

## Dill Pickles and Sauerkraut

### HOW DOES FERMENTATION PRESERVE?

Brined pickles or fermented pickles go through a curing process in a brine (salt and water) solution for one or more weeks. Curing changes the color, flavor and texture of the product. If the product is a fermented one, the lactic acid produced during fermentation helps preserve the product. In brined products that are cured but not fermented, acid in the form of vinegar is added later to preserve the food.

### CONTAINERS AND WEIGHTS FOR FERMENTATION

Pickles and sauerkraut can be fermented in large stoneware crocks, large glass jars or food-grade plastic containers. If you are not sure whether a plastic container is safe for food, read its label or contact its manufacturer. Another option is to line the questionable container with several thicknesses of food-grade plastic bags. Do not use aluminum, copper, brass, galvanized or iron containers for fermenting pickles or sauerkraut.

The container needs to be large enough to allow several inches of space between the top of the food and the top of the container. Usually a 1-gallon container is needed for each 5 pounds of fresh vegetables. Sauerkraut may be fermented in quart or half-gallon canning jars, but there is a greater chance of spoilage.

After the vegetables are placed in the container and covered with brine, make sure that they are completely submerged in the brine. A heavy plate or glass lid that fits down inside the container can be used. If extra weight is needed, a glass jar(s) filled with water and sealed can be set on top of the plate or lid. The vegetables should be covered by 1 to 2 inches of brine. Another option is to place one food-grade plastic bag inside another and fill the inside bag with some of the pickling brine. Freezer bags sold for packaging turkeys are the right size for 5-gallon containers. Close the end securely. Then use this filled bag as the weight on top of the vegetables. Filling the bag with brine is a precaution, in case the bags are accidentally punctured.

### FERMENTED DILL PICKLES

Use the following quantities for each gallon capacity of your container.

#### Ingredients:

4 pounds of 4-inch pickling cucumbers  
2 tablespoons dill seed OR 4 to 5 heads fresh or dry dill  
½ cup pure granulated salt ("pickling" or "canning" salt)  
¼ cup vinegar (5 percent acidity)  
8 cups water  
2 cloves garlic (optional)  
2 dried red peppers (optional)  
2 teaspoons whole mixed pickling spices (optional)

**Procedure:** Wash cucumbers. Cut  $\frac{1}{16}$ -inch slice off blossom end and discard. Leave  $\frac{1}{4}$  inch of stem attached. Place half of dill and spices on bottom of a clean, suitable container. Add cucumbers, remaining dill and spices.

Dissolve salt in vinegar and water and pour over cucumbers. Add suitable cover and weight. Store where temperature is between 70 and 75 °F for about 3 to 4 weeks while fermenting. Temperatures of 55 to 65 °F are acceptable, but the fermentation will take 5 to 6 weeks. Avoid temperatures above 80 °F, or pickles will become too soft during fermentation.

Fermenting pickles cure slowly. Check the container several times a week and promptly remove surface scum or mold. Caution: If the pickles become soft, slimy or develop a disagreeable odor, discard them. Fully fermented pickles may be stored in the original container for about 4 to 6 months, provided they are refrigerated and surface scum and molds are removed regularly.

Fully fermented pickles are better stored by canning. To process them, pour the brine into a pan, heat slowly to a boil and simmer 5 minutes. Filter brine through paper coffee filters to reduce cloudiness, if desired. Fill jar with pickles and hot brine, leaving  $\frac{1}{2}$ -inch headspace. Adjust lids and process pints for 10 minutes and quarts for 15 minutes in a boiling water bath.

## SAUERKRAUT

For the best sauerkraut, use firm heads of fresh cabbage. Shred cabbage and start kraut between 24 and 48 hours after harvest.

### Ingredients:

25 pounds cabbage

¾ cup canning or pickling salt

**Yield:** About 9 quarts

**Procedure:** Work with about 5 pounds of cabbage at a time. Discard outer leaves. Rinse heads under cold running water and drain. Cut heads in quarters and remove cores. Shred or slice to a thickness of a quarter. Put cabbage in a suitable fermentation container. (See Containers and Weights for Fermentation on previous page.) Add 3 tablespoons of salt.

Mix thoroughly, using clean hands. Pack firmly until salt draws juices from cabbage. Repeat shredding, salting and packing until all cabbage is in the container. Be sure it is deep enough so that its rim is at least 4 or 5 inches above the cabbage. If juice does not cover cabbage, add boiled and cooled brine (1½ tablespoons of salt per quart of water).

Add plate and weights; cover container with a clean bath towel. Store at 70 to 75 °F while fermenting. At temperatures between 70 and 75 °F, kraut will be fully fermented in about 3 to 4 weeks; at 60 to 65 °F, fermentation may take 5 to 6 weeks. At temperatures lower than 60 °F, kraut may not ferment. Above 75 °F, kraut may become soft. If you weigh the cabbage down with a brine-filled bag, do not disturb the crock until normal fermentation is completed (when bubbling ceases). If you use jars as weight, check the kraut two to three times each week and remove scum if it forms.

## COLLARD KRAUT

### Ingredients:

5 gallons collards

1 cup canning or pickling salt

**Procedure:** Rinse collards, chop or shred to desired consistency. Layer about 1 gallon of collards and sprinkle with 2 tablespoons salt in large glass jars, food-approved plastic containers or stoneware crocks. Then

add more layers of collards and salt until container is full, leaving approximately 4 to 5 inches of space at top of container. Add water until it covers the chopped collards. The collards should be completely submerged in the brine. Add plate and weights; cover container with a clean bath towel.

Store at 70 °F for fermenting. At this temperature it will take approximately 3 to 4 weeks to ferment. If any scum forms above the plate or weight, remove it about 2 to 3 times a week. Taste in about two weeks. Allow collards to ferment until desired flavor is reached.

### STORAGE

Fully fermented kraut may be kept tightly covered in the refrigerator for several months or it may be canned as follows:

**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 headspace. Adjust lids and process pints for 10 minutes and quarts for 15 minutes in a boiling water bath.

**Raw Pack:** Fill jars firmly with kraut and cover with juices, leaving ½-inch headspace. Adjust lids and process 20 minutes for pints and 25 minutes for quarts in a boiling water bath.

For more information on the ingredients used in pickling, how to process pickles for storage and common problems in pickling, request HGIC 3100, *Pickle Basics*; HGIC 3101, *Common Pickle Problems*; and HGIC 3040, *Canning Foods at Home*.

Source:

Reynolds, Susan and Paulette Williams. *So Easy To Preserve*. Cooperative Extension Service, University of Georgia. Revised by Elizabeth Address and Judy Harrison (1999).

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This information has been reviewed and adapted for use in South Carolina by P.H. Schmutz, HGIC Information Specialist, and E.H. Hoyle, Extension Food Safety Specialist, Clemson University.

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