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Herb Culture and Use

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Introduction

Most botanists would define an herb as a plant that dies back to the ground each year without forming woody stem tissue. This definition limits the number of plants technically called herbs. Most gardeners include plants that have culinary, medicinal, aromatic, or ornamental uses. This definition would include lavender, rosemary, and bay, which form woody stems.

Many families in the 18th and 19th centuries had their own herb gardens. These herbs were used for flavoring foods, as preservatives, and for medicinal uses. Herb gardening is also on the rise in recent years as more people grow herbs for fresh use, drying, or freezing. An interest in medicinal herbs has also bolstered interest in herb gardening.

Purple coneflower (*Echinacea* spp.) *(Photo by John Freeborn)*

Most herbs can be grown successfully with a minimum of effort. Several are drought-tolerant, some are perennials, and many are resistant to insects and diseases. They are versatile plants, providing flavors for seasoning food and fragrances for room-freshening potpourri.

Herbs can be planted with vegetables or mixed in garden beds with annuals, perennials, shrubs, and trees. And with their enticing scents, diverse textures, attractive shapes, and countless shades of green and gray, herbs are often used to make a landscape that appeals to the senses of touch and smell, as well as sight.

The classic use for herbs in the landscape is the formal garden. Many intricate designs have been drawn and planted using the beauty of herb plants to enhance the pattern of the garden; diamonds, compasses, and knots are among the most popular designs. The knot garden is especially intriguing; herbs with various textures and colors are planted carefully and trimmed neatly to create the appearance of ropes looping over and under each other. The effect is striking, especially when viewed from an upper-story window.

Herb theme gardens are also popular. There are Biblical gardens, scent gardens, tea gardens, witch's gardens, kitchen gardens, and apothecary gardens, to name a few.

Site

When selecting a site to plant your herbs, keep in mind that culinary herbs are native to the Mediterranean, Northern Europe, and Asia; therefore, the plant's native habitat must be taken into consideration.

Start with a small herb garden that can be easily constructed and maintained, but leave space around it so you can plan its expansion during the long, cold, winter months. Most annual and perennial herbs grow best in six to eight hours of full sun.

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Formal garden layout. *(Photo by Shawn Appling)*

Choose a soil that is fertile and loamy for best results. Although many of the herbs will live in poor ground, for the healthiest plants and best harvest, they need good soil to thrive. Most herbs require a soil pH of 6.3 to 6.8 for optimum growth, but lavender prefers a pH of 6.5 to 7.0.

Prepare the soil to a depth of 8 inches. If it is heavy or has poor drainage, amend it with composted organic matter. Raised beds are an excellent solution to this problem. Fill them with a mixture of garden soil and compost or use a premixed, soilless potting medium.

Plant perennial herbs in an area that will not be disturbed by tilling. Those that spread by runners — such as the mints — should be given a large, isolated area or must be contained in some fashion (to a depth of 10 to 12 inches) to prevent them from taking over the garden.

Some tender perennials need protection from winter winds. Plant on an eastern exposure, if possible. Evergreen trees and shrubs can be used to break the wind and create a "microclimate" for the herbs. Rocks are often incorporated into the design of herb gardens to provide focal points and windbreaks and to help keep roots cool and moist during the heat of summer.

Cool season herbs such as cilantro, dill, anise, and parsley need to be planted in the spring or fall. If summertime planting is desired, shade must be provided for these plants.

Propagation

Annual herbs are best started from seed. When starting small seeds indoors, the easiest method is to sow them directly into individual pots filled with seed-starting mix at about six weeks before the last frost date. Cover the seed with a thin layer of moist seed-starting mix or milled sphagnum moss. Later, thin the seedlings to four or five per pot. Larger seeds may also be started by this method, then thinned to one plant per pot. Keep the soil surface moist by misting until the plants are established.

Herb garden with raised beds. *(Photo by Shawn Appling)*

Although many perennial varieties may be started from seed, it is often easier to get plants from your local nursery or a reputable mail-order company. In addition, many culinary herbs, such as tarragon, can only be propagated asexually; seed-grown plants lack the oils that give them flavor. Propagate them from root divisions or cuttings taken in the summer, after new growth has hardened.

Root the cuttings in a window box or some other suitable container, preferably covered with plastic to maintain high humidity. About 5 inches of clean, coarse sand is a good rooting medium. Keep the sand moist and out of direct sunlight when the plants are young. In four to six weeks, move the plants to pots or cold frames for the winter.

Many other herbs can also be propagated from stem cuttings, including rosemary, thyme, lemon verbena, scented geraniums, oregano, and wormwood. Transplant all herb plants after the danger of severe frost has passed. Control weeds during the growing season to

Oregano (*Origanum spp.).* *(Photo by Shawn Appling)*

prevent competition for water and nutrients, which are needed by your herbs. A light mulch (about 1 inch) will conserve soil moisture and help control weeds.

Most of the herbs that have a mature height shorter than 12 inches may be grown in 6-inch pots as indoor plants. There are many dwarf varieties of the larger herbs that would be appropriate indoors, as well. Spicy globe basil, dwarf sage, winter savory, parsley, chives, and varieties of oregano and thyme are some of the best choices for windowsill culture. When given proper care in a sunny window, they will supply sprigs for culinary use through all seasons.

Culture

Although many herbs are considered drought-tolerant, some moisture is needed to maintain active growth. For a continual supply of fresh-cut herbs, periodic irrigation during dry intervals is needed. As with all plants, a thorough watering with a period of drying is preferred over frequent sprinkling. Annual herbs require a higher level of available soil moisture than most perennial herbs.

Proper nutrient balance is very important. Weak, succulent growth can be caused by over-fertilization, making the plant susceptible to disease and insect pests. Rapid growth also dilutes the concentration of essential oils that impart the distinctive flavor to the culinary herb.

Parsley (Petroselinum crispum) *(Photo by Shawn Appling)*

Inadequate fertilizer can severely limit new growth, predisposes the plant to insect and disease problems, and increases the susceptibility of tender perennials to winter injury. A light application of fertilizer to perennials in early spring should promote new root and shoot growth and ensure vigor in the new growing season. Generally, adequate herb growth can be achieved with one-quarter to one-half the quantity of nitrogen recommended for vegetables in your area. Sequential harvests of annual herbs will be facilitated by light applications of fertilizer after each heavy harvest.

The high concentration of essential oils in healthy, actively growing herbs repels most insects. However, aphids and spider mites can be a problem. Aphids seem to be more prevalent in crowded conditions with rapidly growing, succulent plants. Spider mites thrive in dry conditions and can be controlled by spraying the plants with plain water at regular intervals — especially during periods of drought. Because there are very few labeled pesticides for use on herbs, the best defense against pests is preventative cultural management, such as good sanitation, removal of weak or infested growth, and regular pruning.

Periodic, judicious pruning promotes vigorous, sturdy plants that are less susceptible to disease and winter injury. If they are allowed to grow unchecked, some herbs will take on a gangly, unkempt appearance. If you are lavish in your use of herbs, regular harvesting for use in cooking, potpourri, and flower arrangements should keep your herbs sufficiently pruned.

Harvesting

It is best to harvest your herbs in the morning, just after the dew has dried, but before the sun gets hot. The concentration of essential oils is highest at this point. Harvest your herbs for fresh use all season, but for drying, cut just before the plants bloom. This will ensure the maximum concentration of essential oils. When harvesting, cut just above the first joint of tender growth — it takes the plant longer to send out new shoots from woody growth.

Perennial herbs can have half of their foliage pruned back. Plants experiencing drought should not be cut back until the stress has passed. Also, stop making large harvests of the perennial herbs in late summer or fall. This will allow time for new growth to harden and gather carbohydrates in preparation for winter. However, small harvests can be made during most of the

fall. Sage flavor may actually be improved by two or three frosts prior to harvest.

If you are interested in saving seed for the next season, choose one or two plants of each variety and allow them to bloom and go to seed. Harvest the seed heads when they change from green to brown or gray, and dry them thoroughly to ensure a good germination rate.

Drying

The best dried herbs are those that have been dried rapidly, without excessive heat or exposure to sunlight. When harvesting to dry, it is often necessary to spray the plants with a garden hose the day before cutting to clean dirt and dust off the leaves. The next morning, after the leaves have dried, make your harvest. Remove dead or damaged leaves and make small bunches of the herbs. Tie the stems together and hang them in a temperate, well-ventilated, darkened room that has little dust. Label each bunch, because several of the herbs look similar when dried.

Herbs may also be dried by removing the leaves and spreading them in a single layer on cookie sheets or foil, though it is preferable to use trays made of window screening for maximum air circulation. Again, remember to label the different varieties for accurate identification after drying.

French tarragon (*Artemesia dracunulus*).
(Photo by Shawn Appling)

Herb leaves are dry if they crumble into powder when rubbed between your hands. When the drying process seems to be complete, fill a small glass container with the herb and seal it. Put it into a hot oven for about 15 minutes or microwave it (don't use a metal cover!) for about five minutes, then check for condensation on the inside of the jar. If there is moisture present, let the rest of the herbs dry more. A harvest that is not completely dry when stored may succumb to molds. If necessary, herbs may be dried on cookie sheets in an oven set for 110° F or lower, though there will be some loss of essential oils using this method.

Basil (*Ocimum basilicum*) *(Photo by Joyce Latimer)*

When completely dry, store whole leaves in airtight containers — preferably of dark glass or some material that will not let in light — in a cool-to-temperate place out of direct sunlight. This will ensure good flavor and color in your seasonings.

To conserve essential oils, do not crush the herb until you add it to your cooking. When cooking, use greater quantities of fresh herbs; although they often have better flavor than dried herbs, they are usually not as strong.

Recipe Conversions for Herbs

1 tablespoon of finely cut fresh herbs
equals
1 teaspoon of crumbled dried herbs
equals
1/4 to 1/2 teaspoon of ground dried herbs

(Swinerton 2010)

Storage Life of Herbs and Spices

Seasoning	Storage time
Whole	2 to 5 years
Ground spices	6 months to 2 years
Leafy herbs	3 months to 2 years

(Hertzler 2001)

Herb Culture and Use

Common name *Scientific name*	Height	Plant spacing	Cultural hints	Uses
Annuals				
Basil *Ocimum basilicum*	20-24″	24-36″	Grow from seed. Sun.	Use in anything with tomatoes.
Borage *Borago officinalis*	24″	12″	Grow from seed, self-sowing. Dry, sunny areas.	Use young leaves in salads for cucumber flavor.
Chamomile, German chamomile *Matricaria recutita*	8-24″	6-12″	Grow from seed. Prefers a sandy, well-drained soil with a pH of 7.0-7.5 and lots of sun. Blooms in early to midsummer. Self seeds.	Leaves and flowers used in tea — two teaspoons dried material per cup. Steep covered to preserve essential oils.
Chervil *Anthriscus cerefolium*	10″	3-6″	Sow in early spring. Partial shade.	Aromatic leaves used in soups and salads. Smells like tarragon.
Cilantro, coriander *Coriandrum sativum*	24″	18″	Grow from seed. Sow in spring in sun or partial shade.	Seeds used in confections; leaves used in salads, Mexican, Asian foods.
Dill *Anethum graveolens*	24-48″	12″	Grow from seed sown in early spring. Sun or partial shade.	Feathery foliage and seeds used in flavoring and pickling.
Parsley *Petroselinum spp.*	12″	6″	Grow from seed started in early spring. Slow to germinate. Sun. Biennial.	Brings out flavors of other herbs. High in vitamin C.
Perennials				
Catnip *Nepeta cataria*	36-48″	18″	Grow from seed or division. Hardy; sun or shade.	Leaves for soothing tea.
Chamomile, Roman chamomile *Chamaemelum nobilis*	4-12″	12-18″	Hardy, evergreen groundcover; used around steppingstones. Low maintenance, full sun. Blooms late spring through early fall.	Flowers used in tea.

Herb Culture and Use (cont.)

Common name *Scientific name*	Height	Plant spacing	Cultural hints	Uses
Perennials (cont.)				
Chives, garlic chives *Allium spp.*	12″	12″	Little care. Divide when overcrowded. Grow from seed or division.	Good indoor pot plant; cut long strands at base. Mild onion or garlic flavor.
Echinacea, purple cone flower *Echinacea spp*.	24-48″	18-24″	Grow from seed or plants; self sows. Hardy, full sun, drought-tolerant.	Roots (primary part used), leaves, and flowers used in teas.
French tarragon *Artemesia dracunulus*	24″	24″	Grow from cuttings or division. Sun or semishade.	Aromatic seasoning; principal flavor in bearnaise sauce. Great with fish or chicken.
Lavender *Lavendula spp.*	24″	18″	Propagate from cuttings. Grows in dry, rocky, sunny locations. High lime soil. Requires pH of 6.5-7.2.	Use for sachets, potpourri.
Lemon balm *Melissa officinalis*	24-48″	18-24″	Hardy; grow from seed in full sun. Well-drained site.	Leaves provide lemon scent and flavor to drinks, salads, and dishes.
Lemon verbena *Aloysia triphylla*	36″	36″	Tender perennial; propagate from cuttings. Sun or partial shade.	Strongest lemon scent. Used in teas or potpourri.
Lovage *Levisticum officinale*	36-48″	30″	Rich, moist soil. Grow from seed planted in late summer. Sun or partial shade.	In the carrot family; strong celery flavor.
Mints *Mentha spp.*	12-36″	18″	Grow from cuttings or division. Sun or partial shade.	Aromatic; used as flavoring. Unusual varieties include orange, blue balsam, ginger, and chocolate.
Oregano *Origanum spp.*	24″	9″	Grow from seed, cuttings, or division. Sun.	Flavoring for tomato dishes, pasta.
Rosemary *Rosmarinus spp.*	36-72″	12-36″	Grows in well-drained, non-acid soil from cuttings. Sun. Marginally hardy; plant in protected site.	Leaves flavor sauces, poultry, soups. Good for meats and rice. Grown as topiary, bonsai.
Sage *Salvia spp.*	18″	12″	From seed or cuttings. Sun. Renew every 3-4 years.	Seasoning for meats, especially pork, and herb teas.
Thyme *Thymus spp.*	8-12″	12″	Light soil, well-drained. Renew every 2-3 years. Grow from cutting or division. Sun.	Aromatic foliage for seasoning. Varieties include lemon, orange, nutmeg, and wooly.

Other Uses of Herbs

Herb Bread

Add 1/2 teaspoon sage,1/2 teaspoon thyme, and1/2 teaspoon marjoram per pound of yeast dough *(Hertzler 2001)*.

Herbal Teas

Fresh or dried leaves of herbs such as lemon balm, peppermint, chamomile, rosemary, and catnip can be used to make tea. Herbal teas are made by steeping the leaves in hot water or placing the leaves in boiling water for several minutes *(McLaurin and McLaurin 2011)*.

Resources

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Lavender *(Photo by Shawn Appling)*

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