



FOOD PRESERVATION

Pack a Pickled Product

Nutritional Sciences
University of Missouri Extension

For safety's sake

The amount of acid in pickles is as important to their safety as it is to their taste and texture. For this reason, do not change the amounts of vinegar, vegetables or water in any recipe. Don't use vinegar of unknown acidity. It is not safe to use homemade vinegar in pickling. Use only recipes with tested amounts of ingredients because there must be a minimum, uniform level of acid throughout all products to prevent the growth of botulinum bacteria. If botulinum bacteria are not destroyed, they can grow inside jars and produce the deadly toxin that causes botulism — a type of food poisoning that can be fatal.

Please refer to MU publication GH1457, *In A Pickle*, for more information on pickling ingredients, proper containers and processing pickles in a boiling-water canner.

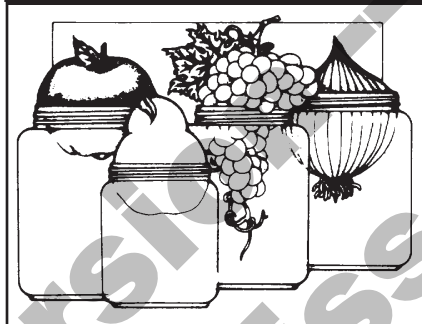
Sauerkraut

25 pounds cabbage
 $\frac{3}{4}$ cup canning or pickling salt

Yield: About 9 quarts

Quality: Firm heads of fresh cabbage make the best sauerkraut. Shred cabbage and start kraut

Quality for Keeps



between 24 and 48 hours after harvest.

Procedure: Work with about five 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 the thickness of a quarter.

Put cabbage in a suitable fermentation container (see MU publication GH1457, *In A Pickle*), and add 3 tablespoons of salt. Mix thoroughly with clean hands. Pack cabbage down firmly until salt draws out juices. Repeat shredding, salting and packing until all cabbage is in the container.

Be sure the container is deep enough so the packed, shredded cabbage is at least 4 inches or 5 inches below the rim. If juice does not cover cabbage, add boiled and cooled brine ($1\frac{1}{2}$ tablespoons of salt per quart of water).

Add plate and weight (see MU publication GH1457, *In A Pickle*, for ideas

for acceptable weights); cover container with a clean bath towel. Store sauerkraut at 70 degrees F to 75 degrees F while it is fermenting. Kraut will be fully fermented in three weeks to four weeks at temperatures between 70 degrees F and 75 degrees F.

At 60 degrees F to 65 degrees F, fermentation may take five weeks to six weeks. Kraut may not ferment at temperatures lower than 60 degrees F. Above 75 degrees F, kraut may become soft.

If you weight the cabbage down with a brine-filled bag, don't disturb the crock until normal fermentation is completed (when bubbling stops). If you use a jar as a weight, check the kraut two to three times each week and skim off scum if it forms.

Fully fermented kraut will keep tightly covered in the refrigerator for several months. Or, can it as follows:

Hot pack: Bring kraut and liquid slowly to a boil in a large kettle; stir frequently. Remove from heat and fill jars rather firmly with kraut and juices. Leave $\frac{1}{2}$ -inch headspace.

Raw pack: Fill jars firmly with kraut and cover with juices. Leave $\frac{1}{2}$ -inch headspace.

Adjust lids and process as directed in Table 1.

Pickled dilled beans

- 4 pounds fresh tender green or yellow beans (5- to 6-inches long)
- 8 to 16 heads fresh dill or 8 teaspoons dill seed
- 8 cloves garlic (optional)
- ½ cup canning or pickling salt
- 4 cups white vinegar (5 percent)
- 4 cups water
- 1 teaspoon hot red pepper flakes or cayenne pepper (optional)

Yield: About 8 pints

Procedure: Wash and trim ends from beans and cut into 4-inch lengths. Put 1 to 2 dill heads (or 1 teaspoon dill seed) and 1 clove of garlic in each sterilized jar. Stand beans upright in jars. Leave ½-inch headspace. Trim beans to fit the jar if necessary.

Mix salt, vinegar, water and pepper flakes or cayenne pepper. Bring to a boil and pour over beans. Leave ½-inch headspace. Adjust lids, and process as directed in Table 1.

Pickled beets

- 7 pounds beets, 2 to 2½ inches around
- 4 cups vinegar (5 percent)
- 1½ teaspoons canning or pickling salt
- 2 cups sugar
- 2 cups water
- 2 cinnamon sticks
- 12 whole cloves
- 4 to 6 onions, 2 to 2½ inches around (optional)

Yield: About 8 pints

Procedure: Trim off beet tops. Leave 1 inch of stem and roots to prevent color from bleeding. Wash beets thoroughly and sort them for size. Cook similar sizes together by covering them with boiling water and cooking until tender (about 25 to 30 minutes).

Caution: Drain and discard liquid. Cool beets. Trim off roots and stems and slip off skins. Slice in ¼-inch slices. Peel and thinly slice onions.

Mix vinegar, salt, sugar and fresh water. Put spices in cheesecloth bag and add to vinegar mixture. Bring to a boil and add beets and onions. Simmer 5 minutes. Remove spice bag. Fill jars with beets and onions. Leave ½-inch headspace. Add hot vinegar mixture, and leave ½-inch headspace. Adjust lids and process as directed in Table 1.

Variation: Pickle whole baby beets that are 1 to 1½ inches around using the above directions. Pack whole. Onions can be left out.

Pickled cauliflower or Brussels sprouts

- 12 cups of 1-inch to 2-inch cauliflower flowerets or small Brussels sprouts
- 4 cups white vinegar (5 percent)
- 2 cups sugar
- 2 cups thinly sliced onions
- 1 cup diced sweet red peppers
- 2 tablespoons mustard seed
- 1 tablespoon celery seed
- 1 teaspoon turmeric
- 1 teaspoon hot red pepper flakes

Yield: About 9 half-pints

Procedure: Wash cauliflower and cut into flowerets. Wash Brussels sprouts and remove stems and damaged outer leaves. Boil in salt water (4 teaspoons canning salt per gallon of water). Boil cauliflower 3 minutes, and boil Brussels sprouts 4 minutes. Drain and cool.

Mix vinegar, sugar, onion, diced red pepper and spices in large saucepan. Bring to a boil, and simmer 5 minutes. Divide onion and diced pepper

among jars. Fill jars with drained cauliflower or brussels sprouts and hot pickling mixture. Leave ½-inch headspace. Adjust lids and process as directed in Table 1.

Pickled corn relish

- 10 cups fresh whole kernel corn (16 to 20 medium-size ears), or six 10-ounce packages of frozen corn
- 2½ cups diced sweet red peppers
- 2½ cups diced sweet green peppers
- 2½ cups chopped celery
- 1¼ cups diced onions
- 1¾ cups sugar
- 5 cups vinegar (5 percent)
- 2½ tablespoons canning or pickling salt
- 2½ teaspoons celery seed
- 2½ tablespoons dry mustard
- 1¼ teaspoons turmeric

Yield: About 9 pints

Procedure: Boil ears of corn 5 minutes. Dip in cold water and cut whole kernels from cob (do not scrape the cob) or use six 10-ounce packages of frozen corn (defrost in the refrigerator or in the microwave). Mix peppers, celery, onions, sugar, vinegar, salt and celery seed in a saucepan. Bring to a boil and simmer 5 minutes. Stir occasionally.

Mix mustard and turmeric with a small amount of the simmered mixture, and add back to the hot mixture along with the corn. Simmer another 5 minutes. If desired, thicken mixture with flour paste (¼ cup flour blended in ¼ cup water) and stir frequently. Fill jars with hot mixture. Leave ½-inch headspace. Adjust lids and process as directed in Table 1.

Pickled dilled okra

- 7 pounds small okra pods
- 6 small hot peppers
- 4 teaspoons dill seed
- 8 to 9 garlic cloves
- $\frac{2}{3}$ cup canning or pickling salt
- 6 cups water
- 6 cups vinegar (5 percent)

Yield: 8 to 9 pints

Procedure: Wash and trim okra.

Pack jars firmly with whole okra. Leave $\frac{1}{2}$ -inch headspace. Put 1 garlic clove in each jar.

Mix salt, hot peppers, dill seed, water and vinegar in large saucepan and bring to a boil. Pour hot pickling mixture over okra. Leave $\frac{1}{2}$ -inch headspace. Adjust lids and process as directed in Table 1.

Pickled bell peppers

- 7 pounds firm bell peppers, free of blemishes
- $3\frac{1}{2}$ cups sugar
- 3 cups vinegar (5 percent)
- 3 cups water
- 9 cloves garlic
- $4\frac{1}{2}$ teaspoons canning or pickling salt

Yield: About 9 pints

Procedure: Wash peppers, cut into quarters and remove cores and seeds. Slice peppers in strips. Boil sugar, vinegar and water for 1 minute. Add peppers and bring to a boil. Put $\frac{1}{2}$ clove of garlic and $\frac{1}{4}$ teaspoon salt in each sterilized half-pint jar. Double the amounts for pint jars. Add pepper strips and cover with hot pickling mixture. Leave $\frac{1}{2}$ -inch headspace. Adjust lids, and process as directed in Table 1.

Pickled hot peppers (Hungarian, banana, chile, jalapeño)

- 4 pounds hot, long peppers (red, green or yellow)
- 3 pounds sweet peppers (red and green mixed)
- 5 cups vinegar (5 percent)
- 1 cup water
- 4 teaspoons canning or pickling salt
- 2 tablespoons sugar
- 2 cloves garlic

Yield: About 9 pints

Caution: To avoid severe burns, wear rubber gloves when handling hot peppers. After handling peppers, wash hands thoroughly with soap and water before touching your face.

Procedure: Wash peppers. If small peppers are left whole, slash 2 to 4 slits in each. Quarter large peppers. To peel peppers, blanch in boiling water or blister as follows:

Oven or broiler method: Put peppers in a hot oven (400 degrees F) or place under the broiler for 6 minutes to 8 minutes or until skins blister.

Range-top method: Cover hot burner, either gas or electric, with heavy wire mesh. Put peppers on burner for several minutes until skins blister.

Cool peppers in a pan covered with a damp cloth. This makes it easier to peel the peppers.

Peel skin off cooled peppers. Flatten small peppers.

Fill jars. Leave $\frac{1}{2}$ -inch headspace. Mix and heat other ingredients to boiling, and simmer 10 minutes. Remove garlic, and pour hot pickling mixture over peppers. Leave $\frac{1}{2}$ -inch headspace. Adjust lids and process as directed in Table 1.

Reduced-sodium, sliced dill pickles

- 4 pounds (3-inches to 5-inches long) pickling cucumbers
- 6 cups vinegar (5 percent)
- 6 cups sugar
- 2 tablespoons canning or pickling salt
- $1\frac{1}{2}$ teaspoons celery seed
- $1\frac{1}{2}$ teaspoons mustard seed
- 2 large onions, thinly sliced
- 8 heads fresh dill

Yield: About 8 pints

Procedure: Wash cucumbers. Cut $\frac{1}{16}$ -inch slice off blossom end and discard. Cut cucumbers into $\frac{1}{4}$ -inch slices. Mix vinegar, sugar, salt, celery and mustard seeds in large saucepan and bring to a boil.

Put 2 slices of onion and $\frac{1}{2}$ dill head on bottom of each pint jar.

Fill jars with cucumber slices. Leave $\frac{1}{2}$ -inch headspace. Add 1 slice of onion and $\frac{1}{2}$ dill head on top. Pour hot pickling mixture over cucumbers. Leave $\frac{1}{4}$ -inch headspace. Adjust lids and process as directed in Table 1.

Pickled green tomato relish

10 pounds small, hard green tomatoes
1½ pounds red bell peppers
1½ pounds green bell peppers
2 pounds onions
½ cup canning or pickling salt
1 quart water
4 cups sugar
1 quart vinegar (5 percent)
⅓ cup prepared yellow mustard
2 tablespoons cornstarch

Yield: 7 to 9 pints

Procedure: Wash and coarsely grate or finely chop tomatoes, peppers and onions. Dissolve salt in water and pour over vegetables in large kettle. Heat to boiling and simmer 5 minutes. Drain vegetables in a colander.

Return vegetables to kettle and add sugar, vinegar, mustard and cornstarch. Stir to mix. Heat to a boil and simmer 5 minutes. Fill sterilized pint jars with hot relish. Leave ½-inch headspace.

Adjust lids and process as directed in Table 1.

Pickled horseradish sauce

2 cups (¾ pound) freshly grated horseradish
1 cup white vinegar (5 percent)
½ teaspoon canning or pickling salt
¼ teaspoon powdered ascorbic acid

Yield: About 2 half-pints.

Note: Make only small quantities of horseradish at a time — its biting taste fades within one to two months, even when refrigerated. Combine ingredients and fill sterilized jars.

Seal jars tightly and store in a refrigerator.

Pickled bread-and-butter zucchini

16 cups fresh zucchini, sliced
4 cups onions, thinly sliced
½ cup canning or pickling salt
4 cups white vinegar (5 percent)
2 cups sugar
4 tablespoons mustard seed
2 tablespoons celery seed
2 teaspoons ground turmeric

Yield: About 8 to 9 pints

Procedure: Cover zucchini and onion slices with 1 inch water and salt. Let stand 2 hours and drain thoroughly. Combine vinegar, sugar and spices. Bring to a boil and add zucchini and onions. Simmer five minutes. Fill jars with zucchini mixture and pickling mixture. Leave ½-inch headspace.

Adjust lids and process as directed in Table 1. Or, use the low-temperature pasteurization treatment described in MU publication GH1457, *In a Pickle*.

Piccalilli

6 cups chopped green tomatoes
1½ cups chopped sweet red peppers
1½ cups chopped green peppers
2¼ cups chopped onions
7½ cups chopped cabbage
½ cup canning or pickling salt
3 tablespoons whole mixed pickling spice
4½ cups vinegar (5 percent)
3 cups brown sugar

Yield: 9 half-pints

Procedure: Wash, chop and combine vegetables with the ½ cup salt. Cover with hot water and let stand 12 hours. Drain and place in a clean white cloth. Squeeze gently to remove all liquid.

Mix vinegar and brown sugar in a saucepan. Tie spices loosely in a spice

bag; add to vinegar and brown sugar mixture. Heat to boil. Add vegetables and continue boiling gently 30 minutes or until the volume of the mixture is reduced by one-half. Remove spice bag.

Fill hot, sterilized jars with hot mixture. Leave ½-inch headspace. Adjust lids and process as directed in Table 1.

Pickled carrots

2¾ pounds peeled carrots (about 3½ pounds as purchased)
5½ cups white vinegar (5 percent)
1 cup water
2 cups sugar
2 teaspoons canning salt
8 teaspoons mustard seed
4 teaspoons celery seed

Yield: About 4 pints

Procedure: Wash and peel carrots. Cut into rounds that are approximately ½ inch thick. Combine vinegar, water, sugar and canning salt in an 8-quart Dutch oven or stockpot. Bring to a boil and boil 3 minutes. Add carrots and bring back to a boil. Then reduce heat to a simmer and heat until half-cooked (about 10 minutes). Meanwhile, place 2 teaspoons mustard seed and 1 teaspoon celery seed into each empty hot pint jar. Fill jars with hot carrots, leaving 1-inch headspace. Fill with hot pickling liquid, leaving ½-inch headspace. Remove air bubbles and adjust headspace if needed. Wipe rims of jars with a dampened clean paper towel.

Adjust lids and process.

Pickled baby carrots

Procedure: Follow directions for pickled carrots, using 8½ cups peeled baby carrots, leaving them whole, and use the same process time.

Table 1. Recommended process times for pickled products in a boiling-water canner.

			Minutes of processing at different altitudes (in feet)	
Product	Style of pack	Jar size	0–1,000 feet	1,001–6,000 feet
Sauerkraut	Hot	Pints	10	15*
	Raw	Quarts	15	20*
		Pints	20	25*
		Quarts	25	30*
Drilled beans	Raw	Pints	5	10
Beets	Hot	Pints or quarts	30	35
Cauliflower or Brussels sprouts	Hot	Half-pints or pints	10	15
Corn relish	Hot	Half-pints or pints	15	20
Dilled okra	Hot	Pints	10	15
Bell peppers	Hot	Half-pints or pints	5	10
Hot peppers	Raw	Half-pints or pints	10	15
Reduced-sodium, sliced dill pickles	Raw	Pints	15	20
Green tomato relish	Hot	Pints	5	10
Bread-and-butter zucchini	Hot	Pints or quarts	10	15
Piccaililli	Hot	Half-pints or pints	5	10
Pickled carrots	Hot	Pints	15	20

**Safe processing time for altitudes ONLY up to 3,000 feet.*

For more information, visit MU Extension:

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