

Sauerkraut

Recommended Varieties

Bravo, Bronco, Danish Ballhead, Premium Late Dutch, Late Flat Head, and Krautman are good varieties for sauerkraut. Late season cabbage is desirable for making sauerkraut.

Quantity

A 50-pound bag of fresh cabbage makes 16 to 20 quarts of kraut.

Quality

To make good kraut, use disease-free, firm, sweet, mature heads of cabbage from mid- and late season crops. Prepare and start the fermentation 1 to 2 days after harvesting the cabbage.

Containers for Fermenting Cabbage

A 1-gallon stone crock holds 5 pounds of shredded cabbage, and a 5-gallon crock holds 25 pounds. Do not use copper, iron, or galvanized metal containers or lead-glazed crocks. If you are unsure about the safety of a container, use an alternative such as glass or food-grade plastic containers. Many restaurants receive foods and ingredients in 5-gallon plastic pails, which make ideal fermentation containers. *Do not use garbage bags or trash liners.*

Preparation

Work with about 5 pounds of fresh cabbage at a time. Discard outer leaves. Rinse heads with cold water and drain. Cut heads in quarters, remove cores, and trim and discard worm- and disease-damaged tissue. Shred or slice cabbage to a thickness of one to two quarters, or $\frac{1}{16}$ to $\frac{1}{8}$ inch.

Filling and Packing the Container

Place 5 pounds of shredded cabbage in the fermentation container and thoroughly mix in 3 tablespoons of canning or pickling salt. Pack it with clean hands until the level of natural juices drawn from the cabbage covers its surface. Continue preparing and packing 5-pound quantities of shredded cabbage and 3 tablespoons of salt at a time until finished, or until the fermentation container is filled within 3 to 4 inches from its top. To avoid surface mold growth, keep the cabbage submerged at all times. If the juice does not cover the cabbage, add boiled and cooled brine prepared with $1\frac{1}{2}$ tablespoons of salt in a quart of

The exact ratio of 3 tablespoons of canning or pickling salt to 5 pounds of shredded cabbage controls pathogen growth. Changing the proportions could result in an unsafe product.



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water. Cover the cabbage with a plate just small enough to fit inside the fermentation container and weigh it down with two or three clean quart jars filled with water. An acceptable alternative is to fill a large, sealed, food-grade plastic bag containing $4\frac{1}{2}$ tablespoons of salt and 3 quarts of water. The filled bag may be inserted into another bag and sealed for added strength. Plastic bags sold specifically for turkeys are the right size for 5-gallon containers. Cover the top of the container with several layers of clean cheesecloth or a clean kitchen towel to reduce exposure to airborne mold spores.

Fermentation Temperature, Time, and Management

Store the container at 70 to 75°F while fermenting. At these temperatures, kraut will be fully fermented in about 3 to 4 weeks; at 60 to 65°F, fermentation may take 6 weeks. Below 60°F, kraut may not ferment. Above 80°F, kraut may become soft and spoil.

Fermentation naturally stops because the acids accumulate to such an extent that further growth cannot take place. If you submerge the cabbage with a brine-filled bag, do not disturb the crock until the normal fermentation is complete (when bubbling ceases). If you use jars as weights, you must check the kraut two to three times each week and remove scum if it forms. Kraut should be to desired tartness, with firm texture, have brine that is not cloudy, and be free of any sign of mold or yeast growth. Do not taste if you see mold on the surface, feel a slimy texture, or smell a bad odor. Fully fermented kraut may be kept tightly covered in the refrigerator for several months, or it may be canned and frozen.

Fermenting sauerkraut in jars is not recommended because fermentation is less consistent and keeping the fermenting cabbage properly submerged under the liquid in jars is difficult.



Freezing Procedure

Don't freeze more than 2 pounds of food per cubic foot of freezer capacity per day. Fill pint or quart plastic freezer containers or tapered freezer jars. Allow ½ inch of headspace, seal, and label.

Canning Procedure

Wash jars. Prepare lids according to manufacturer's instructions. If there is not enough juice to cover the cabbage in each jar, add boiled and cooled brine prepared with 1½ tablespoons of salt in a quart of water.

To Make a Hot Pack

Bring kraut and liquid slowly to a boil in a large kettle, stirring frequently. Remove from heat and fill jars rather firmly with kraut and juices, leaving ½ inch of headspace. Wipe sealing edge of jars with a clean, damp paper towel. Add lids and tighten screw bands. Process for the recommended time according to Table 1.

To Make a Raw Pack

Fill jars firmly with unheated kraut and cover with juices, leaving ½ inch of headspace. Fill and seal as previously described for a hot pack and process for recommended time (Table 1).

To Process in a Boiling Water Canner

Preheat canner filled halfway with water to 180°F for hot packs and 140°F for raw packs. Load sealed jars onto the canner rack. Lower with handles in the preheated boiling water canner, or load one jar at a time with a jar lifter. Add water, if needed, to 1 inch above jars and cover. When water boils vigorously, lower heat to maintain a gentle boil and process for recommended time (Table 1).

To Process in an Atmospheric Steam Canner

Preheat the base of a steam canner that has been filled with the amount of water designated in the instruction manual that comes with the canner (usually about 2 quarts). Set the rack in the base of the canner. Heat water in the base of the canner to 180°F. As each jar is filled, place it on canner rack, keeping the cover or lid on the atmospheric steam canner as you work. When all jars are in the canner, bring the canner to a boil over medium to medium-high heat until a steady column of steam at least 6 inches long escapes from the vent hole(s). Processing time begins when there is a steady column of steam 6 to 8 inches long. Slowly adjust the heat to maintain a steady column of steam throughout the processing time.

After Processing

After processing is complete, remove the canner from the heat and remove the canner lid. Wait 5 minutes, carefully remove the jars from the canner with a jar lifter, and place them on a towel or rack to air-cool for 12 to 24 hours. Remove screw bands and check lid seals. If the center of the lid is indented, wash, dry, label, and store jar in a clean, cool, dark place. If lid is unsealed, examine and replace jar if defective, use new lid, and reprocess as before. Wash screw bands and store separately. Kraut is best if consumed within a year and is safe as long as lids remain vacuum sealed.

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Table 1. Recommended process times in a boiling water or atmospheric steam canner at designated altitudes.

		Process time (in minutes) 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	10	15	15	20
	Quarts	15	20	20	25
Raw	Pints	20	25	30	35
	Quarts	25	30	35	40

For additional information about food preservation, visit the Penn State Extension Home Food Preservation website at extension.psu.edu/food/preservation or contact Penn State Extension in your county.

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