



Crispy Pickles

An ideal pickle is defined by its crispness. The vegetable's variety, freshness, preparation techniques, added ingredients, and processing method influence quality of the final product.

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How does freshness affect the quality of the pickle?

- To get crisp pickles start with fresh, just-picked vegetables. As vegetables age they lose their crispness.
- Refrigerate produce if it cannot be used immediately upon harvest.
- Vegetables become soft as their pectin structure

changes due to microbial activity, excess heat or improper handling. (Pectin is a natural substance in the vegetable that holds the cells together.) Once a vegetable becomes soft it cannot be made firm again.

What cucumbers are appropriate for canning?

- Use pickling cucumbers that are no more than 2 inches in diameter.
- Avoid waxed cucumbers for pickling. The brine or pickling solution can't penetrate the wax.
- Burpless cucumbers are not suitable for making fermented pickles because they produce an enzyme causing the pickles to soften during fermentation.

- Smaller burpless cucumbers with small seeds may be suitable for making quick-process pickles.
- The skins on burpless cucumbers may be tough.

Why do some older recipes call for alum?

- At one time it was added for crispness; however it is no longer recommended.
- If good quality ingredients are used and up-to-date methods are followed, firming agents are not needed.
- Alum has little crispness affect on quick-process pickles.
- Alum will increase firmness of fermented pickles when used at levels up to $\frac{1}{4}$ teaspoon per pint, but greater amounts will decrease firmness.

Why do some pickle recipes include lime?

- Lime is a source of calcium. Calcium improves pickle firmness.
- **Food-grade** lime may be used as a lime-water solution for soaking fresh cucumbers 12 to 24 hours before pickling them.
- Excess lime absorbed by the cucumbers must be removed to make safe pickles.
- Excess lime remaining in the pickle brine will lower the acidity of the brine, making the pickles unsafe to can.
- To remove excess lime, drain the lime-water solution, rinse and then re-soak the cucumbers in fresh water for 1 hour. Repeat the rinsing and soaking steps two more times.

Is there a safer method than the addition of lime to cucumbers?

- Calcium chloride does not have the hydroxide component that lime has that can lower the acidity of pickled foods.
- Two calcium chloride products sold are Ball's Pickle Crisp® and Mrs. Wages Xtra Crunch®.
- To use, add a small amount to each jar of pickles before sealing. Follow the manufacturer's directions on the jar.
- Calcium chloride is an ingredient in some commercial pickle mixes and is found in some canned vegetables.

Why do recipes say to cut off the blossom end of the cucumber?

- The blossom end contains enzymes that can cause softening.
- Remove at least 1/16th inch from the blossom end.

Why do some old recipes add a grape leaf to each jar of pickles?

- Grape leaves contain tannins that inhibit the pectinase enzyme that make pickles soft.
- If you remove the blossom ends, you don't need to add grape leaves.

Why ice pickles?

- One of the simplest methods of firming pickles is to use ice.
- Soak cucumbers or other vegetables in ice water or layer with crushed ice for 4 to 5 hours before pickling. Sometimes this step is combined with a salt solution.

What effect does salt have on pickles?

- In addition to adding flavor, salt draws water out of the cucumber allowing it to be replaced with the brining solution.

Is there an alternative to processing pickles at boiling water temperatures?

- Low-temperature pasteurization involves holding jars of cucumber pickles for 30 minutes at 180-185°F.
- A thermometer must be used to determine that the water temperature remains in that temperature range the entire 30 minutes; if it falls below 180°F microorganisms can survive, and if the temperature goes above 185°F pectin will break down causing softening of the pickle.
- Only use this method of processing when it is specified in a scientifically tested recipe.

Tips for success with pickles.

- Use fresh produce (i.e., cucumbers or other vegetables).
- Do not alter vinegar, food, or water proportions in a recipe.
- Use vinegar of 5% acidity.
- There must be a minimum, uniform level of acid throughout the pickled product to prevent the growth of botulinum bacteria. (Don't pack the pickles so tightly that there isn't room for the pickling solution.)
- Use only scientifically research-based recipes.
- Process all pickles in a boiling water bath or atmospheric steam canner to destroy spoilage organisms and to obtain a strong vacuum seal on the jar.

Let's Preserve Quick Process Pickles and Ohio State's *Making Fermented Dill Pickles* provide research based recipes and instruction to make that perfect pickle!