Annuals and perennials add interesting elements to the landscape with their beautiful flowers and foliage. Beds of color provide brilliant accents against backgrounds of permanent plantings. They also soften artificial lines and provide graceful transitions from one outdoor area to another.

Flowers can be used to accent a view, frame a door, or just draw attention. Annual plants are practical because they are versatile, sturdy, and inexpensive. They quickly yield color throughout the season.

Perennial plants return year after year. They fit into many landscapes and can be used as borders, accents, or strong focal points. The foliage of many perennials is attractive during nonflowering seasons as well.

## Annual Flowering Plants

No other group of flowering plants provides as much color as quickly and economically as annuals. Annual plants sprout from seed. They then flower, set seed, and die, all within one season. Many flowers, vegetables, and herbs are planted every year as annuals.

Some plants may live longer in their native lands but do not survive the temperatures of the Midsouth and are best treated as annuals. Most annuals are planted in spring and killed by frost in the fall. Some of them, such as pansies, ornamental cabbage, and dill, are tolerant of Mississippi winters and are best planted in the fall for color throughout the winter. These plants usually die from the heat of early summer.

Some annuals, such as gomphrena, cosmos, and coreopsis, reseed themselves to yield several years after with minimal care. Annuals come in a variety of colors, heights, and textures, and their uses are almost unlimited. Unbeatable in masses of solid or mixed colors, annuals are also effective in small groups or to soften lines and accent borders.

Many annuals, especially compact varieties, are well suited for containers. Large annuals may be used as specimen plantings, or they can accent plants along the back of a border of flowers or shrubs. Some annuals are vines that may be grown on fences, arbors, porch rails, or trellises.

Annuals are inexpensive, especially when grown from seed; however, they do require soil preparation, fertilization, irrigation, weeding, and pest control. Most are native to semiarid regions of the world and require full sunshine to survive. Some species of annuals, such as impatiens, are native to dark woodland floors and flourish in covered patios, narrow courtyards, heavily wooded sites, and other shady areas.

Annual gardens are easily established in the smallest and most restrictive of spaces as well as in large areas. Their relatively shallow root systems require only a modest amount of soil. Gardeners with sizable yards quickly learn the trick of planting one or two easy-to-grow beds of massed annuals to decorate patios, walks, or pools. Apartment dwellers can achieve a splash of color with a few well-placed pots, washtubs, or planter boxes of annuals.

Annuals that need full sun, such as periwinkle and marigold, grow and flower best when they receive 4 to 6 hours of direct sunlight each day. Woodland species perform best in areas with partial or heavy shade.

Prevent root diseases and other problems associated with waterlogged soil by avoiding areas where water will stand after a heavy rain. Also avoid areas near large trees and shrubs that may have many competitive, thirsty feeder roots.

## Soil Preparation

Soil preparation is the most crucial step in growing annuals. Roots of annuals have to penetrate soils quickly, anchor plants, and absorb water and nutrients in one season, often under adverse conditions. Most Mississippi soils can be improved with cultivation and the addition of plant-enhancing additives.

Cultivating wet soils may cause clumps and shallow "pans," which resist air, water, and root penetration. Soil that is ready for cultivation holds its shape when squeezed but crumbles easily. Power tillers are useful for preparing large areas but may create a compacted zone in the soil directly under the tilled area. Use a digging fork to help avoid soil compaction.

The first step in preparing a bed for annuals is to remove any unwanted plants with a hoe and rake, or with a nonselective contact herbicide. After weeds have been removed or killed,
dig the soil a shovel's depth. Deeper soil preparation is normally not necessary. To prevent re-sprouting, remove grass and weed roots while turning the soil. Break clods and lumps into smaller pieces.

Add 3 to 4 inches of organic material, such as composted leaf-and-yard litter, pine bark, peat moss, or composted manure. Then add an inch or two of sharp sand if the soil is heavy. Also, if the soil test indicates a need for lime or fertilizer, spread these supplements at the recommended rate over the top at this time. Mix amendments together, blending the organic matter, sand, and fertilizer. Rake the prepared bed smooth when finished.

## Seed or Transplants

As with vegetables, there are advantages to setting out some annuals as transplants and others from seed. Singlepotted annual plants or packs of annuals containing several transplants are more expensive than seed. The instant effect created by setting out plants, however, is irresistible to most gardeners.

Sowing seed directly into the garden soil is a time-honored ritual that rewards work and patience with great returns. The extra time involved is offset by savings in initial cost. Also, you can have more variety with less expense from seed than transplants.

Many species of annual flowers have been improved for better heat tolerance and disease resistance. Instead of relying on the same tried-and-true varieties each year, look for those annuals that have won the All-America Selection award. While retail outlets have dozens of varieties on seed racks each year, mailorder companies also provide gardeners with colorful catalogs full of many exciting annuals, including the newest varieties. Ordering seed through the mail has a peculiar excitement all its own, and the catalogs themselves are a wealth of information on planting and caring for unusual plants.

Whether grown from seed or transplants, annual flowers are handled the same in the garden. Summer annuals are planted in early spring, after soil temperatures have warmed and danger of frost has passed. Winter annuals are planted early enough in the fall to allow time for conditioning before frost.

Set plants shallow, with the top of the roots placed just under the surface of the soil. If transplants are grown in pots made of compressed peat moss, crumble the top edge of the peat pot away from the plant so that it will not wick water away from the roots. Pinching off small flowers on new transplants may be hard to do, but it will promote faster growth and more flowers sooner.

You can have continual bloom with your annuals the entire summer with occasional maintenance. As the flowers begin to fade, remove them before seeds are formed. The plants will generate new flowers to produce more seed. Annual beds
maintained for cut flowers will also send up new stems to replace those removed for floral arrangements.

## Irrigation, Mulches, Fertilizers, and Weed Control

Mississippi summers are typically dry for weeks. Therefore, be prepared to water annual plants as needed. To promote deep root growth, water thoroughly and deeply, then let soils get nearly dry before soaking again. Gently water annuals, using the fine spray setting of an adjustable nozzle or a breaker especially designed for watering. Soaker or sprinkler hoses are more convenient than hand watering because they provide a gentle flow of water that seeps into the soil. Trickle- or dripirrigation kits conserve water by placing it only at the base of plants a little at a time, and are best used frequently to keep soil moist. Soakers and drip systems also help keep foliage dry, which can reduce the spread of leaf diseases.

Decorative mulches, such as pine straw, shredded bark, composted leaves, or other porous materials that allow air and water exchange, help to conserve water and keep the soil cooler. Mulches also prevent weed seeds from sprouting but can hinder reseeding annuals for the same reason. Soaker hoses can be hidden beneath the mulch.

Annual plants often require extra applications of fertilizer during the growing season. Whether you use a granular or a water-soluble fertilizer, follow label directions. Water-soluble fertilizers give fast but temporary effects. Slow-release fertilizers are the most expensive, but they provide the appropriate amount to plants throughout the growing season with little effort and waste. The slow-release quality of these products makes them more economical and environmentally safe. Most annuals benefit from an all-purpose fertilizer with an even or nearly even balance between nitrogen, phosphorous, and potash, all of which is indicated by the three numbers on the container. Flowering plants may perform better when you use a fertilizer with a higher middle number, the number that indicates more phosphorous. Green or colorful foliage plants, such as amaranth, caladium, and basil, benefit from a higher first number, or the number that indicates more nitrogen. Remember that fertilizers, like salt, go a long way; "a little" is better than "too much."

The ideal soil pH is between 6.0 and 7.5 for most flower species. A soil test will indicate the need for lime, if any, and the amount needed for your particular soil type. For soil testing information, contact your county Extension office or use an inexpensive test kit available from a garden center or mail-order catalog. Agricultural lime often lasts in Mississippi soils for 3 or more years. For this reason, it is best not to add lime unless a soil test indicates a need and to apply only the recommended amount.

Few things can dampen enthusiasm faster than weeds. To reduce the need for pulling weeds by hand or chopping them, herbicides are available that can prevent weed-seed germination or eliminate existing weeds on contact. Some
of these products may be used to control grasses without harming flowers. There are precautions and guidelines on the uses of herbicides because none are completely foolproof. Consult with your county Extension agent or local garden center on the selection and use of herbicides to control weeds, and carefully follow label directions. Mulches can shade weed seeds and prevent their germination, which will also eliminate or reduce the need for hand or chemical control.

## Pest and Disease Control

Choose insect- and disease-resistant varieties when possible. Keep the garden clean, neat, and weed-free, and be alert for early signs of trouble to reduce the need for pesticides. To prevent the spread of leaf diseases, water in the morning or early enough in the evening so foliage has time to dry before dark. Soapy water or insecticidal soap will control many insect pests. Read all label directions before buying or using any pesticide, and follow all precautions.

Table 1. Selected annual flowering plants for Mississippi gardens.

|  | Light | Height | Spacing | Remarks |
| :---: | :---: | :---: | :---: | :---: |
| Ageratum Ageratum houstonianum | Full sun | 6-20" | 9-12" | Edging; tall cultivars make good cut flowers |
| Alyssum Lobularia maritima | Sun to part shade | $3-4$ " | 6-8" | Edging; nice ground cover; heat sensitive |
| Baby's' Breath Gyposphila elegans | Full sun | 1-2' | 8-12" | Cut flowers; lime lover; excessive growth in rich soil |
| Globe Amaranth Gomphrena globosa | Full sun | 1-3' | 6-12" | Drought tolerant; popular dry flower; reseeds |
| Balsam <br> (Touch-me-not) Impatiens balsamnia | Sun to part shade | 15-24" | 8-12" | Reseeds prolifically |
| Basil Ocimum basilicum | Full sun | 15-24" | 15-18" | Fragrant culinary herb; cut for regrowth |
| Begonia Begonia semperflorens | Sun to part shade | 8-10" | 8-12" | Group for mass effect; green leaf cultivars are shade tolerant |
| Black-eyed Susan Vine Thunbergia alata | Sun to part shade | Vine | 6-18" | Window boxes and hanging baskets |
| Caladium Caladium hortulanum | Sun to part shade | $1-2^{\prime}$ | 12-14" | Tubers planted when day temperatures reach $70^{\circ} \mathrm{F}$; dig in fall after foliage drops |
| Calendula (pot marigold) Calendula officinalis | Full sun | 1-2' | 12-15" | Cut flowers; bright flower bed plantings |
| Candlestick Plant Senecio articulatus | Full sun | 4-6' | $3-5^{\prime}$ | Accent or screen; unusual form |
| Castor Bean Ricinus communus | Full sun | 5-7' | 2-4' | Coarse-textured bronze leaves; seeds poisonous; screen |
| Chrysanthemum Chrysanthemum morifolium | Full sun | 1-3' | 12-14" | Many different colors; plants are perennial but often planted as annuals |
| Cleome Cleome lutea | Full sun | $4-5^{\prime}$ | 18-24" | Screen; cut flowers; reseeds prolifically |
| $\begin{gathered} \text { Cockscomb } \\ \text { (celosia) } \\ \text { Celosia argentea or cristata } \end{gathered}$ | Full sun | 1-2' | 8-12" | Crested or plumed cut flowers; heat tolerant; some reseed |
| Coleus Coleus blumei | Sun to part shade | 2-3' | 10-12" | Colorful foliage; mass in shade; nice container plant |
| Coreopsis Coreopsis lanceolata | Full sun | $1-2^{\prime}$ | 12-18" | Native wildflower; reseeds; use as filler or in container |
| Cornflower (bachelor's button) Centaurea cyanus | Full sun | 2-3' | 6-12" | Filler plant; cut flowers; sow in fall |
| Cosmos Cosmos bipinnatus | Sun to part shade | 2-4' | 6-12" | Heat and drought tolerant; reseeds prolifically |
| Cypress Vine Quamoclit pennata | Sun to part shade | Vine | 6-18" | Attracts hummingbirds; reseeds |


|  | Light | Height | Spacing | Remarks |
| :---: | :---: | :---: | :---: | :---: |
| Dill <br> Anethum graveolens | Full sun | 3-4' | 12-18" | Culinary herb; fine-textured foliage |
| Dusty Miller Senecio cineraria | Full sun | $1-2^{\prime}$ | 8-12" | Silver-gray foliage; yellow flowers |
| Feverfew Chrysanthiemum parthenium | Full sun | 2-3' | 8-12" | Filler; cut flowers; reseeds |
| Flowering Cabbage Brassica oleracea | Full sun | 6-12" | 12-18" | Winter annual but not hardy in north Mississippi; colorful foliage |
| Four-o'clocks Mirabilis jalapa | Full sun | 1-3' | 8-12" | Flowers open in late afternoon; require well-drained soil |
| Gaillardia (Indian blanket) Gaillardia pulchella | Full sun | 2-3' | 12-18" | Cut flowers or dried; reseeding wildflowers |
| Geranium (zonal geranium) Pelargonium x hortorum | Sun to part shade | 12-15" | 9-12" | Tolerates cool temperatures; good container plant |
| Gloriosa Daisy (Black-eyed Susan) Rudbeckia hirta gloriosa | Sun to part shade | 18-30" | 12-18" | Bold texture; cut flowers; reseeds |
| Hollyhock Althaea rosea | Full sun | 4-6' | 12-18" | Annual cultivars are available; biennial cultivars, plant in fall; use as screen or background plant |
| Hyacinth Bean Dolichos lablab | Full sun | Vine | 6-12" | Fast screen; colorful flowers and pods |
| Impatiens Imapatiens wallerana | Part shade | 12-24" | 8-12" | Best annual for shade; some cultivars may reseed |
| Johnny Jump-up Viola tricolor | Sun to part shade | $6-12^{\prime \prime}$ <br> long flowering | 6-8" | Winter annual; plant in fall |
| Joseph's Coat <br> Amaranthus tricolor | Full sun | 6-12" | 8-12" | Colorful foliage; heat and drought tolerant |
| Lantana Lantana camara | Full sun | 1-2' | 18-24" | Fragrant, attractive flowers; container plant; perennial, but may act as an annual in northern Mississippi |
| Larkspur Consolida ambigua | Part shade | 2-3' | 8-15" | Spiked flower form; accent or mass plantings; reseeds; sow in fall |
| Marigold Tagetes erecta or patula | Full sun | 6-30" | 6-12" | Mass plantings; good container plants; spider mites a problem |
| Morningglory Ipomoea purpurea | Full sun | Vine | 6-12" | Colorful vine; cultivar selections rarely reseed |
| Moss Rose <br> Portulaca grandiflora | Full sun | 6-9" | 6-12" | Heat and drought tolerant; summer-long color; reseeds well |
| New Guinea Impatiens Impatiens hawkeri, <br> I. linearifolia, or hybrids | Sun to part shade | 8-12" | 12-14" | Striking foliage; showy blooms; tolerates sun; hanging baskets |
| Pansy Viola x wittrockiana | Sun to part shade | 6-12" | 6-10" | Winter annual for fall planting and early spring color; container plant |
| Pepper (ornamental) Capsicum annuum | Full sun | 9-30" | 6-15" | Many cultivars; heat tolerant; may reseed |
| Periwinkle (vinca) Catharanthus roseus | Full sun | 1-2' | 8-12" | Drought and heat tolerant; container plant; reseeds |
| Petunia Petunia x hybrida | Sun to part shade | 6-24" | 12-15" | Many cultivars; mass color; heat tolerant; reseeds |
| Phlox (annual) Phlox drummondii | Sun to part shade | 8-15" | 6-12" | Mass color; native wildflower; reseeds |


| Poppy Papaver nudicaule or orientale | Full sun | $1-2 '$ | 6-12" | Cut flowers; sow in fall; perennial, but mostly annual in Mississippi; easy to grow |
| :---: | :---: | :---: | :---: | :---: |
| Purslane (hybrid) Portulaca x hybrida | Full sun | 6-9" | 6-12" | Heat and drought tolerant; summer-long color; hanging baskets; does not reseed |
| Queen Anne's Lace Daucus carota | Sun to part shade | $3-4{ }^{\prime}$ | $2-3 '$ | Naturalized wildflower; mass color; winter foliage; reseeds |
| Scarlet Sage Salvia coccinea | Sun to part shade | 15-30" | 8-12" | Attracts hummingbirds; spikes of color; perennial, but may act as an annual in northern Mississippi |
| Snapdragon Antirrhinum majus | Sun | 12-36" | 10-12" | Spikes of color; cut flowers; blooms best in cool weather |
| Statice <br> Limonium sinuatim | Full sun | $1-2^{\prime}$ | 9-12" | Cut flowers; salt tolerant for coastal plantings; readily dried |
| Strawflower Helichrysum bracteatum | Full sun | 12-36" | 12-15" | Mass of color; cut flowers or dried |
| Sunflower <br> Helianthus annuus | Full sun | 4-10' | 20-24" | Thrives in poor soil; temporary screen; attracts goldfinches |
| Sweetpea <br> Lathyrus odoratus | Full sun | $1-3^{\prime}$ | 6-8" | Sow in fall; soak seed in tepid water one hour before planting |
| Tithonia Tithonia rotundifolia | Full sun | 4-6' | $3-4{ }^{\prime}$ | Tall, bright, full plants; drought tolerant |
| Verbena <br> Verbena hortensis | Full sun | 6-12" | 10-12" | Notably fragrant; planter boxes and baskets |
| Wishbone Flower Torenia fournieri | Part shade | 6-12" | 6-8" | Garden borders; pots and hanging baskets |
| Zinnia Zinnia sp. | Full sun | $1-3 '$ | 8-15" | Mass color; many cultivars; variable colors; some reseed |



Snaptastic snapdragons.

## Quick Reference List of Annuals

| Easy-to-Grow | Hot, Dry Locations | May Reseed Year after Year |
| :---: | :---: | :---: |
| Ageratum | Amaranth | Cleome |
| Begonia | (Joseph's Coat) | Coreopsis |
| Chrysanthemum | Copper Plant | Cornflower |
| Cleome | Cornflower | Cosmos |
| Cockscomb | Cosmos | Gomphrena |
| Coreopsis | Four-o'clocks | Impatiens |
| Cornflower | Gomphrena | Johnny Jump-up |
| Cosmos | Melampodium | Larkspur |
| Dusty Miller | Morninglory | Moss Rose |
| Four-o'clocks | Moss Rose | Periwinkle |
| Gomphrena | Periwinkle | Petunia |
| Impatiens | Portulaca | Zinnia |
| Joseph's Coat | Sunflower |  |
| Marigold | Tithonia |  |
| Melampodium | Verbena | For Cut Flowers |
| Moss Rose | Zinnia | Baby's Breath |
| Pansy |  | Calendula |
| Periwinkle |  | Cleome |
| Pepper | Poor Soils | Cockscomb |
| Petunia | Amaranth | Cornflower |
| Poppy | (Joseph's Coat) | Cosmos |
| Portulaca | Cleome | Gomphrena |
| Sunflower | Cockscomb | Larkspur |
| Zinnia | Coreopsis | Marigold |
|  | Four-o'clocks | Poppy |
|  | Gomphrena | Salvia |
| Shade or Semi-Shade | Moss Rose | Snapdragon |
| Ageratum | Periwinkle | Statice |
| Alyssum | Portulaca | Zinnia |
| Begonia | Verbena |  |
| Coleus |  |  |
| Impatiens |  | For Colorful Foliage |
| Pansy | Annuals to Sow in Fall | Amaranth |
| Salvia | Alyssum | Basil |
| Snapdragon | Baby's Breath | (purple-leafed and ruffle-leafed) |
| Wishbone Flower (torenia) | Calendula | Caladium |
|  | Cornflower | Castor Bean |
|  | Cosmos | Coleus |
|  | Dill | Copper Plant |
|  | Johnny Jump-up | Dusty Miller |
|  | Larkspur | Joseph's Coat |
|  | Pansy | Ornamental Kale |
|  | Poppy | (flowering cabbage) |
|  | Queen Anne's Lace |  |
|  | Snapdragon |  |
|  | Sweetpea |  |

For Edging
Ageratum
Alyssum
Begonia
Dusty Miller
Portulaca
Marigold
(dwarf)
Pansy
Petunia
Verbena
Wishbone Flower
(torenia)
Zinnia
(dwarf, and Z. angustifolia)

## For Containers

Ageratum
Alyssum
Black-eyed Susan Vine
Begonia
Coleus
Geranium
Impatiens
Marigold
Pansy
Pepper
Periwinkle
Petunia
Portulaca
Verbena
Wishbone Flower (torenia)

For Backgrounds
and Screens
Amaranth
Castor Bean
Cleome
Cockscomb
Copper Plant
Cosmos
Hollyhock
Marigold
(tall)
Sunflower
Tithonia
Zinnia
(tall)

Attract Butterflies
Coreopsis
Cosmos
Gaillardia
Gomphrena
Marigold
(singles best)
Periwinkle
Queen Anne's Lace
Verbena
Zinnia
(the best)

## For Groundcovers

Alyssum
Begonia
Moss Rose
Periwinkle
Portulaca
Verbena


Luscious royale red zone lantana.

## Dependable Annuals for Mississippi

The following is a quick reference list of common and favorite annual flowers grown in Mississippi, along with selected characteristics. It is not intended to be a comprehensive guide, which may be found in any good gardening book. There are many other suitable annuals that are not included here. Try one or two new varieties at a time for the fun of it.

## Perennial Flowering Plants

Perennials are plants that live for several years and often require at least two years from seed to flower. There is a renewed interest in herbaceous perennials because they need less maintenance, less water, and fewer pesticides than annuals. Many gardeners include flowering bulbs and ornamental grasses in this category. Once prominent in many landscapes, these enduring plants have been rediscovered for their dependable seasonal effects.

Unlike trees and woody shrubs—also perennials—herbaceous perennials appear to die down part of the year, only to emerge again the following season from underground roots, stems, bulbs, or rhizomes. The simple term "perennial" is commonly used when referring to herbaceous perennials.

Perennials are easily used as ground cover, mixed with annuals, grown in containers, and placed as accents or specimen plants. Many perennials are short bloomers and are best mixed with plants that bloom at different times of the year or included with other landscape plants as part of an overall design. Other perennial plants, such as ferns and monkey grass, are noted more for their foliage rather than flowers. Inclusion of these plants adds interest and creates seasonal color or texture in the landscape.

Favorite perennials, including many herbs and native wildflowers, have long been shared by gardeners and sold through garden centers and mail-order nurseries. Many are treasured as heirloom plants and have proven to be hardy enough to withstand weather and climate extremes, often with little care. Others are exciting new discoveries or hybrids that may take several years to prove themselves in Mississippi gardens; however, there are a good many perennial plants that simply do not survive for more than a year or two in Mississippi's hot, humid climate.

## Designing Perennial Plantings

While beds and pots of annuals may be replanted with ease, perennial plantings may live for many years. Their longevity requires planning on the part of the gardener. Perennials work best in highly visible flower beds and can be incorporated into the total landscape design. Otherwise, large areas of the landscape may be left bare for part of the year.

Like annuals, many perennials are effective in mass plantings when they are in bloom. Because of their seasonality, perennials are better viewed as small accents of color and texture among other plants. You can often build a design to support or accent a favorite plant or group of plants. Use small evergreen shrubs, flowering trees, fences, stones, benches, birdbaths, or art objects to enhance a flower garden and "carry" it through all the seasons.

An easy design trick is to interplant groups of flowers that have contrasting shapes. For example, the large flowers of daylilies are set off well by the spikes of blue salvia and the round flowers of yarrow. The large leaves of canna and sword-like form of iris plants have a dramatic effect when used in groups among less bold plants.

A natural way to begin planting perennials is to create islands of flowers in an open lawn, but because such beds are easily viewed from many sides, they often require high maintenance to keep them attractive.

Border plantings along a wall, fence, or hedge can soften the transition of landscape structures into the horizon or create alleys of color. Rectangular beds lend themselves to a border planting where space is restrictive. When planting a perennial border against a hedge, fence, or wall, leave a little space between the object and its backdrop. This allows for better air circulation, more light penetration, and ease of maintenance from the rear of the bed. Perennial borders usually are 6 to 8 feet wide, allowing adequate space for at least a combination of six or more front-to-back species to yield a continual bloom.

To prevent turfgrass from growing into the perennial bed and becoming unsightly, use some form of broad edging or separating strip. Flat-laid bricks, flagstone, bare ground, or a heavy layer of mulch, such as wood chips or bark, will help keep out grass.

Perennials may be grouped according to color, which creates an intermixing that continually blooms at different intervals. Early bulbs may be planted with spring yarrow and iris, which usually fade before daylilies and canna begin their season of color. Use fall sunflowers and ornamental grasses to complete the season. Select plants that have long-lived blooms and foliage to attract attention.

Plant height is a major consideration in landscape design. In border plantings, the tallest plants are usually placed toward the rear to serve as a backdrop. A few of these plants can be moved forward to prevent monotony in the design. In island plantings, tall plants are better placed toward the center. Fallblooming perennials are usually the tallest, making them the best backdrop or accent plants. Most of the middle-height perennial plants are summer bloomers and may occupy the majority of the middle space. Spring-blooming perennials are primarily short plants; place them toward the front. Emerging foliage and flowers of later blooming plants can help hide the fading foliage of earlier flowers. Narrow beds with excessively tall plants usually do not display effectively. Whether for
borders or island beds, keep the width of a planting about twice the height of the tallest plant.

## Site Selection and Soil Preparation

Consider the site before selecting your plants. Although many perennials, such as ferns, tolerate heavy shade, most require abundant sunshine. Air circulation is important for avoiding diseases. Stagnant, warm, or humid air creates ideal conditions for plant disease. Perennial plants also require properly prepared soil, and a few have specific drainage and fertility requirements.

Soil preparation for perennials is similar to that for annuals; however, devote special attention to perennial bed preparation because plants may occupy the site for several years, leaving little opportunity to correct any problems. When possible, add sand and organic matter, such as bark, peat, or compost, to soils well ahead of planting time.

A layer of organic matter from 3 to 4 inches deep, worked into the soil about a shovel's depth, is usually adequate. Since different types of organic matter work and decompose at different rates in the soil, it is best to use a small amount of two to three types of organic matter rather than a large amount of just one.

Soil testing provides specific recommendations for fertilizer and lime needs. Since lime can last for several years (depending on the type), never add it without a soil test. Many fertilizers, such as phosphorus, are best applied and mixed into soils before planting. Perennials need a balance of several nutrients, including nitrogen, phosphorous, and potash; most garden supply stores carry a wide variety of fertilizer mixes. Keep in mind that phosphorus, including that found in bone meal, lasts for several years and does not need to be applied too often.

## Propagation

Though most perennials take a couple of years to flower from seed, many are as easy to start as annuals. The quickest way to have blooming plants is by vegetative propagation, such as by dividing old plants or rooting stem cuttings. Plants produced in this manner have all of the traits of the "mother" plant. Propagation by division may seem difficult at first, but most gardeners find that dividing crowns and roots and separating bulbs can be mastered quickly. Try dividing monkey grass for experience; then move on to daylilies, and before long you will have "the hang of it."

Perennial plants with shallow roots are easily pulled apart by hand. Long fibrous roots can be separated with a hand fork. Thickly intertwined roots may need more forceful separation or cutting with digging forks. Replant only those segments with strong roots and a few intact leaves or crowns.

In general, it is best to divide perennials during their dormant or "off" season. For example, divide spring bloomers in fall and
fall bloomers in spring. Some perennials may need dividing every 3 to 4 years or they will slowly crowd themselves into clumps of nonflowering leaves and roots.

Many perennial plants may be propagated from stem cuttings, which do not disturb the plant's roots. Take stem cuttings during the spring or early summer, choosing stems that are mature and firm but not yet hardened and woody. Cut off from 4- to 6-inch segments using a sharp knife or shears, and pinch off the succulent tip and flower buds to force the cuttings to concentrate their energy on producing roots. Remove the lower leaves that will be below the surface of the rooting medium, but leave a few leaves to provide a source of energy for root initiation and growth.

Because of disease or weather conditions, cuttings often will not root directly in garden soils. They may be easily started in a pot containing a porous, well-drained rooting medium, such as a 1:1 mixture of perlite and peat moss. Coarse sand and vermiculite are also used as rooting soils. These mixtures will hold moisture but allow drainage for air circulation. Rootstimulating compounds, such as those that contain fungicides, are available at most garden centers. Using a blunt stick, pencil, or finger, open a hole in the rooting medium and insert the treated cutting. Firm the medium around the cutting and water in well.

Many commercial growers use a mist bed to keep cuttings from wilting, but this is usually not feasible on a small scale. You may easily construct a humidity tent from plastic film loosely draped over a frame covering the cuttings. Place the tent in bright light but prevent overheating by making sure the tent is not located in direct sunshine. Keep the plastic loose to allow air circulation. Avoid direct contact between the leaves and the plastic. The tent will serve as a tiny greenhouse and will maintain a good rooting environment with light daily watering. Rooting often occurs within 3 or 4 weeks. By the time new leaves begin to appear on cuttings, roots are usually formed. Remove the plastic tent and water regularly until plants are firmly established.

Transplant newly rooted plants into prepared beds or pots and place in a bright, protected area until you are ready to set them into your garden or share them with others.

## Planting

Set perennial plants in their permanent places so roots are completely covered with prepared soil, but avoid burying the stem or crown. Place container-grown plants at the same depth they were grown. Place dormant plants at the depth at which they grew the previous season. To encourage side-root growth, make a planting hole twice as wide as deep. With bare-root perennials, spread the roots outward as well as downward. For container-grown plants, loosen encircled roots and shake some of the potting soil into the planting hole. Remember to crumble away the top edges of a peat pot to prevent water loss through wicking. Do not let roots dry out, especially during transplanting.

Water the plants thoroughly to force out air pockets and to settle the soil. Mark and label the plantings. Mulch the bed surface with pine straw or bark to keep soil from drying, crusting, and overheating in the summer, and to prevent weed seeds from germinating.

## Care and Maintenance

If you do not mulch your plants, use shallow cultivation in the spring and early summer to break and aerate compacted soils. Breaking up the soil also aids in water penetration and makes it easier to incorporate fertilizer. Summer cultivation can damage shallow roots and is more difficult because the plants will be larger. Early in the season, stake tall plants with wire stands or bamboo canes. Use care to avoid root damage.

Apply fertilizer sparingly to plants early in the season after new growth begins to show. If plants are growing well, no additional fertilizer may be needed; otherwise, a second, light application will be helpful several weeks into the season.

In the fall, cut the old plant stalks to the ground after the leaves have fallen, and mulch to protect crowns and roots from the
extremes of mild weather followed by sudden cold spells. Remove any winter-annual weeds that may have germinated before applying mulch. Fall is also a good time to divide plants that may be encroaching on one another.

## Hardy Perennials for Mississippi Gardens

Perennial plants have been long enjoyed for their flowers, foliage, and ability to return for many years with little trouble. Although dozens of perennials have been shared between gardeners, retail garden centers offer many hardy varieties. By planting only three or four new types of perennials each year, you can quickly build up a showy perennial garden and then divide the plants for your own use or to give away.

The following are common and favorite perennial flowers grown in Mississippi, along with selected characteristics. This is by no means a comprehensive list. Use this as a general selection guide for getting started with perennials. Try others as your success and confidence grow.


Table 2. Selected herbaceous perennials for Mississippi gardens.*

|  | Bloom Season | Plant Height | Remarks |
| :---: | :---: | :---: | :---: |
| Achillea (yarrow) Achillea filipendulina or millefolium | Spring and summer | $1-3 '$ | Fernlike winter foliage; flat, round heads of spring and summer flowers; excellent cut flowers; good companion to daylilies; pink or white cultivars popular; 'Coronation Gold' suffers on Gulf Coast from heat and humidity |
| Amsonia (blue star) Amsonia tabernaemontana | Spring and summer | $2-3 '$ | Native; spikes of blue in mid-spring; tolerates wet or dry soils; good cut flower; clump-former to 3 feet tall |
| Artemisia <br> Artemisia ludoviciana | Foliage | 2-3' | Silver-gray foliage plant; invasive, but good companion; 'Silver King' and 'Powis Castle' |
| Asters <br> Aster sp. | Fall | $2-5{ }^{\prime}$ | Wide range of plant heights depending on type |
| Banana <br> Musa acuminata | Foliage | 10-15' | Giant foliage; trunk needs mulch protection in winter |
| Butterfly Lily (ginger lily) Hedychium coronarium | Late summer and fall | 4-6' | Bamboo-like summer foliage; pure white, fragrant flowers; rhizomes edible as a mild ginger; mulch in winter |
| Canna <br> Canna generalis | Summer | 3-7' | Dependable summer flowers; coarse foliage; tolerates both very dry and very wet soils; dwarf forms popular for landscaping; insects are a problem on foliage, but easily controlled; pruning forces new growth |
| Cardinal Flower (Lobelia) <br> Lobelia cardinalis | Late summer and fall | 3-4' | Native to moist or lightly shaded areas; spikes of red flowers; cut flower; do not mulch in winter or rot may occur |
| Chives and Garlic Chives Allium schoenoprasum | Spring | $1-2 '$ | Edible flowering members of onion family; winter foliage |
| Coreopsis (Mississippi State Wildflower) Coreopsis lanceolata | Spring and summer | $2-3 '$ | Several forms include spring bloomers for cut flowers and invasive, lowgrowing summer bloomers ('Moonbeam', 'Zargreb' with ferny foliage) |
| Daisies (mums) Chrysanthemum sp. | Spring to fall | 1-3' | Many forms and colors |
| Ox-eye Daisy C. leucanthemum | Spring | 2-3' | Naturalized wildflower 'May Queen' best variety |
| Shasta Daisy C. maximum | Spring | 2-3' | Very popular white daisy |
| Garden Mum C. x morifolium | Fall | $1-2 '$ | Often planted as an annual; needs dividing in spring to prevent rot |
| Clara Curtis Aster <br> C. rubellum (C. zawadskii latilobum) | Fall | 2-3' | Old garden favorite; large and pink; often called 'Country Girls' |
| Daylily Hemerocallis | Summer | 1-4' | Very popular clump-former with stems of large flowers; tolerates wide range of soils except wet; many improved varieties |
| Elephant Ear Alocasia cucullata | Foliage | $3-4{ }^{\prime}$ | Favorite large-leaf foliage plant; corms edible; may be invasive; many other species and hybrids available |
| Ferns | Foliage | 1-5' | Many kinds, mostly shade; divide and transplant in winter |
| Four-o'clocks Mirabilis jalapa | Spring to fall | 1-3' | Fragrant evening bloomer; easy and fast from seed; tolerant of very poor soils; good for hummingbirds |
| Hibiscus (rose mallow) Hibiscus moscheutos | Summer and fall | $3-5^{\prime}$ | Several hardy varieties; do not confuse with Chinese hibiscus; tall plants; 'Disco Belle' series have dinner-plate-sized flowers; insects a problem on foliage |
| Hosta (plantain lily) Hosta plantaginea | Summer | 10-24" | Shade plant with coarse foliage; cut flower; not heat tolerant near Gulf Coast |
| Iris Iris sp. | Spring | $2-5$ | Louisiana iris thrives in wet soils; bearded iris is popular, but often rots in heavy soils or if planted deep; Siberian iris more dependable in central and north Mississippi; dwarf crested iris is a shade-loving groundcover. |

[^0]|  | Bloom Season | Plant Height | Remarks |
| :---: | :---: | :---: | :---: |
| Lamb's Ears Stachys byzantina | Foliage | 1-2' | Silver-gray foliage, spikes of yellow flowers in spring; drought-tolerant groundcover; container plant |
| Lantana Lantana camara | Spring to fall | 2-4' | Long-blooming butterfly plant; drought tolerant; attractive berries poisonous; new cultivars may not be hardy in the north |
| Liatris (blazing star) Liatris spicata | Summer | 2-3' | Outstanding native with tall spikes of lavender flowers that bloom from top down; great cut flower |
| Liriope (monkey grass) Liriope muscari | Summer | 1-2' | Tough clump-former with evergreen foliage; variegated varieties available; often overlooked as flowering plant for dry or shady sites |
| Lythrum (loosestrife) <br> Lythrum salicaria | Summer and fall | $3-5^{\prime}$ | Tall spikes of pink flowers; butterflies; named cultivars ('Morden's Gleam', etc.) not invasive; tolerates wet soils or water gardens |
| Mistflower (wild ageratum) Eupatorium coelestinum | Fall | 2-3 | Native; blooms in fall with masses of blue flowers |
| Monarda (bee balm) Monarda didyma | Summer | 2-3' | Native to lightly-shaded moist sites; flowers used for herbal tea; good butterfly plant |
| Mondograss Ophiopogon japonicus | Summer | $4-8{ }^{\prime \prime}$ | Dwarf lily turf; good ground cover; full sun to part shade |
| Phlox Phlox sp. | Spring | 1-3' | Most kinds native; 'Thrift',' P. subulata, blooms early spring, good for rock gardens; P. paniculata, taller cut flower (suffers from mildew), good for edging;'Wild Sweet Williams,' P. divaricata, good for ground cover;'Summer Phlox', P. paniculata, taller cut flower (suffers from mildew) |
| Physostegia (obedience) Physostegia virginiana | Summer and fall | 2-4' | Invasive native with spikes of cut flowers; 'Vivid' pink cultivar |
| Purple Coneflower Echinacea purpurea | Summer | 2-4' | Native summer cut flower; attractive seedheads |
| Red Hot Poker (Kniphofia) Kniphofia uvaria | Late spring to summer | 2-3' | Striking stems of late spring flowers above clumps of thin foliage |
| Rudbeckia (Black-eyed Susan) Rudbeckia fulgida or hirta | Summer | 2-4' | Traditional native wildflower; $R$. hirta is a short-lived spring perennial; reseeds readily; R. fulgida 'Goldstrum' is a more dependable, spreading groundcover with many mid-summer flowers on stiff stems; winter foliage |
| Salvia Salvia sp. | Summer | 3-4' | Several hardy species and cultivars (S. greggii, S. farinaceae, S. guarantitica), mostly blue cut flowers on spikes |
| Saponaria (soapwort, bouncing bet) Saponaria officinalis | Spring to fall | 8-10" | Old-world plant used by pioneers to make soap lather; spreading groundcover with pink and white flowers in clusters; good winter foliage |
| Sedum <br> Sedum acre or spectabile | Spring or summer | 10-18" | Several hardy species include cascading S. acre with yellow spring flowers, and S. spectabile ('Autumn Joy') or house leek; very hardy, easy to root or divide; |
| Stoke's Aster Stokesia laevis | Spring | 18-24" | Native, low-growing clump-former with large blue aster-like flowers; tolerates wet soils |
| Verbena Verbena x hybrida | Spring to summer | 1-2' | Spreading ground covers for sunny, dry areas; garden verbenas are propagated from cuttings, not seed like the annual species; $V$. rigida and $V$. tenuisecta (moss verbena) are wild along roadsides and are too invasive for most gardens, but do best in very poor soils; prune in summer to control mites |
| Violets <br> Viola williamsii | Late winter and spring | 6-10" | Woodland natives that also grow in full sun; may become weedy in lawns; winter flowers edible |

## Other Hardy Perennials Worth Growing in Mississippi Gardens

Note: These perennials are all easily grown. However, many of them are difficult to locate commercially except through mail order. All can be readily found in good perennial reference books if more information is needed. Latin names followed by sp. indicate many different species are available.

Asparagus
Asparagus officinalis
Beard-tongue
Penstemon sp.
Blue-eyed Grass
Sisyrinchium angustifolium
Boltonia
B. asteroides

Bugleweed
Ajuga reptans
Butterfly Weed
Asclepias tuberosa
Candytuft
Iberis sempervirens
Cast-iron Plant
Aspidistra elatior
Comfrey
Symphytum officinale
Coralbells
Heuchera sanguinea
Dianthus 'Telstar' and 'Spring Beauty' Dianthus sp.

Dwarf Goldenrod
Solidago x hybrida
Gerbera Daisy
Gerbera jamesonii
Hardy Begonia
Begonia grandis
Heliopsis ("cut-and-come-again")
Heliopsis scabra
Helleborus (Lenten rose)
Helleborus orientalis
Hidden Ginger (hidden lily)
Curcuma petiolata
Indian Pinks
Spigelia marilandica
Ironweed
Veronia altissima and V. angustifolia
Joe-Pye Weed
Eupatorium purpureum
Lily (turk's cap, Madonna, tiger, etc.)
Lilium sp.
Mexican or Mint Marigold
Tagetes lucida

Mints
Menthasp.
Pachysandra
Pachysandra terminalis
Peony ('Festiva Maxima' and other early bloomers only)
Paeonia lactiflora
Peruvian Lily (parrot lily) Alstroemeria pulchella
Purple Heart Tradescantia pallida
Spiderwort
Tradescantia virginiana
Trillium
Trillium cuneatum
Umbrella Sedge
Cyperus alternifolius
Veronica 'Sunny Border Blue', ‘Blue Charm', and 'Goodness Grows' Veronica spicata


## Selected Hardy Bulbs for Mississippi Gardens

Note: These bulbs are commonly grown, though they may not be readily available through local garden supply stores. They are available through mail-order companies. Many may be found in old gardens and, with permission from the owners, can be propagated. Divide bulbs when they are not actively growing. Latin names followed by sp. indicate many different species are available.

Allium (chives, garlic chives)
Allium schoenoprasum
Amaryllis (hardy red)
Amaryllis belladonna
Calla Lily
Zantedeschia aethiopica
Crocosmia ('Lucifer', and the orange montbretia)
Crocosmia x crocosmiiflora
Dutch Iris
Iris xiphium
Hyacinth
Hyacinthus orientalis
Hymenocallis (native white spider lily)
Hymenocallis occidentalis
Jacob's Ladder (hardy gladiolus)
Gladiolus byzantinus
Ipheion (starflower)
Ipheion uniflorum
Leucojum (summer snowflake)
Lilies (garden lily; tiger, Madonna, regal, Easter)
Lilium sp.
Lycoris Radiata (red spider lily)
Lycoris radiata
L. squamigera (naked ladies)

Lycoris squamigera
Milk and Wine Lily
Crinum latifolium
Muscari (grape hyacinth)
Narcissus (daffodil) Narcissus sp.
Oxalis (pink woods sorrel) Oxalis adenophylla
Painted Arum
Arum italicum
Spanish Squill (woods hyacinth)
Scilla hispanica
Star of Bethlehem
Ornithogalum nutans
Sternbergia (Autumn crocus)
Sternbertia lutea
Society Garlic
Tulbaghia violacea
Rain Lily, Atamasco Lily
Zephyranthes sp.


Red amaryllis.

## Quick Reference List for Perennial Uses

Note: Planting a few perennials and annuals around a featured object, such as a bench, urn, or birdbath, gives an interesting all-season scene. Mixing groups of contrasting shapes or textures and planning for a long season of color can create a dramatic effect.

## Shade or Part-Shade

Ajuga
Alstroemeria (Peruvian lily)
Aspidistra
Canna (may not bloom, but foliage good for texture)
Ferns
Ginger Lily (Hedychium)
Heuchera (Coral bells)
Hosta
Iris (Dwarf crested, and the old timey "sweet flags")
Liriope
Lobelia (Cardinal flower)
Ophiopogon (mondograss)
Pachysandra (except on Gulf Coast)
Phlox divaricata (wild blue phlox)
Setcreasia (purple heart)
Spigelia (Indian Pink)
Viola (Violets)

Tolerant of Wet Soils
Amsonia (blue star)
Apsidistra
Canna
Cyperus (umbrella sedge)
Ironweed
Joe-Pye Weed
Louisiana Iris
Lobelia (cardinal flower)
Lythrum
Miscanthus (ornamental grass)
Stokesia
Bloom in Late Summer or Fall
Asters
Boltonia
Canna
Daylily
Dwarf Goldenrod
Four-o'clocks
Ironweed
Lantana
Physotegia (obedience)
Purple Coneflower
Mexican Mint Marigold
Ornamental grasses
Rudbeckia 'Goldsturm'
Salvias
Saponaria
Verbena
Attractive to Butterflies
Canna
Coreopsis
Goldenrod
Ironweed
Joe-Pye weed
Lantana (the best)
Liatris
Lythrum
Monarda
Phlox
Purple Coneflower
Rudbeckia
Salvias
Sedums
Stokesia
Verbena
Yarrow

Bloom in Late Summer or Fall
Asters
Boltonia
Canna
Daylily
Dwarf Goldenrod
Four-o'clocks
Ironweed
Lantana
Physotegia (obedience)
Purple Coneflower
Mexican Mint Marigold
Ornamental grasses
Rudbeckia 'Goldsturm'
Salvias
Saponaria
Verbena

## Attractive to Butterflies

Canna
Coreopsis
Goldenrod
Ironweed
Joe-Pye weed
Lantana (the best)
Liatris
Lythrum
Phlox
Purple Coneflower
Rudbeckia
Salvias
Sedums
Stokesia
Verbena
Yarrow

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[^0]:    *Note: Names are those generally used in the nursery trade and garden books. Cultivated varieties are in single quotes.

