



UCCE Master Food Preservers of El Dorado County

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Preserve Today, Relish Tomorrow

Salsa, Peppers and Spices



Saturday August 9, 2025
9:00 a.m. – Noon.

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Food Safety / Preserving Basics

Food preservation starts with food safety. Cleaning and sanitizing your work area, washing hands frequently, properly handling produce and meat, and avoiding cross-contamination are all part of the process in avoiding food-borne illness.

Following recipes from trusted resources is the next step in ensuring safety when preserving food. This is especially important when canning: It's critical to follow a current, research-based recipe and to use the correct canning method for the food being processed.

For further details on food safety in general, as well as information on a variety of food preservation topics, visit our Food Safety website, where you'll find free, downloadable publications and educational posters: https://ucanr.edu/sites/mfp_of_cs/Food_Safety/.

You can also access the site by scanning this QR code with your smartphone or tablet.



Salsa

Salsa is one of the most popular condiments in homes today. Salsas are usually mixtures of acid and low-acid ingredients; they are an example of an acidified food. In fact, for home preserving purposes, a salsa is considered a pickle product because it is acidified. The specific recipe, and sometimes preparation method, will determine if a salsa can be processed in a boiling water canner, atmospheric steam canner, or a pressure canner. A process must be scientifically determined for each recipe. It is not safe to can your own original salsa recipe; refrigerate or freeze it instead. Salsa can be safely stored in the refrigerator for several weeks or frozen for months without processing. This handout includes several salsa recipes that can be safely canned using a boiling-water canner or atmospheric steam canner. Use any of the recipes included in this handout or other research-tested recipes to make a safe shelf-stable product at home.



Salsa Ingredients

Tomatoes: Use only high-quality tomatoes for canning salsa or any other tomato products. Avoid tomatoes that are overripe or from dead or frost-killed vines. These will result in a poor-quality and potentially unsafe product. Canning is never a good way to use overripe or spoiled tomatoes.

The type of tomato you use affects the quality of your salsa. For example, paste tomatoes, such as Roma, have firmer flesh, contain less liquid, and produce thicker salsas than large slicing tomatoes. Although both types make good-tasting salsa, slicing tomatoes usually yield a thinner, waterier salsa than paste tomatoes.

Where recipes call for peeled or skinned tomatoes, remove the skin by dipping tomatoes into boiling water for 30-60 seconds or until skins split. Immerse in cold water until cool enough to handle. Slip off skins and remove cores. Remove seeds if desired.

Tomatillos: Tomatillos are also known as Mexican husk tomatoes. They do not need to be peeled or seeded, but the dry outer husk must be removed. Tomatillos can be substituted for tomatoes in any tested salsa recipe.

Fruits: Some salsa recipes in this handout contains fruit. Fruits add another dimension of flavor to traditional salsas. When canning fruit salsas, you must follow the same safety rules as tomato-based salsas. This includes using a research-tested recipe, selecting fruits in the quantity and condition described, and preparing fruits according to the directions.

Peppers: Choose high-quality peppers. Peppers range from mild to fiery in taste. Very hot peppers are usually small (1-3 inches long), mild peppers are usually bigger (4-10 inches long). Anaheim, Ancho, and Hungarian yellow wax are mild varieties. Choose a mild pepper when the recipe calls for long green chilies.

Small, very hot peppers provide a distinct taste to salsas. Jalapeno is the most popular hot pepper. Other common hot varieties include Serrano, Cayenne, Habanera and Tabasco.

The terms *chili*, *pepper*, and *chile pepper* are used interchangeably in this handout. Although there is no clear standard for naming peppers, in many instances, chile is used for a hot pepper, or a pepper containing capsaicin, the compound that gives the heat or burning sensation in the mouth. Chile peppers are generally classified as mild, medium, or hot. Sweet peppers, such as bell peppers, do not contain any capsaicin, or heat compounds.

Any combination of hot or mild peppers may be used as long as the quantity stated in any tested recipe is not changed.

Acids: The acid ingredients used in salsa help preserve it. The addition of acid to salsa recipes for canning is necessary because the natural level of acidity may not be adequate for. Commonly used acids in home canning are vinegar, lemon, and lime juices. Lemon and lime juices are more acidic than vinegar but have less effect on flavor. Use only vinegar that is at least 5% acid and only bottled lemon and lime juices made from Concentrate. Never use homemade vinegar or freshly squeezed lemon or lime juice because the level of acidity is variable and could result in an unsafe canned product.

Salt: Pickling or canning salt is recommended when preparing salsa recipes. It contains no anti-caking agents or iodine. Non-iodized table salt can also be used in salsa recipes. Check the label on the container; the ingredient list should only have one ingredient - salt.

Spices: Spices add flavoring to salsas. Cilantro and cumin are often used in spicy salsas. You may leave them out or reduce the amount if you prefer a salsa with a milder taste. For a stronger cilantro flavor, add fresh cilantro after opening the jar, just before serving.

Caution about additional ingredients: Adding ingredients not listed in a salsa recipe may result in an unsafe product if done before canning. This includes thickeners as well as ingredients not listed in the recipe.

Do not thicken salsas before canning. Salsa can be thickened after you open the jar by pouring off some of the liquid or adding cornstarch, tomato paste, or other thickening agents.

The flavor can be enhanced with additional ingredients such as corn, black beans, or other additions just before serving. Additions before canning may result in an unsafe product.

Adjustments to Salsa Recipes

Some ingredients in salsa recipes can be adjusted to suit personal tastes. The changes are primarily limited to ingredient type. It is important not to change the amount of any ingredient, with the exception of dry spices. The table below summarizes the adjustments that can be made to the recipes in this handout without affecting the safety of your canned salsa.

Ingredient	Recipe Adjustments
Tomatoes	<ul style="list-style-type: none"> As long as tomatoes are in good condition, any variety can be used. Paste tomatoes, such as Romas, have more solid tissue and will produce a salsa with a thicker texture. Slicing tomatoes will produce a runny, watery salsa. Under ripe green tomatoes or tomatillos can be substituted for ripe tomatoes. Although salsas are traditionally made with red tomatoes, any color of tomato can be used.
Peppers	<ul style="list-style-type: none"> One type of pepper can be substituted for another. Select any combination of hot and mild pepper to create a flavor you like, if you do not exceed the total amount specified. (For example, if the recipe calls for 2 cups of peppers, any mixture of hot and mild peppers can be used.) Bell peppers are an acceptable substitution for some or all of the long green chilies. Do not substitute the same number of whole peppers of a large size for the same number of peppers of a smaller size. (For example, do not use 6 bell peppers or long chilies in place of 6 jalapenos or serranos.) Canned chilies may be used in place of fresh.
Onions	<ul style="list-style-type: none"> Red, yellow, or white onions can be substituted for each other. Do not increase the total amount of onions. Green onions cannot be used in place of bulb onions. Do not use green onions in a canned salsa recipe unless they are specified as an ingredient.
Fruits	<ul style="list-style-type: none"> Use fruits in the condition described in the recipe. When a recipe calls for green or unripe fruits do not use ripe fruits. This will change the final acidity of the mixture, resulting in an unsafe product. It is not safe to substitute one type of fruit for another.
Spices Herbs	<ul style="list-style-type: none"> The amounts of dried herbs or 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.
Acids	<ul style="list-style-type: none"> White distilled vinegar or cider vinegar can be used as long as it is 5% acidity. White vinegar has a tart flavor but will not discolor the salsa. Cider vinegar has a milder flavor but may affect the color of the final product. Never reduce the amount of vinegar, lemon juice, or lime juice in a recipe. An equal amount of bottled lemon or lime juice can be substituted for vinegar when the recipe calls for vinegar. The reverse is not true. When lemon or lime juice is the acid called for in the recipe, vinegar cannot be substituted. This is because vinegar is less acidic than lemon or lime juice, and the substitution would result in an unsafe salsa. Key lime juice should not be used as lime juice. If prepared salsa is too tart, a small amount of sugar can be added after opening to offset the acidic taste.

Canning Salsa in a Boiling Water Canner or Atmospheric Steam Canner (Generic Recipe)

Ingredients	Yield
1 cup tomatoes	1 pint
1 cup onions and peppers	
1/4 cup lemon or lime juice	

Guideline Salsa Recipe ~ per pint jar (multiply quantities by desired yield)

1/4 cup bottled lemon or lime juice from concentrate

1 cup tomatoes

- peeled, deseeded if desired
- diced to approx. 1/4-inch
- cook tomato juice and reduce volume by half for a thicker salsa

1 cup any combination of:

- onions
- sweet and hot peppers, diced to approx. 1/4"
- hot pepper seeds (heat)

Optional - 1 tsp dry spices (salt, cumin, pepper, garlic powder, or any mixture of dry spices)

Procedure: Peel tomatoes by placing them in boiling water for approximately 1 minute or until skins loosen. Plunge in cold water, then peel skins and discard them. Remove onion skins and discard them. Trim and wash peppers. Retain hot pepper seeds for desired heat level. Dice all vegetables to approximately 1/4-inch cubes. **Caution: Wear plastic or rubber gloves and do not touch your face while handling or cutting hot peppers. If you do not wear gloves, wash hands thoroughly with soap and water before touching your face or eyes.**

Hot Pack: Combine vegetable ingredients in a saucepan. Add salt and up to 1 tsp (total) dry spice as desired. Heat salsa to boiling, stirring constantly. Pour 1/4 cup bottle lemon or lime juice into each clean pint canning jar. Ladle hot salsa into jars, leaving 1/2" headspace. Remove air bubbles. Wipe jar rims clean. Place lids and rings on jars, tightening rings only finger tight. Process both pint and half-pint jars for: 0-1000 ft. = 15 minutes, 1001-6000 ft. = 20 minutes, above 6000 ft. = 25 minutes. For boiling water canning, turn off the heat, remove canner lid and wait 5 minutes. For atmospheric steam canning, turn off the heat, leave canner lid on and wait 2-3 minutes.

Important: This recipe was designed to use 1/4 cup bottled lemon or lime juice per pint of salsa. Do not use fresh squeezed juice or vinegar or alter this acidification procedure. Doing so may not safely acidify the salsa resulting in a risk of botulism. This recipe can be personalized by altering the proportion of peppers (sweet or hot) and onions. Different varieties of onions or peppers (sweet or hot) can be used, but not green onions. It can also be personalized using a total of 1 tsp of dried spice. Some suggested dry spices to add are cumin, garlic powder, celery seeds, and coriander. **Other vegetable or herbs (not dried) are not permitted.**

Source: Brian A. Nummer, Ph.D., Extension Food Safety Specialist Utah State University

Peppers

Originating in the Americas, peppers are members of the nightshade family (Solanaceae), which includes tomatoes, eggplants, and potatoes. And just like tomatoes and eggplants, peppers are botanically fruits, although from a culinary perspective, they are treated like vegetables. All peppers are in the genus *Capsicum* (pronounced KAP sih kum), with 26 currently known wild species and 5 cultivated species. Most cultivated varieties belong to the *Capsicum annuum* species, which includes sweet bell peppers and most of the chile peppers (such as Anaheim, jalapeño, cherry, poblano, and serrano). Other chile cultivars are *C. chinense* (habanero, Scotch bonnet), *C. frutescens* (tabasco), *C. baccatum*, and *C. pubescens*.

The peak harvest season for peppers is July to September. Here in California, the pepper season runs from April through November, with mini sweet bell peppers running from August to November.

Almost all peppers start out green, then change color as they ripen. Color alone is typically not a good indicator of how hot a pepper is; in fact in many cases, sweet peppers and hot peppers can look identical in color and in size. Most species of peppers contain capsaicin (pronounced kap SAY ih sin), a chemical compound that is responsible for a pepper's heat. The amount of capsaicin varies by species and is dependent on genetics. The amount can also vary from plant to plant, or even pepper to pepper on the same plant. In the case of sweet bell peppers, the gene is recessive, thus these peppers are not hot.

All types of peppers will accumulate more sugars as they ripen and change color, and chile peppers will amass more capsaicin. Smaller chile pepper varieties tend to be hotter than larger varieties. The growing environment can also impact a chile pepper's heat and flavor: Smaller peppers can be hotter if the plants are stressed and ripen too fast, and greenhouse peppers have fewer volatile compounds than field-grown peppers.

The majority of the capsaicin in a pepper is concentrated in the placenta, the white pith (also referred to as ribs or veins) that is attached to the seeds. It can also be found to a lesser extent in other fleshy parts of the pepper – but not in the seeds themselves. Both the membranes and the seeds can be bitter, so to improve a dish's flavor (and texture), it's generally recommended to remove them before cooking (which will also reduce the heat).

When skin or mucous membranes come in contact with the capsaicin in a hot pepper, it can feel like you've been burned. The capsaicin does not actually create a physical burn, however; rather, it activates a protein in humans' cells that is part of the pain response system, which "tricks" the brain into thinking the burning sensation is real. The brain then sends pain signals to the affected areas (much like when a fingertip touches a hot stove), which causes physical reactions such as sweating, inflammation, and reddening of the skin.

How Hot is Hot?

A pepper's heat is measured with laboratory equipment using a rating system known as Scoville heat units (SHU). Bell peppers, which contain no capsaicin, are rated as zero. As the Scoville rating goes up, so does the heat. A jalapeño measures between 2,500 to 8,000 SHU; a habanero measures from 100,000 to 350,000 SHU; and Pepper X, the hottest pepper as of this writing, measures about 2,693,000 SHU (that's HOT!). New pepper varieties are being developed all the time. For a list of SHU's for over 160 peppers, from mild to super hot, visit

<https://pepperscale.com/hot-pepper-list/>.

Selecting, Handling, and Preparing Peppers for Preserving

Choose fresh, firm peppers that are free from blemishes and decay, disease, and insect damage. Peppers, like all produce items, should be washed just before preparing them. Gently rub the peppers under cool running water to remove dirt, then shake off excess water.

Because contact with capsaicin may “burn” skin or eyes (see pg. 2), it’s important to handle hot peppers carefully. We recommend wearing gloves when handling and cutting hot peppers; dispose of the gloves immediately after handling them, being sure not to touch your face before disposing of the gloves, then wash your hands thoroughly. If you do not wear gloves, wash your hands thoroughly with *dish soap* immediately after handling the peppers.

Follow a tested recipe from a safe preserving resource for preparation instructions. Some peppers require blanching prior to canning. To blanch peppers, place them in a large pot of boiling water for 3 minutes (if they are large, first put 2-4 slits in each pepper). Remove from the water, and when cool enough to handle, prepare as directed in the recipe.

Chile and other peppers with tough skins generally must have their skins removed prior to processing by blistering them. When the peppers are finely chopped in a salsa, they do not need to be peeled.

The skin can be removed by first blistering the peppers, and then peeling. *Note:* If the peppers are not processed within 2 hours after blistering and/or peeling, refrigerate them in shallow containers until ready to process. Cut a small slit in the side of the peppers to allow steam to escape, then blister the skins using one of the following methods.

Oven/Broiler: Place peppers in a pan in a single layer in hot oven (400°F to 450°F) or under a broiler for 6-8 minutes until the skins blister and the skins can be easily peeled away from the flesh. Turn the peppers over occasionally to blister evenly.

Range Top: Cover a hot burner (either gas or electric) with heavy wire mesh. Place peppers on burner for several minutes until the skins blister, turning the peppers frequently to prevent scorching and ensure even blistering.

Outdoor Grill: Place the hot peppers on a charcoal grill about 5-6 inches above glowing coals, or in a gas grill heated to (400°F to 450°F). Turn the peppers frequently to prevent scorching and ensure even blistering.

After the peppers are blistered, spread them in a single layer until cool enough to handle, then peel. For a crisper hot pepper, dip the peppers into ice water as soon as they are removed from the heat. For peppers that are more thoroughly cooked, place the peppers in paper bag or in pan and cover with damp cloth. Cool for several minutes and then peel off the skins.



Storing Peppers

Peppers are ideally stored at 45°F, but at home refrigerator temperatures (which should be no more than 40°F), they will last about a week if they are in good condition. Keeping fresh, whole peppers dry will help them last longer. Cut peppers not consumed within 2 hours should be refrigerated.

Peppers are one of the few vegetables which do not require blanching prior to freezing. While frozen raw peppers will retain crispier texture (and are thus best used in uncooked foods), blanching can extend the shelf life and take up less space. Blanching frozen peppers are best suited for use in cooking.

To blanch peppers for freezing, water blanch strips or rings for 2 minutes, or halves for 3 minutes. Cool promptly and drain.

When packaging food for freezing, for the best quality remove as much air as possible. Choose freezer-safe, moisture- and vapor-proof containers or heavy zip-lock bags designed for freezing. Food may also be vacuum sealed. After packaging, label and date the packages and freeze at or below 0°F.

To freeze bell or other sweet peppers: Select crisp, tender peppers. Wash, cut in half, and remove stems and seeds. If desired, cut into ½-inch strips or rings. For raw peppers, package using no headspace, seal and freeze. For blanched peppers, package leaving ½-inch headspace, seal, and freeze.

To freeze pimientos: Select firm, crisp pimientos of deep red color. Peel by roasting in an oven at 400°F to 450°F for 6-8 minutes, or until the skins can be rubbed off. Wash off the charred skins, cut out stems, and remove seeds. Package leaving ½-inch headspace, seal, and freeze.

To freeze hot peppers: Wash and stem peppers. Package leaving no headspace, seal, and freeze.

To freeze roasted bell or Anaheim peppers: Peel peppers (see pg. 3) and remove stems and seeds. Flatten whole peppers to remove air, or cut them into strips, rings, or pieces. Package, seal, and freeze. If desired, a sheet of waxed or freezer paper or plastic wrap can be placed between the layers, which will make them easier to handle when thawing.

Swapping Peppers in Canned Pickle and Salsa Recipes

The heat level of canned pepper products can be adjusted simply by swapping the types of peppers. Use bell peppers in place of some or all of the hot peppers for a milder pickle or salsa, or increase the intensity by choosing all hot peppers. The key is to *swap* the peppers: The total amount of peppers must not be increased.

If the recipe calls for a certain amount of peppers by weight or volume (such as pounds or cups), the swap is easy: Simply weigh or measure that amount, regardless of the type of pepper you have chosen.

If a specific number of peppers are called for by size, you will need to do some calculations, as you cannot simply swap the same number of large peppers for small ones. For example, if the recipe calls for 6 jalapeños, do not use 6 bell peppers. Making this type of physical size adjustment will require that you determine the equivalent weight or volume of the small peppers in order to know how many large peppers can be used.

Note that while pepper types may be exchanged for each other, peppers should not be swapped for other ingredients in canning recipes. For example, do not use peppers in place of onions (or vice versa). The amount of peppers and other low-acid vegetables such as onions or celery (but not tomatoes) may be reduced or eliminated, but they may not be increased. Lowering the quantity of peppers and/or other vegetables may affect the overall texture of the recipe, but it will not impact its safety (again, do not reduce the amount of tomatoes called for in a tested canning recipe, as their acidity is required for safety).

Dried Peppers

Peppers are one of the few vegetables that do not require blanching prior to dehydrating. However, tough-skinned peppers, such as chiles, should usually be removed of their skins prior to drying (see pg. 3 for instructions).

*For further details on dehydrating, see our publication **Dehydrating Basics: Produce**, available for free at our website: https://ucanr.edu/sites/mfp_of_cs/files/398681.pdf.*

SWEET PEPPERS (BELL-TYPE AND PIMIENTOS) IN A DEHYDRATOR:

Remove stems, seeds, and membranes. Cut into ¼-inch disks or slices. Spread on dehydrator trays and dry at no more than 140°F until peppers are tough and brittle (about 8 to 10 hours). Peppers can also be started at 140°F for 2 hours and then reduced to 130°F until done.

Note that the skins of peppers dried in large pieces can be tough when rehydrated. Grinding such dried peppers can reduce the problem.

HOT PEPPERS IN A DEHYDRATOR:

To dry green chile peppers, first remove the skin. Remove the stems and seeds. Dry at 140°F until crisp or brittle and a medium green. To dry red chile peppers, spread whole pods in a thin layer on dehydrators trays and dry at 140°F until they are shriveled, dark, red, and crisp. Remove stems and seeds before using. Hot peppers can also be dried in ¼" to ½" pieces.

PEPPERS IN AN OVEN:

Prepare peppers as for drying in a dehydrator (see above) and place on a baking tray. Hot chile peppers may also be sliced in half and the stems removed. Place in a single layer on a baking sheet. Put tray in a preheated 200°F oven until tough and brittle (about 8 to 10 hours). Check the peppers frequently to make sure that they do not burn.

SUN-DRIED PEPPERS:

Peppers may be dried in the sun if daytime temperatures are higher than 85°F and the humidity is below 60%. If the nighttime temperatures drop enough to cause dew to form on grass, bring the peppers indoors.

Large peppers dry better if they are cut in half. Remove stems, seeds, and membranes. Slice or cut into cubes. Small peppers may be left whole but should be slit with a knife to speed drying. Peppers are dried when brittle.

Produce dried in the sun may be subject to insect infestation. "Pasteurize" the peppers to kill insects and/or insect eggs by either freezing at 0°F or lower for at least 48 hours, or by heating in an oven at 160°F for 30 minutes, or for at 175°F for 15 minutes. Use care to avoid scorching the food.

AIR-DRIED CHILE PODS:

String whole red chile pods together through the stems with a needle and cord or heavy thread, or suspend the pods in bunches, stem-side up, in an area with good air circulation and low humidity. Dry until the pods are shrunk, dark red, and flexible. Air-drying chiles may take as long as 3 to 4 weeks.

SMOKED PEPPERS:

Many varieties of peppers can be smoked. A pepper commonly smoked is the jalapeño (a ripe smoked-dried jalapeño is known as a *chipotle*). Smoke peppers in a clean smoker (grease and fat drippings can negatively impact the flavor of the peppers) according to the instructions for your particular smoker for 2-3 hours at a temperature no hotter than 140°F. If your grill can maintain a constant temperature, you may be able to use it as a smoker box.

After 2-3 hours, transfer the peppers to a dehydrator and dry at 140°F until the peppers are brittle. *Note:* The smokiness from the peppers can permeate the surfaces of the dehydrator, leaving it with a smokey smell that can last for days or months. The smokey aroma can also permeate your house, so consider where you place your dehydrator and/or when you run it.

PEPPER POWDERS AND FLAKES:

Pepper powders can be made by grinding dried peppers using a spice mill, food processor, or blender. Pepper flakes, such as chile pepper flakes, are not as fine as powders and can be made by crushing dried peppers with a mallet or rolling pin, or by encasing the peppers in a plastic bag or clean towel and hand crushing.

For powders and flakes, dry peppers until all moisture is gone and the peppers are crisp.

TIP: When grinding hot peppers, wearing a mask can provide some protection against floating capsaicin-laced particles.



Herbs and Spices

To maintain safety and quality, several factors must be considered when drying fruits, vegetables, spices and herbs. Keep in mind that specific food products often have recommendations that are unique to them. Drying removes the moisture from food so that microorganisms such as bacteria, yeasts, and molds are less likely to grow; however, drying does not effectively destroy them. Because there is not a heat treatment that destroys disease-causing microorganisms, it is critical to use safe food-handling practices when growing and handling fruits, vegetables, and herbs for drying.

The optimum drying temperature for most foods is 140°F. (Dry herbs at 95-115°F.) If higher temperatures are used, the food will develop “case hardening” and moisture will not be able to escape from the food; this will lead to a moldy food product. Therefore, do not rush the drying process.

Low humidity is also needed when drying foods. If the surrounding air is humid, the foods will not dry effectively. Increasing the air movement away from the food will assist in the drying process.



Preserve it *F*resh,
Preserve it *S*afe

Foods can be dried in the oven, under the sun, on the vine, or indoors using a dehydrator.

1. When dehydrating foods, using good sanitary practices is critical to reducing the risk of contaminating foods with pathogens and spoilage microorganisms.
2. After harvesting produce or herbs, place them in containers and locations that are free from additional contamination. (For example, put them some place where pets, insects, and wild animals will not have access.)
3. Begin the dehydration process soon after harvesting.
4. Clean and sanitize all utensils, containers, the food-contact surfaces of dehydrating equipment, and work surfaces. To effectively clean, wash with warm, soapy water; rinse thoroughly with warm water; and sanitize* using one of the following methods:
 - a. Immerse utensils and drying trays in a chlorine bleach** solution (1 1/2 teaspoon. of bleach per gallon of water) for 10 seconds, then air dry (do not use a towel).
 - b. Or, prepare a sanitizing spray solution of 1/2 teaspoon of household bleach per quart of water, and spray on food-contact surfaces. Let air dry.
5. Always wash hands before handling foods—this includes harvesting.
6. Consider wearing disposable gloves when preparing foods for dehydrating especially when working with hot peppers. Wash hands before putting gloves on, and always remove gloves whenever you change a task (such as answering the phone or preparing another food item). If your gloves become soiled or torn during food preparation, replace them before resuming food preparation. Do not wash gloves to reuse—use them once, then throw them away. Gloves can give a false sense of security. Change gloves as recommended—do not contaminate food with gloves used incorrectly.

*Source: Michigan State University Extension, Food Safety, E-3446, January 2021, msue.msu.edu/safefood

**Household chlorine bleach (labeled “disinfecting bleach”) is a common sanitizer. Do not use scented or gel bleach solutions for food-contact surfaces and utensils.

Herbs & Spices

What is the difference between an herb and a spice?

While the terms herb and spice are used interchangeably by cooks and cookbooks, there are distinct differences between the two. It all depends on what part of the plant is used.

Herbs: In general, culinary herbs are the leafy portions of a plant, whether dried or fresh. Examples include basil, bay leaves, parsley, cilantro, rosemary, sage, oregano, mint, chives, and thyme.

Spices: Spices, on the other hand, are harvested from any other portion of the plant and are typically dried. Popular spices come from berries (peppercorns), roots (ginger), seeds (nutmeg), flower buds (cloves), bark (cinnamon), undeveloped fruit of an orchid (vanilla), or even the stamen of flowers (saffron).

Two In One: Some plants are generous enough to yield both an herb and a spice. Cilantro is the leafy herb of the same plant that gives us the popular spice coriander seed. And dill weed (an herb) and dill seed (a spice) also come from the same plant.

Garlic and onions are, botanically, vegetables, although we use them both like a spice or herb.



Checking for Freshness:

Color: Green, leafy herbs will often fade as they age, while red spices such as paprika, red pepper, and chile powder will turn brown in color.

Aroma: Place a small amount in the palm of your hand and gently rub with your thumb. The aroma should be rich, full and immediate. If not, it will probably lose potency.

Salts

Table Salt

Table salt is typically mined from underground salt deposits. Table salt is more heavily processed to eliminate minerals and usually contains an additive to prevent clumping. Some table salt also has iodine added, an essential nutrient that helps maintain a healthy thyroid.

Kosher Salt

Kosher Salt is a coarse edible salt without common additives such as iodine. Used in cooking and not at the table, it consists mainly of sodium chloride and may include anti-caking agents.

Sea Salt

Sea salt is produced through evaporation of ocean water or water from saltwater lakes, usually with little processing. Depending on the water source, this leaves behind certain trace minerals and elements. The minerals add flavor and color to sea salt, which also comes in a variety of coarseness levels.

Fleur de Sel

Fleur de sel has been collected since ancient times (it was mentioned by Pliny the Elder in his book *Natural History*), although it was traditionally used as a purgative and salve. ("Flower of Salt" in French) is a salt that forms as a thin, delicate crust on the surface of shallow pools of seawater along the coast of France. The name comes from the flower-like patterns of crystals in the salt crust. These crystals form in very limited weather conditions and are skimmed off by hand using special sieves, making Fleur de Sel an expensive, unique salt. Think of this salt almost as a garnish or condiment, to be added to a dish at the last moments before serving.

Pickling Salt

Pickling salt is pure sodium chloride that's free of the anticaking agents and other additives found in table salt. This means that it dissolves completely in brine, leaving the liquid perfectly clear.

What's the difference between sea salt and table salt?

The main differences between sea salt and table salt are in their taste, texture, and processing.

Since sea salt involves minimal processing, it may vary in color. Its texture is coarse, and the minerals may give a slightly different taste to dishes. Because the large crystals create uneven measurement, it is not recommended for baking. Sea salt is best used for finishing dishes.

Due to the intense processing and elimination of minerals, table salt is usually white in color with small granules, creating a finer (less-course) texture. The smaller crystals are easier for foods to absorb evenly when cooking.

Sea salt and table salt have basically the same nutritional value, even though sea salt is often promoted as being healthier. Sea salt and table salt contain comparable amounts of sodium by weight.

Drying Herbs and Spices

Drying is the easiest method of preserving herbs. Simply expose the leaves, flowers or seeds to warm, dry air. Leave the herbs in a well-ventilated area until the moisture evaporates. Sun drying is not recommended because the herbs can lose flavor and color.

The best time to harvest most herbs for drying is just before the flowers first open when they are in the bursting bud stage. Gather the herbs in the early morning after the dew has evaporated to minimize wilting. Avoid bruising the leaves. They should not lie in the sun or unattended after harvesting. Rinse herbs in cool water and gently shake to remove excess moisture. Discard all bruised, soiled or imperfect leaves and stems.

Dehydrator drying is a fast and easy way to dry high quality herbs because temperature and air circulation can be controlled. Pre-heat dehydrator with the thermostat set to 95°F to 115°F. In areas with higher humidity, temperatures as high as 125°F may be needed. After rinsing under cool, running water and shaking to remove excess moisture, place the herbs in a single layer on dehydrator trays. Drying times may vary from 1 to 4 hours. Check periodically. Herbs are dry when they crumble, and stems break when bent. Check your dehydrator instruction booklet for specific details.

Less Tender Herbs — The sturdier herbs such as rosemary, sage, thyme, summer savory and parsley are the easiest to dry without a dehydrator. Tie them into small bundles and hang them to air dry. Air drying outdoors is often possible; however, better color and flavor retention usually results from drying indoors.

Tender-Leaf Herbs — Basil, oregano, tarragon, lemon balm, and the mints have a high moisture content and will mold if not dried quickly. Try hanging the tender-leaf herbs or those with seeds inside paper bags to dry. Tear or punch holes in the sides of the bag. Suspend a small bunch (large amounts will mold) of herbs in a bag and close the top with a rubber band. Place where air currents will circulate through the bag. Any leaves and seeds that fall off will be caught in the bottom of the bag.

Another method, especially nice for mint, sage, or bay leaf, is to dry the leaves separately. In areas of high humidity, it will work better than air drying whole stems. Remove the best leaves from the stems. Lay the leaves on a paper towel, without allowing leaves to touch. Cover with another towel and layer of leaves. Five layers may be dried at one time using this method. Dry in a very cool oven. The oven light of an electric range or the pilot light of a gas range furnishes enough heat for overnight drying. Leaves dry flat and retain a good color.

Microwave ovens are a fast way to dry herbs when only small quantities are to be prepared. Follow the directions that come with your microwave oven.

When the leaves are crispy dry and crumple easily between the fingers, they are ready to be packaged and stored. Dried leaves may be left whole and crumpled as used, or coarsely crumpled before storage. Husks can be removed from seeds by rubbing the seeds between the hands and blowing away the chaff. Place herbs in airtight containers and store in a cool, dry, dark area to protect color and fragrance.

Dried herbs are usually 3 to 4 times stronger than fresh herbs. To substitute dried herbs in a recipe that calls for fresh herbs, use 1/4 to 1/3 of the amount listed in the recipe.



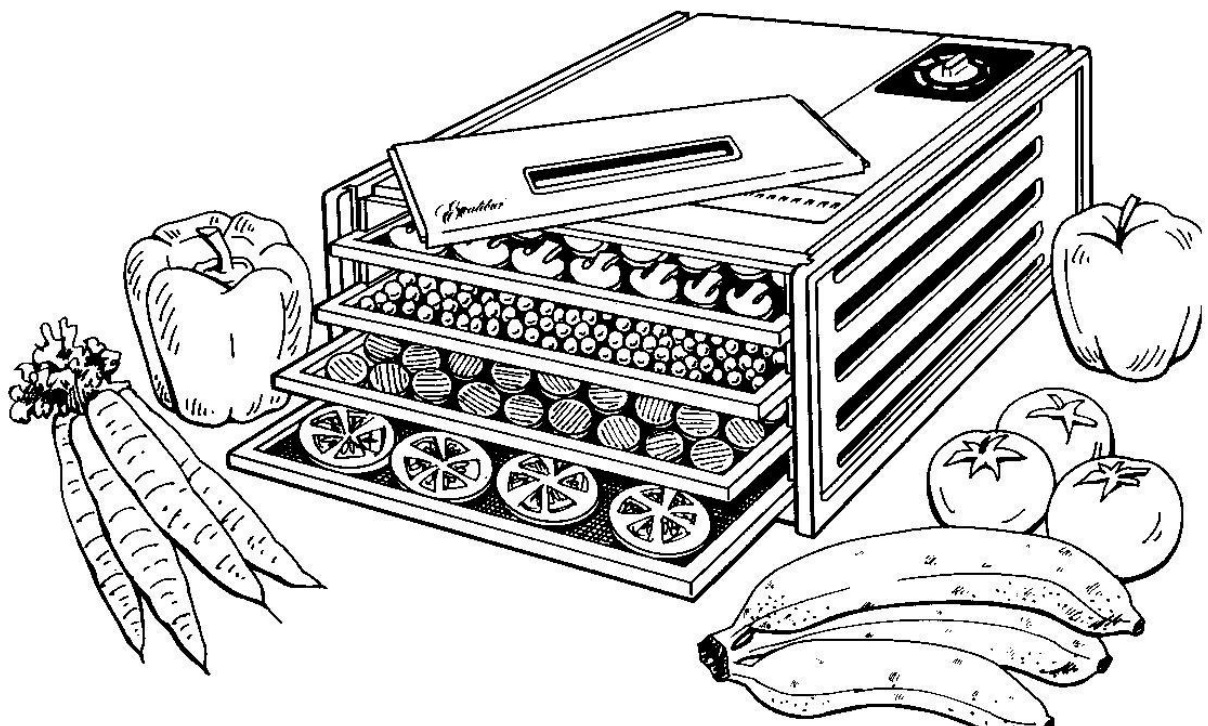
A Rough Guideline for How Long To Keep Herbs and Spices

If spices and herbs are kept as suggested, the shelf life will be as follows:

1. Whole spices and dried herbs, leaves, and flowers will keep 1-2 years.
2. Seeds will keep 2-3 years, and whole roots (i.e. ginger root or galangal root) will keep 3 years.
3. Ground spices and herb leaves will keep 1 year.
4. Ground roots will keep for 2 years.
5. Seasoning blends will keep 1-2 years.
6. Extracts will last 4 years.

Just because a spice or a seasoning blend is outside the date range listed above doesn't mean that the spice needs to be tossed in the trash. To determine if a spice or seasoning is still good, you must remember "appearance" and "aroma". A spice that is no longer acceptable will have lost much of its vibrant color and will instead appear dull and faded. The bigger key, though, is smell. To determine whether a ground spice is still good, gently shake the container with the cap on. Remove the cap and smell the spice to see if the potent aroma of the spice is still present. If it is, then your spice is still in good shape. Spices don't just all of a sudden go from "good" one day to "bad" the next. From the time they're harvested, they slowly begin to deteriorate and what you want to do is to prolong their optimum flavor for as long as possible with proper grinding and storage.

Never store your spices above your stove as the additional heat will more quickly lead to degradation of their quality. Also, don't store them directly above your dishwasher as the increased humidity will shorten their shelf life. Stored spices do best in temperatures below 70°F and in lower humidity environments. While achieving both may be challenging in your kitchen, the closer you can get to the ideal storage of them the better off you'll be.



Recipes

Corn and Cherry Tomato Salsa

Makes about 6 pints

Salsa is delicious any time of year and this recipe is a real classic! Our Corn and Cherry Tomato Salsa is a festive favorite that's sure to brighten up your day with ripe cherry tomatoes and fresh corn kernels mixed with jalapeño and zesty lime juice.

- 5 lbs. cherry tomatoes roughly chopped
- 2 cups corn kernels (about 2 large ears fresh, but frozen thawed is fine)
- 1 cup red onion finely chopped
- 2 teaspoons salt
- ½ cup bottled lime juice
- 2 jalapeno peppers seeded and minced
- 1 tsp. chipotle chili powder, optional
- ½ cup chopped fresh cilantro
- 6 (16 oz.) pint glass preserving jars with lids and bands

Prepare boiling water canner/atmospheric steam canner. Heat jars in simmering water until ready for use. Do not boil. Wash lids in warm soapy water and set aside with bands. Bring all the ingredients to a boil in a large stainless-steel or enameled saucepan. Reduce heat and simmer 5-10 minutes, stirring occasionally.

Ladle the hot salsa into a hot jar, leaving ½-inch headspace. Remove air bubbles. Wipe the jar rim. Center the lid on the jar. Apply the band and adjust to fingertip tight. Place the jar in the boiling water canner. Repeat until all the jars are filled.

Process both pint and half-pint jars for:

For boiling water canning, turn off heat, remove canner lid, wait 5 minutes, then remove jars, cool, and store. For atmospheric steam canning, turn off the heat, leave canner lid on, wait 2-3 minutes, then remove jars, cool, and store.

Source: *The All New Ball Book of Canning and Preserving, 2023*

Peach Salsa

Yield: about 6 pints

- ½ cup white vinegar
- 6 cups chopped pitted peeled peaches
- 1 ¼ cups chopped red onion
- 4 jalapeno peppers, finely chopped
- 1 red bell pepper, seeded and finely chopped
- ½ cup loosely packed, finely chopped cilantro
- 2 Tbsp liquid honey
- 1 clove garlic, finely chopped
- 1 ½ tsp ground cumin
- ½ tsp cayenne pepper

Prepare canner, jars and lids. In a large stainless-steel saucepan, combine vinegar and peaches; add onion, peppers, cilantro, honey, garlic, cumin, and cayenne. Bring to a boil over medium-high heat, stirring constantly. Reduce heat and boil gently, stirring frequently, until slightly thickened, about 5 minutes. Remove from heat. Ladle hot salsa into hot pint jars, leaving ½ " headspace. Remove air bubbles, wipe rim, and place two-piece lids on jars, adjusting 'til fingertip tight.

Process pint jars in a boiling-water canner or atmospheric steam canner for 15 minutes at 0-1000 ft, 20 minutes 1001-6000 ft, 25 minutes above 6000 ft.

For boiling water canning, turn off the heat, remove canner lid and wait 5 minutes.

For atmospheric steam canning, turn off the heat, leave canner lid on and wait 2-3 minutes.

Allow jars to cool on a wire rack or kitchen towel, undisturbed, for 12-24 hours so seals can properly set.

Source: *Ball Blue Book Guide to Preserving, 2024*

Home-style Pickled Jalapenos

Makes about 6 pint jars

- 3 ½ lb (1.6 kg) jalapeno peppers seeded and quartered
- 1 cup (250 mL) thinly sliced white onion
- 2 large carrots, thinly sliced
- 2 ½ cups (625 mL) white vinegar (5% acidity)
- 2 ½ cups (625 mL) water
- 2 Tbsp. (30 mL) pickling salt
- 1 Tbsp. (15 mL) sugar
- 6 garlic cloves, crushed
- Pickle Crisp (optional)

Put on gloves and cut peppers in half lengthwise; remove seeds. Cut halves lengthwise to create long strips. Place jalapeno strips in a large bowl. Add onion and carrot; toss well.

Combine vinegar and next three ingredients in a large stainless steel or enameled saucepan. Bring to a boil.

Place 1 crushed garlic clove in a hot jar, and pack jar tightly with vegetable mixture, leaving ½-inch headspace. Add ¼ tsp (.5 mL) Pickle Crisp to jar, if desired. Ladle hot pickling liquid over vegetables, 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 canner. Repeat until all jars are filled.

Process jars 10 minutes, adjusting for altitude. Turn off heat, remove lid, and let jars stand 5 minutes. Remove jars from canner and let cool.

Source: *The All New Ball Book of Canning and Preserving: 2023.*

Candied Jalapeños

Yield: about 4 1 pint jars

Also known as Cowboy Candy, these sweet-hot pickles are delicious served on sandwiches, salads, nachos, tacos, chili, cornbread, and more. Try garnishing cocktails with them!

- 3 cups apple cider or white vinegar (5% acidity)
- 2 tsp salt
- 4 cups sugar
- 6 garlic cloves, sliced
- 2 tsp turmeric
- ½ tsp cayenne powder
- 2 tsp mustard seeds
- 4 lbs jalapeños, sliced into ¼" rings

Combine all ingredients except jalapeños in a large saucepan. Bring to a boil over high heat, stirring to dissolve sugar.

Add sliced jalapeños, lower heat to medium, and simmer for 15 minutes, until the jalapeños are dark green and have begun to absorb some of the brine.

Ladle hot mixture into a hot jar, leaving ½-inch headspace. Remove air bubbles and adjust headspace if needed, by adding more hot mixture. Wipe jar rim with a dampened clean paper towel or cloth. Place lid and ring on jar, tightening ring as directed by the manufacturer. Place jar in canner. Repeat with remaining jar(s).

Process pint jars in a boiling water or atmospheric steam canner as follows:
15 minutes at 0-1,000 ft., 20 minutes at 1,001-6,000 ft., 25 minutes above 6,000.

For boiling water canning, turn off heat, remove canner lid and wait 5 minutes. For atmospheric steam canning, turn off heat, leave canner lid on and wait 5 minutes. Remove jars to a rack or towel and let cool, undisturbed, for 12-24 hours and then check seals. Store unsealed jars in the refrigerator or reprocess. Clean and label sealed jars and store in a cool, dry dark location.

Source: ballmasonjars.com

Spicy Refrigerator Pickled Peppers

Yield: 1 pint jar

- 1 cup white or apple cider vinegar
- 1 tsp kosher salt
- 2 Tbsp dark brown sugar
- ½ tsp dried oregano
- 3 garlic cloves, peeled and crushed
- ¼ cup extra-virgin olive oil
- ½ lb red jalapeños or Italian roasting peppers, thinly sliced into ¼" rounds

In a saucepan combine the vinegar, salt, brown sugar, oregano, garlic, and olive oil. Bring to a simmer over medium heat. Add the sliced peppers and simmer for 10 to 15 minutes, until the peppers are tender.

Transfer the peppers to a mason jar or container with an airtight lid, then pour the liquid over the top. Refrigerate overnight to allow the flavors to infuse. Store in a tightly capped jar in the refrigerator for up to 1 month.

Source: loveandoliveoil.com

Chile Lime Salt

Yield: about ½ cup

- ½ cup flaked sea salt
- 2 tsp dried chile flakes (or dried Aleppo pepper)
- 2 tsp dried lime zest
- ½ tsp smoked paprika (pimenton)

Whirl all ingredients in a spice grinder or small food processor. Store in an airtight container in a cool, dark place.

Source: delicious.com.au

Safe preserving 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

Also available in paper copy from Purdue Extension (online store is located at https://mdc.itap.purdue.edu/item.asp?item_number=AIG-539)

So Easy to Preserve, Sixth Edition. 2014. Bulletin 989. Cooperative Extension/The University of Georgia/Athens

Ball Blue Book Guide to Preserving. 2024, Newell Corporation

Ball Complete Book of Home Preserving, 2024. Newell Corporation.

All New Ball Bok of Canning and Preserving, 2023, Newell Corporation

Ball <https://www.ballmasonjars.com/blog?cid=classic-strawberry-jam-0&fbclid=IwAR2R1uICXBAEvd1I7-F64i-upRpS6TeNaHnJxk8NhTHpwSZlfNGgyUE2clk>

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