



CANNING: SALSA

Salsa is a great addition to any party, snack or meal. Because of its many uses, it is a very popular canned product. Follow these tips to ensure a safe canned salsa! For more general information about canning tomatoes, please refer to the Canning and Freezing: Tomatoes publication (PM 638), store.extension.iastate.edu/Product/PM638.

SAFETY CONCERNS

Improperly canned salsas can cause botulism poisoning. Botulism comes from dangerous toxins that are produced when *Clostridium botulinum* spores grow in low acid foods. Tomato selection, processing method, and altitude all affect the acidity and therefore, the safety of salsa for home canning.

Tomato selection. Tomatoes vary in acidity based on type, growing conditions, climate, and location. For these reasons, ALL tomatoes need to be acidified, even those described as being high acid. Overripe and infected tomatoes may be low enough in acid to support *Clostridium botulinum*. Use only firm, ripe tomatoes that have no spoiled parts or mold. Tomatoes harvested from dead vines are low in acid. They can be eaten fresh or frozen, but do not can salsa using tomatoes from dead vines.

Processing method. Use only the processing times and methods indicated in this bulletin or other publications that are based on the 2009 USDA Complete Guide to Home Canning. The “open-kettle” method, where food is cooked and packed into hot jars without further processing, is unsafe because undesirable microorganisms could grow and lower the acidity enough to allow production of botulism toxin. Botulism is a potentially fatal food poisoning.

Altitude. As altitude increases, water boils at a lower temperature (less than 212°F). Because lower temperatures are less effective for killing bacteria, either the processing time or the pressure must be increased as altitude increases. Refer to the map on page 3 to check the altitude of your county and follow the altitude adjustments in Table 1.

Follow instructions. Read through all directions before beginning to can salsa.

Key Safety Points:

Use tested salsa recipes for canning only. Most salsa recipes mix low-acid foods, such as onions and peppers, with acid foods, such as tomatoes. It is essential that you only can salsa recipes that have been tested to ensure that

they contain enough acid to be processed safely in a boiling water canner. Tested recipes are those that have been scientifically determined to be safe. Canning recipes should be based on or compatible with the 2009 USDA Complete Guide to Home Food Canning. The recipes in this handout are from the National Center for Home Food Preservation’s website, nchfp.uga.edu.

Do not add any ingredients beyond those given in the tested recipe. Although it is safe to double or halve a salsa recipe, it is not safe to add other vegetables. Adding other vegetables can lower the acidity and change the processing time.

Do not increase the amounts of onions and other ingredients in salsa recipes. Red, yellow, or white onions may be substituted for each other; however do not increase the total amount of onions in any recipe. The amount of *dried* herbs and spices can be altered. It is not safe to add or increase the amounts of *fresh* herbs or garlic before canning because they affect the acidity level. Doing so could produce an unsafe salsa. For a stronger flavor, add fresh herbs, garlic, and spices just before serving.

Do not thicken salsas with flour or cornstarch before canning. If a thicker salsa is desired, you can pour off some of the liquid or add these thickening ingredients after opening.

HOW TO CAN SALSA

Choose standard jars and lids.

Check jars for cracks, chips, dents, and rust; these defects cause sealing failures. Commercial jars, such as those used for mayonnaise, are not recommended for home canning because they are not designed for use with two-piece lids and because the glass is more likely to break during processing.

Wash jars in hot, soapy water; rinse well. Prepare lids and bands according to manufacturer’s directions. Mineral deposits or hard water film on jars can be removed by soaking the empty jars for several hours in a solution of 1 cup vinegar per gallon of water. To avoid mineral deposits

on jars during processing, add ¼ cup vinegar per gallon of water used in the canner.

Select tomatoes, peppers, spices, and onions.

Always use fresh, firm, ripe tomatoes. The type of tomato will affect the consistency of salsa. Paste tomatoes have firmer flesh and produce thicker salsa than large slicing tomatoes. Although both types make good salsas, slicing tomatoes usually yield a thinner, more watery salsa than paste tomatoes. You may substitute green tomatoes or tomatillos for ripe tomatoes in any of these recipes. Tomatillos do not need to be peeled or seeded, but wash them well after removing the dry outer husk. Wash tomatoes. To peel, dip tomatoes in boiling water for 30 to 60 seconds or until skins split, then dip quickly in cold water. Cut out stem end and all blemishes. Cut tomatoes as instructed in recipes.

Use only high quality **peppers**. You may substitute one type of pepper for another, including bell peppers. However, do not increase the amount of peppers used. It is also safe to use canned chiles in place of fresh. Hot peppers such as jalapeños do not need to be peeled, but seeds are often removed. Finely chopped mild peppers do not usually need to be skinned. However, the skin of long green chiles may be tough after canning. If a recipe states to peel the peppers, use the following method:

To peel peppers: Wash and dry peppers. Cut the peppers in half and remove the stalk, seeds (unless you like spicy salsa) and white membrane. Place peppers, skin side up, in a preheated oven (400°F) or broiler for 6-8 minutes until the skin blisters. Remove peppers from oven, cover with a damp cloth. Allow the peppers to cool for several minutes (about 10-15); slip off skins, remove the seeds, and chop. *(CAUTION: Wear plastic or rubber gloves while handling or cutting hot peppers or wash hands thoroughly with soap and water before touching your face or eyes.)*

Acidify salsa: Salsa is preserved by adding acid, either vinegar or bottled lemon juice. Do not reduce the amounts in these recipes. Use only vinegar that is at least 5% acidity; do not use homemade vinegar or fresh squeezed lemon juice because the acidity can vary. Lemon juice is more acidic than vinegar, so you may safely substitute an equal amount of bottled lemon juice for vinegar in recipes using vinegar. Do not substitute vinegar for lemon juice. To do so will result in a less acidic salsa that may be unsafe.

Salt and sugar salsa, if desired: Salt is not necessary for preservation in canned products but can be added for flavor. Use ½ teaspoon per pint or 1 teaspoon per quart. It is recommended that you use a pure, refined canning salt to prevent cloudiness in the product. Sugar can also be added safely to a salsa recipe to overcome the tartness of the acid.

PROCESS SALSA

To process in a boiling water canner: Fill canner halfway with water and preheat to 180°F for hot pack. Be sure a rack is placed in the bottom of the canner. Prepare lids as manufacturer suggests. Use a jar lifter to load jars with “finger-tight” lids into the canner. Be sure water can circulate freely around each jar. Add boiling water if needed to bring water 1–2 inches above jar tops. Don’t pour water directly on the jars. Cover the canner with a tight fitting lid. Bring water in canner to a vigorous boil; adjust heat to maintain a gentle boil. Set a timer for recommended processing time (Table 1) after water comes back to a rolling boil. Process for the time recommended in Table 1 or according to the tested recipe you are following. Do not reduce the processing time. Keep water boiling (212°F) during the entire processing period. If water evaporates, add boiling water to keep it at least one inch over the top of jars; avoid pouring water directly on the jars. Leave the lid on the canner during processing. When processed for the recommended time, turn off the heat and remove the canner lid. **Wait five minutes before removing the jars. This is a new recommendation and allows the canner contents to settle.**

Final steps.

Remove jars carefully, without tilting, from the canner.

Do not tighten lids. Allow jars to cool, undisturbed, for 12 to 24 hours, then check for sealing failures. To test jar, press center of lid. If lid is curved down and will not move, the jar is sealed. Remove screw bands carefully. Wash, dry, label, and store jars in a cool, dry, dark place. If any jars have not sealed, place in refrigerator and use within 2 days or freeze, if desired. You can also repeat the entire canning procedure with clean jars and new lids within 24 hours. Reprocessing will affect the quality of the salsa. Tomato products are safe, as long as lids remain sealed, for up to 12 to 18 months. *Never use canned products that show evidence of mold.* Mold raises the pH of the contents so that the deadly botulism toxin could develop.

Table 1.
Recommended Processing Times in a Boiling Water Canner

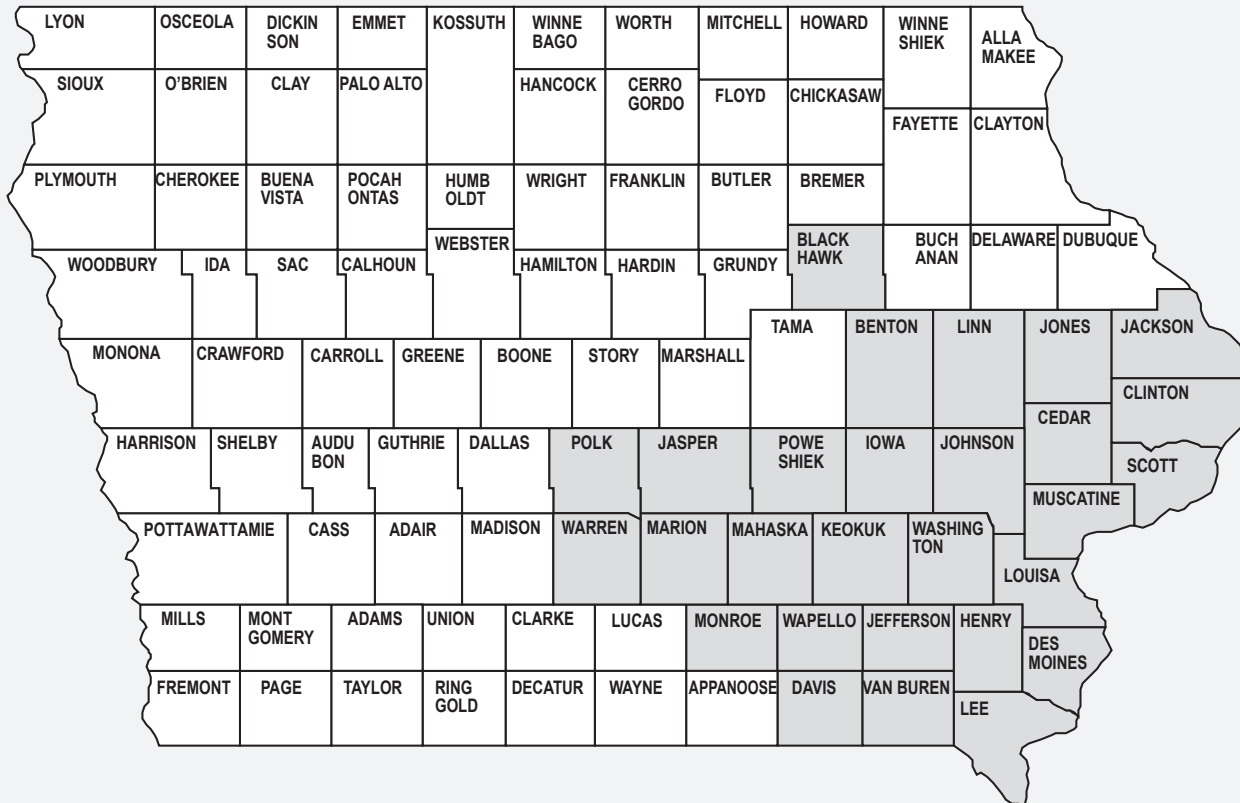
PRODUCT	STYLE PACK	JAR SIZE	MINUTES OF PROCESSING at ALTITUDES of		
			0-1,000 FT	1,000-6,000 FT.	ABOVE 6,000 FT
SALSA	Hot	Pints	15	20	25

The recipes at the end of this handout call for pint jars, but you could also use ½ pints. Process ½ pints for the same time as pints. You cannot use quart jars when it calls for pint jars because there is not a processing time tested for quarts.

Altitudes of Iowa Counties

Shaded areas are less than 1,000 feet

Unshaded areas are 1,000 to 2,000 feet



QUESTIONS AND ANSWERS

When I opened a jar of home-canned salsa, I saw black spots on the underside of the metal lid; does that mean it is spoiled?

Natural compounds in some foods cause a black or brown deposit on the underside of the lid. This deposit does not mean the food is unsafe to eat. However, whenever a sealed jar comes open during storage, spoilage is likely and the product should be discarded.

My home-canned salsa looks cloudy. Is it safe to eat?

Cloudy liquids in home-canned foods can mean the product was improperly processed and has spoiled. Check for other signs of spoilage and discard if necessary. The minerals in hard water and the fillers in table salt also can produce a cloudy liquid. To prevent cloudiness, use soft water and a pure, refined canning salt.

My jars of home-canned salsa always have less liquid after processing. Is that okay, or how can I avoid it?

Never open sealed jars to replace liquid lost during processing. To avoid the problem; pack the food loosely, be sure to leave the recommended headspace, and remove air bubbles before placing on the lid by running a rubber bottle scraper or plastic knife between food and jar.

My jars seal, but the cans of home-canned salsa come open before I have a chance to use them. What should I do?

Spoilage has probably occurred; discard the food. Next time, use new lids, be sure to process for the recommended time, wipe jar rims to help get a good seal, and do not use jars with chips or cracks.

What can I do to avoid jars breaking in the canner?

Use only standard canning jars and check them carefully for hairline cracks before starting to prepare food for canning. Handle jars carefully when transferring them in or out of the canner. Use a rack in the bottom of the canner and add the recommended amount of water. Don't overtighten the screw bands; when trapped air can't escape during processing, the jar is likely to break.

Last time I canned salsa, some of the jars didn't seal.

What can I do to make sure all the jars seal this time?

Here's how to prevent the six most common causes of sealing failure:

1. Use standard canning jars and lids; follow instructions carefully.

2. Purchase new lids each year. The sealing compound may become defective during extended storage. Never re-use lids (reusing the bands is ok).
3. Make sure you have a supply of good jars and lids before starting to can. Avoid using jars that are chipped or lids that are bent.
4. Leave the recommended head-space when filling jars so that food is not forced between the jar and lid during processing.
5. Carefully wipe off jar rim and threads before putting on the lid and band to prevent dripped food particles from causing a sealing failure.
6. After processing, let the jars cool undisturbed. Do not tighten the screw band after removing jar from canner.

SALSA RECIPES

These salsa recipes use pint-size jars only. The processing times are not available for quarts. Remember, you can safely substitute out the vinegar (equal amounts) with bottled lemon juice, unless stated otherwise. You can also change the amount of salt and dried herbs. *Refrigerate any leftover salsa after filling jars, and enjoy freshly made!* Refrigerate the canned salsa once the jar is opened for use.

CHILE SALSA II

Makes about 6-8 pints

10 cups (about 5 pounds) peeled, cored, and chopped tomatoes

6 cups (about 2 pounds) seeded, chopped chile peppers (use mixture of mild and hot peppers)

4 cups (about 1 pound) chopped onions

1 cup vinegar (5%)

3 teaspoons salt

½ teaspoon black pepper

Wash and rinse pint or half-pint canning jars; keep hot until ready to fill. Prepare lids and ring bands according to manufacturer's directions.

Wash, then peel or cut peppers. The skin of long green chiles may be tough. If desired, these can be removed following the directions on page 2. If you finely chop the peppers, they do not need to be peeled.

Peel, wash and dice onions.

Wash tomatoes and dip in boiling water for 30-60 seconds or until skins split. Dip in cold water, slip off skins, and remove cores. Coarsely chop tomatoes.

Combine the tomatoes, chopped onions, chopped peppers, and remaining ingredients in a large saucepan. Heat salsa to boiling; reduce heat and simmer for 10 minutes.

Fill hot jars with hot salsa, leaving ½-inch headspace. Remove air bubbles and adjust headspace if needed. Wipe rims of jars with a damp, clean, paper towel.

Apply two-piece metal canning lids. Adjust lids and process in boiling water canner for time specified in Table 1.

CHOICE SALSA

Makes about 6 pints

- 6 cups peeled, cored, seeded and chopped ripe tomatoes
- 9 cups diced onions and/or peppers of any variety (See Notes below)
- 1 ½ cups commercially bottled lemon or lime juice*
- 3 teaspoons canning or pickling salt

Wash and rinse pint or half-pint canning jars; keep hot until ready to fill. Prepare lids and ring bands according to manufacturer's directions.

Wash tomatoes and dip in boiling water for 30-60 seconds or until skins split. Dip in cold water, slip off skins, and remove cores. Remove seeds and chop tomatoes into ¼- to ½-inch pieces.

Peel, wash and dice onions into ¼-inch pieces.

Wash and remove stems of hot peppers. Keep or remove as much of the seeds and membranes as you wish, depending on the 'pepper heat' of the salsa that you desire. Dice peppers into ¼-inch pieces. If using jalapeño peppers, they do not need to be peeled. The skin of long green chiles may be tough. If desired, these can be removed following the directions on page 2. If you finely chop the peppers, they do not need to be peeled.

Combine ingredients in a large pot; add lemon juice and salt. Bring to a boil over medium heat while stirring. Reduce heat and simmer salsa for an additional 3 minutes, stirring as needed to prevent scorching.

Fill hot jars with hot salsa, leaving ½- inch headspace. Remove air bubbles and adjust headspace if needed. Wipe rims of jars with a damp, clean, paper towel.

Apply two-piece metal canning lids. Adjust lids and process in boiling water canner for time specified in Table 1.

*Notes:

1. This is a fairly acidic salsa, but was tested with a wide variety of tomatoes, peppers and onions to ensure the necessary acidification for boiling water canning and still allow for some consumer choice in the ingredients.
2. The peppers used may be sweet bell peppers (of any color) and/or hot peppers.
3. The purpose of the commercially bottled lemon or lime juice is to standardize a minimum level of acidity in the recipe. When this recipe was tested, lemon juice was deemed the most acceptable flavor for the proportions in this particular recipe. **For safety reasons, do not substitute vinegar for the lemon or lime juice. Do not use bottled key lime juice.**
4. **Do not alter the proportions of tomatoes, vegetables and acid because that might make the salsa unsafe when this canning process is used.** The chopped tomatoes and diced peppers and/or onions are to be measured level in dry measuring cups; the lemon or lime juice is measured in a liquid measuring cup.

TOMATO/TOMATO PASTE SALSA Makes about 7-9 pints

3 quarts (about 12 cups) peeled, cored, chopped slicing tomatoes

3 cups chopped onions

6 jalapeño peppers seeded, finely chopped

4 long green chiles, seeded, chopped

4 cloves garlic, finely chopped

2 - 12 oz. cans tomato paste

2 cups bottled lemon or lime juice

1 tablespoon salt

1 tablespoon sugar

1 tablespoon ground cumin (optional)

2 tablespoons oregano leaves (optional)

1 teaspoon black pepper

Wash and rinse pint or half-pint canning jars; keep hot until ready to fill. Prepare lids and ring bands according to manufacturer's directions.

The jalapeño peppers do not need to be peeled. The skin of long green chiles may be tough and can be removed following the directions on page 2. Usually when peppers are finely chopped, they do not need to be peeled.

Wash tomatoes and dip in boiling water for 30-60 seconds or until skins split. Dip in cold water, slip off skins, and remove cores. Chop tomatoes.

Peel, wash and chop onions.

Combine all ingredients in a large saucepan. Bring to a boil; reduce heat and simmer 30 minutes, stirring occasionally.

Fill hot salsa into hot jars, leaving 1/2-inch headspace. Remove air bubbles and adjust headspace if needed. Wipe rims of jars with a damp, clean, paper towel.

Apply two-piece metal canning lids. Adjust lids and process in boiling water canner for time specified in Table 1.

FOR MORE INFORMATION

- For more information on food preservation, call your local Extension office or AnswerLine at (800) 262-3804 (voice) or (800) 735-2942 (telecommunications device for deaf).
- ISU Extension and Outreach fact sheets are available at store.extension.iastate.edu

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Map prepared by Iowa Department of Natural Resources, Geological Survey Bureau

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