

Maintaining Turfgrass in Shady Areas

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Understanding the challenges of the shade environment is key to maintaining healthy turfgrass in shady conditions.

The challenge

Homeowners find that growing turfgrasses in shady locations can be a significant challenge. Even under the best of conditions, turf maintenance is not a simple task; growing grass under adverse conditions, especially dense shade, can be particularly difficult. When attempting to establish a shade lawn, a homeowner's most important decision should be the careful selection of the proper type of turfgrass (species and cultivar) for the location. Once this is decided, the homeowner can also implement certain turf management practices that may help mitigate the challenges of shade turf, modify the area to make it more favorable for growing turfgrass, and/or employ turf alternatives to combat a patchy lawn.



Establishing and maintaining a lawn in shady conditions can be a challenge for homeowners. (Photo credit: [www.flickr.com/creative commons](http://www.flickr.com/creativecommons))

The shade environment

The shade environment's primary characteristics include reduced light levels and reduced quality of light reaching ground vegetation. The intensity and wavelengths of light necessary for optimal turfgrass shoot and root growth are diminished as a result of shade. The grass roots tend to grow closer to the soil surface and the leaf cuticles are thinner, making the grass more prone to drought and diseases. Turfgrasses grown in shade also exhibit longer, thinner, and more succulent leaves compared to those grown under full sun.

The shade environment also suffers from reduced air movement. Restricted air movement results in increased relative humidity which impacts the ability of turfgrasses to transpire adequately. In addition, cooler temperatures and lack of air movement cause turfgrasses to remain wet for a longer time following rainfall or dew, further making them prone to diseases and traffic injury.

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Shade-tolerant turfgrasses

Another characteristic of the shade environment, that trees and turfgrass roots compete for resources, also warrants consideration. Many trees grow feeder roots four to six inches below the soil surface. This is in the same area where turfgrass roots grow, thus putting the roots of these two plants in direct competition for water and nutrients. Additionally, some trees, such as black walnut, exude toxic material from their roots which may inhibit plant growth beneath the tree canopy.

Selecting the proper shade-tolerant variety of turf (species and cultivar) is probably the single most important aspect of successfully growing turf under shade conditions. Turfgrasses are divided into warm-season and cool-season grasses. Warm-season grasses, such as zoysiagrass and Bermudagrass, are not generally grown in West Virginia's cool climate. In some areas of the state, however, they are grown with varying levels of success. Certain varieties of zoysiagrass are more shade-tolerant than others, but Bermudagrass will not tolerate shade.

Of the cool-season turfgrasses, fine fescues are best adapted for shady areas. Although they grow quite well in cool, dry shade, they are not recommended for poorly-drained soils or in parts of the state where summer temperatures are above 85°F for prolonged periods. Certain varieties of perennial ryegrass may also be considered for shady areas. Perennial ryegrass will give a good cover early in the season but is usually severely thinned by the end of the season; annual reseeding helps remediate this condition. Certain improved Kentucky bluegrass cultivars have also shown varying levels of adaptation to shade, although most cultivars of this grass species require full sunlight.

Management

Mowing

Since the amount of light reaching the turfgrass is greatly reduced under shady conditions, it is important that the grasses intercept as much of the available light as possible. This may be accomplished by raising the mowing height to a minimum of three inches. The increased height of cut preserves a greater leaf surface to intercept more light, and also encourages deeper and more extensive rooting which aids the turf in competing with tree roots for water and nutrients.

Fertilizer

The application rate of nitrogen fertilizer is extremely important in shade turf, as high rates of nitrogen will encourage succulent tissues susceptible to disease and traffic injury. Nitrogen also encourages shoot growth at the expense of root development. For fine fescues, 1.5 to 2.0 pounds of actual nitrogen per 1,000 ft² may be applied per year. Only the minimum rates should be applied to cool-season grasses during hot summer



Watering turfgrass in shady conditions requires careful planning. (Photo credit: www.flickr.com/ creative commons)

months. If trees have to be fertilized, consider placing the fertilizer below the root zone of the grass. This will minimize the possibility of excessive succulent tissue and shoot growth in the turfgrass.

Watering

Shade turfgrass requires a carefully managed watering regime. Frequent, light sprinklings (especially in the evening) should be avoided since these result in shallow-rooted grasses. Instead, employ deep irrigation as it allows the surface of the soil and the turfgrass to remain wet longer. Schedule watering in the mornings to allow moisture to evaporate from leaf and soil surfaces. Turfgrasses grown in the shade should be checked regularly for the presence of fungus or disease so that fungicides may be applied promptly if necessary.

Modifications

In many cases the shade environment may be modified by removing the lower branches of trees to allow for better air circulation and for more sunlight to reach the turf. This is especially true of trees whose branches are lower than ten feet above ground. The crowns of the trees can also be thinned to allow more light to filter through the branches, increasing the quality and intensity of light. If dense shrubs or undergrowth impede air movement, they too should be removed or thinned. The most drastic yet most effective action might be to remove the tree or replace it with a finer-textured tree.

Alternatives

One of the most common approaches to combat shade is to plant ground covers such as ivy, pachysandra, periwinkle, lirioppe or ajuga. From an aesthetic and maintenance perspective, this may be a practical alternative to having a thick stand of turfgrass in sunny areas and a thin stand of grass in the shade. Installing hard surfaced deck, patio, or landscape stones where appropriate is another option to consider. The best solution will depend upon the overall landscape design, the individual site and conditions, and the amount of time and resources the homeowner is willing to devote to establishment and/or installment, and maintenance.

For more information

Last updated May 2015

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AG15-115