UKentucky researchers offer help for 'grass AIDS' after '95 woes

By A.J. Powell, David Williams and Paul Vincelli

The loss of fairway grasses last July and August surpassed that lost in 1991. All courses lost most fairway Poa annua and almost all lost their perennial ryegrass fairways and/or greens collars. Creeping bentgrass fairways and greens fared much better, but heavy play and use were evident and we experienced much loss due to wet wilt, localized dry spots, traffic damage, irrigation shortages, Pythium, brown patch, etc.

No one knows for sure why so much ryegrass was lost, but it is certainly related to the fact that it was too hot for too long. The weather was typical for Atlanta, and perennial ryegrass fairways would not survive in Atlanta. Our August maximum temperature for both day and night, was about 5 degrees higher than the 30-year average.

With mowing heights as low as 1/2 inch, heavy play, frequent irrigation, and spring and summer nitrogen to force it to grow, ryegrass lives on the edge every summer. We have many new, more heat-tolerant varieties, but even those did not survive last summer.

Several diseases have been diagnosed in perennial ryegrass samples brought to the University of Kentucky plant diagnostic labs, and they appear to be part of the syndrome experienced last summer. Rhizoctonia leaf and crown infections were common in dying and dead grass.

In many samples, we found a great deal of foliar blighting caused by the fungus Pyricularia grisea, which causes "gray leaf spot" or "blast" in grasses. P. grisea was sometimes found in combination with Rhizoctonia sp. In other cases, it was the predominant pathogen present in affected ryegrass.

In a few samples, we found a great deal of foliar blighting caused by weak pathogens, particularly Leptosphaeria trifolii. Pythium species were surprisingly uncommon in fairway samples, but aggressive, active root infections by mycelia of Pythium species were observed in one case where damage was confined to discrete patches in the fairway.

"Grass AIDS" might be the best description for the situation. The extended heat period greatly stressed the grass, and the grass had little to no reserve energy and reduced resistance to diseases.

Last July, we had an epidemic of brown patch, and other diseases were active by late July. Soon after disease thinned out the grass, extreme heat finished it off.

Any disease, traffic stress, scalping, etc. will open up the canopy, reduce transpirational cooling and allow for more extreme crown temperatures.

Furthermore, blighting of leaves by diseases takes away ryegrass's ability to maintain metabolic respiration during the hot weather, when respiratory energy demands are very high. The only courses we are familiar with, on which ryegrass mostly survived, were those on a preventive fungicide program during early- and mid-summer.

For $40,000 to $60,000 per year, you could have possibly reduced the loss of ryegrass (but not Poa annua). In midsummer, we did not foresee the kind of damage that perennial rye would suffer in mid-August. We hope superintendents do not conclude that routine, preventive fungicide programs are required every summer to maintain high-quality ryegrass fairways in Kentucky. Our research and general experience indicate this is not true. We need to be able to predict those times when fungicide applications may be beneficial. Clearly, sustained periods of very hot weather raises a flag.

This bulletin, written by University of Kentucky Professors Powell, Williams and Vincelli, was circulated last August to Kentucky fairgrass managers who suffered through last summer's heat. It could prove useful to superintendents in the transition zone as they prepare for the upcoming warm weather.
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