



Culinary Herbs for Oklahoma Gardens: Culture, Use and Preservation

EXTENSION

September 2020

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Herbs are plants with fragrant properties found in leaves, stems and roots that can be used culinarily. Culinary herbs are plants grown for flavoring various kinds of foods. Many are adapted to the Oklahoma climate and grow successfully in home gardens. In many instances, herb plants also are ornamental and can add aesthetic value to the garden as they often grow in different heights, textures and variegations (Figure 1). Some herbs are beneficial host plants for many butterfly larvae as well.



Figure 1. Herbs can be easily incorporated into most ornamental or vegetable gardens.

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Life Cycle

Herbs are classified with respect to their life span. Some are annuals and thus are grown from seed with the knowledge that portions will be harvested at the appropriate time. Removing flower buds or disbudding annuals will often keep them producing fresh vegetative growth longer during the season. If you want to harvest the seeds, allow the flowers to bloom and dry before the first frost. Usually mature seeds may be harvested and used for plantings in future years. Other herbs are biennials, which suggest the plant will grow and mature over two years. Seed production generally takes place only during the second year of growth. For example, parsley and caraway are biennials. The best parsley foliage for flavoring would be produced during the first season. With caraway the usual flavoring substance utilized is the seed, which would not be ready to harvest until the second year. Another group of herbs is perennials and may grow and produce several years from one planting. Perennial herbs often are started from young plants. In several instances, seeds are not produced so the grower may use bulbs, roots, rhizomes or cuttings to propagate more plants.

Culture

In general, herbs need a sunny location with at least five hours of sun per day. Most herbs also need well-drained soil. If the soil is heavy clay, consider planting in raised beds with amended soil. Many herbs also do well in containers, which often can provide improved drainage, can be moved to the optimal sun exposure, control their growth and can add a decorative element to a porch or patio (Figure 2). With a few exceptions, most herbs prefer average moisture, never one extreme or the other. If you don't have a sunny location, try growing some herbs that require or can tolerate part-shade. Herbs that can tolerate some shade include cilantro, lemon balm, mint, nasturtium, ginger, lovage, chervil and parsley. Experiment with other herbs to see if they will take a shadier spot, however most herbs such as lavender, dill, fennel, lemongrass, sage, thyme, tarragon, garlic, purslane and rosemary must have full sun exposure. Also, consider planting herbs in a location easily accessible to harvest from the kitchen (Figure 3). Best management practices such as suitable soil, mulching, irrigation, plant spacing and insect control should be followed. Most herbs also can do well interplanted with



Figure 2. Several mints can be added in the garden, but should be planted in a container to prevent them from aggressively spreading.



Figure 3. Many herbs are well suited for patio gardens. They can provide nice foliage, texture, flowers, fragrance and are convenient for harvesting.

both vegetables and flowers since their general culture is quite similar. For specific requirements of individual herbs see Table 1. Although you can start the seeds outside, most plants will transplant well. Therefore, seeds can be started in mid-February or six to eight weeks before transplanting outdoors after the last spring frost. According to Oklahoma Mesonet, the average last freeze date ranges from March 26 in southern Oklahoma to April 25 in the Panhandle. Gardeners must take precautions regarding chemical residues on plants when spraying for insects and disease as different parts of the plant will be harvested and used, specifically when it comes to culinary uses. Fact Sheet, EPP-7313 Insect Control in the Vegetable Garden, though not specific for herbs may provide cautions as well as recommended treatments.

Some woody, perennial herbs such as rosemary, sage and thyme will benefit if pruned back in early spring. This will encourage newer, tender growth that is better for harvesting. To add more ornamental interest to your garden, consider using many of the variegated herbs available, such as tricolor sage, purple basil and golden lemon thyme. Any reverted green foliage on a variegated herb should be pruned out to maintain its variegation.

Growing Herbs Indoors

Since very small amounts of herbs are used in most foods, one often needs to only grow a few plants of their preferred herb for culinary seasoning. Herbs are well adapted to be grown indoors if they are provided with adequate light. A south- or west-facing window may be suitable. This can be achieved by germinating herb seeds or taking cuttings from the garden before the first frost in the fall (Table 1). Herbs will grow slower indoors and will need less water. While you will not be able to harvest as frequently, it will allow you to continue harvesting some throughout the winter months.

Harvesting, Drying and Storing

It is best to harvest herbs from the newer tender growth located near the top of the plant and just after any dew has dried in the morning. Only collect stems with leaves that appear to be free of pests, diseases and damage. Avoid harvesting from the bottom of the plant where there will be more soil residue. Also, many herbs produce new growth after harvesting. Some herbs are preferred as fresh material to be used as a garnish and should be harvested just prior to use. Herb leaves are usually more flavorful when harvested at or just before blooming. Removing flower buds often can encourage continued foliage production.

Drying herbs concentrates the flavor and is another way to preserve and stretch your harvest throughout the coming months. Herbs can be dried using different methods; hanging, trays, dehydrator and oven are a few of the more common methods. To prepare herbs to hang dry, gather several stems and gently rinse and dry thoroughly on a towel. Discard any damaged or unhealthy material. Tie the bunch together by wrapping twine around the stems. Because hanging can take several weeks, to prevent dust from collecting on the herbs, place each bundle into a separate paper bag that has holes (Figure 4). A hole punch works great for this. The stems should remain sticking out of the top of the bag. The holes in the bag will allow air circulation, while keeping the herbs covered. Also, because herbs will become brittle as they dry, this will help contain some of the leaves that might break off. This method also works well to dry seeds, just ensure the holes in the bag are on the sides not the bottom, where the seeds may collect when they fall from the stems. Hang the herb bundles from their stems in a dark, warm, dry, well-ventilated location such as a garage, shed or attic. Take care not to exceed 110 F,



Figure 4. A laundry rack or cloth line placed in the shade can also provide an ideal location to hang herbs for drying.

as volatile compounds are lost more quickly above this temperature and may result in loss of flavor intensity of the dried herb.

For leaves or short-stemmed herbs, drying on a tray or screen may be a better option. Lay the herbs in a single layer on the screen and place in a dark, warm, dry, well-ventilated location. For a quicker method, consider drying them with heat using a food dehydrator or conventional oven. Food dehydrators are excellent for herbs. For specific times and temperatures consult the owner's manual. Conventional ovens can be a trickier option, as it can be difficult to set some ovens to the low temperature of 90 F to 110 F that is best. When in the oven, it may require leaving the oven door open, checking them often and can take three to four hours. Remember — temperature and duration interact — at a higher temperature (but not exceeding 110 F), the herb will dry more quickly, but take care not to over dry. Over drying will lose flavor intensity.

After thoroughly drying, materials may be stored in darkened areas in airtight containers, such as cupboards or drawers away from stoves and sinks. Storing dried herbs in the refrigerator or freezer will maintain their freshness, but it creates other problems. When you take them out of the cold into your room temperature kitchen, condensation can form, causing the dried herbs to absorb enough moisture in the jar to cause spoilage. Choose ceramic jars or darkened glass containers to help protect the herbs against light deterioration. Make sure herb leaves are completely dry to prevent mold during storage. Once transferred into an air-tight container, monitor for a few days for any sign of moisture or mold. Herbs will mold quickly if there is moisture in the container. This occurs when herbs are not thoroughly dried before storage and they should be discarded if mold forms. Label all storage containers with the name of herb and date, then store in a cool, dry place. Dried herbs store well for up to one year. Their strength can be judged by their aroma. Dried herbs can be stored whole or crushed, but whole herbs retain their flavor longer, thus it is best to grind only small amounts as needed. More information about harvesting and drying herbs can be found on videos listed below.

Freezing fresh herbs is another suitable option for preservation. Herbs should be washed before freezing. One method is to place large pinches of herbs in an ice cube tray and then covering with water. Once frozen, these cubes can be placed in a freezer bag for longer-term storage. These ice cubes with herbs can be added to stews and other dishes. Another option is to place washed, drained and patted dry leaves and stems on a cookie sheet for freezing. Once frozen, they may be stored in a freezer bag. A third alternative for freezing is to place a few sprigs or leaves in freezer wrap and place in a freezer bag, which is then sealed and placed in the freezer. Quickly frozen herbs will keep up to one year in a freezer set at 0 F if well wrapped. Seal in airtight plastic bags and label with name of product and date. Freezing will retain the flavor of the herb, but may change the appearance; therefore, frozen herbs are best suited for cooking and not as a garnish. It is

best to freeze herbs in portions which will be needed for each dish – do not thaw and refreeze as flavor can be changed.

Use

In many instances, the flavors imparted by homegrown herbs are stronger or more pungent than available commercial materials, so one should use very small quantities until experienced. For best results, use herbs to complement, not disguise the flavor of food. Generally, ¼ teaspoon of dried herbs per four servings is adequate. To substitute one form for another, use these amounts as guidelines:

¼ teaspoon powdered or ground herb = 1 teaspoon crumbled dried herb = 1 tablespoon chopped, fresh herb.

Cooked foods are best if herbs are added during the last part of cooking. Herbs in uncooked foods, such as salad dressings, dips and fruits need time to blend flavors, so add them as far in advance of serving as possible. Wrap whole herbs in a cheesecloth bag before adding them to cooked dishes – this makes it easy to remove them before serving.

Additional Resources

Factsheets:

HLA-6430 - Landscaping to Attract Butterflies, Moths and Skippers
EPP-7313 Insect Control in the Vegetable Garden

Videos:

DIY Spiral Herb Garden - <https://youtu.be/CizldzqO65Y>
Top 5 Herbs to Grow - <https://youtu.be/PDby5O9RaM>
Top 5 Herbs to Grow: Basil - <https://youtu.be/tLT14RpgwoA>
Take a Look at These Mint Varieties - <https://youtu.be/zl-ucebwVzKE>
Time to Put Thyme in Your Garden - <https://youtu.be/bE1Qrk-wOJlc>
Learn About Rosemary - <https://youtu.be/XDm6TsEuFns>
Types of Cilantro - <https://youtu.be/QmodsMUEduE>
Herb Garden Plants - https://youtu.be/9X8wndYCO_0
Cutting Back Overwintered Herbs - <https://youtu.be/hSn-TaLmGfUw>
Unique Plants for the Herb Garden - <https://youtu.be/FS6mgVs95U>
Drying Herbs - <https://youtu.be/jDsdAHqumBw>
Starting Herbs From Seed - <https://youtu.be/LPO4vOHD7OI>
Transplanting Herbs - <https://youtu.be/WqajPQwEalU>
Harvesting and Storing Herbs - <https://youtu.be/LuTVjHvMns0>
Infusing Honey with Fresh Herbs - <https://youtu.be/G3irhbLfoBI>
Fruit and Herb Flavored Water - <https://youtu.be/eesc617OzAO>
Rosemary Carrots - <https://youtu.be/lpBO-lpE8SU>

Table 1. Culture requirements of several culinary herbs* that can be grown in Oklahoma.

Common Name	Scientific Name	Type of plant	Preferred propagation	Planting time	Plant Spacing (inches)	Height (inches)	Nutrient requirement	Watering	Notes:
Anise	<i>Pimpinella anisum</i>	Annual	Seed	After last spring frost	6	18-24	Low	Let dry between waterings	Does not transplant well.
Arugula	<i>Eruca vesicaria</i> subsp. <i>sativa</i>	Annual	Seed	Eight weeks before last spring frost	4-6	12-24	Medium	Let dry between waterings	
Basil	<i>Ocimum basilicum</i>	Annual	Seed	One month after last spring frost	12	18-24	High	Well watered	Pinch the tips after four to five weeks to encourage branching. Hairs can cause skin irritations.
Borage	<i>Borago officinalis</i>	Annual	Seed	After last spring frost	12	18-28	Low	Well watered	
Caraway	<i>Carum carvi</i>	Biennial	Seed	Around last spring frost	6-8	12-18	Medium	Moist but not overwatered	
Chervil	<i>Anthriscus cerefolium</i>	Annual	Seed	Four weeks before last spring frost	9-12	12-24	Low	Well watered	It takes about 120 days to produce seed.
Chives	<i>Allium schoenoprasum</i>	Perennial	Seed, bulbs	Four to six weeks before last spring frost	6	8-16	Low	Moist but not overwatered	Divide plants every two to three years.
Cilantro/Coriander	<i>Coriandrum sativum</i>	Annual	Seed	Two to four weeks before last spring frost. Early to mid-August for fall harvest.	12	24-30	Medium	Moist but not overwatered	Cilantro prefers cool days and grows best in spring and fall. It will typically go to seed during the heat of the summer.
Cumin	<i>Cuminum cyminum</i>	Annual	Seed	Four to six weeks before last spring frost	4-8	12-20	Low	Let dry between waterings	
Dill	<i>Anethum graveolens</i>	Annual	Seed	One or two weeks before last spring frost	12	30-36	Low	Well watered	Butterfly larva host plant.
Fennel	<i>Foeniculum vulgare</i>	Annual	Seed	After last spring frost	12	24-36	Medium	Moist but not overwatered	Butterfly larva host plant.
Garden cress	<i>Foeniculum vulgare</i>	Annual	Seed	Four to six weeks before last spring frost	3-6	6-12	High	Moist	
Garlic	<i>Allium sativum</i>	Perennial	Clove, Bulbils	Plant in early-mid October	4-6	16-24	High	Let dry between waterings	
Ginger	<i>Zingiber officinale</i>	Tropical Perennial	Rhizomes	After last spring frost	6-8	24-36	High	Well watered	Use of a high tunnel can extend harvest season
Horseradish	<i>Marrubium vulgare</i>	Perennial	Seed, Cuttings, Division	Three weeks before last spring frost	10	12-24	Low	Let dry between waterings	
Hyssop	<i>Hyssopus officinalis</i>	Perennial	Seed, Cuttings, Division	Two weeks before last spring frost	8-12	16-24	Low	Let dry between waterings	Spreads rapidly and can overtake an area.
Lavender	<i>Lavandula</i> spp.	Tender Perennial	Seed, Cuttings, Transplant, Cuttings	After last spring frost	24	24-36	Low	Let dry between waterings	Plants self-seed and will overtake an area.
Lemon balm	<i>Melissa officinalis</i>	Perennial	Seed, Cuttings	After last spring frost	24	18-36	Low	Let dry between waterings; needs well-drained soil	Should be grown as an annual but may come back.
Lemongrass	<i>Cymbopogon citratus</i>	Annual	Seed, Divisions	Around last spring frost	12	18-24	Low	Moist but not overwatered	Spreads rapidly and can overtake an area.
Lovage	<i>Levisticum officinale</i>	Perennial	Seed, Divisions	Six weeks before last spring frost	36	36-72	High	Moist but not overwatered	Keep plants out of reach of pets.
		Perennial	Seed, Divisions	After last spring frost	6-8	48-72	Medium	Moist but not overwatered	Plants will reseed readily.

Table 1. Culture requirements of several culinary herbs* that can be grown in Oklahoma. (cont'd)

Common Name	Scientific Name	Type of plant	Preferred propagation	Planting time	Plant Spacing (inches)	Height (inches)	Nutrient requirement	Watering	Notes:
Marjoram	<i>Origanum majorana</i>	Perennial	Seeds, Cuttings	After last spring frost	6-12	12-24	Low	Let dry between waterings	
Mints	<i>Mentha</i> spp.	Perennial	Rhizomes, Cuttings, Division	After last spring frost	6-8	18-24	Medium	Moist but not overwatered	Spreads rapidly and can overtake an area. True mints can readily cross-pollinate, eventually altering the flavor and smell.
Nasturtium	<i>Tropaeolum minus</i>	Annual	Seed	After last spring frost	12	12-18	Low	Well watered	Does not tolerate hot Oklahoma summers.
Oregano	<i>Origanum vulgare</i>	Perennial	Cuttings, Division	After last spring frost	8	18-24	Low	Let dry between waterings	
Parsley	<i>Petroselinum crispum</i>	Biennial	Seed	Three to four weeks before last spring frost	6	8-16	High	Moist but not overwatered	Butterfly larva host plant. Can be slow to emerge and grow.
Purslane	<i>Portulaca oleracea</i>	Annual	Seed	After last spring frost	8	12-18	Low	Let dry between waterings	Plants will reseed readily.
Rosemary	<i>Salvia rosmarinus</i>	Perennial	Seed, Cuttings	After last spring frost	24	30-36	High	Let dry between waterings	May not be winter hardy in all parts of Oklahoma. 'Arp' is considered most cold hardy.
Sage	<i>Salvia officinalis</i>	Perennial	Seed, Cuttings	After last spring frost	12-18	16-20	Low	Let dry between waterings	
Savory	<i>Satureja hortensis</i>	Annual	Seed	After last spring frost	8-10	12-18	Low	Let dry between waterings	
Tarragon	<i>Artemisia dracunculoides</i>	Perennial	Cuttings, Division	After last spring frost	12	18-24	Low	Moist but not overwatered	
Thyme	<i>Thymus vulgaris</i>	Perennial	Seed, Cuttings	After last spring frost	12	8-12	Medium	Let dry between waterings	

* An herb is a plant with leaves, seeds, or flowers used for flavoring, food, medicine, or perfume. Some plants listed are considered spices (anise, caraway, cumin, ginger) or vegetable flavorings (garlic, horseradish).

Table 2. Culinary uses of several herbs* that can be grown in Oklahoma.

Common Name	Plant Parts Used	Flavor	Uses as Flavoring**	Notes:
Anise	Seed, Leaves	Licorice	B, S, M, MS, Ga, Sa, BT	Also used in making of black jelly beans.
Arugula	Leaves	Peppery, spicy, nutty	S, Sa, V	Popular in Italian cuisines.
Basil	Seed, Leaves	Spicy	S, St, M, Sa, MS, BT	There are more than 60 varieties of basil and each has its own distinct flavor. Sweet basil is the most popular and common variety.
Borage	Leaves	Cucumber-like	G, Sa, P, S, St, V, BT	Hairs can cause skin irritations.
Caraway	Seed, Leaves, Roots	Light licorice	Ga, B, S, Sa, MS, BT	Produces seed in the second year.
Chervil	Leaves, Stems	Mild and hint of licorice	S, Sa, Ga, BT	Commonly used in French cuisines.
Chives	Leaves, Bulb	Mild onion like	S, Sa, M, B, MS	Can be used fresh or dried.
Cilantro/Coriander	Leaves (cilantro)	Citrusy	B, S, M, Ga, BT	Bolts easily so use successive plantings for supply of fresh leaves.
Curmin	Seed	Earthy, nutty, peppery	M, S, St, V, BT	Will be used differently depending on if seed or powder is required.
Dill	Seed, Leaves, Stem	Lemony, sweet and slightly bitter	P, MS, M, Sa, BT	Bolts easily so use successive plantings for supply of fresh leaves.
Fennel	Seed, Leaves, Bulb, Stem	Licorice	S, Ga, B, BT	Florence fennel is grown for the bulbs.
Garden cress	Leaves, Sprigs	Peppery and tangy	Ga, Sa, M	Cress leaves are not suitable in the dry form.
Garlic	Bulbs	Spicy	S, Sa, M, B, MS	Optimum harvest time is when half or slightly more than half of leaves are brown.
Ginger	Rhizomes	Hot, zesty	B, M, V, BT	Often used in Asian cuisines.
Horehound	Leaves, Flowers	Bitter like licorice or root-beer	BT	Do not consume while pregnant or in larger quantities as it can cause cardiac arrhythmia or an irregular heartbeat.
Horseradish	Roots	Heat and sweetness	MS, P	Roots should be plump and not dried.
Hyssop	Leaves	Slightly bitter, minty lavender	M, S, Sa, St, BT	Use this herb sparingly as it can easily overpower other flavors in a dish.
Lavender	Leaves, Sprigs, Flowers	Spicy, mint, lemon	M, MS, Ga, BT	Can serve as a substitute for rosemary in most recipes.
Lemon balm	Leaves	Lemon	S, M, St, MS	Can serve as a substitute for lemon peel in most recipes.
Lemongrass	Stem	Citrusy like lemon and mint	S, Sa, M, St, V, BT	Gains intensity the longer it is cooked.
Lovage	Leaves	Celery-like	B, M, S, Sa, St, BT	Only a couple of leaves are needed; leaves do not store well.
Marjoram	Leaves	Citrusy, piney	M, Sa, St, V	Sweet marjoram, pot marjoram, and wild marjoram (also known as common oregano) are all commonly used for cooking.
Mints	Leaves, Sprigs	Mint	Ga, Sa, M, MS, P, B, BT	Best added at the end of cooking.
Nasturtium	Leaves, Sprigs	Peppery	Sa, S, D, M, St, BT	Flowers are often used as edible decorative elements.
Oregano	Leaves	Pungent and slightly bitter	S, M, St, Sa, BT	Allowing the plant to flower reduces flavor in leaves.
Parsley	Leaves	Peppery and mildly bitter	Ga, S, Sa, St, V, B, BT	Curly parsley is used as a garnish while flat-leaf is used for cooking.
Purslane	Leaves	Lemony, salty, Peppery	S, Sa, St	Plants are high in heart-healthy Omega-3 fatty acids and beta carotene.

Table 2. Culinary uses of several herbs* that can be grown in Oklahoma. (cont'd)

<i>Common Name</i>	<i>Plant Parts Used</i>	<i>Flavor</i>	<i>Uses as Flavoring**</i>	<i>Notes:</i>
Rosemary	Leaves	Piney, peppery and bitter	M, MS, St, S, D, BT	Tender tips and leaves can be cut throughout the growing season.
Sage	Leaves	Piney, sweet and slightly bitter	M, D, St, BT	Leaves can be cut throughout the growing season.
Savory	Leaves	Peppery	S, Sa, D, M	There is winter form of savory that is more pungent, pine like.
Tarragon	Leaves, Sprigs	Licorice, vanilla, peppery, minty, slightly bittersweet	Sa, MS, V, BT	Collect the newer shoots with light green leaves.
Thyme	Leaves, Sprigs	Earthy, slightly sweet and slightly bitter	S, Sa, D, B, V, MS, BT	Harvest top 6 inches just before the plant flowers.

* An herb is a plant with leaves, seeds, or flowers used for flavoring, food, medicine, or perfume. Some plants listed are considered spices (anise, caraway, cumin, ginger) or vegetable flavorings (garlic, horseradish).

** B=Breads/Pastries; D=Dressing; G=Cooked Greens; Ga=Garnish; M=Meats; MS=Meat Sauce; P=Pickles; S=Soup; Sa=Salads; St=Stews; V=Vegetables; BT=Beverage/Tea

The Oklahoma Cooperative Extension Service

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The Cooperative Extension Service is the largest, most successful informal educational organization in the world. It is a nationwide system funded and guided by a partnership of federal, state, and local governments that delivers information to help people help themselves through the land-grant university system.

Extension carries out programs in the broad categories of agriculture, natural resources and environment; family and consumer sciences; 4-H and other youth; and community resource development. Extension staff members live and work among the people they serve to help stimulate and educate Americans to plan ahead and cope with their problems.

Some characteristics of the Cooperative Extension system are:

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- Extension programs are nonpolitical, objective, and research-based information.
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- It utilizes research from university, government, and other sources to help people make their own decisions.
- More than a million volunteers help multiply the impact of the Extension professional staff.
- It dispenses no funds to the public.
- It is not a regulatory agency, but it does inform people of regulations and of their options in meeting them.
- Local programs are developed and carried out in full recognition of national problems and goals.
- The Extension staff educates people through personal contacts, meetings, demonstrations, and the mass media.
- Extension has the built-in flexibility to adjust its programs and subject matter to meet new needs. Activities shift from year to year as citizen groups and Extension workers close to the problems advise changes.

This fact sheet is based on original material prepared by W. R. Kays.

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Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Director of Oklahoma Cooperative Extension Service, Oklahoma State University, Stillwater, Oklahoma. This publication is printed and issued by Oklahoma State University as authorized by the Vice President for Agricultural Programs and has been prepared and distributed at a cost of 20 cents per copy. 09/2020 GH.