



Using, Storing and Preserving Cucumber pickles

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Michigan Fresh: Using, Storing and Preserving Cucumber Pickles was first published in March 2015 and revised in July 2023. The original was adapted from *Complete Guide to Home Canning*, (Agriculture Information Bulletin No. 539), USDA, revised 2009.

Michigan-grown cucumber pickles are available during July and August.

Food Safety and Storage

- Wash hands before and after handling fresh produce.
- For the highest quality pickle, plan to pickle within 24 hours of picking.
- Use only fresh, blemish-free cucumbers.
- Wash cucumbers thoroughly under running water. Do not use soap.
- Select fresh, firm, unwaxed cucumbers. Quite often pickles purchased from a grocery store will have a wax finish. This will prevent the brine from penetrating and not properly curing to make a good pickle.
- Pick before seeds become hard. Less than 2 inches long for pickles, 4 to 6 inches for dills and 6 to 8 inches for slicing varieties.
- Avoid yellow and large cucumbers.
- Pick daily if growing your own.
- Use pure, granulated, non-iodized canning or pickling salt, high-grade vinegar of 5 percent acidity and fresh spices.
- Keep cucumbers away from raw meats and meat juices to prevent cross-contamination.
- Store processed pickles in a dark, cool, dry place.
- For best quality and nutritive value, preserve no more than your family can consume in 12 months.



Yield

1 to 1½ pounds fresh	=	1 pint canned sweet gherkins (1½ inches or less)
1½ to 2 pounds fresh	=	1 quart canned dills (4-inch average)
1 bushel (48 pounds)	=	16 to 24 quarts (average 2 pounds per quart)
14 pounds fresh	=	a canner load of 7 quarts
9 pounds fresh	=	a canner load of 9 pints

How to Preserve

Preparation: Thoroughly wash cucumbers, especially around the stem, where soil can be trapped. Bacteria trapped in soil are often a cause of pickles softening. Remove and discard a 1/16-inch slice from the blossom end of fresh cucumbers — blossoms contain an enzyme that causes excessive softening of pickles. Sort cucumbers by

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size — use those that are no more than 1½ inches long for gherkins and those that are 4 inches long for dills. Use odd-shaped and more mature cucumbers for relishes and bread-and-butter style pickles.

Key ingredients

Water: Hard water can interfere with the brining process of pickles and prevent them from curing properly. If soft water is unavailable, hard water can be softened by boiling it for 15 minutes and letting it sit for 24 hours, covered. Remove any scum that appears. Slowly pour the water from the container so the sediment will not be disturbed. Discard the sediment. The water is now ready to use. Distilled water may also be used.

Salt (*sodium chloride*): Pickling or canning salt should be used for pickling. It can be found in most grocery or hardware stores. Other types of salt contain anti-caking materials that could make the brine cloudy. Remember not to alter salt concentrations in fermented pickles or sauerkraut. Proper fermentation depends on accurate proportions of salt and other ingredients.

Vinegar: Use cider or white vinegar with 5 percent acidity (50 grain). Correct acidity is important. Do not decrease, omit or dilute vinegar unless indicated in the recipe. Do not use homemade vinegar or vinegar of unknown acidity. Purchase fresh vinegar to make pickles. Cider vinegar has a good flavor and aroma but may darken white or light-colored fruits and vegetables. White vinegar is often used for onions, cauliflower and pears. If a less sour product is preferred, add sugar rather than decrease the vinegar.

Sugar: Use white sugar unless the recipe calls for brown sugar. When measuring, pack brown sugar. Like cider vinegar, dark brown sugar can cause darkening of the product but may be preferred for its flavor. Use white sugar when a light color is important. If you plan to use a sugar substitute, follow recipes developed for these products. Michigan State University Extension does not usually recommend sugar substitutes in pickling because heat, storage or both may cause bitterness or a loss of flavor. Sugar substitutes also do not plump the pickles and keep them firm as sugar does.

Spices: Use fresh whole spices for the best quality and flavor in pickles. If you use powdered spices, keep in mind

they may cause the processed product to become darkened or cloudy. Buy spices in small quantities and store them in a cool, dry place. Spices tend to lose their pungency over long periods, especially in warm and humid weather. To minimize darkening, tie spices in a bag made from several layers of clean cheesecloth, then add the bag to the brine during cooking and fermenting. Remove the bag before canning.

Firming agents: Firming agents are not needed for crisp pickles, if fresh quality ingredients are used and proper preserving methods are followed. Soaking cucumbers in ice water for 4 to 5 hours before pickling is a safe method for making crisp pickles. Firming agents do not work with quick-process pickles. The calcium in lime does improve pickle firmness; if you choose to use lime, purchase food-grade pickling lime from a grocer's shelf. Do not use agricultural or burnt lime. Food-grade lime may be used as a lime-water solution for soaking fresh cucumbers 12 to 24 hours before pickling them, but *excess lime absorbed by the cucumbers must be removed to make safe pickles*. To remove excess lime, drain the lime-water solution, rinse and then resoak the cucumbers in fresh water for 1 hour. Repeat the rinsing and soaking steps two more times. Failure to remove lime adequately may increase the risk of botulism.

Equipment: For heating pickling liquids, use unchipped enamelware, stainless steel, aluminum or glass kettles. Do not use iron, copper or galvanized kettles and utensils, which can cause undesirable colors and flavors, and can react with ingredients to form potentially toxic compounds.

Types of Pickles

Fermented pickles

Fermented or brined pickles are cured for several days or up to a few weeks, during which time bacteria produce the characteristic lactic acid flavor. After fermenting, process pickles in a boiling water canner. When making fermented pickles, you will need a 1-gallon container for each 5 pounds of fresh cucumbers. An unchipped 5-gallon stone crock is an ideal size for fermenting about 25 pounds of cucumbers. Food-grade plastic and glass containers are excellent substitutes for stoneware crocks. If you are not sure if a container is safe for food, read its label or contact its manufacturer. You may use other 1- to 3-gallon nonfood-grade plastic containers if they are lined inside with a clean,

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food-grade plastic bag. Freezer bags sold for packaging turkeys are suitable for use with 5-gallon containers.

Caution: *Be certain that foods come in contact only with food-grade plastics.* Do not use garbage bags, trash can liners, or galvanized or plastic garbage cans. Cucumbers must be kept 1 to 2 inches below the brine surface while fermenting. After adding the cucumbers and brine, insert a suitably sized dinner plate or glass pie plate inside the fermentation container to press the vegetables into the brine. The plate must be slightly smaller than the container opening yet large enough to cover most of the cucumbers. To keep the plate and the cucumbers under the surface of the brine, fill two to three clean quart jars with water, put on the lids and set them on the plate. Cover the container opening with a clean, heavy bath towel to prevent contamination from insects and molds while the cucumbers are fermenting.

Fresh-packed pickles

Fresh-packed or quick-process pickles are soaked in a salt solution for several hours or overnight, drained and combined with a boiling solution of vinegar and spices, then processed in a boiling water canner. The acetic acid of the vinegar produces the tart flavor.

Processing

All pickled products are high-acid products. This acid may come from the large amount of vinegar added to them or from their being brined or fermented. Regardless of the process, the product must be processed in a boiling water bath canner. Times and procedures will vary. Follow a research-tested recipe.

Processing is necessary to destroy the yeasts, molds and bacteria that may cause the products to spoil, and to inactivate enzymes that could affect the color, flavor and texture of the pickled product. A vacuum seal is necessary on the jar to prevent other organisms from entering.

Alternative processing for cucumber pickles: low-temperature pasteurization treatment. **Caution:** *Do not use this treatment on reduced-sodium pickles.*

The following treatment results in a better product texture but must be carefully managed to avoid possible spoilage. Place jars in a canner half-filled with warm water (120 degrees to 140 degrees F). Then add hot water to raise the water level to 1 inch above the jars. Heat the water enough to maintain the water temperature at 180 degrees to 185 degrees F for 30 minutes. Check with a candy or jelly thermometer to be certain that the water temperature is at least 180 degrees F during the entire 30 minutes. Temperatures higher than 185 degrees may cause unnecessary softening of pickles. **Caution:** *Use only when recipe indicates that it is an option.*

References

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