

Pickling versus Fermenting around the World
(Brief history and intro to fermenting and pickling)
Mariposa MFP 11-12-2022

“Key Ingredients”

There are 3 key ingredients: produce, vinegar and salt

PRODUCE:

Fruits and Vegetables should be fresh, tender, crisp and free of any blemishes. Do not use any produce that shows even the slightest evidence of mold. Proper processing kills potential spoilage organisms, but does not destroy the off-flavor or possible toxins that may have already been produced by mold growth.

Prepare fruits and vegetables within 24 hours of harvesting. If produce is not used immediately, store it in a refrigerator or a cool, well-ventilated place. Wash vegetables and fruits thoroughly in cool water to remove dirt that might start bacterial action. Sort fruits and vegetables, and select the size best suited for the specific recipe.

Regarding cucumbers...

Use cucumbers that are a recommended pickling variety. Do not expect good-quality pickles if immature or a slicing variety of cucumbers is used.

Use unwaxed cucumbers for pickling, because the pickling liquid cannot penetrate waxed cucumber. Cucumbers should be used soon after harvest, since they deteriorate rapidly at room temperature.

Sort cucumbers by size, and use the size called for in the recipe. For example, use 1 ½-inch cucumbers for gherkins, 4-inch cucumbers for dills, and save odd shaped and more mature cucumbers for relishes and sliced products

Just before pickling, remove a 1/16-inch slice from the blossom end of the cucumbers, as the blossoms may be a source of enzymes responsible for soft pickles.

VINEGAR:

Use cider vinegar or white vinegar of 5% acidity. The percent acidity is provided on the label of most commercial vinegars. Do not purchase vinegars with acidity levels lower than 5%, or if the acidity level is not provided. Also, do not use homemade vinegars, since the acidity is unknown.

Cider vinegar has a good flavor and aroma, but may darken white or light-colored fruits and vegetables. Note: Cider Vinegar is derived from apples.

White distilled vinegar is often used when a clear, colorless liquid is desired, for example pickling onions or cauliflower. Wine and malt vinegars may be used if their flavor is desired, but they must be of 5% acidity. Note: White Vinegar is derived from grain alcohol..

For low-acid foods that are pickled, vinegar must be added in sufficient quantity to lower the pH to below 4.6. Recipes have generally been developed to a target of pH 4.0 or lower to provide a margin of safety and to provide proper tart flavor.

Use only recipes known to provide sufficient acidity, such as those provided at extension offices.

To ensure that *Clostridium botulinum* cannot grow, pickling requires at least as much vinegar as other liquids. Exceptions could include tested recipes with large amounts of sugar or salt, because these also have a preservative effect, but this must be determined under laboratory conditions. Fresh-pack or quick pickle recipes are considered safe if the ratio of vinegar to water or other liquid is at least 1:1. The proportion of vinegar can be higher, and in some recipes vinegar makes up all of the covering liquid.

SALT:

Pure granulated salt, sold as “Pickling” or “Canning” salt should be used. Kosher salt, which is salt manufactured to conform to Jewish dietary laws, may also be used. These salts do not contain anti-caking agents.

Iodized table salt contains iodine and anti-caking materials that may interfere with fermentation. Anti-caking ingredients make the brine cloudy and iodine may darken pickles. However, the use of iodized table salt in fresh-pack pickled food is acceptable.

Because the density of flake salt varies, its use is not recommended in making pickles and sauerkraut – unless you are able to weigh the flake salt and substitute it in recipes on a weight-for-weight basis. A cup of granulated table salt weighs 10.2 ounces (289 grams). Similarly, sea salt can be substituted on a weight-basis in pickle recipes. However, the type and quantity of impurities varies considerably, and may affect product quality.

LOWERING SALT Content in Pickles

Pickles and pickled products often contain large amounts of sodium. Many people are interested in reducing their sodium intake, and request low-salt pickle recipes.

Salt can be omitted in fresh-pack pickle recipes, but cannot be omitted when making fermented (brined) pickles or sauerkraut. In fresh-pack pickles, salt does act with acid to provide additional inhibition of the growth of some microorganisms, but if no-salt pickles contain at least 1:1 vinegar to water ratio (the rule of thumb for all fresh-pack pickles), product safety is assured. In fermented pickles, salt plays an important role in controlling fermentation, and must be carefully measured.

Salt-free pickles need extra seasoning to give a good flavor and compensate for the missing salt. Peppery-hot, sweet, and sweet-sour pickles are more acceptable as low-salt pickles than plain salt-free pickles.

SALT SUBSTITUTES:

Reduced sodium salts may be used in quick or fresh-pack pickle recipes. These salts are often mixtures of sodium and potassium chloride, and have taste properties that differ slightly from pure sodium chloride, so pickling may not have a fully traditional taste. Reduced sodium salt substitutes should not be used in making fermented pickles or sauerkraut, because the specific properties of sodium chloride are required to achieve the desired fermentation.