



Design for Everyday Living

Maintaining Turfgrass in Shady Areas

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Growing turfgrasses under shady conditions, especially dense shade, can be a challenge to professional growers and frustrating to property owners. Maintaining healthy turfgrass under the best of conditions is not a simple task and growing grass under adverse conditions makes the task even more difficult.

When attempting to grow turfgrass under shady conditions there are several factors which should be considered, such as type of turfgrass (species and cultivars) and maintenance practices; modifications that may be made to make conditions more favorable to growing turfgrass; and alternatives.

THE SHADE ENVIRONMENT

The most obvious characteristic of the shade environment is the reduction of light. Reduced light means root and shoot growth are greatly reduced. The grass roots also grow closer to the soil surface and the leaf cuticles are thinner, thus the grass becomes more subject to drought and disease. Another factor not as obvious is the alteration of light *quality* under a tree canopy. In most cases the foliage of the tree intercepts and uses the wave lengths of light needed for photosynthesis, especially red, orange and blue light rays. The remaining non-photosynthetically active light is transmitted and reflected down to the turf. The result is improperly developed turfgrass which exhibits longer, thinner and more succulent leaves than turfgrass grown in the sun. So even though the turfgrass appears to be receiving adequate light, the quality of the light may not be sufficient for good growth.

A second characteristic of the shade environment is the reduction of air movement. Restricted wind movement results in increased relative humidity and temperature stratification above the turf. In addition, cooler temperatures and lack of air movement cause turfgrass to remain wet longer when rain and dew occur. The result is a weakened turfgrass plant, more succulent and delicate in nature, thus more susceptible to disease and traffic injury.

Tree/turfgrass root competition is a third characteristic to be considered. Contrary to accepted beliefs, research has discovered that many tree roots grow only four to six inches below the soil surface. This is in the same area in which the turfgrass roots grow, thus putting the roots of these two plants in direct competition for water and nutrients.

There is also evidence that some trees exude toxic material from their roots which may inhibit growth or in some cases kill the turfgrass directly. This is called alleopathy. To date there is little information on trees which cause turfgrasses to die through the release of toxic material or on the turfgrass species and cultivars which are the most sensitive.

SHADE TOLERANT TURFGRASSES

Selecting the proper shade tolerant species and cultivars is probably the most important single aspect of successfully growing turfgrass under shade conditions. Turfgrasses are divided into two categories—warm season and cool season grasses. Warm season grasses are not generally grown in West Virginia but in some areas of the state they do satisfy certain