# love grows where my rosemary goes



# Rosemary inspired menu



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# CLEANING, SANTIZING & DISINFECTING HARD SURFACES IN THE HOME KITCHEN

Cleaning: Physically removing dirt and debris from surfaces, usually with water,

soap/detergent, and scrubbing. Cleaning alone is not sufficient to remove

pathogens.

Sanitizing: Reducing pathogens to a safe level so that illness, contamination or spoilage

is unlikely to occur.

Disinfecting: Destroying most pathogenic and other microorganisms. Disinfectants

destroy or irreversibly inactivate the specific microorganisms listed on their

labels (but they may not inactivate spores).

Sanitizing is generally considered the acceptable level for treating home kitchen surfaces. However, if there are vulnerable persons in the home (elderly, pregnant women; children under age 5; or severely ill or immune-compromised individuals), then disinfecting would be appropriate. For known or suspected cases of COVID-19, follow current CDC guidance.

### STEP 1: CLEAN

Wash with warm, soapy water, then rinse well. *Note:* Soils and soaps can inactivate bleach solutions, so it is important to clean surfaces and then rinse well. Further, cross-contamination can occur by using dirty cleaning cloths, so be sure to use a fresh, clean cloth or a paper towel.

### STEP 2: SANITIZE OR DISINFECT

If using a commercial sanitizer or disinfectant, follow the manufacturer's instructions. Note that disinfectants are not always safe for food contact surfaces, and not all bleaches are intended to be used as disinfectants, so be sure to carefully read the label. To make a generic bleach solution, use the chart below.

To Sanitize		To Disinfect	
Bleach	Water	Bleach	Water
1 tablespoon	1 gallon	5 tablespoons (1/3 cup)	1 gallon
1 teaspoon	1 quart	4 teaspoons	1 quart
¼ teaspoon	1 cup	1 teaspoon	1 cup

Add the appropriate amount of **regular**, **unscented liquid chlorine bleach** to cool (not hot) water. Spray surfaces (or immerse item) completely with the solution. Allow to air dry, or let stand/soak for at least 1 minute then dry with a clean towel. Bleach solutions should be changed every 24 hours and preferably be made from bleach containers that have been opened for no more than 30 days. Be sure to check the expiry date on containers as well. Take appropriate precautions when handling bleach solutions or other chemicals: Apply in a ventilated area and wear disposable or dedicated cleaning gloves and protective clothing.

For **food contact surfaces**, use a sanitizing solution only. Be sure to measure carefully, apply the solution or soak items for 1 minute, then **rinse well** and allow to air dry.

Resources:

**USDA** and CDC

North Carolina State University, North Dakota State University, and University of Wisconsin Cooperative Extension Services, and Oklahoma State University Factsheet FAPC-116 Food Safety Magazine, April/May 2019 and August/September 2011





University of California Cooperative
Extension
Stanislaus County







# A Guide to the Use, Cultivation & Selection of Herbs

Anne Schellman Horticulture Program Representative

The word "herb" is used to describe any plant that has fragrance, flavoring or medicinal value. It also includes plants used to make dye or dried crafts.

Many plants can be considered herbs. This publication focuses on herbs that can be grown in the Central Valley for culinary use.

### THE HERB GUIDE

The last pages of this publication are a guide to herbs available locally. These and remain bare in the winter. local herbs can thrive in Stanislaus County if given proper care.

This guide is broken into categories that contain pertinent information for each herb. The category for "Type" uses the letters A, B and P which stand for annual, biennial and perennial. "Part Used" mentions the herb part needed for culinary, dye, medicinal or craft purposes. The "Growing Tips" category describes the growing conditions needed for the herb.

### **HERB TYPES**

Herb life cycles can be annual, biennial or perennial. Annual herbs such as basil last only one season and then die, although some annuals (like dill) will reseed. Biennial Lemon scent comes in the herbs like parsley live for two seasons, blooming and dying during the second season.

Perennial herbs like rosemary or to name a bay live for several years, depending on the life expectancy for that particular plant.

Herbs come in all shapes and sizes. They can be small plants, vines, shrubs or trees.

Some herbs are evergreen, while others are deciduous. Herbs that are evergreen stay green throughout the year by constantly shedding a small amount of leaves. Deciduous herbs lose their leaves in the fall Licorice

### **HERBAL SCENTS**

There are many herbs with fragrances similar to those of fruit, flowers or food. Visit local nurseries and garden centers to peruse their selection. Most carry a wide variety of herbs with aromas sure to delight the senses.

### Almond

Almond-scented geraniums have a nutty aroma.

### Apple

Apple mint and apple-scented geraniums provide apple fragrances in the garden.

### Cinnamon

Cinnamon basil has a surprisingly strong cinnamon scent.

### Citrus

forms of lemon verbena, lemon balm, lemon thyme, lemon basil and lemon-scented geraniums,

few. Lime scents are found in lime basil, limescented

geraniums and lime thyme. Orange scents can be found in a scented geranium known as the "mosquito plant."

### Chocolate & Mint

An herb called chocolate mint blends the two fragrances together.

Anise basil and anise hyssop are two good choices in this category. Some people say that fennel has a licorice scent. Others enjoy angelica because it adds a pleasant, licorice flavor to food.

### Mint

The two classic mints are spearmint and peppermint. Use caution when planting mint in the garden, as it can easily take over an entire bed. Mint-scented geraniums won't take over your garden beds. This plant has very soft leaves and an intense mint aroma.

### Nutmeg

The nutmeg-scented geranium is an unusual and fragrant plant.

### Pineapple

Pineapple sage and pineapple mint provide this fragrance.

### Rose

is because fragrance can be lost in the rose-breeding process. Roses that are fragrant are mentioned in the guide; note that fragrance depends on the species name. There are also several types of rose-scented geraniums available.

The best time to shop for herbs is in the spring. If the nursery or garden center does not have the particular plant you are looking for, they may be able to special order it from a local grower.

### **PLANTING HERBS**

Herbs can be planted from seed or purchased as small plants from a nursery or garden center. Our local farmer's market, located near the Stanislaus County Library (May-November) often has a fine selection of herbs. Herbs included in this publication can be found locally as seeds or living plants.

Before planting herbs, amend the soil well. Add compost and till it into to the top 18" of soil in your garden. Most herbs should be planted in full sun, as they need to receive at least 6-8 hours of direct sun daily.

When planting seeds, be careful not to bury them too deeply. When a seed germinates, tiny leaves attempt to push through the

soil to reach the surface. Not all roses are fragrant. This Seeds buried too deeply will not have enough resources to grow and reach sunlight. Follow planting depth instructions listed on the packet.

> New seedlings need constant moisture to germinate and develop. When a tiny seedling emerges, it is very delicate and will need adequate water until it is established. It may also need protection from pests such as snails and earwigs.

### **PLANTING INSTRUCTIONS**

Herbs can be found in 4" containers as well as 6-paks and 1-gallon cans.

Step 1: dig a hole twice as wide as the container.

It is not necessary to add fertilizer or amendment to the hole, as the soil has already been prepared.

Step 2: remove the plant from its container carefully and examine the root ball. If needed, prune the roots.

The term "root ball" refers to the area of roots inside the container. Sometimes a plant from a nursery or garden center has lived in its container for a long period of time. If the plant has a large number of roots, gently pull them apart. If the container has a lot of roots that are difficult to pull apart,

try using small pruning shears.

Step 3: place the root ball in the hole so the top is slightly above soil level.

Fill in around the root ball with remaining soil. Lightly pack the soil around the herb.

Step 4: water deeply. Use a garden hose or drip irrigation to keep plants well-watered.

Create a trough around the plant to hold water. Once the plant has been watered, it should sink so the top of the root ball is even with the soil. Make sure not to cover the surface of the root ball with any garden soil. Keep the area around the plant moist as dry soil around the root ball can wick away moisture.

### WATERING HERBS

Herbs should be watered deeply enough to wet the entire root system. For deep-rooted perennials, such as rosemary, the soil may need to be wet to 18 inches deep. For shallowrooted annuals, the soil should be wet to 4-6 inches deep.

Clay soils hold moisture the longest. Its small particles hold onto water as well as nutrients. When irrigating these soils, ensure they dry out slightly between watering.

Sandy soils have large particles that allow water to flow easily between them. Because of this, plants in sandy soils will need to be watered more often, especially during the summer.

### **HERBAL "GROUPINGS"**

When organizing your herb garden or adding herbs into an existing planting, pay attention to watering needs. Group plants that prefer similar climates together.

For instance, Mediterranean herbs such as lavender, rosemary and sage all have the same requirements. They prefer to be kept on the dry side and need no additional fertilizer.

Herbs that prefer to stay on the moist and shady side like angelica, coriander and horseradish can be planted in the same area.

Keep plants that spread by underground rhizomes contained in pots. These herbs include lemon balm, peppermint and spearmint.

Herbs that seed themselves can become a nuisance, so plant them in places where you can keep an eye on them and regularly prune seed heads before they scatter. Dill, fennel and borage will readily self-seed in your garden.

# HERBAL "MAINTENANCE"

To keep your herbs looking their best, prune for shape. Some herbs (like basil or lemon verbena) will tend to be tall and slender. For fuller growth, prune the tops of the tallest stalks. This will

encourage the plant to widen in shape.

"Dead-heading" is a term used to signify the removal of spent flowers. To keep herbs blooming longer, dead-head them after the blooms have died.

### **DRYING HERBS**

Herbs should be harvested before they flower for best flavor. Pick early in the morning just after the dew has dried.

Cut herbs and gather them into bunches and tie them with string. Then hang the bunches upside down and tie a paper bag over the bundle. Wait 2 weeks for most herbs to dry.

Herbs can also be dried in the oven or microwave. Before placing herbs in the oven, spread them on a baking pan. Set the oven on the lowest setting and leave the oven door open slightly. Stir occasionally. The herbs are dry when leaves can be crumbled with a finger.

In the microwave, place 1 cup of herbs in a single layer between 2 paper towels. Microwave on high for 3 minutes. If herbs aren't completely dry, keep drying them in cycles of 20 seconds, being careful not to scorch them.

Cilantro, rosemary and parsley can be dried in the refrigerator. Put them (unwashed) in a paper



bag and leave them on a shelf for a month.

### STORING HERBS

Fresh herbs can be stored as sprigs in jars of water just before you use them. To store for a longer period, cover the top of the herb loosely with plastic wrap and place the jar in the refrigerator for storage of up to two weeks.

For dried herbs, store in a cool, dry place away from your oven. Glass containers work well for storage, but keep them in cupboards as sunlight fades both color and flavor. When needed, herbs can be ground with a mortar and pestle or coffee grinder just before use. Dried herbs should not be kept for more than 6-8 months.

### **MAKING TEA**

These directions were taken from Rodale's Illustrated Encyclopedia of Herbs. First, boil water and use it to rinse your teapot. When making tea with fresh herbs, add 2 tablespoons to the pot. The number of tablespoons corresponds to how many cups your teapot can hold. Add an additional 2 tablespoons of herbs per cup.

When making tea from dried herbs, add 1 tablespoon of herb to the pot, and then an additional tablespoon of dried herb for each cup of water.

For both fresh and dry herbs, pour the boiling water into the teapot and let it steep for 5 minutes. Keep the teapot covered to retain heat. Strain the herbs once the tea has reached the desired strength. Serve tea with honey, lemon or milk.

For iced tea, follow the same procedure but use 3 tablespoons of fresh herbs or 2 tablespoons of dried herbs. The extra tablespoon allows for the melting of ice.

For herb tea combinations, the 1/2 tbs oregano Encyclopedia mentions these 1 tsp rosemary (flavors:

- ♦ Basil, lemon balm and lemon verbena
- ♦ Chamomile and apple mint
- ♦ Lemon verbena and borage
- ♦ Peppermint and orange peel

### **COOKING WITH HERBS**

In most cases, using fresh herbs is best for cooking. However, when fresh herbs are unavailable, dried or frozen herbs can be used.

Herbs can be used to flavor vinegars, oils or butter. They can also be used in combination as a salt substitute.

### Herb Vinegar

Use 1 cup of herb per 2 cups of white wine vinegar. "Bruise" the herbs before adding to the wine to extract their flavors. Allow to steep for 2 weeks before using.

### Herb Butter

1 tablespoon of finely chopped herbs per 1/2 cup margarine or butter.

There are also combinations of herbs that can be used to flavor food. Try experimenting with your own herbs for new combinations.

### Soup Seasoning

1 1/2 tsp parsley1 tbs thyme1/2 tbs basil1/2 tbs oregano1 tsp rosemary (crushed)

This lavender shortbread recipe was taken from a website called "Desert First."

### Lavender Shortbread

Ingredients
1 cup (2 sticks) butter
2 cups flour
1/2 cup sugar
1 tablespoon dried lavender
(L. angustifolia)

### **Directions**

Sift the flour. Beat the butter and sugar in a mixer until creamy. Add flour and beat until combined. Add the lavender and beat just to distribute through the dough. Make the dough into a ball and chill for one hour.

Pre-heat oven to 325°. Roll the dough to 1/4" thickness and cut into desired shapes. Place on greased cookie sheet and bake for 15-18 minutes.

# A NOTE OF CAUTION

If you are pregnant or nursing, do not consume any of the following herbs as a tea without first consulting your physician.



Common & Botanical Name	Type	Part Used	Growing Tips
Aloe Aloe vera	P	Sap is applied directly to cuts and burns. Harvest outer leaves first.	Full sun to partial shade; regular water. Grows 1-2' tall in clumps. Does best in a pot that can be moved indoors or to a protected area during winter months. For most of the year, allow soil to dry completely between watering. In summer, take care soil does not dry out. Small "pups" that grow off the side of the plant can be repotted to make a new plant.
Angelica Angelica archangelica	Р	Stems can be made into a candied confection. Young leaves can be used in tea.	Partial shade; regular water. Grows 6' tall and 4' wide. Ensure soil is rich in organic matter that stays fairly moist. Flowers are greenish-yellow and umbel-shaped. Short-lived perennial.
Anise Hyssop Agastache foeniculum	P	Leaves can be used in salads; also for tea. Plant can produce a dark green dye.	Full sun or partial shade; moderate water. Grows 3' tall and 2' wide. Has eye-catching, blue colored flower spikes that attract hummingbirds and butterflies. Foliage and flowers are licorice scented.
Basil Ocimum basilicum	A	Use fresh leaves for best flavor in cooking. Save basil by drying it, adding it to an oil or by freezing it as a paste.	Full sun; regular water. Grows 2' tall and 1' wide. Plant basil after danger of frost. Mulch around the plant to retain moisture. For bushier growth, pinch the top of the main stem. Many aromatic varieties exist, including lemon, anise and cinnamon.
Bay Laurus nobilis	Р	Leaves added fresh or dried to stews and soups. Remove leaves before serving.	Full sun to partial shade; moderate water. Grows as a shrub or tree 12-40' tall and wide. Responds well to pruning; makes an excellent topiary. Needs good drainage and moderate water. Can be subject to black scale and laurel psyllid insects.
Beebalm Monarda di- dyma	Р	Fresh flowers can be added to salads or as garnishes. Leaves dried for use as a tea; leaves and flowers used in potpourri.	Full sun to partial shade; keep moist. Grows to 3-4' tall. Dark green, 4-6" leaves have a pleasant citrus-mint scent (similar to bergamot). Tubular flowers attract bees, hummingbirds and butterflies. Flower colors vary: pink, rose, red, purple and lavender.
Borage Borago officinalis	A	Add fresh flowers to salads or use as a garnish. Remove flower from prickly sepal.	Full sun to partial shade; moderate water. Grows 2-3' tall and 1' wide. Although an annual, this plant reseeds itself yearly. Thin to keep desired plants. Leaves are prickly. The bright blue flowers are attractive and will draw many bees to your garden.

Common & Botanical Name	Type	Part Used	Growing Tips
Calendula Calendula officinalis	A	Fresh petals can be added to salads. Dried petals in potpourri.	Full sun; moderate water. Grows 1 1/2' tall and wide. Calendula is tolerant of many growing situations. Reseeds itself each year, but not enough to become a weed.
Catnip Nepeta cataria	Р	The leaves and stems are dried for use in cat toys. Cats also enjoy it fresh in the garden.	Full sun to partial shade; moderate water. Grows 1-3' tall and wide. Prefers well-drained soil. Shear plant back after blooms fade to encourage re-bloom. Catnip seeds itself readily and can become a pest in the garden. The plant creates clumps that can be divided in winter or early spring.
Chamomile Matricaria recutita	Р	Daisy-like flowers used fresh or dry in a tea for stomach ailments.	Full sun; moderate water. Grows 2' tall and wide. Dead-head (cut off old blossoms) for more blooms. Flowers have a pleasant scent. Another form of chamomile, <i>C. nobile</i> can be used as a lawn substitute. However, all weeding must be done by hand as no herbicides exist that can kill the weeds but not the chamomile.
Chives Allium shoenoprasum	Р	Leaves have a subtle, onion-like flavor. Best used fresh. Pink blossoms in potpourri.	Full sun to partial shade; regular water. Grows in 2' tall clumps. Seeds can be difficult to germinate. Snip stems for fresh use only, as chives do not store well in the refrigerator. Chives can be used creatively as a tie to hold together carrots or asparagus during cooking time.
Cilantro & Coriander Coriandrum sativum	A	Leaves are cilantro; seeds are coriander.	Partial shade; regular water, especially in summer. Grows 2-3' tall and 9" wide. Plant seeds in fall after danger of frost is past. For cilantro harvest, select young leaves. To harvest coriander seeds, wait until flowers have bloomed. When seeds start to form, cut stems and place about 6 bunches in a paper bag. Tie the bag and put it in a warm, dry place. Seeds should be ready in 10 days.
Dill Anethum graveolens	A	Leaves used in salads. Seeds used whole or ground in recipes; also for making pickles.	Full sun; regular water. Grows 3-4 feet tall and wide. Has feathery leaves and white umbel-like flowers. This plant will self-sow readily, so be prepared to pull out many seedlings. Wind can destroy stalks; stake the plant or grow in a well-protected area. Harvest dill seeds by picking umbels after bloom and just before seeds are fully dry. Hang them upside down in a paper bag.

Common & Botanical Name	Type	Part Used	Growing Tips
Fennel Foeniculum vulgare	Р	Leaves and stems used in salads; stem cooked as a vegetable. Seeds used whole or ground.	Full sun, moderate water. Grows 3-6' tall, depending on variety. Fennel self-sows and can become invasive. Similar in appearance to dill, fennel has yellow, umbel-like flowers. Bronze fennel has a bronzy-purple foliage. Fennel is best used fresh. Leaves and seeds have a licorice flavor.
Geranium Pelargonium species	P	Leaves can be dried and used to make fragrant sachets.	Full sun to partial shade; moderate to regular water. Grows 1-3' tall. Small flowers are inconspicuous, leaves are extremely fragrant. Numerous scents exist including peppermint, rose, lemon, apple, lime and nutmeg.
Horseradish Armorica rusticana	P	Peel and grate for sauces. Young leaves in salads. Root and leaves used to make a yellow dye.	Full sun; regular water. Grows 3' tall in clumps. Does best in moist, rich soil. Can be purchased bare root in the fall at most nurseries. Pieces of the root can be harvested off the side as the plant begins to clump. Harvest during fall, winter and spring.
Hyssop Hyssopus officinalis	P	Minty leaves and flowers are some- what bitter; can be used to flavor meat and salads; potpourris.	Full sun or light shade; moderate to regular water. Tolerates dry conditions. Grows 1 1/2 to 2' tall. Makes a nice border or container plant. Hyssop has a medicinal-like fragrance. Flower color can be pink, white or dark blue depending on the plant species. Bees are very attracted to this plant.
Lavender Lavandula species	P	Dried flowers of <i>L. angustifolia</i> used to flavor tea, cookies and jelly; other lavender species used for making sachets. Lavender aroma is said to discourage moths.	Full sun; little water. Very drought tolerant. Height depends on variety. Well drained soil and little to no fertilizer. Prune lavender every year in spring, after danger of frost has passed. In winter, if plant appears to be destroyed by frost, do not prune. Wait until spring to see if new growth appears. Lavender flower color can range from purplish blue to pink or white. To dry lavender, gather flowers just as they open and set them on trays in a dry place or hang them upside down in bunches.
Lemon Balm Melissa officinalis	Р	Add fresh or dried leaves to tea. Said to relieve tension headaches. Use fresh leaves in salads.	Full sun to partial shade; regular water. Grows 2' tall and 1 1/2' wide. Can be invasive as it self-sows by seed and replants itself by rhizomes. Makes a good container plant. Shear tops occasionally to keep form bushy; cut off flowers before they go to seed. Honeybees are very attracted to lemon balm. Harvest leaves before flowers bloom for best flavor. Grows very well near faucets where it doesn't mind the extra water.

Common & Botanical Name	Туре	Part Used	Growing Tips
Lemon Verbena Aloysia triphylla	P	Dried leaves make a flavorful tea. Fresh leaves added to salads. Excellent in potpourri.	Full sun; regular water. Grows 6' tall and wide. Can be somewhat leggy. Prune in both midsummer and spring. Can be sensitive to frost. Also sensitive to spider mites, clean with a spray of water to prevent dust-buildup.
Marjoram Origanum majorana	Р	Fresh or dried leaves used to season meat and stuffing.	Full sun; little to moderate water. Grows 1-2' tall and wide. This plant is in the same family as oregano and is similar in appearance and scent. Flowers are tiny and white or pink. Marjoram is often used as an oregano substitute.
Mint Mentha species	Р	Use young leaves only. Peppermint for tea, spearmint for salads.	Full sun or partial shade; regular water. Grows 1-3' tall and wide. Can be an extremely invasive plant. Keep in pots for best control. Flavored mints include apple mint, pineapple mint, chocolate mint and orange mint. Grows very well near faucets where it doesn't mind the extra water.
Nasturtium Tropaeolum majus	A	Flowers have a peppery taste and can be added to salads or floated in punch bowls for decoration.	Full sun to partial shade; regular water. Grows 1' tall and 3' wide. Both vining and compact forms exist. Flowers come in numerous colors: red, yellow, maroon and off-white. Blooms last from summer to first frost.
Oregano Origanum vulgare	Р	Leaves used to flavor sauces.	Full sun; little to moderate water. Grows 2 1/2' tall and wide. Best known for flavoring tomato sauces. Makes a great container plant. <i>O. vulgare</i> 'Compactum' has best flavor for cooking.
Parsley Petroselinum crispum	В	Fresh and dried leaves used in food. Best treated as an annual; replant every year.	Full sun to partial shade; regular water. Flat-leaved Italian parsley grows 2-3' tall and wide and is considered the most flavorful. Curly-leaved French parsley grows 6-12" tall and wide and is used for garnish. To dry parsley, make small bunches and hang them in a shady area, then store in an airtight container.
Rose Rosa species	Р	Rose hips are high in vitamin 'C'. Rose petals can be used in potpourri.	Full sun; regular water. Grows to 6' tall and wide. <i>R. rugosa</i> and <i>R. laevigata</i> have excellent for rose hips. <i>R. damascena</i> has intensely fragrant flowers. <i>R. gallica</i> is an old-world rose whose flowers were used in wreath making.

Common & Botanical Name	Туре	Part Used	Growing Tips
Rosemary Rosmarinus officinalis	Р	Use fresh or dried sprigs when cooking with meat or vegetables.	Full sun; little to moderate water. Height varies with type of plant. Used as a groundcover or small to large shrub. Tall types make a good hedge. Prune lightly on a regular basis for shape. Flower color can be blue, purple, pink or white. To harvest: remove 4" pieces from the branch tips.
Sage Salvia officinalis	Р	Fresh or dried leaves used in cooking.	Full sun to partial shade; regular water. Grows 1-3' tall and 1-2' wide. Replace leggy plants every 3-4 years. Leaves can be harvested anytime but are best used fresh.
Tarragon Artemesia dracunculus	Р	Fresh or dried leaves in salads. Avoid over- cooking, as this brings out a bitter flavor.	Full sun; little to moderate water. Grows 2' tall, creeps along the ground. Makes a good container plant. French tarragon is used in cooking, Russian tarragon has little flavor. Hang upside down to dry. Stores well in the freezer.
Thyme Thymus vulgaris	Р	Fresh leaves can be used in most dishes; dried leaves make a good tea for sore throat or gums.	Full sun to partial shade; little to moderate water. Grows 1' tall and 2' wide. Makes a good container plant, keep on the dry side. When picking, do so before it begins flowering. Bees are attracted to the small white or purple flowers.
Yarrow Achillea millefolium	Р	Flowers yield a yellow dye. Dried flowers make excellent bouquets.	Full sun; little to moderate water. Grows 3' tall in clumps that get larger each year. Divide in spring if desired. Flower colors include white, pink, yellow and red.

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### **UCCE Master Food Preservers of Amador/Calaveras County**

12200B Airport Road Jackson, CA 95642 (209) 223-6482 http://cecentralsierra.ucanr.edu



# **Freezing Basics**

### **Basic Food Safety**

### Wash Hands Frequently

- Personal cleanliness is a must. Wash your hands thoroughly and frequently. E. coli resides in the human nose and intestines. Wash your hands if you rub your nose, or if you wipe your face or skin.
- Bandage any cuts or burns on hands before handling food, or use disposable gloves.

### Avoid Cross Contamination

- Rinse all fresh fruits and vegetables well under running water before preparing or eating them. Dry them with a clean cloth or paper towel.
- **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.
- Use a disinfecting solution of 1½ teaspoon of chlorine bleach to 1 pint of water. Dispense with a spray bottle to disinfect countertops, cutting surfaces, sinks, etc. Make a new solution daily.

### When In Doubt, Throw It Out

- Never taste food that looks or smells strange to see if it can still be used.
- Most bacteria that cause foodborne illness are odorless, colorless, and tasteless.

### **Freezing Foods**

Retains natural color, flavor and nutritive value of foods and is quick and simple to do. Freezing slows down the enzymes in fruits and vegetables that cause them to ripen and then decay.

### Freezing Pointers

- Freeze foods at 0°F or lower. For rapid freezing, set the temperature to -10°F 24 hours in advance.
- Freeze foods as soon as they are packed and sealed.
- Water in food freezes and expands creating ice crystals, which rupture cell walls of fruits and vegetables,
  making them softer when thawed. Large ice crystals do more damage to food cells and cause softer, mushier
  textures. Minimize the size of ice crystals by keeping the temperature consistent and freezing the food quickly.
- Do not overload your freezer with unfrozen food. Add only the amount that will freeze within 24 hours, which is usually 2 to 3 pounds of food per cubic foot of storage space. Overloading slows down the freezing rate, and foods that freeze too slowly may lose quality.
- Place packages in contact with refrigerated surfaces in the coldest part of the freezer.
- Leave a little space between new packages so air can circulate freely. Stack after frozen.

### **Preparing Vegetables for Freezing**

Select vegetables that are ripe and free of blemishes and prepare for freezing by blanching in boiling water or steam. See separate handout, Freezing Vegetables, for specific blanching times for each type of vegetable.

### **Blanching Vegetables**

- Blanching (scalding vegetables in boiling water or steam for a short time) is a must for almost all vegetables to be frozen. It stops enzyme actions, which can cause loss of flavor, color and texture.
- Blanching cleanses the surface of dirt and organisms, brightens the color and helps retard loss of vitamins. It also wilts or softens vegetables and makes them easier to pack.
- Blanching time is crucial and varies with the vegetable and size. Underblanching stimulates the activity of enzymes and is worse than no blanching. Overblanching causes loss of flavor, color, vitamins and minerals. Follow recommended blanching times listed on the separate handout, Freezing Fruits and Vegetables.

### Water Blanching

- Use one-gallon water per pound of prepared vegetables.
- Put the vegetables in a blanching basket and lower into vigorously boiling water.
- Place a lid on the blancher. The water should return to boiling within 1 minute, or you are using too much vegetable for the amount of boiling water.
- Start counting blanching time as soon as the water returns to a boil. Keep heat high for the time given in the directions for the vegetable you are freezing.

### Steam Blanching

Heating in steam is recommended for a few vegetables. For broccoli, pumpkin, sweet potatoes and winter squash, both steaming and boiling are satisfactory methods. Steam blanching takes about 1½ times longer than water blanching.

- Use a pot with a tight lid and a basket that holds the food at least three inches above the bottom of the pot. Put an inch or two of water in the pot and bring the water to a boil.
- Put the vegetables in the basket in a single layer so that steam reaches all parts quickly. Cover the pot and keep heat high. Start counting steaming time as soon as the lid is on.

### Microwave Blanching

Microwave blanching may not be effective, since research shows that some enzymes may not be inactivated. This could result in off-flavors and loss of texture and color. Those choosing to run the risk of low quality vegetables by microwave blanching should be sure to work in small quantities, using the directions for their specific microwave oven. Microwave blanching will not save time or energy.

### Cooling Vegetables

As soon as blanching is complete, vegetables should be cooled quickly and thoroughly to stop the cooking process.

- Plunge the basket of vegetables immediately into a large quantity of cold water, 60°F or below.
- Change water frequently or use cold running water or ice water. If ice is used, about one pound of ice for each pound of vegetable is needed.
- Cooling vegetables should take the same amount of time as blanching.
- Drain vegetables thoroughly after cooling. Extra moisture can cause a loss of quality when vegetables are frozen.

### **Preparing Fruits for Freezing**

Select premium fruits that are fully ripe and free of bruises and other blemishes. Carefully wash, dry, remove pits, and peel, if desired. Use one of the methods described below to prepare fruit for freezing.

### Without sugar

Fruit may be frozen without sugar in a water pack or sugar-free fruit juice, such as citrus or berry juice. Small fruit such as berries, cherries, and grapes may be frozen in a single layer on a cookie sheet before packing in containers.

### Syrup pack

Fruit may be frozen in a simple syrup of water and cane or beet sugar. If desired, part of the sugar may be replaced by corn syrup or honey. Allow about 2/3 cup of simple syrup for each pint of fruit; 1-1/3 cup for each quart of fruit. Dissolve sugar in hot water and cool before using.

### Sugar pack

Juicy fruits and those that will be used for pies or other cooked products may be packed in sugar. Use about 1 cup of sugar for each 2 to 3 pounds of fruit. Gently mix until the sugar has dissolved in the fruit's juices.

Strength of Syrup	Water (cups)	Sugar (cups)	Yield (cups)
Light	4	1	4 3/4
Medium	4	1 3/4	5
Heavy	4	2 3/4	5 ½

### Retarding browning

Ascorbic acid may be used to reduce browning of light-colored fruit. For syrup or liquid packs, add ½ teaspoon ascorbic acid to each quart of cold syrup. For sugar or sugarless dry packs, dissolve ½ teaspoon ascorbic acid in 3 tablespoons cold water and sprinkle over 4 cups of fruit just before adding sugar.

### **Packaging and Shelf Life**

### Packaging and Labeling Foods

- Cool all foods and syrup before packaging to speed up freezing and help retain the natural color, flavor and texture of food. (Cool in shallow containers in the refrigerator or ice bath.)
- Pack foods in single meal quantities.
- Follow directions for each individual food (see separate handout, Freezing Fruits and Freezing Vegetables) to determine which can be packed dry and which need added liquid. Some loose foods such as blueberries may be individually "tray packed."
- Pack foods tightly leaving as little air as possible in the package.
- Most foods require headspace between the packed food and closure to allow for expansion of the food as it freezes. Foods that are exceptions and do not need headspace include loose packing vegetables such as asparagus and broccoli, bony pieces of meat, tray packed foods and breads.
- Seal rigid containers carefully. Use a tight lid and keep the sealing edge free from moisture or food to ensure a good closure. Secure loose-fitting covers with freezer tape.
- Meats may be packaged using either the "drugstore wrap" or the "butcher wrap."
- Label each package, including the name of the product, any added ingredients, packaging date, the number of servings and amount of each serving, and the form of the food, such as whole, sliced, etc. Use freezer tape, marking pens or crayons, or gummed labels made especially for freezer use.

**Containers:** Use proper packaging materials to protect food's flavor, color, moisture content and nutritive value from the dry climate of the freezer. The type of containers depends on the type of food to be frozen, personal preference and what you have at home. Do not freeze fruits and vegetables in containers with a capacity over one-half gallon. Foods in large containers freeze too slowly to result in a satisfactory product.

### Best packaging materials:

- Moisture vapor resistant
- Not become brittle and crack at low temperatures
- Resistant to oil, grease or water
- Protect foods from absorption of off flavors or odors
- Durable and leak proof
- Easy to seal and mark

Rigid: Used with liquids or soft foods

- Plastic
- Glass: wide mouth dual purpose jars
- Straight sides (no shoulder)
- Tight fitting covers/freezer tape

Flexible: Used with irregular shapes and liquids

- Flexible freezer bags
- Plastic freezer wrap,
- Freezer paper
- Heavy-weight aluminum foil

### Headspace to Allow Between Packed Food and Closure Table

Type of Pack	Container with wide top opening		Container withnarrow top opening	
	Pint	Quart	Pint	Quart
Liquid Pack*	½ inch	1 inch	<sup>3</sup> / <sub>4</sub> inch	1 ½ inch
Dry Pack**	½ inch	½ inch	½ inch	½ inch
Juices	½ inch	1 inch	1½ inch	1½ inch

<sup>\*</sup>Fruit packed in juice, sugar, syrup or water; crushed or pureéd fruit.

### Freezer Shelf Life

- Freezing cannot improve the flavor or texture of any food, but when properly done it can preserve most of
  the quality of the fresh product. Knowing how long a particular food can be stored in the freezer is not as
  simple as it sounds.
- The storage times listed in the following table are approximate months of storage for some food products assuming the food has been prepared and packaged correctly and stored in the freezer at or below 0°F. For best quality use the shorter storage times. After these times, the food should still be safe, just lower in quality.

### Freezer Shelf Life Table

Food	Approximate months of storage at 0°F
Fruits and Vegetables	8-12 months
Poultry	6 – 9 months
Fish	3 – 6 months
Ground Meat	3 – 4 months
<b>Cured or Processed Meat</b>	1-2 months

### Refreezing Frozen Foods

Occasionally a home freezer stops running. The time the food will stay frozen depends on the amount of food in the freezer and the temperature of the food. A full load of food will stay for up to 2 days if the freezer is not opened. It is safe to refreeze fruits and vegetables that still have ice crystals in them. If the temperature has warmed above 40° F, foods may not be fit for refreezing.

### Resources

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<sup>\*\*</sup>Fruit or vegetable packed without added sugar or liquid.



### **UCCE Master Food Preservers of Amador/Calaveras County**

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# Freezing Fruits and Vegetables Guide

	Freezing Fruits
Apples	Select crisp, firm fruit. To prevent browning during preparation, pretreat. Drain and pack in syrup, pack in sugar, or pack without sugar.
Applesauce	Wash apples, peel if desired, core and slice. Pretreat if desired. Cook until tender in water (1/3 cup to each quart of slices). Cool and strain if necessary. Sweeten to taste.
Apricots	Select firm, ripe, uniformly yellow fruit. Wash, halve, and pit. Pretreat to retard browning if desired. Peel and slice if desired. (to loosen skins, dip in boiling water for 15 to 20 seconds.) Pack in syrup or sugar.
Avocados	Best frozen as puree (not whole or sliced). Select avocados that are soft with rinds free from dark blemishes. Peel, halve, and remove pit. Mash the pulp. Pack in sugar (1cup to 1 quart of puree) if using for ice cream or milk shakes or pack without sugar if using for salads, dips, or sandwiches.
Bananas	Select firm, ripe bananas. Peel and mash thoroughly. Add ½ teaspoon ascorbic acid per cup.
Blackberries	<b>Also boysenberries, loganberries</b> . Select firm, fully ripe fruit with glossy skins. Wash and drain. Pack in syrup, sugar, or without sugar.
Blueberries	<b>Also huckleberries</b> . Select ripe berries with tender skins. Wash and drain. If desired, steam for 1 minute and cool immediately to tenderize skin. Pack in syrup or sugar.
Cantaloupe	<b>Also other melons</b> . Select firm, well colored, ripe melons. Cut in half, remove seeds and peel. Cut into slices, cubes, or balls. Pack in syrup.
Cherries, sour	Select bright red, tree-ripened fruit. Stem and wash. Drain and pit. Pack in syrup, sugar, or without sugar.
Cherries, sweet	Select tree-ripened red varieties. Stem and wash. Remove pits if desired. Pretreat if desired. Pack in syrup or without sugar.
Currants	Select fully ripe, bright red fruit. Wash and stem. Pack in syrup, sugar or without sugar.
Figs	Select tree-ripened, soft-ripe fruit. Wash and cut off stem. Peel if desired. Slice or leave whole. Pack in syrup, sugar, or without sugar
Gooseberries	Select fully ripe (for pie) or slightly under ripe (for jelly) berries. Wash and remove stems and blossom ends. Pack in syrup or without sugar.
Grapefruit	<b>Also oranges</b> . Select firm tree-ripened fruit, heavy for its size and free of soft spots. Divide fruit into sections, removing all membranes and seeds. Pack in syrup (made with excess juice, add water if needed) or water without sugar.
Peaches	<b>Also nectarines</b> . Select firm, fully ripe, well-colored fruit. Wash and pit. Peel if desired. Cut in halves or slices. Pack in syrup, orange juice, or water without sugar. Pretreat to retard browning
Pears	Select well-ripened, firm fruit. Wash and peel. Cut in halves or quarters and remove cores. Pretreat if desired. Heat in boiling syrup for 1 to 2 minutes (depending on size). Drain, cool, and pack in syrup.
Persimmons	Select orange, soft-ripe fruit. Sort, wash, peel, and cut into sections. Press fruit through a sieve to make a puree. To each quart of puree, add 1/8 teaspoon ascorbic acid. May be packed with or without sugar.

Plums	Select firm, tree-ripened fruit. Wash. Cut in halves, quarters, or leave whole. Pretreat if desired. Pack in syrup or pack without sugar.
Raspberries	Select fully ripe, juicy berries. Wash and drain. Pack in syrup, pack in sugar, or pack without sugar.
Rhubarb	Select firm, well colored stalks. Wash and cut into 1" to 2" pieces. Pack in syrup or without sugar.
Strawberries	Select firm, ripe red berries. Wash, drain, and remove hulls. Slice if desired. Pack in syrup or pack without sugar

<sup>\*</sup>Fruits may be frozen as purees for use later in jam making. Ascorbic acid may be used to prevent darkening and increase the vitamin C content.

	Freezing Vegetables
Asparagus	Select young stalks with compact tips. Wash and sort by size. Leave whole or cut in 1-to-2 inch lengths. Blanch small stalks 1 1/2 minutes, medium stalks 2 minutes, large stalks 3 minutes. Cool immediately.
Beans, green	<b>Also snap or wax</b> . Select young stringless beans. Wash and snip off tips. Cut or break into suitable pieces or slice lengthwise into strips. Blanch 3 minutes. Cool immediately.
Beans, pinto	Also, lima or butter. Harvest beans while seeds are green. Wash, shell, and sort according to size. Water-blanch small beans 2 minutes, medium beans 3 minutes and large beans 4 minutes. cool
Beets	Select beets less than 3 inches across. Sort by size. Remove tops and wash. Cook until tender (small 25 to 30 minutes, medium 45 to 50 minutes). Cool. Peel and slice or dice.
Broccoli	Select compact, dark-green heads. Wash, trim leaves and woody ends. If necessary to remove insects, soak 30 minutes in salt brine (4 tsp salt to 1 gallon of water). Rinse and drain. Cut through stalks lengthwise, leaving heads 1" in diameter. Blanch 3 minutes. Cool.
<b>Brussels Sprouts</b>	Select green, firm, compact heads. Wash and trim outer leaves. Soak 30 minutes in salt brine (see broccoli). Rinse and drain. Blanch medium heads 4 minutes, large heads 5 minutes. Cool immediately.
Carrots	Select tender carrots. Remove top. Wash, and scrape. Dice or slice 1/4" thick. Blanch 2 minutes. Cool
Cauliflower	Select firm, white heads. Wash and trim. Split heads into pieces 1" across. If necessary to remove insects, soak 30 minutes in salt brine (4 tsp salt to 1 gallon water). Rinse, drain. Blanch 3 minutes. Cool
Corn	Select ears with plump kernels and thin, sweet milk. Husk ears, remove silk, and wash. Whole-kernel or cream-style: Blanch 4 to 5 minutes. Cool thoroughly. Drain; cut off cob. On-the-cob: Blanch small ears 9 minutes, large ears 11 minutes. Cool, drain and wrap each ear separately or tightly pack desired number in large freezer bags or containers.
Herbs – Fresh	Wash, drain, and pat dry. Wrap a few sprigs or leaves in freezer wrap and place in freezer bag.
Mushrooms	Select edible mushrooms free from spots or decay. Wash and remove stem base. Freeze small mushrooms whole; cut large ones into four or more pieces. When blanching, add ½ tsp citric acid (or 3 tsp. lemon juice or ½ tsp. ascorbic acid) per quart of water to prevent darkening. Blanch medium or small whole mushrooms 5 minutes, cut pieces 3 minutes. Cool. Or: slice mushrooms ¼" thick and sauté in butter until almost done. Cool by setting pan in cold water.
Onions	Select fully mature onions. Peel, wash and cut into sections. Blanch 1 ½ minutes. Cool. May be frozen unblanched.
Peas, edible-pod	Select young, tender pods. Wash. Remove stems, blossom ends, and any strings. Blanch small pods 1 minute, large pods 1 ½ to 2 minutes. Cool.
Peas, green	Select firm, bright green, plump, pods. Shell. Blanch peas 1 ½ to 2 minutes. Cool
Peppers, sweet (green)	Select firm, crisp peppers. Wash, cut out stem and remove seeds. Halve, Blanch halved peppers 3 minutes; sliced or diced 2 minutes. Cool. May also be frozen unblanched.
Peppers, hot (green chili)	Select firm, crisp peppers. Wash and dry. Broil for 6 to 8 minutes to loosen skin. (First make small slits in each to allow steam to escape.) Cool. Remove peel, seeds, and stems, may be done after freezing. Protect hands with rubber gloves. May be frozen unblanched.

Potatoes	Wash, pare; remove deep eyes, bruises, and green surface coloring. Cut in ½" to ½" cubes. Blanch 5 minutes. Cool. <i>For French fries</i> : Pare and cut into thin strips. Fry in deep fat until light brown. Drain and cool. (To serve, bake at 400° F for 10 to 20 minutes.)
Potatoes, sweet	Select medium to large sweet potatoes. Wash and cook until almost tender. Peel, cut in halves, slice or mash. To prevent browning dip for 5 seconds into solution of 1 Tbsp. citric acid or ½ cup lemon juice to 1 quart of water. To keep mashed sweet potatoes from darkening, mix 2 Tbsp. orange or lemon juice with each quart of mashed potatoes.
Pumpkin	<b>Also other winter squash.</b> Select full-colored, mature pumpkin. Cut or break into fairly uniform pieces. Remove seeds, cut into pieces. Bake at 350° F or steam until tender. Cool. Scoop pulp from rind, and mash or put through a ricer. May also be frozen in chunks.
Spinach	<b>Also other greens.</b> Select young, tender leaves. Remove tough stems. Wash. Blanch most leafy greens 2 minutes. Blanch collards and stem portion of Swiss chard 3 to 4 minutes. Blanch very tender spinach 1 ½ minutes. Cool.
Tomatoes	Best frozen stewed or pureed. Select ripe tomatoes free from blemishes. Remove stem ends, peel and quarter. Cook until tender. Cool by setting pan in cold water.
Zucchini	<b>Also other summer squash.</b> Select young squash with small seeds and tender rind. Wash and slice. Blanch 1/4" slices 3 minutes, 1 1/2" slices 6 minutes. Cool.

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Pucker Up for Homemade Vinegar By Monique Wilber UCCE Master Food Preservers of El Dorado County

Homemade fruit and herb vinegars give your food an extra burst of flavor, and condiments and chutneys dazzle and accent your main dishes. Join the UCCE Master Food Preservers on Tuesday, September 9, and Saturday, September 13, for a free class featuring Vinegars, Condiments, and Chutneys.

Use these general guidelines to make your own herb or fruit infused vinegars.

### Herbs

Use 3-4 sprigs per pint (2 cups) of vinegar. If using basil, use ½ cup of coarsely chopped leaves. Wash fresh herbs and blot dry; then sanitize them by dipping them in a bleach solution of 1 teaspoon of household chlorine bleach in 6 cups of water. Rinse thoroughly under cold water and pat dry with clean paper towels. If you would like to use dried herbs instead, use 3 tablespoons of dried herbs per pint of vinegar, and skip the sanitizing.

### Fruits, Vegetables, and Spices

Flavorings can include raspberries, blackberries, strawberries, peaches, pears, lemon peel, orange peel, garlic cloves, jalapeno, green onions, peppercorns, and mustard seeds, and others. Sometimes the fruit is combined with herbs or spices such as mint, tarragon, and cinnamon.

Wash all fruits and vegetables, and peel if necessary. Cube, slice, halve, or leave whole. Use 1 to 2 cups of fruit per pint of vinegar, or the peel of one orange or lemon per pint of vinegar.

### Vinegar

Different kinds of vinegars produce different results. The University of Georgia Cooperative Extension explains the difference in vinegars:

"Distilled white vinegar is clear in color and has a sharp acidic taste by itself. It is the best choice for delicately flavored herbs. Apple cider vinegar has a milder taste than distilled white vinegar, but the amber color may not be desirable. Apple cider vinegar blends best with fruits. Wine and champagne vinegars are generally more expensive than distilled and cider vinegars, but are more delicate in flavor. White wine and champagne

vinegars work well with delicate herbs and lighter-flavored fruits. Red wine vinegar would work well with spices and strong herbs like rosemary, but will mask the flavor of most herbs. Rice vinegar is a mild, slightly sweet vinegar used occasionally for flavoring. Be aware that wine and rice vinegars contain some protein that provides an excellent medium for bacterial growth, if not handled and stored properly. For added safety, use only commercially produced vinegars."

### **Method to Flavor Vinegar**

Start with clean glass jars or bottles. After washing them in warm soapy water, rinse them, and then sterilize them by immersing them completely in boiling water for ten minutes.

You can choose to lightly bruise your fresh herbs and berries to release the volatile oils and flavors. With citrus peel, use only the colored portion, avoiding the bitter white pith. Try to cut in a continuous spiral for easy removal from the jar after the infusion.

Place your herbs, fruits, and/or spices in hot sterilized jars.

Heat your chosen vinegar to just below boiling, or at least 190-195 degrees Fahrenheit. Pour the heated vinegar over the flavoring ingredients in the jars, leaving ¼" headspace. Wipe rims of jars with a clean, damp cloth. Attach lids and let sit to cool, undisturbed.

Store vinegar in a cool dark place, undisturbed, for at least 10 days but up to 3 to 4 weeks to develop flavors. Bruising fruit and berries can reduce infusion time by about 1 week. If flavor is too strong, dilute with additional vinegar. Strain the vinegar through a damp cheesecloth or coffee filter one or more times until the vinegar shows no cloudiness. Discard the fruit, herbs, and vegetables.

Prepare and sanitize additional jars and lids for final bottling. Pour the strained flavored vinegar into clean sterilized jars and cap tightly. A few clean berries or a washed and sanitized sprig of fresh herb may be added to the jars before closing, if you wish.

Store the flavored vinegars in a cool, dark place. Refrigeration is best for retention of freshness and flavors. Flavored vinegars should keep for up to 3 months in cool storage. Fruit vinegars in particular may start to brown and change flavor noticeably. Refrigeration of all flavored vinegars may extend the quality for 6 to 8 months. After 6 months, taste the vinegar before using to make sure the flavor is still good. If a flavored vinegar ever has mold on or in it, or signs of fermentation such as bubbling, cloudiness or sliminess, throw it away without tasting or using any of the vinegar for any purpose.

 $Sources: \underline{http://nchfp.uga.edu/publications/uga/uga\_flavored\_vinegars.pdf} \ and \underline{http://www.clemson.edu/extension/hgic/food/food\_safety/preservation/hgic3470.html} \ .$ 

This year's annual series of free UCCE Master Food Preservers of El Dorado County classes are from 10 a.m. to noon in the El Dorado County Fairground's Boardroom at 100 Placerville Drive in Placerville. Master Food Preservers are also available to answer home food preservation questions; leave a message at (530) 621-5506. For more information about the public education

classes and activities, go to the Master Food Preserver website at <a href="http://ceeldorado.ucdavis.edu/Master Food Preservers/">http://ceeldorado.ucdavis.edu/Master Food Preservers/</a>. Sign up to receive our Master Food Preservers E-Newsletter at <a href="http://ucanr.org/mfpenews/">http://ucanr.org/mfpenews/</a>. Find us on facebook too (UCCE Master Food Preservers of El Dorado County)!



# Basics of Home Canning

Canning can be a fun and economical way to make fresh foods available year-round. Don't take chances with canning recipes handed down over the years. Use procedures that have been scientifically tested to ensure safe and high-quality canned products and optimized for prolonged storage. Use this fact sheet to understand the correct procedures for canning foods at home.

### Introduction

The two safe methods of canning food at home are boiling water bath canning and pressure canning. Whether a food is high acid or low acid indicates what type of processing method should be used (Table 1). Generally, high-acid foods can be safely canned in a boiling water bath. Low-acid foods must be processed in a pressure canner.



Table 1. Examples of low-acid and high-acid foods and required processing methods.

required processing methods.			
High-Acid Foods Boiling Water Bath Canning			
Most fruits			
Apples and apple sauce			
Apricots			
Berries			
Cherries			
Grapes			
Jams and jellies (fruit only)			
Peaches and nectarines			
Pears			
Pie fillings (fruit only)			
Plums			
Acidified and fermented foods			
Chutneys			
Pickled vegetables			
Pickles (cucumbers)			
Relishes			
Salsa			
Sauerkraut			
Tomatoes (acidified)*			

<sup>\*</sup>Directions are available for boiling water bath and pressure canning methods.



### **Acidity in Foods**

### **Low-Acid Foods**

Low-acid foods include meats and vegetables (except for acidified tomatoes and pickled products). Low-acid foods lack the acidity needed to inhibit the growth of bacteria and spores that can survive the temperature of boiling water (212°F). The bacterium of greatest concern in home canning is *Clostridium botulinum* because it can produce spores that generate a dangerous toxin that causes food poisoning. Botulism spores thrive on low-acid foods in the absence of air, in the presence of moisture, and at room temperature—the conditions inside a jar of homecanned meat or vegetables. While spores of *Clostridium botulinum* may survive a boiling water bath, they are destroyed when processed in a pressure canner where the temperature can reach 240°F or higher.

### **High-Acid Foods**

Most fruits have naturally high levels of acid. While tomatoes have some natural acids, they are borderline between high and low acid and need bottled lemon juice, citric acid, or vinegar (labeled 5 percent acidity) to increase their acidity for safe food processing. Fermented foods, such as sauerkraut, and foods to which a sufficient amount of vinegar is added, as in pickled vegetables, are also canned as high-acid foods. Jams and jellies are high-acid foods unless low-acid vegetables, such as peppers, are added. Foods in the high-acid category can be safely processed by the boiling water method. Consult other Let's Preserve fact sheets for details about canning specific foods.

### **Boiling Water Processing**

Heat is transferred to the food by the boiling water that surrounds the jar. Maintaining a temperature of 212°F for the time specified in an approved recipe is adequate to destroy molds, yeasts, enzymes, and some bacteria. Processing times are usually given for altitudes under 1,000 feet above sea level. At higher altitudes water boils at lower temperatures, making it necessary to process foods longer.

### Steam Pressure Processing

When heat is applied to a sealed canner, pressure builds up inside that canner. Water inside the canner forms steam, which replaces air. When the vents are closed, only pressurized steam hotter than boiling water remains in the canner.

### **Canning Procedures**

### Selecting Jars and Lids

Mason jars are recommended for home canning.

Commercial single-use jars are less likely to seal and may break, especially in a pressure canner. Lids may not fit single-use jars. Canning jars come in a variety of sizes. Most recipes have been developed for pint and quart jars. If processing times are not specified for smaller jars, process them the same as the next larger size that is specified. Half-gallon jars are recommended only for canning apple and grape juices. If properly used, jars may be reused.

Recipes have been research tested using standard Mason jars. Many specialty shops sell novelty jars in different sizes and shapes. Unusual jar shapes may not work with process times and temperatures given in the Let's Preserve fact sheets.

The recommended lid consists of a flat metal disc that has a sealing compound around the outer edge and a separate metal screw band. The lid should not be reused; the bands may be reused as long as they don't rust. Never reuse lids from commercially canned foods for home food preservation. Zinc lids or bail-type jars with rubber rings are no longer recommended for home canning.

### Hot Pack or Raw Pack

When foods are raw packed the jars are filled with freshly prepared, unheated food. Raw-packed foods will often float in the jars, and the air trapped in and around the food may cause discoloration within 2 to 3 months of storage. Hot packing involves heating freshly prepared food to boiling, simmering it briefly, and promptly filling the jars loosely with the boiled food and liquid. Hot packing helps remove air from inside the food tissues, shrinks the food, and helps keep the food from floating in the jars. Preshrinking that occurs in hot packing allows more food to fit into each jar.

### **General Canning Guidelines**

- Use tested recipes from Penn State Extension's Let's Preserve fact sheets, the USDA Complete Guide to Home Canning, So Easy to Preserve (University of Georgia), or the Ball Blue Book. All these contain research based recipes. All should be 1994 or more recent editions. Older recipes may not have adequate processing times or pressure for safety.
- Use Mason jars because they withstand the higher temperatures of a pressure canner better than single-use jars.
- Use proper headspace: ¼ inch for juices, jams and jellies, and relishes; ½ inch for fruits, tomatoes, and pickles; 1 to 1½ inches for meats and vegetables. Refer to a tested recipe. Too much headspace results in a lower vacuum and a weak seal. Too little headspace may force food under the lid, causing siphoning

or breaking of the seal.

- Remove air bubbles with a plastic utensil.
- Wipe edge of jar with a clean, damp paper towel.
- Use two-piece lids (a new flat disk and a screw band).
- Only tighten lids finger-tip tight.
- Use a jar lifter to place jars into canner and to remove jars. Be careful not to tilt jars.
- Process according to the boiling water bath or pressure canning procedures that follow.
- Adjust process times or pressure for altitudes that are 1,000 feet or more above sea level.
- After processing, set jars at least 2 inches apart to cool.
- Do not retighten bands.
- Do not turn jars upside down.

### **Boiling Water Bath Procedures**

- Follow all the practices listed under "General Canning Guidelines" above.
- Fill the canner about half full with water.
- Preheat water to 140°F for raw-packed foods and to 180°F for hot-packed foods.
- Place jars on a rack in canner.
- Add more water if necessary to cover jars with at least 1 inch of water.
- Place the lid on the canner and keep covered during processing.
- Turn heat to its highest position until water boils vigorously; then lower heat setting to maintain a gentle boil while processing.
- After processing for the designated time, turn heat off, set off burner, remove lid, and let jars rest in the canner for five minutes before removing from the canner—this will reduce siphoning (loss of liquid from the jar).

### **Pressure Canning Procedures**

- Follow all the practices listed under "General Canning Guidelines" above.
- Put 2 to 3 inches of water in the bottom of the pressure canner.
- Place filled jars on a rack at bottom of the canner.
- Heat to boiling to exhaust steam from the canner for 10 minutes before adding the weight or closing the petcock.
- Add weight or pressure regulator.
- Allow pressure to rise and maintain at level called for

- in the tested recipe by adjusting the heat. If pressure goes below recommended pressure at any time during processing, reset your timer to zero and restart the process time.
- After processing, remove canner from heat and allow canner to cool naturally to 0 pounds pressure. Wait 2 minutes and remove weighted gauge or pressure regulator. Wait 10 more minutes before removing lid—this will reduce siphoning (loss of liquid from the jar).

### Testing for a Vacuum Seal

Allow jars to cool 12 to 24 hours. Press the center of the lid to see if it is concave. If the center does not flex up and down and you cannot lift the lid off, the lid has a good vacuum seal.

### **Storing Canned Goods**

- Remove screw bands from jars and wash jars before storing. Properly sealed jars do not need the bands on to hold the lids in place. Screw bands can rust if left on the jars in storage, causing the seals to break.
- Label with contents, date, and lot number if you canned several canner loads that day.
- Store in a cool, dry place; 50 to 70°F is an ideal temperature for storing canned goods.
- Store in a dark place. Place cooled jars in boxes if closed cupboards are not available.

### **Food Spoilage**

When good-quality produce is used and correct canning procedures are followed, canned foods should be safe and of high quality. However, sometimes there are canning failures. A common reason for food spoilage is inadequate processing times or temperatures needed to destroy or control microorganisms. These microorganisms are molds, yeasts, and bacteria.

Molds and yeasts are easily destroyed by the heat used in processing. However, if the product is underprocessed or the lid seal is broken during storage, fuzzy masses of mold may grow inside the jar. Yeasts may react with sugars in the food, causing fermentation. You can recognize yeast activity by slime, scum, murkiness, or gas bubbles.

While some bacteria can be beneficial, as in making sauerkraut, others can be extremely dangerous, as in botulism poisoning as discussed earlier. Bacteria can multiply rapidly with millions growing on a gram of food in just a few hours. Bacteria are too small to see with the human eye. Food can be spoiled without any visual evidence. Therefore, use proper canning procedures. Never taste a food you suspect is spoiled. If in doubt, throw it out.

Enzymes are naturally occurring substances in foods that promote the normal ripening process. If they continue to work after the fruit or vegetable is harvested, they can cause undesirable changes in color, texture, flavor, and nutrition. Adding ascorbic acid or commercially available antibrowning products to the holding water reduces color changes when peeling light-colored fruits. Enzymes are quickly inactivated when heated to between 170 and 190°F. For this reason, heat process foods as soon as possible after preparing them for canning.

Never taste a food you suspect is spoiled. If in doubt, throw it out.

### **Preventing Spoilage**

- Use top-quality produce that is free of disease and mold.
- Can immediately after harvest.
- Wash produce thoroughly.
- Discard overripe produce.
- Use proper canning methods and equipment.
- Use clean equipment and work surfaces.
- Sterilize jars that will be processed less than 10 minutes.
- Pressure can low-acid vegetables and meats.
- Acidify tomatoes.
- Follow a scientifically tested recipe and process for specified time.
- Adjust time and pressure for higher altitudes.



### **Pressure Canner Dial Gauge Testing**

Pressure canner dial gauges should be tested for accuracy each year. Contact your local Purdue Extension office to determine locations and times for testing.

Important Temperatures:		
240°F	Temperature needed in a pressure canner to destroy bacterial spores in low-acid foods	
212°F	Boiling point of water and processing temperature for acid foods in boiling water bath	
180-212°F	Temperature at which molds, yeasts, and some bacterial cells are destroyed	
170–190°F	Temperature needed to inactivate enzymes	
140–180°F	Temperature at which growth of bacteria, molds, and yeasts is slowed, but some microorganisms can survive	
40–140°F	Active growing range of molds, yeasts, and bacteria	
50-70°F	Best storage temperature for home- canned and home-dehydrated foods	

For additional information about food preservation, contact the Purdue Extension office in your county, or call 888-EXT-INFO (888-398-4636; toll free).

This publication was adapted with permission from the College of Agricultural Sciences, The Pennsylvania State University. Content prepared by Penn State Extension: Luke LaBorde, associate professor of food science, Penn State University, and Martha Zepp, Extension project assistant, Lancaster County, PA.

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### **UCCE Master Food Preservers of El Dorado County**

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### Fig Rosemary and Red Wine Jam

Red wine, rosemary, and figs meld into this jam reminiscent of the South of France. Serve with a big blue cheese, which stands up in flavor. I can also see this with some good, aged white cheddar. Since the wine really stands out, use a good- quality Merlot or Pinot Noir with this jam.

Makes about 4 half-pint or 8 4-oz. jars

### YOU WILL NEED

- 1 ½ cups merlot or other fruity red wine
- 2 Tbsp. fresh rosemary leaves
- 2 cups finely chopped fresh figs
- 3 Tbsp. Ball<sup>®</sup> Classic Pectin
- 2 Tbsp. bottled lemon juice
- 2 ½ cups sugar

### DIRECTIONS

- 1. Bring wine and rosemary to a simmer in a small stainless steel or enameled saucepan. Turn off heat; cover and steep 30 minutes.
- 2. Pour wine through a fine wire-mesh strainer into a 4-qt. stainless steel or enameled saucepan. Discard rosemary. Stir in figs, pectin, and lemon juice. Bring mixture to a full rolling boil that cannot be stirred down, over high heat, stirring constantly.
- 3. Add sugar, stirring to dissolve. Return mixture to a full rolling boil. Boil hard 1 minute, stirring constantly. Remove from heat. Skim foam, if necessary.
- 4. Ladle hot jam into a hot jar, leaving 1/4-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.
- 5. Process jars 10 minutes, adjusting for altitude. Turn off heat; remove lid, and let jars stand 5 minutes. Remove jars and cool.

source: http://www.freshpreserving.com

I chose to pack mine in 4 oz. jars since my plan is to use these on cheese platters or as hostess gifts. Remember, the processing time is the same for 4 oz. jars as it is for 8 oz. jars.

Cook's note: The blurb at the top of the recipe suggested using good wine. This is true for any alcohol used in canning recipes. Use good quality. If you won't drink something because it is awful. why would you save it to cook with it? As for liqueurs, don't buy the cheap stuff. It really shows in a jar. If you do not want to spring for a whole bottle of expensive liqueur then go to a big liquor store that sells the little tiny 50 ml bottles.

# **Rosemary Roasted Potatoes**

Level: Easy Total: 1 hr 8 min Prep: 8 min Cook: 1 hr

Yield: 3 to 4 servings

### **Ingredients:**

1 1/2 pounds small red or white-skinned potatoes (or a mixture)

1/8 cup good olive oil

3/4 teaspoon kosher salt

1/2 teaspoon freshly ground black pepper

1 tablespoons minced garlic (3 cloves)

2 tablespoons minced fresh rosemary leaves

### **Directions:**

- 1 Preheat the oven to 400 degrees F.
- 2 Cut the potatoes in half or quarters and place in a bowl with the olive oil, salt, pepper, garlic and rosemary; toss until the potatoes are well coated. Dump the potatoes on a baking sheet and spread out into 1 layer; roast in the oven for at least 1 hour, or until browned and crisp. Flip twice with a spatula during cooking to ensure even browning.
- 3 Remove the potatoes from the oven, season to taste, and serve.

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https://www.foodnetwork.com/recipes/ina-garten/rosemary-roasted-potatoes-recipe-

### **Rosemary Garlic Butter**

Jessica Vogl

A delicious recipe for Rosemary Garlic Butter, perfect for serving with fresh bread, savory dishes, or freezing to use when you need a flavor boost.

### **INGREDIENTS**

1 cup unsalted butter softened

2 Tablespoons fresh rosemary chopped

1 Tablespoon garlic about 1 large garlic clove, minced

1 teaspoon lemon juice

pinch salt and pepper to taste

Combine softened butter, chopped rosemary, minced garlic, lemon juice, and a pinch of salt and pepper in a small mixing bowl.

- 2. Mix with a fork until well incoporated. At this point, your butter is ready to eat!
- 3. If you'd like to freeze your butter, roll your butter into a log with parchment paper and freeze overnight. Then slice into disks and use or thaw as needed.

### Crown Roast of Pork with Rosemary

Perfect for a celebratory gathering, a crown roast of pork is formed by tying the rib section into a circle. Here, we season the meat with a flavorful marinade that includes rosemary, mustard and garlic. The extra marinade becomes the basis for a delicious sauce.

### Ingredients:

1 crown roast of pork with 12 ribs, 7 to 8 lb.

3/4 cup dry white wine

3 Tbs. firmly packed light brown sugar

3 Tbs. olive oil

1/2 cup Dijon mustard

2 Tbs. chopped fresh rosemary

2 large garlic cloves, chopped

Salt and freshly ground pepper, to taste

1/4 cup heavy cream

### Directions:

Set the roast on a

In a bowl, whisk together the wine, brown sugar, olive oil, mustard, rosemary and garlic. Brush the roast generously on all sides with the marinade. Pour the remaining marinade into a small saucepan and set aside. Cover the roast with plastic wrap and let stand at room temperature for 1 hour.

Preheat an oven to 400°F.

Scrape the excess marinade off the roast and add it to the saucepan. Season the roast with salt and pepper.

Roast for 30 minutes. Reduce the oven temperature to 350°F and continue roasting until an instant-read thermometer inserted into the center of the meat, away from the bone, registers 140°F for medium, about 1 1/2 hours more.

Transfer the roast to a carving board, cover loosely with aluminum foil and let rest for 20 minutes before carving.

Place the saucepan with the reserved marinade over medium-high heat, add the cream and boil until the sauce is reduced slightly, about 5 minutes. Season with salt and pepper, and transfer the sauce to a sauceboat. Carve the roast between the bones and arrange on a warmed platter. Pass the sauce alongside.

# **Strawberries with Balsamic Vinegar**

Recipe courtesy of Ina Garten

Show: Barefoot Contessa: Modern Comfort Food Episode: Make It Fast

Level: Easy
Total: 45 min
Prep: 15 min
Inactive: 30 min
Yield: 8 servings

### **Ingredients:**

4 pints (8 cups) fresh strawberries, sliced thick

5 tablespoons balsamic vinegar

2 tablespoon sugar

1/4 teaspoon freshly ground black pepper

2 pints vanilla ice cream, for serving

Freshly grated lemon zest, for serving

### **Directions:**

1 Thirty minutes to an hour before serving, combine the strawberries, balsamic vinegar, sugar, and pepper in a bowl. Set aside at room temperature.

2 Place a serving of the strawberries in a bowl with a scoop of ice cream on top and dust lightly with lemon

zest.

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# **Resource Page**

### **UC Master Food Preserver Program**

https://mfp.ucanr.edu/Resources\_/Extension\_Document\_Library/Publications\_\_Meth\_ods/

### **National Center for Home Preservation**

https://nchfp.uga.edu/#gsc.tab=0