

# Gardening with Herbs

Herbs are useful plants that are adaptable to many gardening conditions. Basic cultural considerations for growing herb plants in the home garden are addressed in this fact sheet. An herb reference chart of the common culinary and fragrant herbs is provided.

## Climate

Herb plants vary in their ability to tolerate cold temperatures. Herbs such as basil are frost sensitive, while dill tolerates a light frost. Most perennial herbs are frost tolerant, but tender perennial herbs tolerate cold temperatures only up to a point. The U.S. Department of Agriculture has created a plant hardiness zone map, useful as a general measure of a plant's ability to survive cold temperatures in your area. Montgomery County Maryland is located in zone 7 where the average low temperature is between 0°F and 10°F. Within your yard you will find small areas where the temperatures vary creating what is called a "microclimate". Temperature differences occur due to variations in your yard's topography. The presence of trees, rocks, and walls may alter the effects of wind, moisture, temperature, and sunlight in that area. Microclimates are advantageous. By placing plants in a sheltered spot next to a south facing wall you may be able to reduce the severity of winter. A tender rosemary plant might survive winter in such a microclimate. Other factors affecting herb plant growth include wind, soil type, soil moisture, drainage, extreme heat, humidity, snow, and winter sunshine. The life cycle of herb plants vary tremendously. Dill for example is a short-lived annual that bolts (goes to seed) in hot weather. Lavender however is a long-lived perennial that can live for many years (5-10) if taken care of properly. Some lavender species tolerate cold temperatures (often referred to as hardy lavenders), but tender lavender species may need to be brought indoors during winter depending on your climate zone.

## Garden Site

An ideal site for herbs would be a sunny open area that provides some shade during the hottest part of the day and some shelter from strong winter winds. The site would be free from tree roots and have well-drained, loose, moderately fertile soil. Most herbs prefer an almost neutral soil with a pH of 6.5. The pH can be determined with a soil test. Agricultural lime should be added if it falls below 6.5. Heavy clay soil can be improved by adding organic matter such as compost, peat moss and grit (crushed granite).

## Fertilizing and Watering

Herbs require limited amounts of fertilizer. Excess fertilizer increases leafy growth but decreases the production of essential oils, which give herb plants their distinctive flavor and fragrance. Organic liquid fertilizers such as fish emulsion and seaweed are often used on herbs. Compost and limestone are often added to the soil, but manure is generally not recommended for herbs since it provides excessive nitrogen. A small dose of water-soluble fertilizer helps young transplants start to grow and root more rapidly. Frequently harvested herbs such as basil re-sprout more quickly with a dose of liquid fertilizer after every few harvests. When transplanting a new herb plant in the garden dig the hole, add water, position the plant, firm the soil around the plant and water again. Herbs vary in their water requirements. Mint, parsley, and dill like it on the moist side, whereas lavender, oregano and thyme prefer drier conditions. When watering the herb garden a periodic soaking is better than frequent sprinklings, which tend to draw roots to the surface. Well-drained soil is probably the single most important consideration when growing herb plants. Without well-drained soil herbs such as sage will often die after a damp wet winter season.

## Pruning

Plant health is improved by removing dead, damaged or diseased sections. Pruning can “open up” the plant, allowing better light and air penetration. Good airflow through the plant is often critical for herb health. Harvesting is a form of pruning. Harvest just before the plant blooms to obtain the most potent volatile oil. Harvest on a sunny morning after the dew has dried. It is important to stop harvesting perennial herbs about one month before the first fall frost. Late pruning may encourage tender growth that cannot harden off before winter.

## Winter Protection

Many herbs benefit from a layer of mulch applied after the ground has frozen. Straw or evergreen boughs work well. Never place mulch too close to the crown of the plant. Winter mulch helps maintain an even soil temperature to prevent alternate freezing and thawing of soil, which may cause winterkill. Protect herb plants from winter winds by growing them near a windbreak such as a wall. Make your own temporary windbreak by wrapping a thick piece of burlap around three wooden stakes to create an L shaped screen or four stakes to create a box shape.

## Ground Preparation

**Dig Method:** Start by removing large rocks, debris, underbrush and weeds. Remove perennial weeds with a garden fork or sharp spade. Once the perennial weeds are out loosen up the soil by digging down and turning over the soil with a sharp spade or shovel. Loosening the soil allows air and moisture to reach the roots. Next, fork in well-rotted organic matter such as compost. Manure is not recommended for most herbs. If you have heavy clay soil you can improve drainage by adding chicken grit. Grit is sharp crushed granite that is smaller than pea gravel and larger than sand. Work in grit around the planting holes if you have a large garden. Limestone may be needed, but get a soil test first.

**No Dig Method:** Instead of digging you can start by smothering the grass and weeds with a barrier or covering that blocks sunlight. Start with a thick layer of newspaper (avoid glossy colored pages) covered with organic material such as shredded leaves, grass clippings (weed and pesticide free), and compost. Water and wait three months for the sod to break down before planting.

**Raised Bed:** A raised bed helps provide better drainage and warms the soil up quicker in the spring especially if located in a sunny spot. If you have heavy clay soil that does not drain well a raised bed may be the best option. Herbs must have good drainage. Thyme, oregano and marjoram would benefit from being grown in a raised bed. Frame the bed with brick, stone, cement block or cedar boards. Fill the bed with good garden soil (or purchase topsoil), compost, peat moss, and lime. You can use the above no-dig method to smother the grass/weeds first and then proceed to build and fill your raised bed.

## Outdoor Container Herb Gardening

Herbs grow well in containers and the advantages are many. Pots for example can be placed in a convenient spot near the kitchen for easy harvesting. Large pots help contain invasive herbs like mint. Herbs such as basil can be protected from slugs by placing a piece of copper tape around the pot as a barrier. You can create “mobile” herb gardens by placing pots in a wagon or cart. If your yard has limited sunlight you can wheel your mobile garden around to “catch” the sunlight. A moveable garden also works well for those herbs that need a bit of shade during the hottest part of the day since they can be wheeled to a sheltered spot. Hanging baskets can also be moved around to suite your needs. A basket of culinary herbs hanging near the kitchen door is always nice. If you want to grow catnip for your cat try growing it in a hanging basket. By strategically placing the basket up high in a protected spot you should be able to prevent neighborhood cats from destroying your plant.

## Choosing a Container

Good drainage is crucial for growing herbs in pots so drainage holes are a must. Clay pots are porous and allow air to penetrate and moisture to evaporate. This allows the growing medium in the pot to dry out more rapidly, an asset for herbs that like it on the dry side. Plastic pots on the other hand prevent rapid moisture loss, an asset in the heat of summer. Regarding container size a good rule is never put a small plant in a big pot. This is because when you water the plant the large area of moisture may be too much for the small plant to handle and the roots may end up rotting. Start seedlings and young plants in small pots and graduate them up to large pots as they grow. If you notice roots coming out the bottom of your pot the plant is “root bound”. When roots run out of room they start to wind around the base of the pot, becoming tangled and plant health may suffer.

## Water, Soil and Fertilizer for Container Herb Gardening

In summer potted plants must be watered frequently, especially water loving herbs such as mint. Reduce evaporation by placing pots in a sheltered position buffered from wind. Soil based potting mixes retain moisture better. Opinions differ on the best potting mix for containers. You can purchase a commercial potting mix at a plant nursery or you can make your own. Recipes for soil-based and soil-less potting mixes can be found in herb gardening books. Reference books listed on this fact sheet provide many recipes. If you find that your potting mix is too acidic add limestone, if too alkaline add powdered sulfur or peat moss. Organic fertilizers are often recommended for container grown herbs. Examples include compost, kelp meal and water-soluble fertilizers such as fish emulsion or seaweed.

## Indoor Herb Gardening

Good air ventilation is critical for indoor herb gardening. Avoid stuffy rooms with stale air by opening a window or running a fan periodically. Do not crowd plants; give them some room to breathe. Careful watering is also critical. Use tepid water and allow the soil surface to dry out between watering. Do not leave herbs sitting in a saucer of water because this will drown their roots. When available a dose of rainwater will benefit indoor herbs. Herbs vary in their water requirements. Herbs such as parsley and chives prefer a soil that is moister than rosemary and sage. Potting soil should be fast draining, porous and friable. Most herbs do well in a window with a southern, southwest or southeast exposure and a temperature range of 55°F-70°F. When herbs are actively growing give them 5-6 hours of bright sunlight. During the winter months, try for 3- 4 hours of sunlight. Some herbs such as the mints and chervil require less light and should be given indirect light. Fertilize indoor herbs about every two to three weeks during the growing season when they are actively growing. Water-soluble fertilizers such as liquid seaweed or fish emulsion work well.

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### References

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2. Living with Herbs: A Treasury of Useful Plants for the Home and Garden by Jo Ann Gardner. The Countryman Press, 1997
3. Rodale's Illustrated Encyclopedia of Herbs. Claire Kowalchik & William H. Hylton, Editors. Rodale Press, Inc., 1998
4. The Big Book of Herbs: A Comprehensive Illustrated Reference to Herbs of Flavor and Fragrance  
Arthur O. Tucker, PH.D. and Thomas DeBaggio, Interweave Press, Inc. 2000
5. The Herb Society of America New Encyclopedia of Herbs and Their Uses by Deni Bown. New York: Dorling Kindersley, 2001
6. Interview with Jim Adams, former curator National Herb Garden, U.S. National Arboretum, 2005
7. Interview with Holly Shimizu, Executive Director US Botanic Garden, 2005

### Places to visit

1. National Herb Garden, U.S. National Arboretum, 3501 New York Avenue, N.E. Washington, DC 20002
2. U.S. Botanic Garden, 245 First Street, S.W., Washington, DC 20024

## Herb Reference Chart

Common Name	Botanical Name	Type	Zone	Light	Soil *	Propagation
Basil	Ocimum basilicum	A or TP	Not frost tolerant	Full sun	Organically rich, well-aerated, moist	Seed, cuttings
Bay laurel	Laurus nobilis	TP	8	Full-pt sun	Medium rich, loose	Cuttings
Bee balm	Monarda didyma	P	4	Full sun to pt shade	Moist, rich in organic matter	Seed, divisions in spring
Catnip	Nepeta cataria	P	3	Full sun to pt shade	Average, moist, slightly sandy	Seed, cuttings, divisions in spring
Chamomile German	Matricaria recutita	A	Tolerates frost	Full-pt sun	Light, average, somewhat moist	Seed sown in early spring, reseeds itself
Chamomile Roman	Chamaemelum nobile	P	5	Full-pt sun	Moist, organic-rich	Seed, cuttings, division
Chervil	Anthriscus cerefolium	A	Tolerates frost	Part sun to pt shade	Light, moist, rich in organic matter	Seed sown early spring or fall, reseeds itself
Chives	Allium schoenoprasum	P	4	Full-pt sun	Moist, med-rich with organic matter	Seed, division (divide every three years)
Chives, garlic	Allium tuberosum	P	4	Full-pt sun	Moist, med-rich with organic matter	Seed, division, invasive cut seedpod after flwg.
Coriander	Coriandrum sativum	A	Tolerates light frost	Full sun	Light with organic matter, moist	Seed sown in early spring, reseeds itself
Dill	Anethum graveolens	A	Tolerates light frost	Full sun	Light, moist, rich, neutral-slightly acid	Seed-directly in garden is best, reseeds itself
Fennel	Foeniculum vulgare	P	7	Full sun	Light, organic-rich, neutral to alkaline	Seed (do not plant near dill) reseeds itself
Geranium, scented	Pelargonium species	TP	9	Full-pt sun	Slightly acid, dry	Cuttings in summer
Lavender	Lavandula angustifolia	P	5	Full sun	Slightly alkaline, dry, light, sandy	Cuttings in late spring or summer, layering
Lemon balm	Melissa officinalis	P	5	Full-pt sun	Moist, medium rich	Seed, divisions – spring
Lemon verbena	Aloysia triphylla	TP	8	Full sun	Light, medium rich	Cuttings in summer
Marjoram, sweet	Origanum majorana	TP	8	Full sun	Light, dry side, gravelly-sandy	Seed (slow to germinate), cuttings, division
Mint	Mentha species	P	4	Full sun to pt shade	Moist, well dug with organic matter	Cuttings, division, layering
Nasturtium	Tropaeolum majus	A		Full sun	Light, average, moist	Seed in spring
Oregano	Origanum vulgare	P	5	Full sun	Light, dry, average, gravelly-sandy	Cuttings in summer, divisions in spring
Parsley	Petroselinum crispum	B	Tolerates frost	Full sun to pt shade	Deeply dug, moist not wet, organic rich	Seed, soak overnight for faster germination
Rosemary	Rosmarinus officinalis	TP	8	Full sun	Light, sandy, neutral to alkaline	Cuttings
Sage	Salvia officinalis	P	5	Full sun	Light, dry, neutral to alkaline	Cuttings, layering
Savory, summer	Satureja hortensis	A		Full sun	Average, loose, dry	Seed, Cuttings, layering
Savory, winter	Satureja Montana	P	5	Full sun	Light, sandy, dry, neutral to alkaline	Cuttings, division
Tarragon, French	Artemisia dracunculus	P	5	Full sun	Light, dry, med-rich	Cuttings, division
Thyme, common	Thymus vulgaris	P	6	Full sun	Light, dry, neutral-alkaline, gravelly	Cuttings in summer, divisions in spring

### Plant Type

A = Annual  
 B = Biennial  
 P = Perennial  
 TP = Tender Perennial

### USDA Zones of Plant Hardiness

Average minimum (low) temperature in each zone  
 Zone 1 .....-50°F.      Zone 6.....-10° to 0°F.  
 Zone 2 .... -50° to -40°F.      Zone 7..... 0° to 10°F.  
 Zone 3..... -40° to -30°F.      Zone 8.....10° to 20°F.  
 Zone 4..... -30° to -20°F.      Zone 9.....20° to 30°F.  
 Zone 5..... -20° to -10°F.      Zone 10.....30° to 40°F.

\* Important: All herbs listed need well-drained soil.  
 Moist = Slightly wet or damp NOT soggy.