**We Can Pickle That!**

**Fundamentals**

**Food Safety Tips**

* Wash hands and forearms frequently: after using toilet, after changing baby's soiled diaper, after touching animals, before handling food, and after touching raw meat, fish and poultry.
* 20-second rule: wash hands for 20 seconds.
* Use disposable gloves if you have a cut or sore on your hands.

***When in doubt - throw it out***

* DANGER - Never taste food that looks or smells strange to see if it can still be used. Just discard it.
* Generally foods that contain bacteria will look, smell, and taste normal.
* Generally speaking most bacteria that cause food borne illness are odorless, colorless, and tasteless.

**General Cleaning Tips**

* Run sponges and pot scrubbers through the dishwasher frequently. Change dish cloths daily.
* Mop up spilled juices from meat, fish or poultry immediately using a disposable paper towel.
* Use a disinfecting solution consisting of 1½ teaspoon of chlorine bleach to 1 pint of water. Dispense with a spray bottle to disinfect countertops, cutting surfaces, etc. Make a new solution every week.
* AVOID CROSS CONTAMINATION. ALWAYS wash your hands, knives, cutting boards, and food preparation surfaces well with soapy water before and after any contact with raw meat, fish, or poultry.
* Rinse all fresh fruits and vegetables well under running water before preparing or eating them. Do not soak.

**Use the Right Equipment**

* Use standard canning jars, lids, and rings.
* Cook the product in a deep, non-reactive kettle, stainless steel, enameled, or glass.
* Use a reputable recipe for the best results; they have been tested for quality, flavor, and ***safety***.

**Getting Ready: Be Prepared!**

* Read the recipe thoroughly before you begin. Measure out all ingredients and have all needed utensils at hand. Make sure your vinegar is 5% acidity (read the label).
* Do not change the quantities of produce nor vinegar in any recipe, unless specified in a tested recipe. (If you cut a recipe in half, do the math right.)
* Check the jar for flaws. Wash jars, lids, and rings in hot soapy water and rinse well. Place clean jars into the canner to heat.

**Fill and Seal Jars Properly**

* Fill hot jars using either a ***Raw (Cold) Pack or Hot-Pack***.
	+ The raw, or cold-pack, method means packing the cold or raw food into a hot jar, then adding boiling liquid brine. The jars are then processed in a boiling-water canner. Fruits such as apricots, berries, cherries, grapes, plums, rhubarb and tomatoes are best if packed raw. Most vegetables can be packed raw (cold-packed) if processed in the pressure canner.
	+ The hot-pack method requires a short pre-cooking period (boiling or heating in some manner). Then the boiling-hot product is packed into clean, hot jars and processed immediately. The hot-pack method is more satisfactory for some vegetables and fruits and it is recommended for peaches, pears and pineapple. Benefits include a tighter pack and, because food expels air when heated, less float.
	+ Use the method suggested in your tested recipe for best flavor and texture.
* Leave the headspace specified in the recipe.
* Wipe the rim with a clean, damp, paper towel.
* Place lids and rings on jars. Tighten the rings only fingertip tight.

**Processing**

* Process jars of pickled products using either the boiling water or atmospheric steam canning method. This ensures that any foodborne pathogens in the jar are destroyed.
* **The USDA does not recommend open kettle canning**, which involves heating the food to boiling, pouring it into the jars, applying lids, and allowing the heat of the jar to cause the lid to seal, without further processing.
* Paraffin, as a sealing agent, is not recommended. No processing is involved and the wax can shrink during cold weather, exposing the food.
* ***Alternative Low-Temperature Pasteurization Process:*** Low-temperature pasteurization can produce a better pickle texture, but must be done very carefully to avoid spoilage and is only acceptable for certain recipes. Fill jars with room temperature pickles. Pour 165° to 180°F liquid over the product, leaving the appropriate headspace. Remove bubbles with a rubber spatula. Wipe the jars clean and adjust lids. Process at 180˚F for 30 minutes. Be sure to use a thermometer. **Caution: Use this process only for cucumbers. Do not use this treatment on reduced-sodium pickles.**
* ***Atmospheric Steam Canner Processing:*** Use a research tested recipe and processing time developed for a **boiling water** canner when using an atmospheric steam canner. An atmospheric steam canner may be used with recipes approved for half-pint, pint, or quart jars. Processing time must be limited to **45 minutes or less, including any modification for elevation**.

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| --- |
| Altitude Chart |
| Altitude in feet | Increase processing time |
| 1,000 – 3,000 | 5 minutes |
| 3,001 – 6,000 | 10 minutes |
| Above 6,001 | 15 minutes |

**Adjusting for Altitude**

* All recipes are developed using sea level as the criteria for processing times. At sea level, water boils at 212°F. At higher altitudes water will boil at a lower degree.
* Adjustments have to be made to ensure safe canning. If you are at a higher altitude, you must increase the processing times according to the chart.

**Pickles**

A pickle is any fruit or vegetable preserved in vinegar or brine.

* **Brine pickles** are products fermented in salt brine. Regular dill pickles and sauerkraut are fermented and cured for about 3 weeks. They may be canned or stored in the refrigerator for 4-6 months.
* **Refrigerator dills** are not heat processed and must be stored in the refrigerator for 4-6 months.
* **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** are fruits that are pickled in spicy, sweet-sour syrup.
* **Relishes** are prepared using chopped products and cooked in a spicy vinegar solution.

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.

**Salt**

* Salts are not interchangeable. Use canning or pickling salt. Table salt contains anti-caking ingredients which can cloud the brine. Kosher salt may also contain anti-caking ingredients so check the label.
* Since flake salt varies in density (grain size), it is not recommended for making pickled and fermented foods. (If you must substitute Kosher salt, it is lighter than canning salt so you need to use the same amount of salt by weight, not volume.
* In our class experiment, **½ cup pickling salt = 1 cup plus 2 tablespoons Kosher salt**.

**Vinegar**

The level of acidity in a pickled product is as important to its safety as it is to taste and texture. When pickling, always use high-quality commercial vinegars with 5% acidity or higher (also listed as 50-grain). The acidity should be listed on the label; if not, assume it is not 5%.

* Do not alter vinegar, food, or water proportions in a recipe or use a vinegar with unknown acidity. Doing so may alter its preservative effect and undermine the safety of the product.
* Use only recipes with tested proportions of ingredients.
* White distilled and cider vinegars of 5% acidity are recommended. White vinegar is usually preferred when light color is desirable.
* Do not use homemade vinegar as the acidity is unknown.

**Water**

* Soft water makes the best brine for pickles.
* Hard water may cause cloudiness in the brine and discolor pickles. If only hard water is available, boil and let site for 24 hours. Skim off scum and use water from the top of the container without disturbing the sediment.
* Fluoridated or chlorinated water may contribute to soft pickles or cloudy brine; bottled distilled water is always a good choice.

**Pickles with Reduced Salt Content**

When making 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 noticeably, different than expected. You may wish to make small quantities first to determine if you like them.

**Sugars**

White granulated and brown sugars are most often used. Corn syrup and honey, unless called for in reliable recipes, may produce undesirable flavors.

**Spices**

Use fresh whole spices for the best quality and flavor in pickles. Powdered spices may cause the product to darken and become cloudy. Pickles will darken less if you tie whole spices loosely in a clean white cloth or cheesecloth bag and then remove the bag from the product before packing the jars.

**Firming Agents**

If good quality ingredients are used in pickling and up-to-date methods are followed, lime and alum are not needed for crisp pickles. If you choose to use firming agents, alum may be safely used to firm *fermented* cucumbers. Alum does not have an effect on quick-processes pickles.

* When pickling cucumbers, cut 1/16-inch slice off the blossom end and discard because enzymes in the blossom end causes soft pickles.
* Soaking cucumber in **ice** water for 4 to 5 hours prior to pickling is a safe method for making crisp pickles.
* The calcium in pickling lime does improve pickle firmness. Food-grade lime may be used as a lime-water solution for soaking fresh cucumbers 12 to 24 hours before pickling them. However, 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 re-soak the cucumbers in fresh water for 1 hour. Repeat the rinsing and soaking steps two more times.
* Calcium chloride for pickling is often sold where you buy canning supplies. It is usually added directly to the jars of pickles. Follow the instructions on the package.

**Other Considerations:**

* ***Yellow crystals on pickled asparagus:*** Sometimes pickled asparagus will form yellow crystals. Do not panic!!! When asparagus is heated with acid (such as vinegar), rutin is drawn out of the asparagus plant. It then becomes insoluble in the vinegar and crystallizes on the exterior of the asparagus stems. It is safe to it; it is only a cosmetic concern. In commercially canned asparagus, a small amount of tin salts is added to the pickling solution, which prevents the rutin from crystallizing.
* ***Blue garlic***: Garlic contains anthocyanins, water-soluble pigments that can turn blue or purple in acidic environments like vinegar or pickling brine - the garlic is still safe to eat. Garlic should be fresh and at the peak of maturity. Immature or sprouting garlic can turn blue in the jar.

**For Best Results …**

* Store fresh-pack/quick pickles for 4-6 weeks in a cool, dry, dark place to allow the flavors to mellow and blend.
* Marinate **refrigerator** pickles (they aren’t processed in heat) in the refrigerator for at least two weeks before serving and use within 3 months.

**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 or steam canner will prevent 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.

***Resources***

**National Center for Home Food Preservation**: <http://nchfp.uga.edu/>

**Complete Guide to Home Canning**. 2015. <http://nchfp.uga.edu//publications/publications_usda.html>

**So Easy to Preserve,** Sixth Edition. 2016. Bulletin 989. Cooperative Extension/University of Georgia, Athens

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**Recipes**

Quick Fresh Dill Pickles *Yield: 7-9 wide-mouth pints or 4-5 wide mouth quarts*

8 pounds of 3 to 5-inch pickling cucumbers

2 gallons water

1¼ cups canning salt (divided)

1½ quarts white vinegar (5%)

¼ cup sugar

2 quarts water

2 tablespoons whole mixed pickling spice

about 3 tablespoons whole mustard seed

about 14 heads of fresh dill or 5 tablespoons dill seed

1. Wash and rinse canning jars, lids and rings; keep jars hot until ready to use.
2. Wash cucumbers. Cut 1/16-inch slice off blossom end and discard. Leave ¼-inch of stem attached. Dissolve ¾ cup salt in 2 gallons of water. Pour over cucumbers and let stand for 12 hours. Drain.
3. Combine vinegar, ½ cup salt, sugar and 2 quarts water. Add mixed pickling spices tied in a clean white cloth. Heat to boiling.
4. Fill jars with pickles. Add 1 teaspoon mustard seed and 1½ heads fresh dill (or 1½ teaspoons dill seed) per pint jar. Cover with boiling pickling solution, leaving ½-inch headspace. Remove air bubbles and adjust headspace, if necessary, by adding hot solution. Wipe rims with a dampened clean paper towel; adjust two-piece metal canning lids.
5. Process in a boiling water or steam canner:
	1. Pints: 10 minutes at 0-1,000 feet, 15 minutes at 1,001-6,000 feet, 20 minutes above 6,000 feet.
	2. Quarts: 15 minutes at 0-1,000 feet, 20 minutes at 1,001-6,000 feet, 25 minutes above 6,000 feet.
6. For boiling water canner, remove lid and wait 5 minutes; for steam canner, wait 3 minutes before removing lid. Remove jars from canner. Let cool, undisturbed, 12-24 hours and check for seals. Remove rings, clean and label jars. Store sealed jars in a cool, dry, dark location.

*Source: So Easy to Preserve, Cooperative Extension, The University of Georgia, 2015*

Kosher Dills *Yield: 6-7 pints*

30-36 cucumbers (3- to 4-inches long)

3 cups white vinegar (5%)

3 cups water

6 tablespoons canning salt

fresh or dried dill

garlic

mustard seed

1. Wash and rinse canning jars, lids and rings; keep jars hot until ready to use.
2. Wash cucumbers. Cut 1/16-inch slice off blossom end and discard. Leave ¼-inch of stem attached.
3. Make a brine of the vinegar, water and salt. Bring to a boil.
4. Place a generous layer of dill, ½ to 1 clove of garlic (sliced) and ½ teaspoon of mustard seed in bottom of each pint jar. Pack the cucumbers into the hot jars. When the jars are half-filled with cucumbers add more dill and complete the packing of the jars. Cover with boiling pickling solution, leaving ½-inch headspace. Remove air bubbles and adjust headspace, if necessary, by adding hot solution. Wipe rims with a dampened clean paper towel; adjust two-piece metal canning lids.
5. Process in a boiling water or steam canner for 10 minutes at 0-1,000 feet elevation, 15 minutes at 1,001-6,000 feet, 20 minutes above 6,000 feet.
6. For boiling water canner, remove lid and wait 5 minutes; for steam canner, wait 3 minutes before removing lid. Remove jars from canner. Let cool, undisturbed, 12-24 hours and check for seals. Remove rings, clean and label jars. Store sealed jars in a cool, dry, dark location. Pickles will shrivel after processing. They will later plump in sealed jars.

*Source: So Easy to Preserve, Cooperative Extension, The University of Georgia, 2015*

Refrigerated Dill Slices *Yield: about 5 pint jars*

8 ¼ cups sliced trimmed pickling cucumbers

2 cups white vinegar

2 cups water

6 tablespoons canning salt

2 tablespoons pickling spice

7 ½ teaspoons dill seeds

5 teaspoons mustard seeds

1 ¼ teaspoons whole black peppercorns

5 cloves garlic, halved (optional)

1. Place cucumber slices in a large glass or stainless steel bowl; set aside.
2. In a medium stainless steel saucepan, combine vinegar, water, salt, sugar and pickling spice. Bring to boil over medium-high heat, stirring to dissolve salt and sugar. Reduce heat, cover and boil gently for 10 minutes.
3. Pour pickling liquid over cucumber slices. Cover with waxed paper and set aside until cooled to room temperature, about 30 minutes.
4. In each pint jar, place 1½ teaspoon dill seeds, 1 teaspoon mustard seeds, ¼ teaspoon peppercorns and two garlic clove halves, if using. Add cucumber slices to within a generous ½-inch headspace of top of jar. Ladle pickling liquid into jar to cover cucumbers, leaving ½-inch headspace. Apply lids.
5. For best results, allow cucumbers to marinate in refrigerator for at least 2 weeks and use within 3 months.

*Source: Ball Complete Book of Home Preserving, 2015*

Fermented Dill Pickles *Yield: 1 gallon*

4 pounds of 4-inch pickling cucumbers

2 tablespoons dill seed or 5 heads fresh dill

2 cloves garlic (optional)

2 dried red peppers (optional)

2 teaspoons whole mixed pickling spices (optional)

½ cup canning salt

¼ cup white vinegar (5%)

8 cups water

1. Wash cucumbers. Cut 1/16-inch slice off blossom end and discard. Leave ¼-inch of stem attached.
2. Place half of dill and spices on bottom of a clean, suitable container. Add cucumbers, remaining dill and one or more of the optional spices.
3. Dissolve salt in vinegar and water. Pour over cucumbers. Add suitable weight. *Note: a small plastic zip bag with a little water can be used as a weight.)*
4. Store where temperature is between 70℉ and 75℉ for about 3 to 4 weeks while fermenting. Temperatures of 55℉ to 65℉ are acceptable, but fermentation will take 5 to 6 weeks. Avoid temperatures above 80℉, because pickles will become soft.
5. Fermenting pickles cure slowly. Check the container several times a week and promptly remove surface scum or mold. CAUTION: If the pickles become soft, slimy or develop a disagreeable odor, discard them.
6. Fully fermented pickles may be stored in the original container for about 4 to 6 months, provided they are refrigerated and surface scum and molds are removed regularly. Canning fully fermented pickles is a better way to store them.
7. To process fermented dill pickles, pour the brine into a pan. Heat slowly to a boil and simmer 5 minutes. Filter brine through paper coffee filters to reduce cloudiness, if desired. Fill hot jars with pickles, leaving ½-inch headspace. Fill jars to ½-inch from top with hot brine. Remove air bubbles. Wipe jar rims. Adjust lids.
8. Process in a boiling water or steam canner:
	1. Pints: 10 minutes at 0-1,000 feet, 15 minutes at 1,001-3,000 feet, 20 minutes at 3,001-6,000 feet, 25 minutes above 6,000 feet.
	2. Quarts: 15 minutes at 0-1,000 feet, 20 minutes at 1,001-3,000 feet, 25 minutes at 3,001-6,000 feet, 30 minutes above 6,000 feet.

*Source: So Easy to Preserve, Cooperative Extension, The University of Georgia, 2015*

**Freezer Pickles** *Yield: about 3 pints*

6 cups thinly sliced cucumbers

1 large thinly sliced white or yellow onion

2 tablespoons pickling salt

1 cup sugar

1 cup white vinegar

2 cloves garlic, minced

3 tablespoons dill seed

1. In a large bowl, combine cucumbers and onions; sprinkle with salt and let stand for 2 hours. Rinse under cold, running water and drain well.
2. In a large bowl, combine sugar, vinegar, garlic and dill. Stir well to dissolve the sugar.
3. Add cucumbers and onion and mix thoroughly.
4. Pack into food-safe containers, leaving about 1-inch headspace at the top.
5. Freeze for up to 6 months. Defrost in refrigerator for 8 hours before serving.

Tip: Spice up your pickles by adding 1 finely diced jalapeno or ½ teaspoon red pepper flakes in step 2.

*Source: Michigan State Extension*

Freezer Lime-mint Cucumber Pickles *Yield: 4 pints*

8 cups pickling cucumbers, thinly sliced

(about 2½ pounds)

3 tablespoons canning salt

1 small sweet red pepper, seeded, cored, and chopped

¼ cup mint leaves, minced

½ cup onion, peeled and sliced (1 medium onion)

2 garlic cloves, peeled and minced

Grated zest of 1 lime

1½ cups sugar

1½ cups white vinegar (5%)

1. Gently wash cucumbers. Trim 1/16-inch from blossom end and discard. Thinly slice cucumbers and measure out 8 cups. In a large bowl, toss the cucumbers with the salt. Let the cucumbers stand 2 hours, then drain.
2. In another bowl, stir together the remaining ingredients. Pour the mixture over the drained cucumbers and stir well. Refrigerate the mixture for 8 to 10 hours.
3. Pack the cucumbers and pickling solution in freezer bags or rigid containers, leaving 1-inch headspace. Label and date packages, and freeze at 0℉ or colder for up to 6 months.
4. Thaw pickles for about 8 hours in the refrigerator, and serve chilled. Thawed pickles must be kept refrigerated; use within 2 weeks.

*Source: University of Wisconsin-Extension Cooperative Extension*

**Pickled Corn Relish** *Yield: about 5 pints*

Three 10-ounce packages frozen corn

1¼ cups diced sweet red peppers

1¼ cups diced sweet green peppers

1¼ cups chopped celery

¾ cups diced onions

⅘ cups sugar

2½ cups vinegar (5%)

1¼ tablespoons canning or pickling salt

1¼ teaspoons celery seed

1¼ tablespoons dry mustard

¾ teaspoon turmeric

1. Wash and rinse canning jars, lids and rings; keep jars hot until ready to use.
2. Combine peppers, celery, onions, sugar, vinegar, salt, and celery seed in a saucepan.
3. Bring to boil and simmer 5 minutes, stirring occasionally.
4. Mix mustard and turmeric in ½ cup of the simmered mixture. Add this mixture and the corn to the hot mixture. Simmer another 5 minutes.
5. Fill jars with hot mixture, leaving ½-inch headspace. Adjust lids and process in a boiling water or steam canner. Half-pints or Pints: 15 minutes at 0-1,000 feet, 20 minutes at 1,001-6,000 feet, 25 minutes above 6,000 feet.

*Source: USDA Complete Guide to Home Canning, 2015*

Pickled Eggs

There are no home canning directions for pickled eggs. The following pickled egg recipes are for storage in the refrigerator. Pickled eggs should never be at room temperature except for serving time, when they should be limited to no more than 2 hours.

Each of these recipes uses 12 peeled, hard-cooked eggs. The directions for each recipe are to bring all the ingredients except the eggs to a boil, reduce the heat and simmer for 5 minutes. Pack no more than one dozen peeled, hard-cooked eggs loosely into a warm, pre-sterilized quart jar (or other similar size container which can be closed tightly). There needs to be plenty of pickling solution, and enough to completely cover the eggs. Pour the hot pickling solution over the eggs in the jar, cover, and refrigerate immediately.

After making the eggs, the eggs require some time to season (i.e., pick up the flavors from the pickling brine). Keep refrigerated at all times. If small eggs are used, 1 to 2 weeks are usually allowed for seasoning to occur. Medium or large eggs may require 2 to 4 weeks to become well-seasoned. Use the eggs within 3 to 4 months for best quality.

RED BEET EGGS SWEET AND SOUR EGGS

1 cup red beet juice (from canned beets) 1½ cups pasteurized apple cider

1½ cups cider vinegar ½ cup cider vinegar

1 teaspoon brown sugar 12-ounce package red cinnamon candy

A few canned whole tiny red beets 1 tablespoon mixed pickling spice

(or several slices of beets can be used) 2 tablespoons salt

 1 teaspoon garlic salt

DARK AND SPICY EGGS CIDERED EGGS

1½ cups cider vinegar 1½ cups pasteurized apple cider or apple juice

½ cup water ½ cup white vinegar

1 tablespoon dark brown sugar 6 thin slices of onion

2 teaspoons granulated sugar 1½ teaspoons salt

1 teaspoon mixed pickling spice 1 teaspoon whole pickling spice

¼ teaspoon liquid smoke or hickory smoke salt 1 peeled garlic clove

2 teaspoons salt

DILLED EGGS PINEAPPLE PICKLED EGGS

1½ cups white vinegar 1 can (12 ounces) unsweetened pineapple juice

1 cup water 1½ cups white vinegar

¾ teaspoon dill weed 2 medium onions, peeled and sliced

¼ teaspoon white pepper ¼ cup sugar (omit if using sweetened

3 teaspoons salt pineapple juice)

¼ teaspoon mustard seed 1 teaspoon salt

½ teaspoon onion juice or minced onion 1 teaspoon whole pickling spice

½ teaspoon minced garlic or 1 peeled garlic clove

*Source: National Center for Home Food Preservation*

Pickled Dill Beans *Yield: about 8 pints*

4 pounds fresh tender green or yellow beans (5-6 inches long)

8 to 16 heads fresh dill

8 cloves garlic (optional)

½ cup canning or pickling salt

4 cups white vinegar (5%)

4 cups water

1 teaspoon red pepper flakes (optional)

1. Wash and rinse canning jars, lids and rings; keep jars hot until ready to use. If under 1,000 feet, sterilize the jars by boiling for 10 minutes. Wash and trim ends from beans and cut to 4-inch lengths.

1. In each sterile pint jar, place 1 to 2 dill heads and, if desired, 1 clove of garlic. Place whole beans upright in jars, leaving ½-inch headspace. Trim beans to ensure proper fit, if necessary.
2. Combine salt, vinegar water, and pepper flakes (if desired). Bring to a boil.
3. Add hot solution to beans, leaving ½-inch headspace. Remove air bubbles and adjust headspace, if necessary, by adding hot solution. Wipe rims with a dampened clean paper towel; adjust two-piece metal canning lids.
4. Process in a boiling water or steam canner for 5 minutes at 0-1,000 feet (only in sterilized jars), 10 minutes at 1,001-6,000 feet, 15 minutes above 6,000 feet.
5. For boiling water canner, remove lid and wait 5 minutes; steam canner, wait 3 minutes before removing lid. Remove jars from canner. Let cool, undisturbed, 12-24 hours and check for seals. Remove rings, clean and label jars. Store sealed jars in a cool, dry, dark location.

*Source: USDA Complete Guide to Home Canning, 2015*

Spiced Pears *Yield: about 4 pints*

3½ pounds medium-ripe pears (14-16)

2½ cups sugar

1¼ cups white vinegar (5%)

1 cup water

*Tie in a spice bag:*

2 teaspoons whole ginger

2 tablespoons whole cloves

7 cinnamon sticks, 3-inch pieces

1. Wash and rinse canning jars, lids and rings; keep jars hot until ready to use.
2. Wash, peel and core pears. Place immediately in a solution of ½ teaspoon ascorbic acid and 2 quarts water to prevent browning.
3. Combine sugar, vinegar, and 1 water; bring to a boil. Add spices in cheesecloth bag. Boil 5 minutes.
4. Drain pears and add to syrup. Simmer 5 minutes or until soft but still firm. Remove spice bag.
5. Pack pears into hot jars; leaving ½-inch headspace. Fill jars to ½-inch of top with boiling hot syrup. Remove air bubbles and adjust headspace if needed. Wipe rims with a dampened clean paper towel; adjust two-piece metal canning lids.
6. Process pint jars in either a boiling water or steam canner for 15 minutes at 0-1,000 feet elevation, 20 minutes between 1,001-3,000 feet, 25 minutes between 3,001-6,000 feet, and 30 minutes above 6,000 feet.
7. For boiling water canner, remove lid and wait 5 minutes; for steam canner, wait 3 minutes before removing lid. Remove jars from canner. Let cool, undisturbed, 12-24 hours and check for seals. Remove rings, clean and label jars. Store sealed jars in a cool, dry, dark location.

*Source: National Center for Home Food Preservation, 2018*

**Pickled Asparagus** *Yield: about 3 wide-mouth pints*

5 pounds asparagus
3 large garlic cloves
2¼ cups water

2¼ cups white vinegar (5%)
3 small hot peppers (optional)

¼ cup canning salt
1½ teaspoons dill seed

1. Wash and rinse canning jars, lids and rings; keep jars hot until ready to use.
2. Wash asparagus gently under running water. Cut stems from the bottom to leave spears with tips that fit into the canning jar with a little less than ½-inch headspace.
3. Peel and wash garlic cloves. Place a garlic clove at the bottom of each jar, and tightly pack asparagus into jars with the blunt ends down.
4. In a 6–8-quart pot, combine water, vinegar, hot peppers (optional), salt and dill seed. Bring to a boil.
5. If using, place one hot pepper in each jar over asparagus spears. Pour boiling hot pickling brine over spears, leaving ½-inch headspace. Remove air bubbles and adjust headspace, if necessary, by adding hot solution. Wipe rims with a dampened clean paper towel; adjust two-piece metal canning lids.
6. Process in a boiling water or steam canner for 10 minutes at 0-1,000 feet elevation, 15 minutes at 1,001-6,000 feet, 20 minutes above 6,000 feet.
7. For boiling water canner, remove lid and wait 5 minutes; for steam canner, wait 3 minutes before removing lid. Remove jars from canner. Let cool, undisturbed, 12-24 hours and check for seals. Remove rings, clean and label jars. Store sealed jars in a cool, dry, dark location.
8. Allow pickled asparagus to sit in processed jars for 3 to 5 days before consumption for best flavor development.

*Source: USDA Complete Guide to Home Canning, 2015*

**Pickled Beets** *Yield: about 8 pints*

7 pounds of 2- to 2½-inch diameter beets

4 cups vinegar (5%)

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-inch diameter) if desired

1. Wash and rinse canning jars, lids and rings; keep jars hot until ready to use.
2. Trim off beet tops to 1 inch of stem and roots to prevent bleeding of color. Wash thoroughly. Sort for size.
3. Cover similar sizes together with boiling water and cook until tender, about 25 to 30 minutes. **Caution: Drain and discard liquid.** Cool beets. Trim off roots and stems and slip off skins.
4. Slice into ¼-inch slices. Peel and thinly slice onions.
5. Combine vinegar, salt, sugar, and fresh water. Put spices in cheesecloth bag and add to vinegar mixture. Bring to a boil.
6. Add beets and onions. Simmer 5 minutes. Remove spice bag.
7. Fill jars with beets and onions, leaving ½-inch headspace. Add hot vinegar solution, allowing ½- inch headspace. Remove air bubbles and adjust headspace, if necessary, by adding hot solution. Wipe rims with a dampened clean paper towel; adjust two-piece metal canning lids.
8. Process in a boiling water or steam canner for 30 minutes at 0-1,000 feet elevation, 35 minutes at 1,001-3,000 feet, 40 minutes at 3,001-6,000 feet, 45 minutes above 6,000 feet.
9. For boiling water canner, remove lid and wait 5 minutes; for steam canner, wait 3 minutes before removing lid. Remove jars from canner. Let cool, undisturbed, 12-24 hours and check for seals. Remove rings, clean and label jars. Store sealed jars in a cool, dry, dark location.

*Source: USDA Complete Guide to Home Canning, 2015*

British Bread and Butter Pickles *Yield: about 5 pints*

10 cups sliced trimmed pickling cucumbers

4 medium onions, thinly sliced

½ cup pickling or canning salt

3 cups cider vinegar (5%)

2 cups brown sugar

2 tablespoons mustard seeds

1 teaspoon celery seeds

1 teaspoon ground turmeric

1 teaspoon ground ginger

1. In a glass or stainless-steel bowl, combine cucumbers, onions and salt. Mix well, cover with cold water and let stand at room temperature for 2 hours. Transfer to a colander placed over a sink, rinse with cool running water and drain thoroughly.
2. Wash and rinse canning jars, lids and rings; keep jars hot until ready to use.
3. In a large stainless steel pan, combine vinegar, brown sugar, mustard seeds, celery seeds, turmeric, and ground ginger. Bring to a boil over medium-high heat, stirring to dissolve sugar. Stir in vegetables and return to a boil.
4. Pack vegetables into hot jars to within a generous ½-inch of top of jar. Ladle hot pickling liquid into jar to cover vegetables, leaving ½-inch headspace. Remove air bubbles and adjust headspace, if necessary, by adding hot pickling liquid. Wipe rims with a dampened clean paper towel; adjust two-piece metal canning lids.
5. Process in a boiling water or atmospheric steam canner for 10 minutes between 0-1,000 feet, 15 minutes between 1,001–3,000 feet, 20 minutes between 3,001–6,000 feet, 25 minutes between 6,001–8,000 feet, and 30 minutes between 8,001–10,000 feet.
6. For boiling water canner, remove lid and wait 5 minutes; for steam canner, wait 3 minutes before removing lid. Remove jars from canner. Let cool, undisturbed, 12-24 hours and check for seals. Remove rings, clean and label jars. Store sealed jars in a cool, dry, dark location.

*Source: Ball Blue Book Guide to Preserving, 2012*

Bread and Butter Zucchini *Yield: 8-9 pints*

16 cups fresh zucchini, sliced

4 cups onions, thinly sliced

½ cup canning or pickling salt

4 cups white vinegar (5%)

2 cups sugar

4 tablespoons mustard seed

2 tablespoons celery seed

2 teaspoons ground turmeric

1. Wash and rinse canning jars, lids and rings; keep jars hot until ready to use.
2. Cover zucchini and onion slices with 1 inch of water and salt. Let stand 2 hours and drain thoroughly.
3. Wash and rinse canning jars; keep hot until ready to use. Prepare lids and bands according to manufacturer's directions.
4. Combine vinegar, sugar, and spices. Bring to a boil and add zucchini and onions. Simmer 5 minutes.
5. Fill jars with mixture and pickling solution, leaving ½-inch headspace. Remove air bubbles and adjust headspace if necessary. Wipe rims with a dampened clean paper towel; adjust two-piece metal canning lids.
6. Process in a boiling water or atmospheric steam canner for 10 minutes between 0-1,000 feet, 15 minutes between 1,001- 6,000 feet, 20 minutes above 6,000 feet.
7. For boiling water canner, remove lid and wait 5 minutes; steam canner, wait 3 minutes before removing lid. Remove jars from canner. Let cool, undisturbed, 12-24 hours and check for seals. Remove rings, clean and label jars. Store sealed jars in a cool, dry, dark location.

*Source: USDA Complete Guide to Home Canning, 2015*

Pickled Baby Carrots *Yield: about 4 pints*

8½ cups peeled baby carrots

5½ cups white vinegar (5%)

1 cup water

2 cups sugar

2 teaspoons canning salt

8 teaspoons mustard seed

4 teaspoons celery seed

1. Wash and rinse canning jars, lids and rings; keep jars hot until ready to use.
2. Wash carrots well.
3. Combine vinegar, water, sugar and canning salt in an 8-quart Dutch oven or stockpot. Bring to a boil and boil gently 3 minutes. Add carrots and bring back to a boil. Then reduce heat to a simmer and heat until the carrots are half-cooked (about 10 minutes).
4. Meanwhile, place 2 teaspoons mustard seed and 1 teaspoon celery seed in the bottom of each clean, hot pint jar.
5. Fill hot jars with the hot carrots, leaving 1-inch headspace. Cover with hot pickling liquid, leaving ½-inch headspace. Remove air bubbles and adjust headspace, if necessary, by adding hot liquid. Wipe rims with a dampened clean paper towel; adjust two-piece metal canning lids.
6. Process in a boiling water or steam canner for 15 minutes at 0-1,000 feet elevation, 20 minutes at 1,001-6,000 feet, 25 minutes above 6,000 feet.
7. For boiling water canner, remove lid and wait 5 minutes; steam canner, wait 3 minutes before removing lid. Remove jars from canner. Let cool, undisturbed, 12-24 hours and check for seals. Remove rings, clean and label jars. Store sealed jars in a cool, dry, dark location.

*Source: National Center for Home Food Preservation, 2015*

Zucchini Pickles *Yield: about 8 pints*

5 pounds medium zucchini cut into ¼-inch-thick slices

2 pounds mild white onions, thinly sliced

¼ cup salt

Ice water

4 cups cider vinegar (5%)

2 cups sugar

2 tablespoons mustard seeds

1 tablespoon each: celery seeds and ground turmeric

2 teaspoons ground ginger

3 cloves garlic, minced

1. Wash and rinse canning jars, lids and rings; keep jars hot until ready to use.
2. Place zucchini, onions, and salt in a large kettle; cover with ice water and let stand for 1 to 2 hours. Drain, rinse well and drain again.
3. In large kettle mix vinegar, sugar, mustard seeds, celery seeds, turmeric, ginger, and garlic. Bring to a boil over high heat, stirring to dissolve sugar. Boil for 2 to 3 minutes.
4. Stir in zucchini mixture, return to a boil and boil for 2 more minutes.
5. Pack hot mixture into hot pint jars, leaving ½-inch headspace. Wipe rims with a dampened clean paper towel; adjust two-piece metal canning lids.
6. Process in a boiling water or steam canner for 10 minutes at 0-1,000 feet elevation, 15 minutes at 1,001-3,000 feet, 20 minutes at 3,001-6,000 feet, 25 minutes at 6,001-8,000 feet, and 30 minutes at 8,001-10,000 feet.
7. For boiling water canner, remove lid and wait 5 minutes; for steam canner, wait 3 minutes before removing lid. Remove jars from canner. Let cool, undisturbed, 12-24 hours and check for seals. Remove rings, clean and label jars. Store sealed jars in a cool, dry, dark location.

*Source: Pickles, Relishes and Chutneys, UC Publication #4080*

Cherry Pickles *Yield: about 4 pint jars*

2½ pounds sweet cherries,

with stems and pits, if desired

3 cups white vinegar (5%)

1½ cups water

3½ cups sugar

2 sticks cinnamon, broken in half

2½ teaspoons whole cloves

1 teaspoon whole allspice

1 teaspoon black peppercorns, or to taste (optional)

4 strips lemon, lime, or orange peel (optional)

*Note: If using* ***unpitted*** *cherries, prick skins on opposite sides with a clean needle or toothpick to prevent splitting.*

 *If using* ***pitted*** *cherries, place them in an ascorbic acid solution to prevent stem-end discoloration.*

1. Wash and rinse canning jars, lids and rings; keep jars hot until ready to use.
2. Combine vinegar, water, sugar, and spices in a non-reactive saucepan. Bring to a boil, then reduce the heat, cover the pan, and simmer the brine about 30 minutes. Add the cherries and return to a boil.
3. Add 1 piece of cinnamon stick and 1 citrus strip (if using) into a hot jar. Ladle hot cherries into jar. Add hot brine to cover, leaving ½-inch headspace. Remove air bubbles. Wipe jar rim. Center lid on jar. Apply band, and adjust to fingertip-tight. Place jar in boiling water or steam canner. Repeat until all jars are filled.
4. Process in a boiling water or steam canner for 15 minutes at 0-1,000 feet elevation, 20 minutes at 1,001-6,000 feet, 25 minutes at 6,001-8,000 feet, and 30 minutes at 8,001-10,000 feet.
5. For boiling water canner, remove lid and wait 5 minutes; for steam canner, wait 3 minutes before removing lid. Remove jars from canner. Let cool, undisturbed, 12-24 hours and check for seals. Remove rings, clean and label jars. Store sealed jars in a cool, dry, dark location.

*Source: National Center for Home Food Preservation*

Refrigerated Pickled Red Cherries *Yield: about 1 quart jar*

1 heaping pint Bing cherries

(washed, with pits and stems on)

1 cup red wine vinegar

3 tablespoons balsamic vinegar

1 cup water

Zest of 1 lemon

2 bay leaves

2 tablespoons sugar

½ teaspoon salt

1 teaspoon black peppercorns

½ teaspoon whole cloves

1. Pack cherries into a clean quart jar. Combine the remaining ingredients and bring to a boil over medium-high heat. Reduce heat and simmer until the sugar is dissolved. Remove from heat and cool 10 minutes. Pour over the cherries and allow jar to cool to room temperature (no more than 2 hours).
2. Refrigerate cherries for at least several hours before serving. The cherries will keep, refrigerated, for up to several weeks.

*Source: brooklynsupper.com*

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3 quarts (about 6 pounds)

Watermelon rind (unpared)

¾ cup salt

2 quarts (2 trays) ice cubes

9 cups sugar

3 cups white vinegar (5%)

3 cups water

1 tablespoon (about 48) whole cloves

6 cinnamon sticks, 1-inch pieces

1 lemon, thinly sliced, with seeds removed

1. Trim the pink flesh and outer green skin from thick watermelon rind. Cut into 1-inch squares or fancy shapes as desired. Cover with brine made by mixing the salt with 3 quarts cold water. Add ice cubes. Let stand 3 or 4 hours. Drain; rinse in cold water. Cover with cold water and cook until fork tender, about 10 minutes (do not overcook). Drain.
2. Combine sugar, vinegar, water, and spices (tied in a clean, thin, white cloth). Boil 5 minutes and pour over watermelon; add lemon slices. Let stand overnight in refrigerator.
3. Heat watermelon in syrup to boiling and cook slowly 1 hour.
4. Wash and rinse canning jars, lids and rings; keep jars hot until ready to use.
5. Pack hot pickles loosely into clean, hot pint jars. To each jar add 1 piece of stick cinnamon from spice bag; cover with boiling syrup, leaving ½-inch headspace. Remove air bubbles and adjust headspace if needed. Wipe rims of jars; adjust two-piece metal canning lids.
6. Process in a boiling water or steam canner for 10 minutes at 0-1,000 feet elevation, 15 minutes at 1,001-6,000 feet, 20 minutes above 6,000 feet.
7. For boiling water canner, remove lid and wait 5 minutes; for steam canner, wait 3 minutes before removing lid. Remove jars from canner. Let cool, undisturbed, 12-24 hours and check for seals. Remove rings, clean and label jars. Store sealed jars in a cool, dry, dark location.

*Source: National Center for Home Food Preservation, 2024*

Marinated Whole Mushrooms *Yield: about 9 half-pint jars*

7 pounds small whole mushrooms

½ cup bottled lemon juice

2 cups olive or salad oil

2½ cups white vinegar (5%)

1 tablespoon dried oregano leaves

1 tablespoon dried basil leaves

1 tablespoon canning salt

½ cup finely chopped onion

¼ cup diced pimento

2 cloves garlic, cut in quarters

25 black peppercorns

1. Wash and rinse canning jars, lids and rings; keep jars hot until ready to use.
2. Select very fresh unopened mushrooms with caps less than 1¼-inch in diameter. Wash. Cut stems, leaving ¼-inch attached to cap. Add lemon juice and water to cover. Bring to a boil, reduce heat, simmer 5 minutes. Drain mushrooms.
3. Mix oil, vinegar, oregano, basil and salt in saucepan. Stir in onions and pimento. Heat to boiling.
4. Place ¼ garlic clove and 2 or 3 peppercorns in each half-pint jar. Fill jars with mushrooms and hot, well-mixed oil/vinegar solution, leaving ½-inch headspace. Remove air bubbles and adjust headspace if needed. Wipe rims of jars; adjust two-piece metal canning lids.
5. Process in a boiling water or steam canner for 20 minutes at 0-1,000 feet elevation, 25 minutes at 1,001-3,000 feet, 30 minutes at 3,001-6,000 feet, 35 minutes at 6,001-8,000 feet, and 40 minutes at 8,001-10,000 feet.
6. For boiling water canner, remove lid and wait 5 minutes; for steam canner, wait 3 minutes before removing lid. Remove jars from canner. Let cool, undisturbed, 12-24 hours and check for seals. Remove rings, clean and label jars. Store sealed jars in a cool, dry, dark location.

*Source: So Easy to Preserve, 6th ed. 2014*

Pickled Roasted Peppers *Yield: 4 pint jars*

20 medium sweet red peppers,

such as red bell or Shepherd

4 large cloves garlic

1½ cups white vinegar (5%)

1½ cups cider vinegar (5%)

1½ cups dry white wine

½ cup water

1 cup coarsely chopped onion (about 1 large)

½ cup granulated sugar

1 tablespoons dried oregano

4 tablespoons pickling salt

1. Roast peppers and garlic cloves over hot coals, on a grill or under the broiler until charred, turning to roast all sides. Once the skin of the peppers wrinkle and char and garlic has charred spots, remove from heat. Place peppers in a covered bowl until cool enough to handle, about 15 minutes, then lift off skins. Slice peppers into strips. Squeeze roasted garlic cloves to remove garlic from peel.
2. Wash and rinse canning jars, lids and rings; keep jars hot until ready to use.
3. Combine roasted garlic, white vinegar, cider vinegar, white wine, water, onion, sugar, oregano and salt in a large stainless steel saucepan. Bring to a boil over medium-high heat, stirring to dissolve sugar. Reduce heat and boil gently for 5 minutes.
4. Pack peppers into hot jars, leaving ½-inch headspace. Ladle hot pickling liquid into jar to cover peppers leaving a ½-inch headspace. Remove air bubbles and adjust headspace if needed. Wipe rims of jars; adjust two-piece metal canning lids.
5. Process in a boiling water or steam canner for 15 minutes at 0-1,000 feet elevation, 20 minutes at 1,001-3,000 feet, 25 minutes at 3,001-6,000 feet, 30 minutes at 6,001-8,000 feet, and 35 minutes at 8,001-10,000 feet.
6. For boiling water canner, remove lid and wait 5 minutes; for steam canner, wait 3 minutes before removing lid. Remove jars from canner. Let cool, undisturbed, 12-24 hours and check for seals. Remove rings, clean and label jars. Store sealed jars in a cool, dry, dark location.

*Source: Ball Complete Book of Home Preserving, 2020*

Mediterranean Refrigerator Pickles *Yield: about 1 quart jar or 2 pint jars*

*Classic Mediterranean flavors from oregano or basil and citrus combine in this simple refrigerator pickle.*

*Because they’re refrigerated and not preserved for the pantry, you can get a little more creative with the vegetables and seasonings to taste.*

2 pounds desired vegetables\*

2 cups white, red wine, or balsamic vinegar (5%)

 or a combination

1 cup water

1 tablespoon sugar

1 tablespoon pickling salt

2 tablespoons minced fresh oregano or basil

2 teaspoons citrus zest

¼ teaspoon crushed red pepper

4 garlic cloves, crushed

2 small bay leaves

1. Wash, trim, and peel vegetables; leave whole (depending on size), halve, quarter, slice, or chop.
2. Bring vinegar(s) and rest of ingredients to a boil in a small stainless-steel or enameled saucepan; reduce heat and simmer 3 minutes, stirring to dissolve sugar and salt.
3. Tightly pack the vegetables into hot jar(s). Pour the hot brine over the vegetables to cover. Cover jar with lid; let stand 1 hour or until cooled to room temperature. Store in refrigerator for 3 weeks for the best flavor; consume within 3 months. (The longer the pickles stand in the refrigerator, the more flavorful they will become.)

\*This recipe works with any combination of the following vegetables: asparagus, button mushrooms, green beans, cauliflower, eggplant, onions, radishes, bell peppers, chile peppers, cherry or grape tomatoes, or zucchini.

*Source: Ball Canning Back to Basics*