carefully to the boiling liquid. Return to a boil.
4. Place one cinnamon stick in each jar, if desired. With a slotted spoon, fill hot pickle slices into clean, hot pint jars, leaving $\frac{1}{2}$ -inch headspace. Cover with boiling hot pickling brine, leaving $\frac{1}{2}$ -inch headspace. Remove air bubbles and adjust the headspace if needed. Wipe rims of jars with a dampened, clean, paper towel; apply two-piece metal canning lids.
5. Process in a boiling water canner for 10 minutes if at an elevation of less than 1,000 feet. For elevations of 1,001–6,000 feet, process the pickles in a boiling water bath for 15 minutes. Let cool, undisturbed for 12–24 hours, then check to ensure they are sealed.



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No-sugar-added beets can be pickled in slices or whole.

No-Sugar-Added Pickled Beets

- 7 lb of 2–2½-inch diameter beets
- 4–6 onions (2–2½-inch diameter), and 6 cups of 5% vinegar if desired
- 1½ teaspoons canning or pickling salt
- 2 cups sucralose
- 3 cups water
- 2 cinnamon sticks
- 12 whole cloves

Yield: About 8 pints

1. Wash and rinse pint canning jars; keep hot until ready to use. Prepare lids according to the manufacturer's directions.
2. Trim off beet tops, leaving 1 inch of stem and roots to prevent bleeding of color. Wash thoroughly. Sort beets according to size. Cover similar sizes together with boiling water and cook until tender (about 25–30 minutes). *Caution: Drain and discard liquid.*
3. Cool beets. Trim off roots and stems and slip off skins. Slice into $\frac{1}{4}$ -inch slices. Peel, wash, and thinly slice onions.
4. Combine vinegar, salt, sucralose, and fresh water in large Dutch oven. Tie cinnamon sticks and cloves in a cheesecloth bag and add to the vinegar mixture. Bring to a boil. Add beets and onions. Simmer 5 minutes. Remove spice bag.
5. With a slotted spoon, fill hot beets and onion slices into clean, hot, pint jars, leaving $\frac{1}{2}$ -inch headspace. Remove air bubbles and adjust headspace if needed. Wipe rims of jars with a dampened, clean, paper towel. Apply two-piece, metal canning lids.
6. Process in a boiling-water canner for 30 minutes if at an elevation of less than 1,000 feet. For elevation of 1,001–3,000 feet, process the pickled beets in a boiling water bath for 35 minutes. For 3,001–6,000 feet elevation, process for 40 minutes. Let cool, undisturbed, for 12–24 hours, then check to ensure they are sealed.

Pickled whole baby beets variation: Follow the directions above but use beets that are 1–1½-inches in diameter. Pack whole after trimming, cooking, and peeling—do not slice.

Jams and Jellies

Jams and jellies are made by cooking crushed fruit or fruit juice with sugar. Sugar must be present in the proper proportions with pectin and acid to form a gel. Sugar preserves the product, helping to prevent the growth of microorganisms. For these reasons, regular jam and jelly recipes cannot be made into sugar-free, reduced-sugar, or artificially sweetened products by altering the original recipe.

Various methods can be used to make jams and jellies without added sugar:

- 1. Regular pectin with special recipes.** These special recipes were formulated without added sugar. However, each package of regular pectin does contain some sugar. Non-nutritive sweetener is often added.
- 2. Specially modified pectin.** These pectins are not the same as regular pectin. They are labeled “light” or “less sugar.” Follow the directions on the package. Some products are made with less sugar and some with non-nutritive sweeteners.
- 3. Recipes using gelatin.** Some recipes use unflavored gelatin as the thickener for the jam or jelly. Non-nutritive sweetener is often added.
- 4. Long-boil methods.** Boiling fruit pulp for extended periods of time thickens a product and resembles a jam, preserve, or fruit butter. Non-nutritive sweeteners may be added.

Since sugar is not used as a preservative in these products, process or store the products exactly as directed. Some require longer processing in a boiling water bath, while some require refrigeration.

Refrigerator Grape Spread (made with gelatin)

- 2 tablespoons unflavored gelatin powder
- 1 bottle (24 oz) unsweetened grape juice
- 2 tablespoons bottled lemon juice
- 2 tablespoons liquid low-calorie sweetener

Yield: 3 half-pints

1. In a saucepan, soften the gelatin in the grape and lemon juices. To dissolve gelatin, bring to a full rolling boil, then boil for 1 minute. Remove from heat.
2. Stir in sweetener.
3. Fill jars quickly, leaving $\frac{1}{4}$ -inch headspace. Adjust lids. Seal, cool, and store in refrigerator.

Caution: Store in refrigerator and use within 4 weeks.

Refrigerated Apple Spread (made with gelatin)

- 2 tablespoons unflavored gelatin powder
- 1 quart bottle unsweetened apple juice
- 2 tablespoons bottled lemon juice
- 2 tablespoons liquid, low-calorie sweetener
- Food coloring, if desired

Yield: 4 half-pints

1. In a saucepan, soften the gelatin in the apple and lemon juices. To dissolve gelatin, bring to a full rolling boil, then boil 2 minutes. Remove from heat.
2. Stir in sweetener and food coloring, if desired.

3. Fill jars, leaving $\frac{1}{4}$ -inch headspace. Adjust lids. Do not process or freeze.

Caution: Store in refrigerator and use within 4 weeks.

Variation: For spiced apple jelly, add 2 sticks of cinnamon and 4 whole cloves to the mixture before boiling. Remove both spices before adding the sweetener and food coloring.

Additional Resources

Note: *This fact sheet uses language, recipes, procedures, and data from reliable sources such as the ones listed below. For the most part the original text has been preserved because safety around food preservation is especially important. For safe and healthy preserved foods, be sure to carefully follow directions.*

Learn more about preserving food with less sugar.

- **National Center for Home Food Preservation** (nchfp.uga.edu)
- **USDA Complete Guide to Home Canning** (nchfp.uga.edu/resources/category/usda-guide)

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