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UCCE Master Food Preservers of Sacramento County



University of California
Agriculture and Natural Resources

*Sacramento County Master Food Preservers
Monthly Wednesday Night
Demonstration*

April 21, 2021

Pickles, Relish and Chutney



Resources:

- Please visit the National Center for Home Food Preservation at <http://nchfp.uga.edu> for detailed information about research-based methods of home food preservation.
- UC ANR Catalog (<http://anrcatalog.ucanr.edu>)

Should you need assistance or require special accommodations for any of our educational programs, please contact us at 916-875-6913.

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SWEET PICKLED RADISH

Source: <https://www.freshpreserving.com/blog?cid=sweet-pickled-radish>

Preserving Method: Non-Preserving

Makes about 1 pint jar

Fresh ruby red radishes, with their certain crunch and sharp flavor, make for delicious and easy refrigerator quick pickles. Recipe excerpted from The All New Ball Book of Canning and Preserving, published by Oxmoor House (2016).

You will need

- 1 bunch radishes (about a 1/2 pound), stem and root ends removed and cut into 1/8-inch slices
- 1/2 cup white or apple cider vinegar (5% acidity)
- 1/2 cup sugar
- 1/4 cup water
- 1 tsp. Ball® Salt for Pickling and Preserving
- 1 tsp. mustard seeds
- 1/2 tsp. ground black pepper
- bay leaf
- 1/2 tsp. dried crushed red pepper (optional)
- Ball® glass preserving jars with lids and bands

Directions

1. Place radishes in a hot 1-pint jar. Bring vinegar, next 6 ingredients, and, if desired, crushed red pepper to a boil in a small stainless steel or enameled saucepan.
2. Ladle hot pickling liquid over radishes. Wipe jar rim. Center lid on jar. Apply band, and adjust to fingertip-tight. Let cool on a wire rack (about 1 hour). Chill 6 hours before serving. Store in refrigerator up to 4 months.

PICKLED ASPARAGUS

Source: https://nchfp.uga.edu/how/can_06/pickled_asparagus.html

For six wide-mouth pint jars

- 10 pounds asparagus
- 6 large garlic cloves
- 4½ cups water
- 4½ cups white distilled vinegar (5%)
- 6 small hot peppers (optional)
- ½ cup canning salt
- 3 teaspoons dill seed

For seven 12-ounce jars

- 7 pounds asparagus
- 7 large garlic cloves
- 3 cups water
- 3 cups white distilled vinegar (5%)
- 7 small hot peppers (optional)
- 1/3 cup canning salt
- 2 teaspoons dill seed

Procedure:

1. Wash and rinse canning jars; keep hot until ready to use. Prepare lids according to manufacturer's directions.
 2. Wash asparagus well, but 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. 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.
 3. In an 8-quart Dutch oven or saucepot, combine water, vinegar, hot peppers (optional), salt and dill seed. Bring to a boil. Place one hot pepper (if used) in each jar over asparagus spears. Pour boiling hot pickling brine over spears, leaving ½-inch headspace.
 4. Remove air bubbles and adjust headspace if needed. Wipe rims of jars with a dampened, clean paper towel; apply two-piece metal canning lids.
 5. Process in a boiling water canner according to the recommendations in [Table 1](#). Let cool, undisturbed, for 12 to 24 hours and check for seals.
- Allow pickled asparagus to sit in processed jars for 3 to 5 days before consumption for best flavor development.

Table 1. Recommended process time for **Pickled Asparagus** in a boiling-water canner.

		Process Time at Altitudes of		
Style of Pack	Jar Size	0 - 1,000 ft	1,001 - 6,000 ft	Above 6,000 ft
Raw	12-ounce or Pints	10 min	15	20

PICKLED CORN RELISH

Source: https://nchfp.uga.edu/how/can_06/pickled_corn_relish.html

- 10 cups fresh whole kernel corn (16 to 20 medium-size ears), or six 10-ounce packages of frozen corn
- 2-1/2 cups diced sweet red peppers
- 2-1/2 cups diced sweet green peppers
- 2-1/2 cups chopped celery
- 1-1/4 cups diced onions
- 1-3/4 cups sugar
- 5 cups vinegar (5 percent)
- 2-1/2 tbsp canning or pickling salt
- 2-1/2 tsp celery seed
- 2-1/2 tbsp dry mustard
- 1-1/4 tsp turmeric

Yield: About 9 pints

Procedure: Boil ears of corn 5 minutes. Dip in cold water. Cut whole kernels from cob or use six 10-ounce frozen packages of corn. Combine peppers, celery, onions, sugar, vinegar, salt, and celery seed in a saucepan. Bring to boil and simmer 5 minutes, stirring occasionally. Mix mustard and turmeric in 1/2 cup of the simmered mixture. Add this mixture and corn to the hot mixture. Simmer another 5 minutes. If desired, thicken mixture with flour paste (1/4 cup flour blended in 1/4 cup water) and stir frequently. Fill jars with hot mixture, leaving 1/2-inch headspace.

Adjust lids and process according to the recommendations in [Table 1](#).

Table 1. Recommended process time for **Pickled Corn Relish** in a boiling-water canner.

		Process Time at Altitudes of		
Style of Pack	Jar Size	0 - 1,000 ft	1,001 - 6,000 ft	Above 6,000 ft
Hot	Half-pints or Pints	15 min	20	25

CHUTNEY

What is Chutney?

Chutney is a savory condiment made from slow-cooked fruits or vegetables, vinegar, and spices. Originating from India, chutneys have traveled the globe, and every country has their own take on this versatile condiment.

Sixteen Ways to Eat Chutney and Relish

1. Have it on a sandwich – add it to chicken salad
2. Serve it alongside a cheese, and-or preserved, cured meat platter
3. Mix it into ground beef or pork and use for meatloaf or sausage roll filling
4. Serve it on the side of a meat pie or and empanada
5. Eat it with any kind of cooked pork dish (e.g. chops, tenderloin, ham, etc.)
6. Serve it with grilled sausages
7. Serve it with roasted chicken or turkey
8. Serve it with pate
9. Warm goat cheese or brie, pour chutney over it and serve
10. Mix it with Greek yogurt to make a dip
11. Puree it and glaze meat, roasted sweet potatoes, butternut squash, etc.
12. Puree it and use as a dipping sauce for egg rolls, samosa, any fried food!
13. Puree it and add it to salad dressing
14. Serve it with a grilled cheese sandwich
15. Serve it on the side of Indian dishes like curry
16. Serve it on a burger, especially a cheese or veggie burger

APPLE RHUBARB CHUTNEY

Source: Ball Complete Book of Home Preserving. Page 239

Makes about four jars 8 oz each

4 cups diced peeled cored apples, treated to prevent browning and drained

4 cups granulated sugar

2 cups diced rhubarb, fresh or frozen

1/2 cup water

Grated zest and juice of 1 lemon

1/2 cup dried cranberries

1 tsp ground cinnamon

1/2 tsp ground nutmeg

1. In a large stainless-steel saucepan, combine apples, sugar, rhubarb, water and lemon zest and juice. Bring to a boil over medium-high heat, stirring constantly. Reduce heat and boil gently stirring frequently for 15 minutes. Add cranberries, cinnamon and nutmeg. Boil gently, stirring frequently until thick enough to mound on a spoon, about 15 minutes.
2. Meanwhile prepare canner, jars and lids.
3. Ladle hot chutney into hot jars, leaving ½ inch headspace. Remove air bubbles and adjust headspace if necessary by adding hot chutney. Whip rim. Center lid on jar. Screw band down until resistance is met, then increase to fingertip tight.
4. Place jars in canner, process for 10 minutes following instructions for boiling water or steam canner.

APRICOT CHUTNEY

Source: Ball Complete Book of Home Preserving. Page 240

Makes about seven jars 8-ounces each

- 1 1/2 cups cider vinegar
- 2 tart green apples, peeled, cored and finely chopped
- 3 cups chopped dried apricots
- 3 cups boiling water
- 2 onions, finely chopped
- 1 cup granulated sugar
- 1 cup lightly packed brown sugar
- 4 cloves garlic
- 1/2 cup raisins
- 2 Tbsp finely chopped gingerroot
- 2 tsp mustard seeds
- 1 1/2 tsp ground cinnamon
- 1 tsp ground allspice
- 1 tsp freshly ground black pepper
- 1/2 tsp ground cloves
- 1/4 tsp salt
- 1/4 tsp cayenne pepper

1. In a large stainless-steel saucepan, combine vinegar and apples. Add apricots, boiling water, onions, granulated sugar, brown sugar, garlic, raisins and gingerroot. Bring to a boil over medium-high heat, stirring constantly. Reduce heat and boil gently, stirring occasionally, for 30 minutes. Add mustard seeds, cinnamon, allspice, black pepper, cloves, salt and cayenne. Boil gently, stirring frequently, until thick enough to mound on a spoon, about 15 minutes.
2. Meanwhile, prepare canner, jars and lids.
3. Ladle hot chutney into hot jars, leaving ½ inch headspace. Remove air bubbles and adjust headspace, if necessary, by adding hot chutney. Wipe rim. Center lid on jar. Screw band down until resistance is met, then increase to fingertip-tight.
4. Process for 10 minutes

BOILING WATER CANNING PROCESS

1. Before you start preparing your food, fill the canner halfway with clean water. This is approximately the level needed for a canner load of pint jars. For other sizes and numbers of jars, adjust the amount of water in the canner so it will be 1 to 2 inches over the top of the filled jars.
2. Preheat water to 140°F for raw-packed foods and to 180°F for hot-packed foods. Food preparation can begin while this water is preheating. Do not have the water boiling when you add the jars.
3. Fill, fit with lids, load onto the canner rack and use the handles to lower the rack into the water; or fill the canner with the rack in the bottom, one jar at a time, using a jar lifter. When using a jar lifter, make sure it is securely positioned below the neck of the jar (below the screw band of the lid). Keep the jar upright at all times. Tilting the jar could cause food to spill into the sealing area of the lid.
4. Add boiling water, if needed, so the water level is at least 1 inch above jar tops. Pour the water around the jars, not on them. For process times over 30 minutes, the water level should be at least 2 inches above the tops of the jars.
5. Turn heat to its highest position, cover the canner with its lid, and heat until the water in the canner boils vigorously.
6. Set the timer for the total minutes required for processing the food, adjusting for altitude.
7. Keep the canner covered and maintain a boil throughout the process schedule. The heat setting may be lowered a little as long as a complete boil is maintained for the entire process time. If the water stops boiling at any time during the process, bring the water back to a vigorous boil and begin the timing of the process over, from the beginning.
8. Add more boiling water, if needed, to keep the water level above the jars.
9. When the jars have boiled for the recommended time, turn off the heat and remove the canner lid. Wait no more than 5 minutes before removing jars.
10. Using a jar lifter, remove the jars without tipping and place them on a towel, leaving at least 1-inch spaces between the jars during cooling. Let jars sit undisturbed to cool at room temperature for 12 to 24 hours.



ATMOSPHERIC STEAM CANNING PROCESS

1. 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.
2. Add enough water to the base of the canner to cover the rack. (Follow manufacturer recommendations.)
3. Preheat water to 140°F for raw-packed foods and to 180°F for hot-packed foods. Food preparation can begin while this water is preheating. Do not have the water boiling when you add the jars.
4. . Heat jars prior to filling with hot liquid (raw or hot pack). Do not allow the jars to cool before filling.
5. Load filled jars, fitted with lids, onto the canner rack and place the lid on the canner base.
6. Turn heat to its highest position to boil the water until a steady column of steam (6-8 inches) appears from the vent hole(s) in the canner lid. Jars must be processed in pure steam environment.
7. If using a canner with a temperature sensor, begin processing time when the temperature marker is in the green zone for your altitude. If using a canner without a temperature sensor, begin processing time when a steady stream of steam is visible from the vent hole(s).
8. Set the timer for the total minutes required for processing the food, adjusting for altitude. Processing time must be limited to 45 minutes or less, including any modification for elevation. The processing time is limited by the amount of water in the canner base. When processing food, do not open the canner to add water.
9. Monitor the temperature sensor and/or steady stream of steam throughout the entire timed process. Regulate heat so that the canner maintains a temperature of 212°F. A canner that is boiling too vigorously can boil dry within 20 minutes. If a canner boils dry, the food is considered under-processed and therefore potentially unsafe.
10. At the end of the processing time, turn off the heat and wait 2 to 3 minutes. Carefully remove the lid, lifting the lid away from you.
11. Using a jar lifter, remove the jars without tipping and place them on a towel, leaving at least 1-inch spaces between the jars during cooling. Let jars sit undisturbed to cool at room temperature for 12 to 24 hours.



PICKLES and RELISHES PROBLEMS and SOLUTIONS		
Problem	Cause	Prevention
Pickles not crisp enough. Once a pickle becomes soft, it cannot be made firm again.	1. Over-heating	1. Use low-temperature pasteurization to process pickles if permitted for the recipe used.
	2. Blossom ends not removed from cucumber before fermentation. Blossoms may contain fungi or yeasts responsible for enzymatic softening.	2. Slice at least 1/16 th inch off blossom end of cucumber and discard.
	3. "Crisping" procedures not followed.	3. Soak vegetable in saltwater, hydrate with ice, use lime water or calcium chloride as directed in recipe.
Soft and slippery pickles. Most likely due to enzyme activity from yeasts, molds, or remnants of cucumber blossom. If due to microbial spoilage, destroy the food. If softening not caused by microorganisms, pickles are safe to eat.	1. Too little salt in fermentation brine.	1. Maintain salt concentration specified in recipe.
	2. Vinegar too weak.	2. Use vinegar of at least 5% acidity.
	3. Cucumbers stored too high a temperature during fermentation.	3. Conduct fermentation at 70°F to 75°F to facilitate growth of desired lactic acid bacteria.
	4. Cucumbers not covered with brine during fermentation.	4. Keep cucumbers covered.
	5. Scum not removed from brin during fermentation.	5. Remove scum to prevent undesirable yeasts and mold from dominating the fermentation. Use an airlock system for fermentation.
	6. Insufficient heat treatment during processing to destroy microorganisms.	6. Process pickles after filling jars.
	7. Moldy garlic or spices.	7. Use fresh, high-quality spices and garlic.
Hollow pickles. Pickles are safe to eat.	1. Cucumber developed air pockets during growth or are over-ripe.	1. Since hollow cucumbers usually float, remove them when washing before use. Use floating cucumbers for relishes or chunk pickles.
	2. Holding cucumbers too long before brining.	2. Use cucumbers within 24 hours of harvesting.
	3. Fermentation too rapid.	3. Too high temperature during fermentation.

Shriveled pickles. Pickles are safe to eat.	1. Too strong a salt, sugar or vinegar solution at the beginning of the pickling process.	1. Use a weak solution at the beginning of the pickling process in preparing very sweet or sour pickles, then gradually increase the concentration.
	2. Long time between harvest and brining.	2. Use cucumbers within 24 hours of harvest.
	3. Overcooking or over-processing.	3. Carefully time processes.
	4. Dry weather around harvest.	4. None.
Dark pickles. Pickles are safe to eat, unless brass, copper or zinc utensils and brining equipment were used, in which case, do not use pickles.	1. Use of ground spices, too much spice, or leaving whole spices in jars.	1. Use whole spices and use them only to flavor the covering liquid, do not pack spices in the jar.
	2. Minerals from hard water.	2. Use softened water.
	3. Utensils leached metals, such as iron, copper, or zinc.	3. Use food-grade unchipped enamelware, glass, stainless steel or stoneware utensils.
	4. Iodized salt used.	4. Use canning or pickling salt..
	5. Overcooking or over-processing.	5. Carefully time processes.
Light and blotchy pickles. Pickles are safe to eat.	1. Sun-scaled, poorly colored cucumbers, or over-ripe cucumbers.	1. Select high-quality cucumbers.
Small brown spots on pickles. Pickles are safe to eat.	1. Holding cucumbers too long before brining.	1. Use cucumbers with 24 hours of harvest.
Abnormally bright green pickles. Pickles may not be safe, depending on the cause of color.	1. Prepared in copper utensil.	1. Consumption of excess copper is toxic. If abnormal green color is caused by copper, the pickles should be discarded.
	2. Green food coloring added.	2. Green food coloring is not recommended.

Strong, bitter taste.	1. Spices cooked too long in vinegar, or too many spices used.	1. Follow instructions for amount of spices to use and the boiling time.
	2. Dry weather may induce bitter flavor in cucumbers.	2. Taste cucumbers before processing to ensure bitterness is not present.
	3. Use of salt substitute.	3. Potassium chloride, present in most salt substitutes, cause bitterness.
Off-Flavor in fermented pickles. If no mold is present, and pickles have fermented to proper acidity, they are probably safe to eat.	1. “Wrong” microorganisms growing in brine.	1. Follow direction carefully, especially regarding fermentation temperature and salt levels.
White sediment. Generally, not harmful, but if accompanied by soft and slippery texture and spoiled appearance or odor, discard pickles.	1. Sediment is normal product of bacterial fermentation. Also due to yeast growth on surface of pickles brine, and settling to bottom of jar.	1. To reduce yeast growth, use an airtight cover on fermentation container. Strain brine before using as covering liquid. Heat-process pickles to prevent yeast growth in jar.
	2. Salt that contains an anti-caking agent.	2. Use canning or pickling salt.
Blue or purple garlic. Use the pickles, discard the garlic.	1. Immature garlic.	1. Garlic contains anthocyanins, water-soluble pigments. With acid conditions they may turn blue or purple.
	2. Copper in the water.	2. Garlic contains sulfur compounds, which may react with copper to form copper sulfate, a blue compound.
Yellow crystals on pickled asparagus. Safe to eat.	1. The yellow crystals are rutin, a compound naturally present in asparagus that is insoluble in vinegar. During the pickling it is drawn out and crystalizes on the stem.	1. None.