

Horticulture Learn & Grow

www.extension.uiuc.edu/champaign

Gardening in Shade

Shade gardening can be a challenge. For many people their shade gardening experience starts with an unsuccessful attempt to grow lawn grass under trees. Even shade tolerant grasses, however, need at least 4 hours of sun to grow. While many plants do not grow well under low light conditions, or under trees due to massive tree root systems, there are plants that will survive and even thrive in these environments. Moisture, temperature, soil conditions, and nutrient and light availability are all factors that must be considered when selecting plants. The first step in shade gardening is to become familiar with your shady area so you can match plants to your landscape. A successful shade garden can be a relaxing place and well worth the effort.



Landscaping

Written by
Heather Miller, MS
Master Gardener

Edited by
Sandy Mason,
Extension Educator
Horticulture



UNIVERSITY OF ILLINOIS
EXTENSION

Champaign County
801 N. Country Fair Dr.
Champaign, IL 61821

PHONE:
217.333.7672

FAX:
217.333.7683

Types of Shade

All shade is not created equal. The different types of shade are:

Dappled Shade— produced by trees and creates an ever-moving pattern of sun/shade. High canopied trees or small leaved trees such as honey locusts provide this type of shade. It provides the widest range of gardening options for growing both shade and sun-loving plants.

Open Shade— describes a north-facing yard. The shade is often cast by an adjoining wall, fence or building. The amount of shade is determined by the season, making it a challenge for plant selection. Plants get no more than 3 to 4 hours of shade.

Medium Shade— is created where open shade is further obscured by trees in the landscape. Medium shade also occurs under decks and south-facing entrances with no direct sun due to structures or trees. Plants get about 4 to 6 hours of shade per day.

Dense Shade— is the deepest shade, and found where tall walls and fences block out all but the narrowest strips of light. Dense shade can also occur under trees with dense foliage such as maples and some conifers. Plant selection for dense shade is very limited. Sod thinning is a major problem in this type of shade. Plants receive no direct sunlight.

Dry Shade— can be the most challenging as it often occurs under trees especially maples. Because many trees are shallow rooted, this does not allow for ease of planting, and the tree may also take the majority of the available nutrients and water. Sod thinning or complete death of the sod tends to occur in this type of shade.

Plant Response to Shade

Plants require or tolerate different amounts of shade. Understanding these differences is important for the success of the garden. Many plants are adapted to growing in the shade, and are therefore, more sensitive to light and are more efficient in utilizing what sunlight is available. However, this sensitivity to light also reduces a “shade lover’s” ability to withstand direct sunlight for an extended period of time. Direct sunlight bleaches leaves; typically causing scorching of the leaf margins, or burns spots on the leaves. Shade-loving plants in the sun

may quickly deteriorate, especially if they are getting too much hot late afternoon sunlight. Plants that prefer sun may live but not thrive and perhaps may not flower.

After you assess the amount of light available in the landscape, you may find that you have varying degrees of shade and sun. You can plant part of the area with true shade-loving plants and other parts with plants that will take part shade. Often times, you can also utilize some sun-loving plants in part shade as long as they receive enough hours of sunlight at some point within the day. Burning bushes for example, will just take longer to turn red in the fall if they do not get enough sunlight where they are placed in the landscape, but will survive in a part-shade situation.

Site Preparation

Rather than starting a new bed at the same time all the way around a tree, plan to work the garden in sections over several years. Establishing and maintaining plantings in the shade can also be a challenge. Often times the shade is created by trees, creating the issue of planting between roots. The competition for water and nutrients also becomes a factor when working around existing root systems of large trees. Shallow rooted trees such as maples can be particularly difficult, and are also one of the most commonly found trees in the landscape.



To improve aeration and drainage add a 2 to 4 inch layer of organic matter on the soil surface. Chopped leaves or grass clippings can be used, although they may tie up some of the available nitrogen in the soil creating the need for an additional application of fertilizer. You should carefully incorporate this into the soil profile to a depth of 6 inches. If the roots are too thick to dig this deep, then start with a 2-inch layer and go at least 3 to 4 inches down into the soil. This is typically best done carefully by hand, as a rototiller can damage vital tree roots. Adding organic matter can help your new plants get a good start when competing in this type of environment.

Many home gardeners try to overcome the problem of bare and compacted soil beneath mature trees by installing a raised planting bed. However, these beds quickly become filled with dense, fibrous tree roots. Trees have many of their feeder or surface roots within the top 2 to 3 inches of soil and will quickly fill in a raised bed to take up additional water and nutrients. In addition raised beds are not healthy for the trees. Therefore do not add soil or mulch to the soil line around the base of a tree. This can contribute to bark decay around the trunk, and limit the availability of oxygen to the root system. The addition of the organic matter layer can basically “suffocate” the tree over time, leading to eventual death. For example oak trees are very sensitive to changes in soil depth or too much disturbance within their root zone.

The extensive root system of a mature tree often makes it too difficult to plant large shrubs. Planting smaller plants between roots is a better option. When planting shrubs, be sure to trim excessive roots, rather than bending them within the planting hole. Bent roots will never straighten and may eventually girdle the plant, where as cut roots will quickly form lateral roots that aid in plant establishment.

Shade and Turfgrass Establishment

Establishing turfgrass under mature trees is a major challenge for many home gardeners. The competition for light, nutrients and water can stress and weaken existing turf and keep newly seeded areas from filling in properly. Many areas under mature trees also become compacted due to root systems and people enjoying shade in the hot summer months.

Trees that have a dense but shallow root system, such as many maples, are extremely competitive with turfgrass for moisture. Many trees, such as the silver maple, have also been found to give off toxic substances into the soil, which have a negative influence on Kentucky bluegrass growth. Trees with larger leaves such as sycamore, oak, maple and linden may block nearly all available sunlight. Trees such as honey locust, ash and most flowering trees allow some filtered light to penetrate to the turf.

Shade can also create areas with poor air movement and high humidity. The plant foliage stays wet longer creating a perfect environment for diseases. To help prevent disease problems select disease-resistant varieties, space plants farther apart in the shade to allow more air movement, and water from below (using drip irrigation or soaker hoses) to avoid water on the foliage. Removal of the lower tree limbs may create better air circulation underneath the tree canopy and allow more sunlight to penetrate.



Since shade is a poor environment for turfgrass, it is essential to develop a good management program for shady places. First, be sure to select a high quality, shade-tolerant grass seed. The fine-leaf fescues are considered the most shade tolerant of the cool-season grasses. Creeping red fescues, Chewing's fescue, sheep fescue, hard fescue, rough bluegrass and some Kentucky bluegrass cultivars have all performed well in dense shade and moderate shade. Fall seedings tend to be more successful than spring seedings because they go into the first summer with a more established root system and more food reserves. Frequent leaf raking is essential to the development of new seedlings as leaves left on the lawn shade the young seedlings and slow their establishment.

Also, do not over fertilize lawns in shade. Shade grasses do not require as much total nitrogen as sunny turf. Late fall — November — fertilization of cool-season grasses is extremely beneficial in shaded environments.

If all attempts at establishing turfgrass in shade have failed, shade tolerant ground covers are good alternatives. You must still prepare the soil for planting by adding organic matter and working it into the existing soil. You must also provide adequate water for the first year during establishment. Groundcovers need the equivalent of one inch of water per week. You will also need to apply mulch to the area to help retain moisture.

Designing in Shade

Shade gardens are often more subtle and restful than sunny landscapes. Plant textures, forms, and slight color differences become crucial elements when designing in the shade.

Texture is a key component in the shade garden. Hostas are an example of a large-leaved plant, which provides a coarse texture, while the fronds of ferns provide a fine texture to the landscape. Strong contrasts in textures stand out more in a landscape and are best left where focal points or accents are desired.

Forms in the shade garden also provide interest. Pyramidal or upright/columnar plant forms serve best as accents in the shade. Rounded, weeping, or spreading forms create a more spacious effect.

Adding plants with glossy leaves tend to have more impact in the shade garden than velvety or dull-leaved plants. Variegated or yellow-green foliage rather than solid green or blue-green foliage stands out in the shade garden. Light colors such as white, cream, yellow and pastels are noticeable in the shade especially from a distant view. Deep reds, blues and purples may fade into the shade unless backed or set off by a contrasting lighter color. As a rule of thumb, try to emphasize specific focal point plantings in the shade, and concentrate on plants with light-colored flowers or foliage.

Garden Maintenance

Successful shade gardening requires good soil preparation, but also adequate water, fertilizer and mulch. Seasonal garden cleanup is also crucial to the success of the shade garden. Mulching will help keep the soil cool during the hot summer months, reduce water loss due to evaporation, suppress weed growth, and aid in long term improvement of soil tilth. A layer of mulch 2 to 3 inches deep is usually recommended and should be applied in the spring before weed growth begins and before the summer heat. Mulch can also provide winter protection to plants, so replenishing mulch in thin areas is a good habit to establish. Using a pre-emergent herbicide specifically recommended for landscape beds may also be used to reduce weed competition.

One of the most important rules to remember when shade gardening is to water deeply and less often rather than frequent light watering. Slow, deep watering encourages plants to develop deeper root systems that are better able to withstand droughty conditions.

Summary

- Remember there are different variations of shade. Determine your type before starting your landscaping project.
- Match plant needs and tolerances to your type of shade.
- Soil preparation and proper garden maintenance specific to shady areas is crucial to success.
- To establish turfgrass use shade-loving grass species. Remember even shade tolerant grasses need at least 4 hours of sun. Rake leaves in fall to allow air movement and as much light in as possible to the new seedlings. Do not over fertilize.
- Shade-loving groundcovers may work to fill in the area that was left bare from thinned or non-existent sod.
- Designing the shady landscape requires variation in forms and textures. Using lighter colors or variegated plants brings light into the landscape.
- Proper shade garden maintenance includes routine cleanup, adequate water, proper mulching and timely applications of fertilizer to optimize growth.



Here are just a few of the many possibilities of plants for shady gardens.

Perennial groundcovers

Ajuga	Wild Ginger	Pachysandra
Epimedium	Lamium	Sweet Woodruff

Perennials

Astilbe	Hosta	Hellebore
Celandine Poppy	Virginia Bluebells	Columbine
Bleeding Heart	Ferns	Turtlehead
Foxglove	Lungwort	Foamflower

Annuals

Begonia, Wax	Coleus	Forget-me-not
Begonia, Tuberous	Heliotrope	Nicotiana
Browallia	Impatiens	Pansy
Caladium	Lobelia	Torenia 'Clown Mixture'