2017 Kikuyugrass Gray Leaf Spot Fungicide Trial

Gray leaf spot disease symptoms on kikuyugrass turf caused by the foliar fungus *Pyricularia grisea*. Hot weather followed by extended periods of warm humid or wet conditions usually incite the disease characterized by dark lesions on leaf blades that eventually lead to blighted, twisted leaves. Photo taken in rough at San Clemente Golf Course on 13 July 2017.

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The Bottom Line: Twelve commercial and experimental fungicides were tested alone or in combination against an untreated control for management of gray leaf spot (GLS) disease caused by *Pyricularia grisea* on kikuyugrass maintained as rough at San Clemente Municipal Golf Course. Treatments were applied three times on 3-week intervals beginning 16 July 2017. Some sporadic disease activity was present at the beginning of the study, which emphasized that preventative fungicide applications are most effective against GLS disease. Most treatments reduced GLS severity and improved turfgrass quality compared to the untreated control. However, Exteris Stressgard (fluopyram + trifloxystrobin), Tartan (triadimefon + trifloxystrobin), and Insignia (pyraclostrobin) provided the most consistent turf quality and disease control throughout the study.

Acknowledgments:

Thanks to Gus Nelson, San Clemente Municipal Golf Course, Golf Course Superintendents' Association of Southern California, San Diego Golf Course Superintendents' Association, Golf Course Superintendents' Association of Northern California, California Turfgrass & Landscape Foundation, BASF, Bayer, and Syngenta for supporting this research.

Introduction:

Gray leaf spot (GLS), caused by the foliar fungus *Pyricularia grisea*, is a mid- to late-summer disease of perennial ryegrass, tall fescue, St. Augustinegrass, and kikuyugrass turf. Different strains of the fungus appear to infect turfgrass species independently. Typically, disease activity and resultant turf injury are related to warm, wet or humid weather that results in extended periods (ca. 9 hours) of leaf wetness. Maximum daytime temperature + minimum relative humidity >140F is usually a good indicator of GLS activity. Management of GLS includes use of GLS tolerant cultivars and avoiding excessive fertilization and irrigation when environmental conditions are conducive for disease activity. DMI, QoI, benzimidazole, SDHI fungicides, sometimes tank-mixed with chlorothalonil or mancozeb, are typically used to manage this disease.

Materials and Methods:

The study was conducted in kikuyugrass rough near the 5th green at San Clemente Golf Course. Experimental design was a randomized block with 4 replications. Plot size was 6-ft x 8-ft with 2-ft alleys. Fungicides were applied using a CO_2-powered backpack sprayer equipped with 8003VS nozzles to deliver 2 gal/M. Fungicide treatments (Table 1) were first applied on 16 July 2017 and two repeat applications were made approximately three weeks apart.

Results:

Disease activity was present in a few of the plots at the start of the experiment. This affected three treatments in particular by lowering mean disease quality (Table 1): untreated control; Heritage Action (azoxystrobin + acibenzolar); and Banner Maxx (propiconazole) + Daconil Action (chlorothalonil + acibenzolar). Maximum GLS disease pressure occurred during August 8-19. Despite some initial disease activity, two applications of the aforementioned fungicides were sufficient to restore turf disease quality above that of the untreated control.

Overall, most treatments reduced GLS severity and improved turfgrass quality compared to the untreated control. However, Exteris Stressgard (fluopyram + trifloxystrobin), Tartan (triadimefon + trifloxystrobin), and Insignia (pyraclostrobin) provided the most consistent turf quality and disease control throughout the study.

This study demonstrated that GLS disease is best managed when fungicides are applied preventatively.

A second GLS fungicide trial is scheduled to begin in July 2018 at San Clemente Municipal Golf Course.

Table 1. Effects of fungicides on kikuyugrass quality/gray leaf spot disease severity (1-9, 9 = best, no disease). 2017. San Clemente Golf Course (SCGC).

No.	Product(s)	Application	Rate (oz/M)	Jul 23	Jul 30	Aug 8	Aug 19	Aug 29	Sep 12	Sep 17
1	Control	--	--	6.5 B	7.0 BC	4.5 BC	4.5 F	5.5 DE	5.0 CDE	6.0 AB
2	Exteris Stressgard SC	ABC	5.0	7.8 AB	8.2 A	5.8 AB	6.8 ABC	7.2 AB	6.2 ABC	6.2 AB
3	Exteris Stressgard SC	ABC	6.0	8.2 A	8.0 AB	5.5 ABC	7.2 A	7.0 AB	6.2 ABC	6.5 A
4	UCR001	AB	5.0	8.2 A	7.8 ABC	5.0 ABC	5.2 DEF	5.8 CDE	4.5 DE	5.0 B
5	UCR002	AB	5.5	7.2 AB	7.5 ABC	4.2 C	4.8 EF	5.8 CDE	4.0 E	5.5 AB
6	UCR003	ABC	6.0	8.2 A	8.0 AB	4.8 ABC	4.5 F	4.8 E	4.2 DE	5.0 B
7	Mirage SC	ABC	1.5	7.8 AB	8.0 AB	5.2 ABC	5.8 B-F	6.8 ABC	6.8 A	6.2 AB
8	Tartan SC	ABC	1.5	7.5 AB	7.8 ABC	6.0 A	7.0 AB	7.8 A	6.2 ABC	5.8 AB
9	Xzemplar SC	ABC	0.26	8.2 A	8.0 AB	5.2 ABC	5.5 C-F	6.8 ABC	5.5 A-D	6.0 AB
10	Insignia SC	ABC	0.7	8.2 A	8.0 AB	6.0 A	6.8 ABC	7.5 AB	6.0 ABC	6.0 AB
11	Trinity SC	ABC	1.5	7.8 AB	7.8 ABC	5.8 AB	5.8 B-F	6.5 BCD	6.5 AB	6.2 AB
12	Heritage Action WG	ABC	0.4	6.5 B	6.8 C	5.2 ABC	6.0 A-E	6.8 ABC	6.8 A	6.2 AB
13	Banner Maxx EC	ABC	2.0	6.5 B	7.2 ABC	5.2 ABC	6.5 A-D	7.0 AB	5.2 B-E	6.2 AB
13	Daconil Action SC	ABC	3.5							
14	Torque SC	A	0.6	7.2 AB	7.2 ABC	4.8 ABC	4.8 EF	5.2 E	5.2 B-E	6.2 AB
14	Dorado EC	B	1.5							
14	Dorado EC	C	2.0							

Trt 14 = SCGC GLS program for fairways.
Treatments 4 and 5 were not applied on 29 August 2017. Did not have enough material for applications.

A = 16 July 2017; 2-inch soil temp = 75F; air temp = 70F.
B = 8 August 2017; 2-inch soil temp = 75F; air temp = 68F.
C = 29 August 2017; 2-inch soil temp = 74F; air temp = 70F.