

Disease Management in the Home Lawn

Paul Vincelli, *Extension Plant Pathologist*
& Gregg Munshaw, *Extension Turf Specialist*



INTRODUCTION

Numerous infectious diseases can occur on lawns in Kentucky. Unless diagnosed and managed, these diseases can sometimes cause extensive damage. A sound disease management program benefits your lawn in two ways:

- Reduces the severity of lawn diseases
- Improves the lawn's recovery should a disease outbreak occur.

This publication describes lawn management practices that can help control diseases of turfgrasses commonly used in home lawns—Kentucky bluegrass, tall fescue, and perennial ryegrass. You can control diseases of turfgrasses most effectively by using as many of the following lawn management practices as feasible.

The first step in improving your lawn is to accurately diagnose the problem. Although diseases are sometimes responsible for poor turf quality, they are not the only cause (They may not be involved at all). You may need to consider some other possible causes of thinning or dead grass: improper fertilization, chemical injury, mower problems, dog or insect injury, localized dry spots, poor soil drainage, excessive thatch, and competition from other plants.

LAWN MANAGEMENT PRACTICES

Fertilization

Under-fertilization makes certain diseases worse, whereas over-fertilization worsens others. For greatest lawn health, make sure your program provides moderate fertility. Lawns of Kentucky bluegrass, tall fescue, or perennial ryegrass should receive no more than 2 to 3 pounds of total nitrogen per 1,000 square feet each year; even less nitrogen is acceptable for lawns on a low-maintenance or moderate-maintenance program. Most or all of the nitrogen should be applied during the autumn months.

Autumn fertilization helps promote a vigorous, well-rooted, healthy turf that is better able to withstand diseases and stresses. Autumn fertilization also helps to promote recovery of the grass in the event a summer disease outbreak has already occurred. Avoid heavy applications of nitrogen during spring and summer, as lush spring or summer growth can be more prone to certain diseases.

You can apply a single, lighter application during spring months if desired, but avoid heavy fertilization during spring and summer. For more information on fertilizing lawns, see *Fertilizing Your Lawn* (AGR 212). Also, have the soil tested to determine whether lime, potash, or phosphate should be applied to meet your lawn's fertility needs. For more information on liming lawns, see *Liming Kentucky Lawns* (AGR 214). Contact the Cooperative Extension agent in your county for information on soil testing.



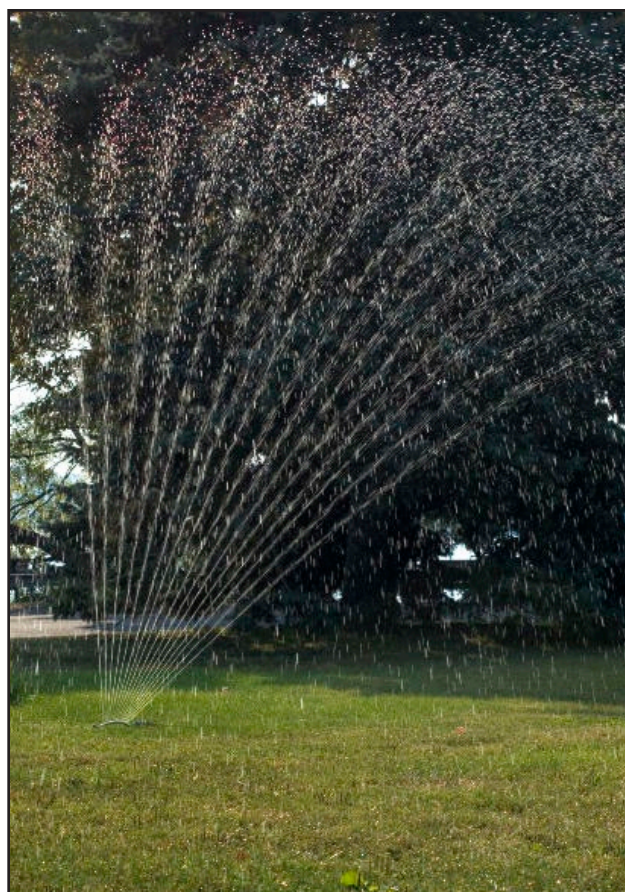
Mowing

Mowing too closely during the hot months of summer can stress the lawn, increasing susceptibility to diseases and environmental extremes. During spring and early autumn, mow at a 2- to 2 1/2-inch height. During the summer it is usually better to mow slightly higher to reduce stress on the lawn and increase root depths. However, mowing too high can also favor some diseases, particularly in late autumn.

Continue mowing through late autumn to prevent leaf tissue from accumulating. A thick covering of leaves on the lawn during autumn and winter can lead to outbreaks of disease during wet weather, even though the grass is dormant.

Mowing at a height of 2 inches or less during late autumn will promote tillering (production of new grass stems), which helps to thicken the lawn and fill in dead spots. Keep the mower blades sharp. A dull mower shreds the grass blades. This not only causes the lawn to be temporarily unsightly, but

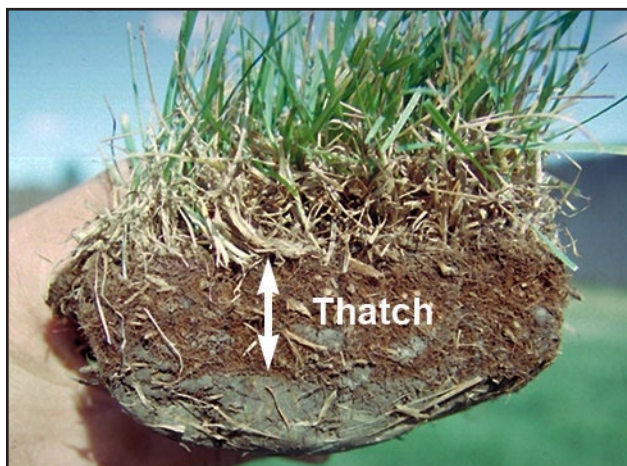
it may also provide wounds for infectious fungi to invade. Never allow the grass to get higher than 4 to 5 inches between mowings. In most circumstances, leaving clippings on the lawn is a good practice. Clippings provide mineral nutrients to the soil as they decompose. Leaving clippings on the lawn generally has little impact on lawn diseases. For more information on proper mowing practices, see *Mowing your Kentucky Lawn* (AGR 209). About the only time when clipping removal may help suppress a disease in lawns is during an active outbreak of brown patch on tall fescue turf. See *Brown Patch Disease in Kentucky Lawns* (PPFS-OR-T-12) for more information on this disease.



Watering

Provide adequate moisture during periods of drought. Avoid frequent, light waterings, which encourage the grass to develop a shallow root system and often provide the moisture that fungi need to infect the leaves. When watering, saturate the soil to a depth of 3 to 4 inches to promote deep rooting. Check the watering depth by pushing a metal rod or screwdriver into the soil. It will sink easily until it reaches dry soil.

If a disease outbreak is evident, water early in the day so that the leaves dry by nightfall. If the lawn is watered late in the day, the leaves may remain wet until morning, thus providing long periods of leaf wetness favorable for infectious fungi. For more information on watering lawns, see *Irrigation Tips to Conserve Water and Grow a Healthy Lawn* (AGR 115).



Thatch Control

A buildup of thatch—a layer of dead and living stems and roots that accumulates on the soil surface—is often the result of intensive turf management. Heavy fertilization, frequent use of certain pesticides, and excessive soil acidity are all conditions that can promote thatch accumulation in Kentucky bluegrass and fine fescues. Note that leaving grass clippings on the lawn does not contribute to thatch accumulation, as clippings decompose quickly.

While a little thatch is not harmful, accumulation of more than about 1/2 inch of thatch can lead to increased stress and disease. When the thatch layer is thick, roots will tend to grow within the thatch rather than reaching down into the soil. Such turf will be subject to extremes of moisture and temperature because thatch does not hold moisture as well as soil, nor does it protect roots as well from temperature extremes. Thatch also serves as a reservoir for many infectious fungi, and thus can aggravate several turf diseases.

Two techniques can be used to reduce thatch: dethatching and aerification (also called core cultivation).

- *Dethatching*—Remove thatch using a dethatching implement or vertical mower that cuts through the thatch and into the soil surface.

Rake and remove the debris that results from dethatching. Hand-held rakes are ineffective for removing large amounts of thatch.

- *Aerification*—Aerification can also help to decompose a thick thatch. Aerification involves using special equipment to remove soil cores from the top 2 to 3 inches and to redeposit them on the surface. As the soil cores degrade, they release soil into the thatch layer. Incorporating soil into the thatch helps natural soil microorganisms break down the thatch.

Dethatch or aerify only during spring or autumn in bluegrass or fescue lawns. For more information on reducing thatch, see *Aerifying and Dethatching Lawns* (AGR 54).



Other Practices

Most turfgrasses do poorly in dense shade and may be prone to disease problems. The best solution for shade-related problems is to plant a shade-tolerant fescue. Prune trees and shrubs as needed to allow light to penetrate to the lawn. Pruning also can increase air circulation, which helps reduce the severity of fungal diseases by allowing wet turfgrass leaves to dry quickly. When planning where to locate turfgrass areas in the home landscape, avoid areas where excessive or inadequate drainage, excess shade, or other stresses would promote diseases. Sometimes herbaceous ground covers, flower beds, or walkways are better suited for these areas. For more information on managing turfgrasses under shade, see *Trees, Turf, and People* (ID 203).

When seeding or sodding new turfgrass areas, use high-quality seed, sprigs, or sod from reliable sources to avoid bringing diseases into the lawn. Your county Extension agent can suggest turfgrass varieties that are resistant or tolerant to disease, and those that are well-suited to your area.



Control weeds, insects, and other lawn pests which can cause stress. A stressful turfgrass environment often favors diseases. Follow all label directions when using lawn chemicals, as improper application can sometimes lead to turfgrass injury. Fungicides—pesticides that kill fungi—can be an important part of a disease-control program in an intensively managed turf, such as putting greens on a golf course. However, if you follow a sound program of disease management through the practices described above, rarely should you need fungicides for a home lawn. Before using any fungicide, be sure the disease is properly diagnosed.

Commercial fungicides are effective only against specific turfgrass diseases. They must be applied at the right time to be effective and often must be applied several times. For these reasons, fungicide

use is generally discouraged for home lawns. If a disease breaks out in your lawn, keep in mind that a return to weather favorable for turf growth and vigor will help alleviate the problem.

ADDITIONAL UK RESOURCES

Web Sites

- Plant Pathology Extension Turfgrass Publications <http://www2.ca.uky.edu/agcollege/plantpathology/extension/pubs.html#OrnamentalTurfgrass>
- Entomology Extension Publications (Landscape Plants) <http://www2.ca.uky.edu/entomology/dept/entfacts.asp>
- Plant and Soil Sciences Tips and Recommendations for Maintaining Home Lawns <http://www.uky.edu/Ag/ukturf/lawns.html>

Publications

- Aerifying and Dethatching Lawns (AGR 54) <http://www2.ca.uky.edu/agc/pubs/agr/agr54/agr54.pdf>
- Brown Patch Disease in Kentucky Lawns (PPFS-OR-T-12) http://www2.ca.uky.edu/agcollege/plantpathology/ext_files/PPFShtml/PPFS-OR-T-12
- Fertilizing Your Lawn (AGR 212) <http://www2.ca.uky.edu/agc/pubs/AGR/AGR212/AGR212.pdf>
- Irrigation Tips to Conserve Water and Grow a Healthy Lawn (AGR 115) <http://www2.ca.uky.edu/agc/pubs/AGR/AGR115/AGR115.pdf>
- Liming Kentucky Lawns (AGR 214) <http://www2.ca.uky.edu/agc/pubs/agr/agr214/agr214.pdf>
- Mowing your Kentucky Lawn (AGR 209) <http://www2.ca.uky.edu/agc/pubs/AGR/AGR209/AGR209.pdf>
- Trees, Turf, and People (ID 203) <http://www2.ca.uky.edu/agc/pubs/id/id203/id203.pdf>

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Photos: William Brown, Jr., Bugwood.org (pg 1); and Robert Videki, Doronicum Kft., Bugwood.org (page 4)

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