



TURFGRASS MATTERS

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Gray Leaf Spot Blasts Ryegrass Fairways in 1995

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I first diagnosed gray leaf spot at Chartwell CC in early November of 1986. Since that time it has appeared sporadically, with no more than one or two cases being observed in a year. The only gray leaf spot I diagnosed in 1994 was restricted to a small area on one ryegrass fairway at Baltimore CC, on 6 October. In late July 1995, however, a deluge of samples brought to me from area golf courses revealed that we were having an epidemic.

As you know, July 1995 was that hottest on record, and except for a two or three day hiatus, the heat wave persisted throughout August. There was only one major rainfall event during the entire month of August, which occurred on 6 August. These environmental conditions are what triggered the problem, and the disease continued to be active into late August, despite cooler night temperatures. The pathogen, *Pyricularia grisea*, remained virulent during somewhat cooler weather because the drought and high day temperatures greatly restricted the ability of perennial ryegrass to grow actively and defend itself. The epidemic subsided by the third week of September, but the pathogen continued to attack and injure seedlings throughout October. There was a resurgence of destructive levels of gray leaf spot in early to mid-November of 1995.

The gray leaf spot pathogen also causes rice blast, the most destructive disease of rice worldwide. Literally overnight, the fungus produces enormous numbers of spores. It seems to

initially attack through leaf tips: at least the initial symptoms include the discoloration and twisting of leaf tips. The



first really noticeable symptom from a standing position is the appearance of reddish-brown spots, which are 1-2 inches in diameter. These spots can easily be confused with *Pythium* blight or brown patch. The major difference is that there is no foliar mycelium associated with gray leaf spot. In the early morning hours the twisted leaf tips may appear felted and either gray, purple, or yellow. The felted appearance is the result of the production of prodigious numbers of spores and their spike-bearing stalks known as conidiophores. Within hours, leaf tips turn brown and are usually twisted. Below the twisted areas a small number of leaf lesions may or may not be evident. The lesions are circular to oblong, about 1/8 inch or less in diameter, grayish-brown with a dark-brown border. Gray to brown lesions with or without a dark-brown border can also develop along the margins of leaf blades. Leaf lesions are not produced during the initial infection

phase, therefore, twisting of the youngest leaf is the most important early warning symptom to look for when scouting for gray leaf spot. During prolonged hot and humid weather the spots enlarge to 3 to 18 inches in diameter. Large areas of turf may be enveloped and collapse in 3 to 5 days, and at this point, the turf develops symptoms that mimic drought stress. The disease is most severe in heat-sink areas such as south facing hillsides or knolls. Another unusual feature of the disease was that it is more destructive in the rough, particularly the first-cut rough where the

soil has been compacted by cart traffic. Evidently, the higher canopy in the rough provides a more ideal micro-environment for the pathogen. This is also supported by the observation that the disease was generally less severe in low-cut, perennial ryegrass approaches, collars or tees. The reduction of disease

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