

# SUSTAINABLE GARDENING

FOR SCHOOL AND HOME GARDENS

## Culinary Herbs





# History

Herbs and spices are used in flavoring food and are an integral part of cooking. Herbs are defined as the fresh or dried leaves of temperate plants. Spices are generally derived from tropical plants and may be any other part of the plant, i.e., fruits, roots, bark, flowers or seeds. Historically, herbs were gathered locally, and spices were sourced from far away and were rare and difficult to obtain.

The desire for spices drove European exploration, colonization and conflict for thousands of years, until the establishment of spice plantations outside of Far East Asia in the 1800s ended the exclusive trade in spices. Christopher Columbus' landing in the New World was actually a failed attempt to find a more direct route to India and the spice trade. Herbal history is just as old and fascinating. Herbs have been studied and used medicinally since the beginning of recorded culture, with the oldest texts dating back to China (2700 B.C.) and Sumeria (2500 B.C.). Plant chemicals form the basis of many modern medicines and there is new interest in investigating folk remedies for plant compounds that may be of use in developing new medical treatments. This publication addresses the culinary uses of herbs and spices.

Herbs are grown by gardeners for flavoring food, for fragrance and for landscape interest. Various herbs



**Figure 1. Herbs and spices heavily used in Louisiana cuisine include, from left, flat-leaf parsley, ginger root, garlic, bay leaf, jalapeño and cayenne peppers and cilantro.**

also allow cooks to try, and for chefs to offer, other cuisines and foods. For example, French recipes rely upon thyme and tarragon, Italian upon oregano, garlic and parsley, and Asian upon the spices ginger, lemongrass and turmeric. Herbs also provide the signature flavor of American favorites like dill pickles and garlic bread. In particular, garlic and parsley are heavily used in Louisiana cooking. Culinary herbs are included in vegetable gardens and are just as important for flavoring food as the vegetables we grow throughout the year.



**Figure 2. Map showing the origins of herbs and migration to the U.S.**

# Growing

Herbs may be annuals, perennials, or biennials. Annuals have a one-year life cycle, from planting the seed, to producing seed, and finally dying, all in a single growing season. Perennials have a life cycle that continues for multiple years, i.e., instead of dying in the winter, these plants become dormant (foliage dies back to the ground, root survives over winter), and the tops regrow in the spring. Some herbs are biennials, meaning they have a two-year life cycle. From planting the seed in the first year, biennials grow into a low rosette shape, become dormant during the first winter, and in the spring of their second year, they produce seed and die. The different herbs are seasonal, with some growing and thriving only in the cool season and others only in the warm season. Most of the perennial herbs are cool-season plants.

Cool-season herbs are planted by seed or cuttings in the early fall or early spring to avoid temperatures in the hot Louisiana summers. Some cool-season perennial

herbs may be difficult to start as seeds, requiring special treatment like cold stratification (moist chilling) to enable germination. These plants are more easily reproduced by cuttings, a piece of plant stem placed in well drained media and protected from drying out by covering with a plastic bag or sheet or frequent misting until roots form. Propagation by cuttings is a faster, more reliable route to a large, producing plant for cool-season perennials. Annual warm-season herbs grow quickly from seed either directly sown into the garden or planted in early spring and transplanted after danger of frost has passed. Those warm-season annuals that form a tall, branched plant (e.g., basil) may also be propagated by cuttings.

Some individual herbs are available in different forms or flavors. For example, there are many flavors of basil, mint and thyme and several leaf shapes and plant sizes for parsley and rosemary. The gardener should consider how herbs will be used when choosing varieties. See the recommended species of herbs for Louisiana in Table 1.

**Table 1. Recommended Culinary Herbs for Louisiana.**

Herb	Plant Type	Spacing	Size	Propagation	Light Requirement	Plant Family
<b>Basil</b> <i>Occimum spp.</i>	Warm-season annual	12-24"	2'-3'	Seed, cuttings	Full sun/light shade	Lamiaceae
<b>Bay, Red</b> <i>Persea borbonia</i>	Small woody tree	10' apart	10'	Cuttings	Partial shade	Lauraceae
<b>Bay, Sweet</b> <i>Laurus nobilis</i>	Tender evergreen shrub	container	3'-10'	Cuttings	Partial shade	Lauraceae
<b>Borage</b> <i>Borago officinalis</i>	Warm-season annual	12"	1'-2'	Seed	Full sun/partial shade	Boraginaceae
<b>Chives</b> <i>Allium shoenoprasum</i>	Cool-season perennial	8"	10"	Division, seed	Full sun/partial shade	Amaryllidaceae
<b>Cilantro, Coriander</b> <i>Coriandrum sativum</i>	Cool-season annual	10"	1'-2'	Seed	Full sun/partial shade	Apiaceae
<b>Culantro</b> <i>Eringium foetidum</i>	Tender biennial grown as annual	12"	12"	Seed	Partial shade	Apiaceae
<b>Dill</b> <i>Anethum graveolens</i>	Cool-season annual	12"-18"	2'-3'	Seed	Full sun	Apiaceae
<b>Epazote</b> <i>Dysphania ambrosiodes</i>	Tender perennial grown as annual	12"	4'	Seed	Full sun	Amaranthaceae
<b>Fennel</b> <i>Foeniculum dulce</i>	Warm-season biennial	12"	2'-3'	Seed	Full sun	Apiaceae

Herb	Plant Type	Spacing	Size	Propagation	Light Requirement	Plant Family
<b>Galangal</b> <b>Alpinia galanga/ officinarum</b> <b>Kaempferia galanga,</b> <b>Boesenbergia rotunda</b>	Tender perennial rhizome; tropical	12' - Alpinia 6" - Kaempferia	3'-6' 6"	Rhizome, division	Shade/part shade	Zingiberaceae
<b>Garlic</b> <b>Allium sativum</b>	Cool-season bulb	4"	1'-2'	Individual cloves	Full sun	Amaryllidaceae
<b>Garlic chives</b> <b>Allium tuberosum</b>	Perennial	8"	8"-12"	Seed, division	Full sun	Amaryllidaceae
<b>Ginger</b> <b>Zingiber officinale</b>	Tender perennial rhizome; tropical	2' or container	2'-4'	Rhizome, division	Part sun/shade	Zingiberaceae
<b>Kaffir (Makrut) Lime</b> <b>Citrus hystrix</b>	Tender tropical tree	Half barrel (15-20 gal. pot)	3'	Grafting	Full sun	Rutaceae
<b>Lavender</b> <b>Lavandula angustifolia</b>	Perennial	18"-24"	1'-2'	Cuttings	Full sun	Lamiaceae
<b>Lemongrass</b> <b>Cymbopogon citratus</b>	Tender perennial; tropical	2'-3'	4'	Division	Full sun/part shade	Poaceae
<b>Marjoram</b> <b>Origanum majorana</b>	Warm-season tender perennial grown as an annual	8"-12"	1'-2'	Seed, cuttings	Full sun	Lamiaceae
<b>Mint</b> <b>Mentha spp.</b>	Perennial	12"	8"-12"	Cuttings, division	Full sun/part shade	Lamiaceae
<b>Oregano (Greek, Italian)</b> <b>Origanum vulgare var. hirtum</b>	Cool-season perennial	12"	2'	Seed, cuttings	Full sun	Lamiaceae
<b>Oregano, Cuban</b> <b>Plectranthus amboinicus</b>	Tender tropical perennial	2'-3'	3'	Cuttings	Full sun/part shade	Lamiaceae
<b>Oregano, Mexican</b> <b>Lippia graveolens</b>	Tender shrubby perennial	24"	4'	Seed, cuttings	Full sun/part shade	Verbenaceae
<b>Parsley</b> <b>Petroselinum crispum</b>	Cool-season biennial	12"	3'	Seed	Full sun	Apiaceae
<b>Peppers</b> <b>Capsicum spp.</b>	Warm-season annual	18"-24"	3'-4'	Seed	Full sun	Solanaceae
<b>Pineapple sage</b> <b>Salvia elegans</b>	Perennial	12"	4'	Cuttings, layering	Full sun	Lamiaceae
<b>Rosemary</b> <b>Rosmarinus officinalis</b>	Cool-season perennial	12"	2'-4'	Cuttings	Full sun	Lamiaceae
<b>Sage</b> <b>Salvia officinalis</b>	Cool-season perennial grown as an annual	12"	1'-3'	Seed, cuttings, layering	Full sun	Lamiaceae

Herb	Plant Type	Spacing	Size	Propagation	Light Requirement	Plant Family
<b>Savory</b> <b>Satureja hortensis</b> (Summer) <b>Satureja montana</b> (Winter)	Warm-season annual  Warm-season evergreen perennial	6"-10"	8"-18"	Seed  Cuttings, division	Full Sun	Lamiaceae
<b>Tarragon</b> <b>Artemesia</b> <b>dracunculus</b>	Cool-season perennial	1'-2'	12"	Cuttings, division	Full sun	Lamiaceae
<b>Thyme</b> <b>Thymus vulgaris</b>	Perennial	6"-10"	6"-12"	Cuttings, division	Full sun	Lamiaceae
<b>Turmeric</b> <b>Curcuma longa</b>	Tender perennial rhizome; tropical	12"	2'-3'	Rhizome, division	Part shade/shade	Zingiberaceae

Table recommendations from University of Georgia Extension, LSU AgCenter, and Mississippi State Extension.

## Descriptions of Individual Culinary Herbs

**Basil** — Frost-tender annual culinary herb grown for fragrant leaves used in various dishes and cuisines. There are many types and varieties with different flavors (sweet basil, lemon, purple opal, holy as examples) and plant forms. Good reseeder. Grow in well-drained soil and full sun. Remove flower heads to increase production of harvestable plant material and prevent from going to seed.

**Bay, Red** — A large evergreen native shrub grown for their fragrant leaves. Grows well as an understory tree. Can get quite large in southern Louisiana but may die back to the ground in severe winters in north Louisiana. Harvest blemish-free leaves and dry flat.

**Bay, Sweet** — An evergreen grown for its fragrant leaves. Can survive mild winters but is often grown in containers and protected from severe cold. The leaves are pungent and used in cooking (soups, stews, gumbos, sauces) as flavoring, with the leaves removed before serving.

**Borage** — attractive herb mostly grown for striking, blue, edible flowers instead of leaves. Grown as a Mediterranean plant. Prefers very well-drained and alkaline soil.

**Chives** — Perennial plant with a mild onion flavor, with the foliage or the edible flowers used in cooking. Though perennial, chives do not survive as well as garlic chives. Most successful production starts with rooted bulbs. May be grown in a container in a sunny window and harvested with scissors as needed.

**Cilantro** — refers to the leaves of the cool season annual plant used in cooking. Often dies back in summer heat but is an excellent re-seeder. May be difficult to transplant. Shading will extend its season into the summer. Pinch back flower stalks regularly in order to maintain vegetative growth.

**Coriander** — refers to the mature seeds of cilantro and also the roots that are used in Asian cooking. Harvest seeds when seeds have dried and grind in a spice grinder.

**Culantro** — Pungent, tender biennial grown as an annual for its leaves. Deadhead flower stalks regularly in order to maintain vegetative growth. A tropical American native, often used in Latin American, Caribbean and Asian cuisine.

**Dill** — Very easy to grow cool-season annual with both the seeds and leaves used in sauces, breads, seasonings and pickling. Dries and stores well.



**Epazote** — Grown for use as a leafy vegetable, herb and herbal tea for its pungent flavor and strong, unique fragrance. This intense herb is often compared to mint, savory, citrus (and turpentine or creosote). It is used in Latin American, especially Mexican, cuisine. Needs full sun and good drainage. Do not mix with other herbs, due to its herbicidal effects on neighboring plants. Reseeds freely and may become weedy. Pinch out flowers.

**Fennel** — Anise-flavored above-ground bulb grown for the feathery leaves used raw in salads. The bulb is used in Italian dishes as a vegetable. Very decorative. May be grown for the anise-flavored seeds, also. There are several types of fennel, one of which is primarily leaves and another type with an enlarged base. Fennel is similar in appearance to dill.

**Galangal** — Tender perennial tropical aromatic rhizome of several genera with the rhizome used in Asian cuisine and for medicinal purposes. Similar taste to ginger with earthy citrus notes. Grown very similarly to ginger.

**Garlic** — Bulb is the most commonly used part of the plant for its pungent flavor as a condiment or seasoning, although the leaves and flowers (bulbils) are sometimes consumed in different cuisines. Plant early fall using individual cloves, harvest heads late spring. Foliage may be troubled by thrips, but bulbs are usually unaffected. May be woven into ropes for drying, separated into cloves for freezing or preserved in olive oil. Elephant garlic (*Allium ampeloprasum* var. *ampeloprasum*) is a mild flavored, hardy perennial form.

**Garlic chives** — Flat leaves, stalks and unopened flower buds are used as a flavoring, especially in Asian cuisine (Chinese, Japanese, Korean, southeast Asian). Flavor is more like garlic than chives and when grown in the dark (etiolated), yellow leaves have a more subtle flavor. More prolific and with better survival than onion chives and may be substituted for chives in recipes. Very decorative, it is frequently grown in flower gardens as an ornamental.

**Ginger** — Tender perennial flowering plant grown for rhizomes (ginger root) used as a spice and in folk medicine. Common ingredient in many cuisines, in particular Asian, and as a flavoring in Western cuisine and beverages. Can survive a mild winter in south Louisiana if grown in-ground and well-mulched. Plant in spring, harvest in fall. Easy to start from produce section rhizomes (surface sterilization is helpful to deter decay). Save rhizomes for next year or choose organic ones from produce sections, if possible, to avoid

rhizomes that have been treated to suppress sprouting. Sometimes used as an ornamental in the landscape.

**Kaffir (Makrut) lime** — Tender, container-grown citrus tree grown for its fruit and leaves, used in Asian cuisine, and essential oil used in perfumery. The aromatic leaves are used either fresh, frozen or dried in southeast Asian cuisine and the rind is used in curry paste. Also used in a marinade for wild game. The plant is well suited as a garden shrub in southern Louisiana or grown in container gardens or pots for protection from freezing temperatures.

**Lavender** — English lavender is a perennial herb grown for its fragrant purple flowers and aromatic, narrow leaves. Flowers are one of the ingredients of herbes de Provence. Requires excellent drainage. It survives best in a container in Louisiana. Plants are usually pruned hard to keep them growing vigorously and nicely shaped. English lavender (*Lavandula angustifolia*) is a different species of lavender than French lavender (*Lavandula dentata*) although both are native to France. The best cultivar of English lavender for Louisiana is Phenomenal.

**Lemon balm** — Perennial herb grown for its lemon scent and flavor used in seasoning dishes, sauces, and teas. Once established, it may spread and crowd out other plants.

**Lemon grass** — Citrus-scented tender perennial grass with foliage used in south and southeast Asian cooking. Usually only the bottom stem/leaf section is used in cooking. Citronella grasses (*Cymbopogon nardus* and *C. winterianus*) are different species from lemon grass and are used to produce citronella oil as an insect repellent in sprays, candles and soaps. It is also used in aromatherapy, curries, teas and marinades. Grown as a container plant in north Louisiana. Mulch well to survive in-ground in south Louisiana.

**Marjoram** — Warm season tender perennial grown as an annual for its leaves. Used as an all-purpose herb with meats and vegetables. Very frost tender, large, attractive, shrubby plant. Cut back at 6"-8" to keep in good production.

**Mint** — Square-stemmed perennial plant grown for leaves, with many flavors and forms. With over 30 distinct species, peppermint and spearmint are the most common with other types (lemon, apple, orange, chocolate, etc.) available. Best grown from cuttings. May be invasive and is often grown with a barrier or in a pot. Cut back for best production.

**Oregano** — Cool-season perennials grown for the leaves, the two major types (Italian and Greek) are essential in cuisine. Requires good drainage but survives well as a perennial in a container. Cut back as you harvest. Mexican and Cuban oregano are tender perennials that must be protected from freezes. Native to the Americas, they are used in Latin American cuisine.

**Parsley** — Cool-season perennial grown as an annual with two types grown for their curly or flat (Italian) leaves, the latter preferred by cooks. Fresh or dry chopped leaves are used in a wide assortment of cuisines and dishes. Soak seed overnight to aid germination. Plants require adequate moisture for continuous production and can produce well into summer if shaded. Remove seed stalks to keep in production further into the warm season.

**Peppers** — Perennial grown as an annual spice plant with both mild and pungent (chili) pepper pods that are used as seasonings in many different cuisines. Peppers can be used fresh for pickling or making hot sauce. Many of the chilis, like cayenne and jalapeño, are easily dried and ground into chili powders or pepper flakes.

**Pineapple sage** — Tender ornamental perennial grown for the leaves; used in flavoring drinks, preserves and dishes. Showy red flowers are also edible. Pinch back plants to continue production and mulch well to overwinter in north Louisiana.

**Rosemary** — An attractive tender shrubby perennial herb grown for the leaves used in many cuisines. There are many types available, including a prostrate (low-growing) form (*R. prostratus*). Native to the Mediterranean and sensitive to poor drainage. Hardy to 20 F. Very large shrub if grown in well-drained soils; cut back as you harvest. Very easy to strip and dry leaves for the kitchen and store.

**Sage** — Perennial plant grown for its attractive leaves that are used in cooking, teas and medicine. Many different types including lemon, variegated, golden; all are interchangeable in their use. Culinary sage has poor summer survival as a perennial in the humid South, especially in poorly drained soils. Requires exceptional drainage on a raised bed or in a pot. Cut back as it becomes leggy with thick branches to induce branching.

**Savory** — Winter savory is a hardy perennial and summer savory is an annual. Both are grown for their foliage and used in bean dishes, soups and stews, and for medicinal properties as well. Winter savory has smaller, darker leaves with a stronger flavor and

becomes dormant in winter in Louisiana. Do not cut back the old growth for optimal production. Harvest in summer during flowering and use fresh or dried. Winter savory is a companion plant for beans against bean beetle. Summer savory is grown from seed while winter savory is grown from cuttings or division. The culinary use of summer savory is similar to that of the winter variety, and the latter has a slightly more bitter flavor.

**Tarragon** — Perennial plant grown for its leaves and used in vinegars and flavoring foods (such as fish, meat, vegetables), perfumes and condiments. French tarragon has a better flavor and is grown from cuttings/division compared to seed propagated Russian tarragon. Although cold-hardy, it has poor summer survival, primarily due to high humidity. Grows best as a cool season annual in Louisiana. Mexican mint marigold (*Tagetes lucida*) is a hardy taste-alike.

**Thyme** — Perennial plant with over 400 varieties grown for their leaves in many flavors and forms including prostrate types (creeping thyme). English thyme is the most common variety with lemon, caraway and mother-of-thyme also available. Needs excellent drainage and survives best in a container. Cut back to rejuvenate as older plants will develop woody stems. Used in both meat and vegetable dishes. The essential oil, thymol, is used as a commercial antiseptic.

**Turmeric** — Tender perennial flowering plant grown for rhizomes that are used fresh, or boiled in water and dried. Used as a coloring and flavoring agent in many Asian cuisines; essential in many curries. Grown like ginger, it is a tender curcuma like the ornamental ‘hidden ginger’ (*C. petiolata*). Plant in spring, harvest in fall before frost, using rhizomes stored after harvesting the previous fall.

When and How to Plant

Herbs used in cooking are quite varied in form and growing requirements. Transplants, divisions, seed and cuttings are all common methods of starting herbs in the garden. Some, like basil, cilantro, parsley and most other annuals, are easily direct seeded, but may also be started inside six weeks before their proper growing season begins, for transplant outside. Some herbs, like rosemary, mint and thyme (perennial herbs), are difficult to grow from seed and much easier when reproduced by cuttings. Still others, like red bay, lemongrass, chives, garlic and the rhizomatous ginger and turmeric are best planted from divisions of existing plants or as transplants from the nursery or grocery store produce section. See Table 2 for guidance on when to plant the different types of herbs.

**Propagation by cuttings:** Cuttings can be taken any time but will root best if taken during the season when most of that plant’s growth occurs. For cool-season crops, this would be the cool season, and for warm-season perennials and annuals, this would be the warm season. A cutting must have a minimum of two leaf nodes (the enlarged part of the stem where leaves emerge) to be successful. One leaf node will be placed in rooting medium and produce future roots, and one leaf node will be above the medium and produce new leaves and stems after the lower node has rooted. Typically, cuttings with three to four nodes are used to increase the chances of producing many roots and a strong plant. When making cuttings, cut just below the lowest leaf node and just above the uppermost leaf node (do not leave excess stem above or below). Choose a loose, well drained, moisture-retentive medium and



Figure 3. Suitable cuttings.

water it well before placing or “sticking” the cuttings. Stick the cuttings, water to improve contact between the stem and medium, and cover loosely to keep the cuttings in a moist environment and prevent drying. Keep out of direct sun. If the cover (which may be a clear plastic bag or sheet of light, clear plastic) fogs with condensation, remove it, air out the cuttings to prevent rotting and recover. After several weeks, new growth should appear above the surface, but allow to grow under cover for another week or so to ensure adequate roots have formed to support the young plant in the drier outside environment. If leaves wilt when the cover is removed, replace the cover for another week. When adequate roots have formed (give the cutting a light tug or gently excavate to check), the cutting may be transplanted to a 4" container or placed in the garden.

Table 2. Herb Planting Guide.

Plant type	Direct seed or transplant outside dates	Remarks
Warm-season annual	North LA: March 20-May 31 South LA: March 1-May 31	May be direct seeded or planted as transplants after danger of frost passes.
Cool-season annual	North LA: Sept. 1-Nov. 1, February-March South LA: Sept. 1-November, Jan. 15-March	May be direct seeded or planted as transplants.
Perennial	North and South LA: September-November	Use transplants or divisions.
Tropical	North LA: March 15-May 31 South LA: March 1-May 31	For greatest harvests, plant early to allow more time to develop before frost.



## Where to Plant

In general, herbs prefer well-drained soil and full sun (at least six hrs./day). It is recommended to plant in box beds or traditional raised garden rows that are about 4-8 inches tall and at least 24 inches wide to ensure adequate drainage and prevent disease. In all types of gardens, it is recommended to add a 2-3-inch layer of compost, peat moss, rotted hay or other organic matter and mix into the soil to optimize plant health. Herbs also make attractive additions to flowerbeds, and many of them attract pollinators. Tropical herbs may be successfully grown in Louisiana if grown in containers and moved to winter shelter or by planting in ground beds after danger of frost and harvesting before the first frost of the cool season. In south Louisiana, tropical herbs may survive freezing in ground beds if mulched heavily and protected for freezing events.

## Plant Care

**Watering:** Regular watering is required for good leaf and stem production. The general rule of watering is 1 inch of water per week. Water more in hot, windy seasons and less in the cool of winter. Several of the most popular culinary herbs are of Mediterranean origin — from a climate of hot, dry summers and mild, wet winters, e.g., rosemary, thyme, tarragon, oregano and marjoram. These plants may be watered the same as other herbs if provided with superior drainage but should be watered less than neighboring plants if mixed into a flower bed. Tropical herbs and spices, like lemongrass, ginger and turmeric thrive with more frequent watering, up to 2 inches per week.

**Fertilization:** While quite varied in species, herbs are generally light feeders. Fertilize the garden bed before planting seeds or transplants. Some long-producing herbs like parsley and rosemary will also benefit from side-dressing.

[Organic fertilizers](#) such as compost, fish emulsion, composted poultry litter or manure, worm castings, and blood or bone meal originate from living organisms. They are far more environmentally sustainable and safe than synthetic fertilizers. They naturally release nutrients slowly over a longer period of time. When applying organic fertilizer, it is important to use in unison with [compost](#), [cover crops](#) and [crop rotation](#), which all work together to build [soil health](#). Learn how to convert inorganic fertilizer recommendations to organic fertilizers [here](#).



**Figure 4. Mature basil plant before and after cutting back by half. If allowed to produce seeds, annual plants cease production of new plant material. Cutting back causes annuals to resume production of new stems and leaves.**

**Cutting Back:** Some mound forming perennial herbs like oregano, sage, marjoram, thyme and large annuals like basil and cilantro benefit from cutting back for rejuvenation of long-lived plants that have begun to thin at the crown. Many annuals, like basil and cilantro, make large plants that will cease producing the leaves used in cooking and switch to seed production. Thus, ending their useful life as a culinary herb. To delay this natural stage of development, plants may be cut back to return them to a juvenile, leaf- and stem-producing stage. Cut the plant back by half when plants are approaching the flowering stage.

**Weeds:** Commercial producers of large herb crops, such as parsley or cilantro, use plastic mulch to control weeds. For smaller plantings, apply an organic mulch such as hay or straw, up to but not touching the plant base. Apply mulch 2-3 inches deep and replenish as mulch breaks down and weed seedlings begin to break through.

**Insect Pests and Diseases:** While most culinary herbs are trouble free, some insects and diseases may occur. Several herbs in the Apiaceae family (parsley, dill and fennel) are host plants for the black swallowtail butterfly and their large larvae can quickly decimate even large plants. These should be hand-picked and removed to another part of the garden or collected (along with some host plant material) for fun and educational observation to later be released as butterflies. Several organic-approved chemicals like the biological *Bacillus thuringiensis* (Bt) are available for pest caterpillars

(“worms”). Bt should not be used around butterfly host plants, as it will kill butterfly larvae also. Leaf miners may damage parsley; spider mites are fond of rosemary. Utilizing a crop rotation aids in preventing pest or disease issues. See Table 3 for listings of other potential pests and diseases of herb plants.



Figure 5. Monarch butterfly larvae.

Table 3. Organic and Natural Management for Common Insect Pests and Diseases of Herbs.

Symptoms	Diagnosis	Organic and Natural Management
<ul style="list-style-type: none"> <li>Curled and yellow leaves</li> <li>Sticky honeydew on leaves</li> </ul>	Aphids or whiteflies	<ul style="list-style-type: none"> <li>Reduce water stress</li> <li>Weed control</li> <li>Use water jet to dislodge</li> <li>Beneficial insects: lady bugs, lacewings, predatory stink bugs, syrphid flies</li> <li>Insecticidal soap, neem oil, pyrethrin, combination of pyrethrins and azadirachtin (Azera)</li> </ul>
<ul style="list-style-type: none"> <li>Holes in foliage</li> <li>Missing plant parts</li> </ul>	Caterpillars	<ul style="list-style-type: none"> <li>Identify as harmful – Dill, fennel and parsley host black swallowtail butterflies</li> <li>Hand-pick and remove</li> <li>Bt (<i>Bacillus thuringiensis kurstaki</i>) for most caterpillars</li> </ul>
<ul style="list-style-type: none"> <li>Dark spots on leaf stems</li> <li>Sticky honeydew on leaves</li> </ul>	Leaf hoppers	<ul style="list-style-type: none"> <li>Remove with strong stream of water</li> <li>Plant sunflowers as a trap crop</li> </ul>
<ul style="list-style-type: none"> <li>White trails inside leaves of parsley</li> </ul>	Leaf miners	<ul style="list-style-type: none"> <li>Spunbonded polyester row covers</li> <li>Spinosad</li> </ul>
<ul style="list-style-type: none"> <li>Leaves covered with talc-like powder; leaf yellows and dies</li> <li>Hot, dry conditions</li> </ul>	Powdery mildew	<ul style="list-style-type: none"> <li>Increase air circulation</li> <li>Remove infected plant parts</li> <li>Sulfur fungicide</li> <li>Neem oil</li> </ul>
<ul style="list-style-type: none"> <li>Whitening of leaves as cell contents are sucked out</li> <li>Tiny spiderwebs in severe infestations</li> </ul>	Spider mites	<ul style="list-style-type: none"> <li>Increase humidity by misting or spraying leaves</li> <li>Neem, pyrethrin, combination of pyrethrins and azadirachtin (Azera)</li> </ul>

Note: Adapted from The Organic Vegetable IPM Toolkit slide chart, Auburn University, Ayanava Majumdar author. The Louisiana Pesticide Law regulates the use of pesticides in schools to protect children and staff from harmful exposure to chemicals and is enforced by Louisiana Department of Agriculture and Forestry (LDAF). The recommended alternative to routine pesticide use is Integrated Pest Management (IPM), which combines pest control, disease management techniques and organic/natural alternatives, many of which are found in this table.

# Harvest and Storage

Harvest in the morning when leaves and stems are plump with water.

Most herbs will store well in a perforated plastic bag in the refrigerator. Basil is very sensitive to cold temperatures and should be stored at room temperature in a vase of water, like cut flowers. Basil may also be processed into pesto and stored in the freezer in small, meal-size quantities.

Most herbs dry exceptionally well. Hang entire plant stems inside in a dark place to help retain color. Strip the foliage after drying and store in a tightly sealed container. Herbs can be preserved for many years in dried form.

If considering using fresh herbs versus dried, remember that dehydrated leaves have a much more concentrated flavor. A good rule of thumb is to use 1 tablespoon fresh herbs as opposed to 1 teaspoon dried herbs.

Herbs may be used in vinegars and oils. For herb vinegar, add one part washed leaves, stems or flowers to four parts white vinegar. Steep for three to six weeks, strain and store in bottles with a sprig of fresh herb for decoration. To make herbal oils, warm the oil and add to herbs in the same proportions as for vinegar. Because herbal oils lack the acidity of vinegars, they are more prone to spoilage and should be refrigerated and used promptly.

## Recipes

**How to select herbs:** [extension.purdue.edu/foodlink/foods.php?category=4&sort=asc](https://extension.purdue.edu/foodlink/foods.php?category=4&sort=asc)

General information on selecting, pairing, preparing and storing. Also includes a list of recipes.

### Taste Test Ideas



**Herbed Butter**



**Pestos**



**Herb Roasted Potatoes**

### Other websites with many culinary herb recipes:

**Oregon State University's  
Food Hero**

[foodhero.org/herbs-and-spices](https://foodhero.org/herbs-and-spices)

Recipes include herb flavored water, ceviche and more.

**USDA MyPlate Kitchen**

Visit [eatfresh.org/find-a-recipe](https://eatfresh.org/find-a-recipe) and search for herb recipes. Recipes include herbed vegetable combo, strawberry basil popsicles and more.

**Produce for Better Health  
Foundation**

[fruitsandveggies.org/?s=herb](https://fruitsandveggies.org/?s=herb)

Recipes include herb garden pizza, roasted herbed artichokes, and more.



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