

GARDENING IN SHADY AREAS

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Many plants not only tolerate growing in the shade, but also may prefer it. Some weary gardeners have the misconception that it is impossible to have nice gardens with some colorful plants where there is no or little direct sun. Some think that these gardens are likely to be boring and/or are just too difficult to bother with. All it takes is a little creativity, an understanding of shade gardening basics, and some hard work to develop a beautiful landscape in shady areas.

CATEGORIES OF SHADE

Shade isn't just "shade." There are distinct variations in the amount of available light between one garden and another and also between areas of the same garden. An understanding of the different categories of shade is needed when deciding which plants to use.

Shade 1: Filtered, or intermittent shade: This is the shade through fine leaves or well-spaced, highly branched trees, which allows some sun through in a moving pattern. It is the brightest shade category. This area may have 1-4 hours of direct sun each day. Some full-sun plants can "tolerate" growing in this amount of light.

Shade 2: Open shade: There is plenty of bright light, but no direct sun, such as the shade cast by the north side of a house, a wall or a fence. The sun is blocked, but the area is open to the sky.

Shade 3: Medium shade: This is often an open shade situation where light is further blocked by additional foliage and branches. An area can have some sun or bright light in early spring, but become medium shade when the trees have leafed out. Pruning can sometimes be used to reduce the amount of shade cast. Shade loving plants may grow well in these areas, but if there is not enough light in August and September when buds should be setting, they may not bloom.

Shade 4: Deep, or dense, shade: This is the light (or lack of light) under low-branching deciduous trees, under dense evergreens or in a forest. There may be some reflected light. This is the most difficult area, because there are very few appropriate plants. Established Norway maple and beech trees cast deep shade.

The plants in a shade landscape are located in four different identifiable layers.

- **Canopy:** These are the overhead trees that are themselves in direct sun. They block or filter the light to the plants or the ground under them.
- **Understory:** These are shorter deciduous and evergreen trees that are protected (shaded) by the canopy. Tree height varies from about 15' to over 25'. These plants in turn cast shade on the plants that grow under them.
- **Large and small shrubs:** This level includes plants that may be in the shade of the canopy and/or the understory. Plant height is usually under 15 feet. There can be significant variations in available light at this level.
- **Ground covers:** These are the plants that hug the ground and are under 12" tall, including turfgrasses and many herbaceous annuals and perennials.

MODIFICATION OF SHADE

Where a building, fence, or other permanent structure casts shade, the shade can't be modified. However, where deciduous or evergreen trees or large shrubs cast shade, pruning may improve the quality of light. Where several trees cause shade, one or two can be removed. Removing lower branches and thinning the foliage on main branches can allow more light to reach the ground. Two side benefits of this pruning are that air circulation improves (so the foliage of underlying plants has a chance to dry) and the legginess, common to some shade plants, is reduced. Pruning also stimulates new growth.

NOTE: Use caution when removing trees completely and when pruning severely. Plants that prefer or are used to growing in shade can suffer severe setbacks if much of their shade is suddenly removed. Trunks and tender plant foliage that are used to protection can sunscald when exposed to bright sun and the accompanying higher temperatures.

SOIL IMPROVEMENT

The Problem

Ideally, soil in the woods is a deep, loose, well-drained humus-rich loam that supports many types of plant life. Unfortunately, on many "improved" and newly developed properties, much of this wonderful soil and the surface layer of leaf "litter" are removed. What remains is compacted subsoil devoid of nutrients, microorganisms, and organic matter.

In established gardens surface roots from shallow-rooted trees and shrubs may compete for water and nutrients and make digging and planting very difficult. After years of rainfall pounding the surface, the soil may be very compacted. "Neatnik" gardeners also remove fallen leaves, needles, and twigs, reducing available organic matter. In order for landscape plants to thrive, the soil must be improved.

Soil Tests

The first step to soil improvement is to run a soil test. Many plants need a pH of about 6.5 (over 7 is alkaline, under 7 is acidic) to thrive. Ericaceous or acid-loving plants (rhododendron, azalea, leucothoe, etc.) need a pH between 4.5 and 6.0. Boxwood and yews need a nearly neutral soil. A soil test is the accurate way to determine both soil pH and nutrient levels. Kits available in garden centers can be used. A soil lab will run soil tests for a fee. A low pH can be raised using agricultural limestone or garden lime. Sulfur, aluminum and iron sulfate, and, to a lesser extent, naturally acid organics (cottonseed meal fertilizer, peat moss) lower the pH.

Some soil tests determine available phosphorus, potassium, magnesium, and calcium. These nutrients plus nitrogen and trace elements are needed for good growth of plants. A complete fertilizer such as 5-10-5 or 10-6-4 can supply needed nutrients. Slow to very slow-releasing organics (bone meal, dried blood, cottonseed meal, fish emulsion, kelp, earthworm castings) and rock powders (rock phosphate, greensand) may be complete fertilizers or may be single nutrient. The soil test results will determine which are appropriate for a garden's needs.

Soil Preparation

Planting beds can be improved by scratching up the area to remove surface plant materials and debris and some of the competing surface roots. Use a spade, digging fork, or rototiller to loosen the soil in the area to a depth of 6 to 12 inches or whatever is possible. (An air spade is a new device used by some commercial tree companies that uses compressed air to loosen soil without damaging roots.) Incorporating well-rotted organic matter such as compost, peat moss, leaf mold, or rotted manures helps loosen heavy soils and helps retain moisture in sandy soils. This improved soil also provides a good home for earthworms and other critters such as insects and small animals that penetrate and loosen the soil.

Where heavy clay is a problem, incorporating coarse sand, organic matter, and agricultural gypsum (calcium sulfate) with needed fertilizers, and limestone will help to increase the amount of air space in the soil and alleviate compaction.

For those with patience, applying a thick (at least 3") finely shredded or composted organic mulch on the ground and waiting for the worms to incorporate it into the soil will get needed humus into the soil. This is not practical in cases where an immediate improvement is needed.

To establish a new bed near the base of a large established tree with shallow roots, you may sometimes remove one of the offending major support roots, but it is much more satisfactory to work between the roots. Some feeder roots near the trunk can be removed. Dig a trench out from the tree about 18 inches deep and 5 feet wide. Improve the soil in the trench with appropriate amendments. Although roots will eventually fill this bed again, the plants that you put there will have a chance to get established with less competition. This practice can also work as a shallowly trenched ring around the entire tree at the dripline. Ground covers planted in improved soil will establish, then spread back under the tree as far as available light will allow.

Mulches

Using mulch on the ground mimics nature's way of dropping leaves, needles, cones, and other organic debris where it forms a thick organic layer and eventually decomposes to humus. An organic mulch helps keep weeds at bay, maintains even soil moisture, delays soil compaction, adds humus to the soil as it decomposes, adds continuity to planting beds, and feeds the worms. The ideal depth depends on the type of mulch, but 2-3 inches is best. Do not pile mulch on the base or root flare of the trees or shrubs. Leave a 2"-6" gap between the trunk or stems and the mulch.

If the selected mulch is high carbon (wood chips, pine bark, shredded hardwood, sawdust, shredded dried leaves) add nitrogen to compensate for that which is used up in the natural decomposition process.

Inorganic mulches, such as gravel or decorative stone can be used, but they don't fit as well visually in a shade garden and don't add organic matter to the soil.

USE OF COLOR IN THE SHADE

Gardens in the shade need not be simply "tranquil green." Although the majority of flowering plants for shade is spring blooming, it is possible to have color unfolding throughout the growing season. The use of warm reds, yellows, and oranges makes a shade garden seem warmer and makes the space appear smaller and closer. Cool greens, blues, and violets give the impression that the space is cooler, larger, and farther away than it really is.

When selecting flowering trees, shrubs, and herbaceous plants, note which plants bloom in early-, mid-, and late-season so that you can plan for progressive non-clashing color through the growing season. Foliage colors other than green and variegated plants will also provide interest.

SELECTING PLANTS TO USE IN SHADY LOCATIONS

Choosing plants to grow in shady sites is not much different than selecting them for full sun because the major concerns still apply. Considerations include ultimate landscape size, desirable and undesirable characteristics, pest resistance, hardiness, and cultural and maintenance requirements. The difference is in the plant lists that are used. Some plants require full sun (at least 8 hours of direct sun a day) and some prefer full sun, but will tolerate some shade. Still others are genetically engineered to need shade. Their leaves may be thicker and darker and will sunburn or scald if exposed to direct sun, especially in mid-summer and mid-winter.

Some plants that prefer shade can be grown in full sun, but get very touchy about their care. Impatiens and astilbe, for example, can be grown in full sun, but have to have sufficient soil moisture at all times. Even a hint of drought in full sun will cause their leaves to wilt, yellow and fall off. Why fight nature? It is much

easier, more rewarding, and less exasperating to use the plants adapted to the situation you have. (See the companion information sheet by Barbara J. Bromley, *Plants for Shady Sites*)

Many references have lists of materials suitable for different shade categories and should be used as a guide. Experiment! Conditions may make it possible to grow plants that are borderline for existing shade density. Landscapes are constantly changing. Plants grow and create new shady areas or increase shade density in existing plantings. Be prepared to change with it.

Note: For information on shade lawns, see this author's information sheet *Growing Grass in the Shade*. For information on growing vegetables in the shade, forget it. Greens like lettuce can grow in as little as four hours of sun a day, but most vegetables, especially fruiting crops like tomatoes and squash need six (OK) to 8 (most desirable) hours of direct sun. Shade will cause these plants to remain vegetative and set no fruit or to become tall and leggy and set very small fruit. Poor color and delayed ripening are other consequences of lack of light.