

## Turfgrass in Shaded Areas

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Many home lawns have heavily shaded areas where it is not easy to establish or maintain quality turfgrass. The competition for light, nutrients and water creates stresses that weaken turfgrass plants and reduce their growth potential. The fact that shade attracts people during the hotter periods of the year adds to the problem by increasing soil compaction in the area.

Trees that develop a shallow, fibrous root system, such as silver maple, are extremely competitive with turfgrass for moisture. In addition, research has demonstrated that certain trees like the silver maple excrete toxic substances that have a negative influence on Kentucky bluegrass growth. Trees with heavy shading potential in the form of many large leaves and thick branches, such as some oaks, maples and lindens, create a poor environment for turfgrass. Trees, such as honey locust, that have a lower crown density, (that is, more of an open canopy) allow more light to reach the grass.

The shade canopy tends to moderate temperature fluctuations by lowering daytime temperature and keeping it warmer at night by preventing release of heat. This moderating effect on temperature helps humidity remain high both day and night. This relatively constant temperature in the presence of high humidity and subdued light creates conditions conducive to fungal activity. The turfgrass growing in this environment produces succulent, thin cell walls and elongated leaves that are heat, drought and disease susceptible. In addition, the reduced sunlight leads to decreased carbohydrate (food) production and a plant that is less able to recuperate from foot traffic, mower

damage or plant pests.

Since shade is a poor environment for turfgrass, it is essential to develop a good management program in shady places. First, select shade tolerant grasses. The fine-leaf fescues are considered the most shade tolerant of the cool-season grasses. Creeping red fescue, Chewing's fescue, sheep fescue and hard fescue all have shown promise in heavily shaded areas. Some varieties of Kentucky bluegrass and fine-bladed turf-type tall fescue have performed well in moderate shade.

Sow seed in shaded areas in the fall. Fall seedings generally are more successful than spring seedings because they go into the first summer more mature with a better root system and more stored food reserves. Frequent, fall, leaf raking is essential to establishment of grasses in shaded areas. Leaves left on the lawn shade the young seedlings and slow their development.

Turfgrass growing in shade generally requires less total nitrogen than grass in full sunlight because of the reduced rates of photosynthetic activity. Over application of nitrogen on shaded grasses reduces stored food reserves and produces thin cell walls which can cause disease on the turfgrass plants.

Late fall fertilization of cool-season grasses is extremely beneficial in shaded environments. This is the only time of the year when the grass plants under the trees can efficiently utilize the applied nitrogen without competition from the tree for moisture, nutrients and light. Soluble sources of nitrogen applied October through mid-November, after leaf drop, are extremely beneficial.

Maintaining a pH near 6.2 is important for tall fescue and Kentucky bluegrass. Research evidence suggests that the fine fescues do better at a pH of 5.5.

Raise the mowing height. Increased mowing height induces larger root systems and healthier plants.

Irrigate infrequently, but heavily. An irrigation program that minimizes the amount of time shaded areas are moist is beneficial in reducing disease. Infrequent watering also tends to minimize compaction and reduce shallow surface rooting.

Reduce use of the area. Thin cell walled grass plants with little food reserve cannot bear much traffic without sustaining damage. Therefore, any effort to minimize traffic in shaded areas is beneficial.

Provide good drainage. Poor drainage increases the possibility of disease activity.

Remove leaves and debris promptly. Quick removal of leaves and debris all year long is essential as they shade the grass plant and reduce its food making potential.

Provide appropriate pest protection. Powdery mildew, Rhizoctonia brown patch and Helminthosporium leaf spot are common diseases in shaded areas. Periodic fungicide application may be necessary. Control of unsightly weeds and damaging insects improves the appearance of the turf and reduces the competition for light, water and nutrients.

If attempts to produce turfgrass in shade meet with failure after using the above management program, consider the use of shade-tolerant groundcovers.