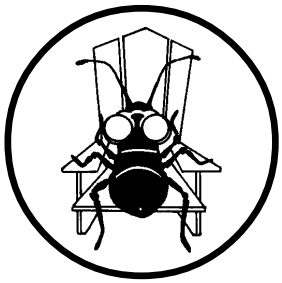
Gray Leaf Spot: A Potential Threat to Perennial Ryegrass and Tall Fescue



Pest Watch

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From year to year, many turfgrass diseases seem to come and go. In some years, they can be quite destructive, whereas in other years, little or no damage may be observed. Over the decades, few diseases have raised panic annually among turfgrass managers, with the possible exception of Pythium blight and summer patch. In the past couple of years, another disease has been causing panic in the mid-Atlantic region of the U.S. and is raising concern among golf course superintendents in the Northeast. The disease is gray leaf spot caused by the fungus, *Pyricularia grisea* (= *P. oryzae* = *Magnaporthe grisea*). Although this disease has been known for nearly 30 years, it had never been a serious problem on golf course turf until recently.

The first major epidemic was observed in 1992 where it was restricted to the warmer, humid regions of the U.S., particularly through the mid-Atlantic region comprising Maryland, Virginia, Delaware. It has now reached many parts of the east and midwest, ranging from Pennsylvania to North Carolina and as far west as Nebraska and Oklahoma.

Major foliar symptoms of this disease are evident during the hot humid weeks of summer toward the end of July and the first part of August. Overall symptoms appear as small (1-2") reddish-brown patches that enlarge very rapidly, similar to those associated with Pythium blight or Brown patch. However, there is no foliar mycelium or smoke rings associated with these patches. Symptoms may also resemble those of heat or drought stress. However, upon visual inspection of leaf blades, a water-soaking and yellowing appearance of the leaf tips is first observed along with distinctive leaf spots. The circular spots may take on a grayish or grayish-brown appearance with purple to dark brown borders and a yellowish halo. These lesions may resemble those caused by species of *Dreschlera*. Under optimum conditions the disease progresses rapidly with the lesions coalescing causing an overall blight of the foliage. Grass blades may take on a twisted appearance and in the early morning hours may appear to be felted or fuzzy. This is due to the massive production of very characteristic spores in the lesions. This massive production contributes to the destructive nature of the disease, since vast amounts of inoculum are available for infection.

Under optimum conditions, the disease may progress rapidly over a 48 hour period, killing an entire stand of perennial ryegrass in 3-5 days. Hot humid weather where leaf blades remain moist for prolonged periods of time is ideal for disease development and symptoms are often more severe on south-facing areas. Symptoms are also typically more severe in higher cut turf such as in roughs and on fairways as opposed to putting greens, since canopy humidity is maintained at a higher level.

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Gray Leaf Spot

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Essential to the management of this disease is an accurate and timely diagnosis, since symptoms may be easily confused with other diseases and abiotic stresses. This is particularly important because of the explosive nature of this disease. If the disease is allowed to reach epidemic proportions, nearly all control strategies may fail. However, if the disease is correctly diagnosed early in its development, many strategies may be effective. Golf course superintendents have typically relied on fungicide applications for the control of gray leaf spot. From among the fungicides currently registered in New York State, the most effective are those based on chlorothalonil (e.g., Daconil, Thalonil, etc.) and azoxystrobin (Heritage). Whereas Heritage may provide longer residual control than chlorothalonil, cost becomes an issue if superintendents move toward spraying roughs.

In summary, this is a disease with which we should be extremely concerned because of its extreme destructive potential. Turfgrass managers who are responsible for large areas of perennial ryegrass and tall fescue should keep close watch during the latter part of the summer and be prepared to deal with this nasty disease should it raise its ugly head.

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