Research Summary

Fungicide Management Strategies for Dollar Spot and Brown Patch

There has been a lack of investigations concerning the performance of creeping bentgrass (*Agrostis stolonifera*) cultivars of differing disease susceptibility under varying fungicide application regimes. Thus, the objective of this study was to evaluate dollar spot (*Sclerotinia homoeocarpa*) and brown patch (*Rhizoctonia solani*) severity and resultant turfgrass quality of four creeping bentgrass cultivars managed under curative and preventive fungicide application strategies. The study was conducted over a three-year period from 1997 to 1999 on a putting green constructed to USGA specifications and located in Manhattan, Kansas. The preventive fungicide treatments included flutolanil plus tridimefon at monthly intervals, and iprodione plus a pigment formulation of fosetyl-aluminum at 14-day intervals. Iprodione was applied as a curative treatment when dollar spot or brown patch infection centers were visible and thereafter at two-week intervals only if the disease was active. In 1998 a combination treatment of azoxystrobin and tridimefon at 14-day intervals was added, and in 1999 chlorothalonil was used instead of iprodione as a curative treatment.

The results revealed that greater flexibility was available in the disease control strategy when a more disease-resistant turfgrass cultivar was used rather than a disease-susceptible cultivar. For example, dollar spot was controlled using preventive fungicide applications of 14 or 28 days, preventive low-rate applications of chlorothalonil every 7 days, or a curative fungicide application when disease was observed. In contrast, only a 14-day preventive fungicide regime effectively controlled dollar spot on a highly susceptible cultivar. **Over the three-year period of the study where a composite of all cultivar data was evaluated, there were substantially fewer fungicide applications using a curative treatment program than a preventive strategy.** The curative strategy was effective on dollar spot, but not on Rhizoctonia brown patch. A number of the cultivars in this study exhibited season-long unacceptable turf quality when receiving no fungicide treatment. The disease attacks were most severe after July 1, and was expressed as a decline in turf quality.

Comments. The intense dollar spot pressure observed on the most susceptible cultivar in this study coupled with the continuous use of fungicides, especially the demethylation inhibiting (DMI) fungicides, could result in rapid selection for resistant strains of *Sclerotinia homoeocarpa*. This potential problem plus essentially a doubling of the amount of fungicide required certainly are serious concerns when considering the use of cultivars with a high susceptibility to dollar spot. This research also emphasizes that **the application rate of a fungicide, particularly in terms of a preventive program, can and should be adjusted in relation to the relative susceptibility of the cultivar to a particular disease of concern, in order to achieve minimal fungicide usage.**

Source: Dollar Spot and Brown Patch Fungicide Management Strategies in Four Creeping Bentgrass Cultivars by Derek Settle, Jack Fry, and Ned Tisserat. *Crop Science,* 41:1190–1197, 2001.

Ask Dr. Beard

Q *I have scattered patches of rough bluegrass in the fairways of the golf course planted two years ago. What can be done?*

A The rough bluegrass (*Poa trivialis*) present in the fairways probably was a contaminate in the seed originally planted. The yellow-green color and stoloniferous patchy growth cause it to be visually objectionable in fairways. One obvious approach is to specify *Poa trivialis*-free seed at the time of purchase.

It has been my experience that the ***Poa trivialis* tends to persist in annual bluegrass (*Poa annua*) fairways under that cultural regime. However, a switch in the cultural program combined with interseeding of creeping bentgrass (*Agrostis stolonifera*) has resulted in a dissipation and eventual disappearance of *Poa trivialis*.** This cultural program includes a lower mowing height typically with a light-weight mower combined with a lower nitrogen nutritional level, more modest irrigation program, and periodic coring for turf cultivation. In addition, the *Poa trivialis* tends to be prone to a number of diseases. Thus, a preventive fungicide program tends to sustain its presence, while minimal use of fungicides accelerates the rate of decline in *Poa trivialis*.

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