



*Dr. Sharon M. Douglas*  
*Department of Plant Pathology and Ecology*  
*The Connecticut Agricultural Experiment Station*  
*123 Huntington Street, P. O. Box 1106*  
*New Haven, CT 06504*

*Phone: (203) 974-8601*  
*Fax: (203) 974-8502*  
*Email: Sharon.Douglas@po.state.ct.us*

## **COMMON DISEASES AND PROBLEMS OF HOME LAWNS**

There are a number of diseases and problems commonly found on home lawns throughout Connecticut. Some of these are considered more aesthetic than life-threatening whereas others result in significant death and dieback of portions of a lawn so accurate diagnosis is important. A number of factors contribute to both the occurrence and the severity of these diseases. Some of these include: severity of the infection the previous year, weather, cultural practices, and type of turfgrass planted. Many of these problems can be effectively managed by following a multifaceted approach which includes sanitation, culture, and resistance so chemical controls are often not necessary.

### ***DISEASES:***

#### **Rhizoctonia brown patch, *Rhizoctonia solani***

Symptoms of this common turf disease appear as circular to irregular patches of poorly growing grass which eventually turn brown. Individual blades of infected grass have purple-brown, irregular lesions. Affected areas appear sunken when disease is severe. These patches can vary in size although disease development can be rapid when weather is favorable. The fungus attacks the roots, first killing the fine feeder roots and then the entire root system. This is a disease of hot, humid weather and is more pronounced on lawns that are heavily fertilized and frequently watered. Brown patch is most severe in perennial ryegrass and tall fescue lawns.

Control strategies include following a well-balanced fertilization program which minimizes excessive applications of nitrogen before hot weather and watering practices which promote rapid drying of the leaf blades (early morning). Resistant or tolerant cultivars of turfgrass are available. Chemical control can supplement other methods for disease management during periods of humid, hot weather. However, they are usually not necessary on Kentucky bluegrass or fine fescue lawns. Among the compounds registered for use in Connecticut are azoxystrobin, iprodione, thiophanate methyl, and mancozeb. Consult the label for dosage rates and safety precautions.

#### **Snow molds: gray snow mold (*Typhula blight*), *Typhula* spp. and pink snow mold (*Fusarium patch*), *Microdochium nivale***

The fungi that cause these diseases attack the grass during the winter, either under snow cover or during cold winter rains. These diseases are often more common when snow starts falling on ground that isn't

completely frozen or on turf that is not fully dormant. The injury usually appears in the spring as circular to irregular spots of dead, matted grass. Patches range from 3-12 inches in diameter. However, individual patches frequently coalesce and appear as large, irregular, blighted areas in the lawn. Web-like growths of fungus are often visible when the matted patches of grass are wet. Grass infected with pink snow mold usually appears white to salmon in color whereas grass infected by gray snow mold appears white to gray. Since it is not unusual for both types of snow mold to be found in the same area, diagnosis based solely on color can be inaccurate. Gray snow mold normally attacks leaf blades and usually only occurs after prolonged snow cover. Grass infected with gray snow mold usually recovers as growth resumes during warm spring weather. In contrast, pink snow mold can invade leaf blades, roots, and crown tissues so it often causes more serious damage. Pink snow mold can occur with and without snow cover and grass infected with this disease may not recover when temperatures warm in spring. Factors that promote snow mold development include late fall fertilization, snow cover before the ground freezes, and plant debris and matted leaves on the grass. All common lawn grasses can be infected by snow molds but Kentucky bluegrass and fescue lawns are the least susceptible to severe damage.

The effects of these diseases can be minimized by raking the affected patches to remove matted grass and plant debris in the spring. This procedure also helps to stimulate new growth. Over-seeding can be helpful to fill in affected areas. Practices that help to prevent or minimize damage from snow molds begin in the fall with careful attention to the timing of fall fertilizer applications to avoid a late season flush of growth, continuing to mow the grass as long as it is growing, and cleaning and removing plant debris. Additional control measures are not usually necessary, especially for gray snow mold.

### **Dollar spot, *Sclerotinia homoeocarpa***

This disease is characterized by small, circular, brown spots on the leaf blades which can turn nearly white. The spots may remain separate or coalesce into larger irregular areas which often have hourglass shapes. Dollar spot can occur in the early summer, late summer, and early fall when humidity levels are high and cool nights follow warm days. All turfgrasses are susceptible to this disease although Kentucky bluegrasses are relatively resistant.

It is helpful to maintain adequate fertility since dollar spot is often found on nitrogen-deficient lawns. Infected lawns should be mowed when the grass is dry to minimize spread of the fungus to healthy grass. Watering to maximize vigor is helpful but it should be deep rather than frequent, shallow watering. Chemical control can supplement other methods for disease management during periods of humid weather although they are usually not necessary. Among the compounds registered for use in Connecticut are iprodione, myclobutanil, propiconazole, triadimefon, and thiophanate-methyl. Consult the label for dosage rates and safety precautions.

### **Red thread, *Laetisaria fuciformis***

Infected lawns frequently have a reddish-pink cast in early morning or when wet. These colorful patches can vary in size from several inches to several feet in diameter. When examined more closely, the symptomatic grass blades appear to be covered with a pinkish, gelatinous growth when the grass is

wet or pink, cotton candy-like threads when the grass is dry. Infected grass blades may turn brown, but infection is usually limited to the blades. Red thread is most common on perennial ryegrasses and fine-leaf fescues although it can occur on most turfgrasses.

This disease is usually more common on lawns that are stressed by drought, soil compaction, low temperatures, or inadequate fertility so any steps to minimize stress and maximize vigor are helpful. Watering should be infrequent but deep. It is helpful to mow when the grass is dry and to mow affected portions of the lawn after the healthy portions to help minimize spread of the fungus. Although chemical controls for this disease are usually not necessary, fungicide sprays can supplement other methods for disease management. Among the compounds registered for use in Connecticut are azoxystrobin, iprodione, myclobutanil, propiconazole, and triadimefon. Consult the label for dosage rates and safety precautions.

### **Anthracnose, leaf spots, melting-out, *Drechslera*, *Bipolaris*, *Ascochyta***

These diseases are commonly found after periods of extended wet weather and can occur under a variety of temperatures. Symptoms vary from small red to purple spots on leaf blades to tip blights and to total plant collapse, depending upon the particular fungus involved. Large, weakened patches of turf may result. These diseases are so common that they probably occur in every home lawn although they usually don't result in substantial damage unless the lawn is weak from low fertility or from other stresses.

Although these diseases aren't considered a threat to the overall health of a lawn, steps to maximize vigor are helpful. Among these are: following an adequate fertility program, deep watering, mowing when the blades are dry, and re-seeding with cultivars that are resistant. In most situations, chemical controls are not necessary. However, fungicide sprays can supplement other methods for disease management. Among the compounds registered for use in Connecticut are azoxystrobin, iprodione, mancozeb, propiconazole, and thiophanate methyl. Consult the label for dosage rates and safety precautions.

### **Pythium blight or Greasy spot, *Pythium* spp.**

This disease is a problem of hot, humid weather when night temperatures are high. Symptoms first appear as small, slimy, "greasy" spots in the lawn. These spots can vary in size and are often covered with a white, cottony web when the grass is wet. Disease can spread rapidly if hot, humid weather persists and in areas where drainage is a problem. Infection of perennial ryegrass lawns is most common.

Although weather is an important factor for disease development, steps to improve drainage, to promote drying of leaf blades (by watering early in the day), and to provide adequate fertility are helpful. It is also important to avoid mowing when the grass is wet. Fungicide sprays can supplement other methods for disease management. Among the compounds registered for use in Connecticut are fosetyl-Al, mefenoxam, and metalaxyl. Consult the label for dosage rates and safety precautions.

### **Necrotic ring spot and summer patch, *Leptosphaeria*, *Magnaporthe***

These diseases have very similar symptoms and, as the names suggest, appear as dead patches in the lawn. These patches are usually circular although this pattern can be masked once the individual patches coalesce. Symptoms are most obvious in warm or hot weather, particularly when the grass is drought-stressed. Areas along sidewalks and roadways are often the first to show symptoms since they are particularly prone to heat- and drought-stress. The fungi causing these diseases attack the roots and crowns of grasses; these infected tissues often appear brown or black and rotted. These diseases are most severe on Kentucky bluegrasses and fine-leaf fescues. Perennial ryegrasses are not very susceptible.

Strategies which maximize plant vigor are most helpful to minimize the damage associated with these root diseases. This includes following a sound program for cultural care (fertilizing, watering, thatch removal). Additionally, planting and/or over-seeding with resistant cultivars are also effective and will help to mask damaged areas. Chemical controls are not very effective and are usually disappointing because of the root damage associated with these diseases. Since most fungicides don't have curative properties, the damage cannot usually be reversed.

### **Rusts, *Puccinia* spp.**

These diseases usually develop in late summer and early fall and are most common on Kentucky bluegrass and perennial ryegrass. Early infections appear as light yellow flecks on the grass blades. These flecks enlarge in rows which are parallel to the veins of the leaves. The development of the fungus within the leaf causes the cuticle and epidermis of the leaf to rupture and reveal the rusty-orange colored spores for which these diseases get their name. When infections are heavy, enough spores are present to leave a reddish dust on shoes, mowers, and any objects that come in contact with the infected leaves. Leaf blades may dry and wither due to splitting of the epidermis and subsequent loss of moisture associated with those splits. Rust-infected turf is weak and more susceptible to other stresses such as drought and winter injury. The disease cycle for rusts is complex and in Connecticut, most infections result from spores blown here from southern states. Free water on the grass blades is also necessary for infection.

Control strategies include following a well-balanced fertilization program to maximize the vigor of the grass. Resistant or tolerant cultivars of turfgrasses are available. It is also important to avoid wetting the grass blades. Frequent mowing is helpful to remove infected leaves before spores are released. Chemical control is usually not necessary but can supplement other methods for disease management in extreme cases. Among the compounds registered for use in Connecticut are mancozeb, myclobutanil, propiconazole, and triadimefon. Consult the label for dosage rates and safety precautions.

### **PROBLEMS:**

#### **Moss**

The appearance of moss in a lawn can be associated with a number of factors including problems with turfgrass management and/or soil and site characteristics. Mosses are small plants that can grow and

out-compete turfgrass species when one or more of the following occur: high soil acidity (low soil pH), low soil fertility, shade, poor soil drainage, and soil compaction.

The first step in controlling moss in a lawn is to determine the nutritional status and pH of the soil so that fertilizer and lime applications can be made to correct any deficiencies. Heavy or compacted soils can be improved by incorporating several inches of sand and/or composted leaves or organic matter into the soil and by aeration. These amendments may help to improve both soil texture and drainage. Hand raking can be effective for eradicating moss. However, control may only be temporary **if** the reason(s) for the infestation is not established or remedied as previously described. Moss can also be controlled through the use of chemicals. Since moss grows most strongly during cool, moist conditions in the fall and spring, these are the best times for applying chemical moss killers. Among the compounds registered for use in Connecticut are potassium salts of fatty acids and iron sulfate. Consult the label for dosage rates and safety precautions. The treated area should be thoroughly watered 48 hrs after the application in the absence of natural rainfall. Once the moss blackens and dies, it will need to be thoroughly raked. A fact sheet with more detailed information on moss control is available upon request.

## **Algae**

The green to black, slimy growth often found in damp, shady places in the lawn is actually a mass of small, green plants called algae. Algae do not harm the grass but can be unsightly and are often indicative of soil moisture problems. Algae often grow under conditions of high soil acidity (low soil pH), low soil fertility, shade, poor soil drainage, and soil compaction.

Efforts to improve the site and soil are important to eliminate the growth of these plants. The first step in controlling algae in a lawn is to determine the nutritional status and pH of the soil so that fertilizer and lime applications can be made to correct any deficiencies. Heavy or compacted soils can be improved by incorporating several inches of sand and/or composted leaves or organic matter into the soil and by aeration. These amendments may help to improve both soil texture and drainage. Once these conditions have been modified, reseeding can be done, preferably with turfgrasses which are shade-tolerant.

## **Thatch**

Thatch is a normal component of healthy turf which consists of living and dead stems, leaves, and roots. It appears as a layer between the actively growing grass and the underlying soil. Thatch develops as a result of many factors including the naturally vigorous growth of Kentucky bluegrasses, fertilizer deficiencies, acidic soils, and overwatering. Thatch becomes a problem when it accumulates to an excessively thick layer which restricts the movement of air, water, and fertilizer to the grass roots. Contrary to popular belief, thatch does not result when clippings are left on the lawn after cutting. Turf with excessive thatch (greater than approx. 1½ inches thick) can appear weak and does not respond to management practices such as fertilizing. The presence of excessive thatch can be determined by cutting a small wedge of turf several inches deep. If the spongy thatch layer is greater than 1½ inches, it is considered excessive.

Thatch buildup can be prevented by following good cultural practices such as deep watering, a well-balanced program for fertilizing and liming, and other practices that promote the activity of microbes and earthworms in the soil. However, if excessive thatch is found, grass can be mechanically reduced using dethatchers, also known as vertical mowers, verticutters, and power rakes. Dethatching is best done in late summer or early fall when turf recovers most quickly.

### **Mushrooms, various fungi**

The appearance of mushrooms or “toadstools” in the lawn usually follows periods of rainy weather in the spring, summer, or fall. It is not uncommon for these fruiting bodies to pop up overnight. Mushrooms are the above-ground, reproductive structures of a number of fungi which grow unnoticed for most of the year on decaying organic matter in the soil. In lawns, this frequently consists of buried stumps, old wood from construction projects, or decaying tree roots. Mushrooms are chiefly considered a nuisance since they do no harm to the grass. However, they can present a problem for children or pets since some types of mushrooms are poisonous if eaten.

Mushrooms can be removed by frequent raking or sweeping although diligence is often necessary since new mushrooms can often appear overnight, especially during wet weather. Fungicides are not effective for control of these types of fungi.

### **Slime molds, several species of fungi**

There are several types of slime molds that appear in lawns during warm, damp weather. One of these molds appears as a bluish-gray, sooty growth on the grass, the other looks like a large, unpleasant, dirty-yellow mass. Neither of these organisms do any harm to the grass since they are simply using the blades of the grass as a structure upon which to grow. Slime molds are not pathogenic, do not infect turfgrasses, and are considered curiosity problems.

If the appearance of slime molds in the lawn is objectionable, they may be swept off with a broom or a stream of water. A fact sheet with more detailed information on slime molds is available upon request.

### **Miscellaneous injuries**

Sunburn and drought injury are very similar in appearance and frequently occur at the same time although they may also occur independently. Sunburn sometimes occurs during very hot weather following cool, cloudy weather. Different species of grass sunburn differently and this may cause spots in the lawn resembling brown patch. Drought causes the same brown discoloration as sunburn but over larger areas, first in the open, sunny areas and later under trees if the drought is prolonged. Damage from sunburn and drought is usually confined to the leaf blades and under normal circumstances, neither problem results in permanent injury. The grass recovers when conditions of cooler, wetter weather resume. However, extreme, prolonged periods of drought can kill grass blades, crowns, and roots.

In order to avoid drought-stress, deep watering is necessary before the damage occurs. Once the symptoms are evident, watering is usually not helpful.

