Preparing and Canning Fermented and Pickled Foods
This document was adapted from the "Complete Guide to Home Canning," Agriculture Information Bulletin No. 539, USDA, revised 2009
http://nchfp.uga.edu/how/can_home.html

General Information
The many varieties of pickled and fermented foods are classified by ingredients and method of preparation.
Regular dill pickles and sauerkraut are fermented and cured for about 3 weeks. Refrigerator dills are fermented for about 1 week. During curing, colors and flavors change and acidity increases. Fresh-pack or quick-process pickles are not fermented; some are brined several hours or overnight, then drained and covered with vinegar and seasonings. Fruit pickles usually are prepared by heating fruit in a seasoned syrup acidified with either lemon juice or vinegar. Relishes are made from chopped fruits and vegetables that are cooked with seasonings and vinegar.
Be sure to remove and discard a 1/16-inch slice from the blossom end of fresh cucumbers. Blossoms may contain an enzyme which causes excessive softening of pickles.
Caution: The level of acidity in a pickled product is as important to its safety as it is to taste and texture.
• Do not alter vinegar, food, or water proportions in a recipe or use a vinegar with unknown acidity.
• Use only recipes with tested proportions of ingredients.
• There must be a minimum, uniform level of acid throughout the mixed product to prevent the growth of botulinum bacteria.

Ingredients
Select fresh, firm fruits or vegetables free of spoilage. Measure or weigh amounts carefully, because the proportion of fresh food to other ingredients will affect flavor and, in many instances, safety.
Use canning or pickling salt. Noncaking material added to other salts may make the brine cloudy. Since flake salt varies in density, it is not recommended for making pickled and fermented foods. White granulated and brown sugars are most often used. Corn syrup and honey, unless called for in reliable recipes, may produce undesirable flavors. White distilled and cider vinegars of 5 percent acidity (50 grain) are recommended. White vinegar is usually preferred when light color is desirable, as is the case with fruits and cauliflower.

Pickles with reduced salt content
Recipes for pickles with reduced sodium content are provided in Guide 6 of the USDA Complete Guide to Home Canning.
In the making of fresh-pack pickles, cucumbers are acidified quickly with vinegar. Use only tested recipes formulated to produce the proper acidity. While these pickles may be prepared safely with reduced or no salt, their quality may be
noticeably lower. Both texture and flavor may be slightly, but noticeably, different than expected. You may wish to make small quantities first to determine if you like them. However, the salt used in making fermented sauerkraut and brined pickles not only provides characteristic flavor but also is vital to safety and texture. In fermented foods, salt favors the growth of desirable bacteria while inhibiting the growth of others. Caution: Do not attempt to make sauerkraut or fermented pickles by cutting back on the salt required.

Firming agents
Alum may be safely used to firm fermented pickles. However, it is unnecessary and is not included in the recipes in this publication. Alum does not improve the firmness of quick-process pickles.

Preventing spoilage
Pickle products are subject to spoilage from microorganisms, particularly yeasts and molds, as well as enzymes that may affect flavor, color, and texture. Processing the pickles in a boiling-water canner will prevent both of these problems. Standard canning jars and self-sealing lids are recommended. Processing times and procedures will vary according to food acidity and the size of food pieces.

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Selection of Fresh Cucumbers
Quantity: An average of 14 pounds is needed per canner load of 7 quarts; an average of 9 pounds is needed per canner load of 9 pints. A bushel weighs 48 pounds and yields 16 to 24 quarts – an average of 2 pounds per quart.
Quality: Select firm cucumbers of the appropriate size: about 1-1/2 inches for gherkins and 4 inches for dills. Use odd-shaped and more mature cucumbers for relishes and bread-and-butter style pickles.

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

1"-2" of water