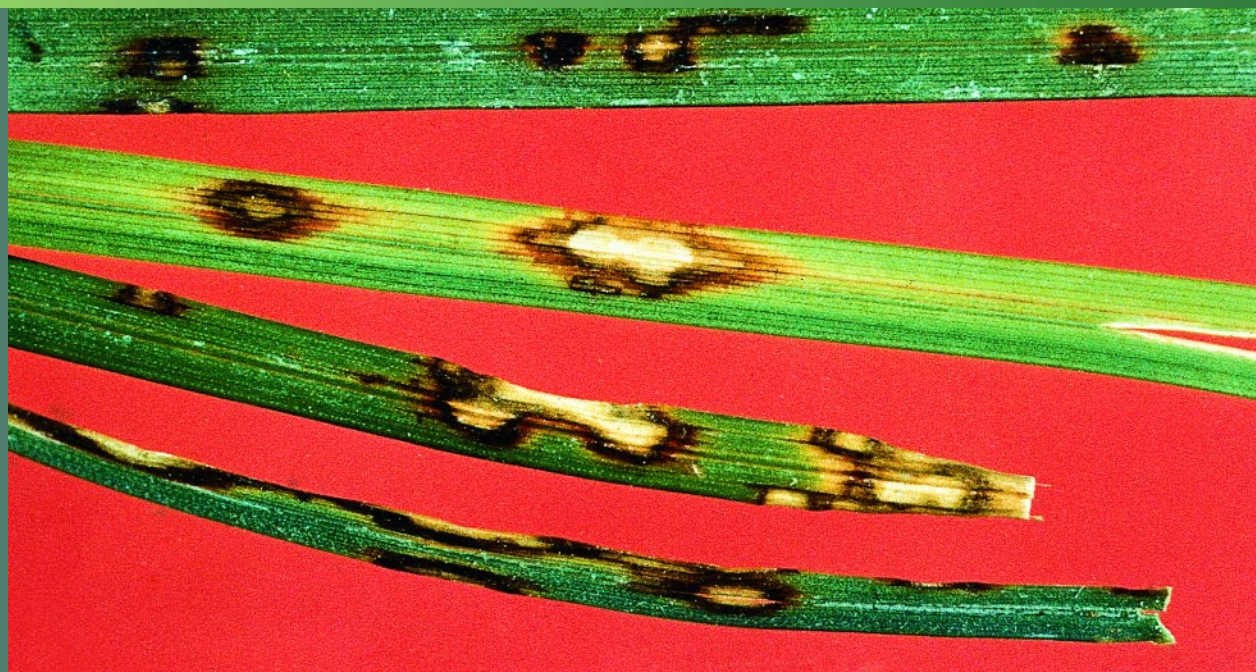


TURFGRASS



A FUNGAL DISEASE CALLED LEAF SPOT AND MELTING-OUT IS ONE OF THE most common turfgrass diseases in Iowa. A few leaf spots can be found on most lawns, but in some situations the damage is severe and can result in the thinning or complete death of an entire lawn. | In Iowa, outbreaks generally occur in late spring through July, especially when weather conditions are warm and humid. In advanced stages, melting-out (thinning or death of the grass) may occur in large areas. | Newly seeded lawns are sensitive to leaf spot and melting-out, but severe damage is most common on established lawns planted with Kentucky bluegrass cultivars that are susceptible to the disease. | Insect or drought injury can mimic leaf spot and melting-out. If the symptoms are mistaken for drought stress, and water is applied to remedy the situation, grass health probably won't improve. In fact, additional moisture could cause the disease to become worse.

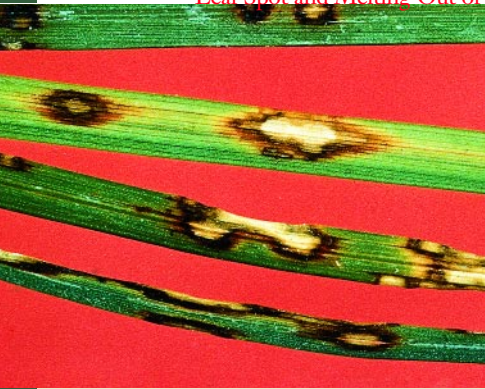


Figure 1 Leaf spots with whitish centers and dark borders.



Figure 2 Thinning (melting-out) of large areas in advanced stages of leaf spot and melting-out.

Symptoms

Symptoms begin with the appearance of purplish-black spots on leaf blades and sheaths. When conditions are right for disease development, the spots elongate, becoming oval shaped. The center of the spots turn tan to white, while the borders remain dark (Fig.1). Spots on individual blades can vary in size, and may coalesce to produce larger dead areas. Leaf spot fungi may girdle the leaf blades, causing the tips to die back. When the temperature is above 85°, the disease can attack at the base (crown) of the plant, so that entire plants wither and die.

Causal Agents

Several fungi interact to cause the leaf spot and melting-out complex. Fungi commonly associated with the disease are *Cochliobolus sativus*, *Drechslera poae*, and *Bipolaris species*.

Hosts

Bluegrass (*Poa* spp.) and fescue (*Festuca* spp.) are common hosts of leaf spot and melting-out fungi. Outbreaks in Iowa are most common on residential lawns and golf course fairways composed primarily of Kentucky bluegrass (*Poa pratensis*). Bentgrass (*Agrostis* spp.), buffalograss (*Buchloe* spp.), and ryegrass (*Lolium* spp.) also are susceptible to the leaf spot and melting-out fungi.

Survival and Dispersal

The fungi survive as spores and mycelium (threadlike fungal structures) in plant material and the thatch (a layer of intermingled dead and live grass that develops between green vegetation and the soil surface). Infectious particles of fungi are spread by material that attaches to shoes, mowers, core aerators, or other equipment.

Management

Cultural practices that maintain healthy turfgrass are essential for leaf spot and melting-out prevention and control. Maintenance of plant vigor can help avoid severe outbreaks when conditions are favorable for disease development.

Genetic resistance is the most effective strategy. Locations where leaf spot and melting out damage has been severe, overseed or reseed with blends of several different Kentucky bluegrass varieties, including those with resistance to leaf spot and melting out. Another option is to use a mixture of several turfgrass species, such as Kentucky bluegrass, tall fescue, and perennial ryegrass. These mixtures are widely sold in retail garden stores. More information can be found at the National Turfgrass Evaluation Program website (<http://www.ntep.org/>). See Table 1.

Excellent	Very Good	Good
Blacksburg	Adelphi	America
Brilliant	Barblue	Banff
Liberator	Challenger	Cheri
Midnight	Eclipse	Nassua
Moonlight	Majestic	Nugget
North Star	Somerset	Rugby II
Total Eclipse		Touchdown
Wildwood		Trenton
ZPS - 2183		

Table 1 Kentucky bluegrass cultivars with resistance to leaf spot and melting-out. Headings indicate the degree of resistance.

Figure 3 Collect samples at the margin, the area where “sick” and healthy grass meet.

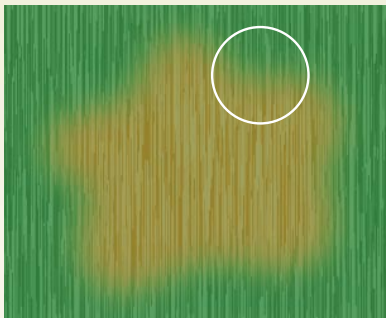
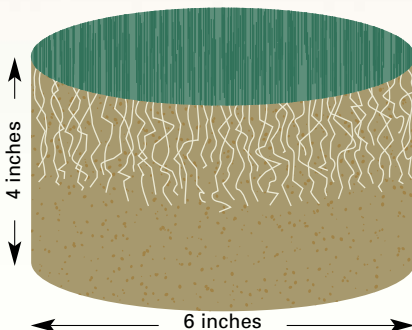


Figure 4 An adequate turf sample is approximately six inches across and four inches deep.



- Avoid over-fertilization in the spring. Lush new foliar growth can serve as a food source for many disease-causing fungi.
- Mow bluegrass and fescue at a height of 2 inches in the spring and fall, but raise the height to 2 ½–3 inches from June through August. Lower mowing heights can weaken grass. Mow only when the grass is dry since the fungi can be spread with a mower.
- Irrigate before mid-morning to allow time for the grass blades to dry before the evening. Extended periods of leaf wetness promote fungal growth. Avoid irrigation during cool, rainy periods. If frequent watering is necessary for newly seeded lawns, it should be done in the middle of the day. Excessive watering can further stress plants by limiting oxygen absorption by the roots.
- Core aerate in the early spring or early fall to prevent the build-up of thatch (the layer of dead organic matter at the base of grass blades). Thatch should be no greater than ½ inch in thickness.
- Fungicides are rarely needed to control leaf spot and melting out. However, these chemicals are an option in situations where the disease occurs repeatedly in the same location over a period of successive years. Fungicides are most effective when used in conjunction with the cultural control measures suggested above. Azoxystrobin can give good control, but is only available commercially. These fungicides are intended to be used to protect plants from infection and should be applied as soon as symptoms appear for best results. Once the disease gets into the base of the plants, management can be very difficult. Remember to read and follow the label instructions.

Submitting Turfgrass Samples for Disease Diagnosis

The Iowa State University Plant Disease Clinic can help diagnose turfgrass disease problems. An adequate sample and detailed information are important for an accurate diagnosis.

- Lift out a section of turf approximately six inches across and four inches deep, including roots and attached soil. If the symptoms appear as patches in the lawn, take the sample from the edge of the patch. (Figures 3 and 4.) The sample should include healthy as well as “sick” grass.
- Provide lots of information about the situation, such as watering schedule, weather events, chemical applications, core aeration, type of grass, light/shade, topography, and when you first noticed the symptoms. Include a photo or two, if possible. You also can send digital images to the Plant Disease Clinic at sickplant@iastate.edu.



Figure 5 A complete turfgrass sample ready for shipment.

- Fill out the “Plant Disease Identification Form” (PD-31) and send it with the sample. There is a \$10.00 fee per sample.
- Wrap the sample in clean newspaper to keep the soil intact. **Do not add water.** Pack it securely in a sturdy box and bring or ship overnight to:

ISU Plant Disease Clinic
351 Bessey Hall
Iowa State University
Ames, IA 50011
Phone: (515) 294-0581
Fax: (515) 294-9420

Plant Disease Identification Forms Are Available From:

- Any Iowa State University Extension county or area office
- ISU Extension Distribution Center:
119 Printing and Publications
Iowa State University
Ames, IA 50011-3171
Phone: (515) 294-5247
Fax (515): 294-2945
- On the Web at <http://www.isuplantdiseaseclinic.org>

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