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The Rutgers Turfgrass Proceedings is published yearly by the Rutgers Center for Turfgrass Science, Rutgers Cooperative Extension, and the New Jersey Agricultural Experiment Station, Cook College, Rutgers University in cooperation with the New Jersey Turfgrass Association. The purpose of this document is to provide a forum for the dissemination of information and the exchange of ideas and knowledge. The proceedings provide turfgrass managers, research scientists, extension specialists, and industry personnel with opportunities to communicate with co-workers. Through this forum, these professionals also reach a more general audience, which includes the public. Articles appearing in these proceedings are divided into two sections.

The first section includes lecture notes of papers presented at the 1999 New Jersey Turfgrass Expo. Publication of the New Jersey Turfgrass Expo Notes provides a readily available

source of information covering a wide range of topics. The Expo Notes include technical and popular presentations of importance to the turfgrass industry.

The second section includes research papers containing original research findings and reviews covering selected subjects in turfgrass science. The primary objective of this section is to facilitate the timely dissemination of original turfgrass research for use by the turfgrass industry.

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Dr. Ann B. Gould, Editor  
Dr. Bruce B. Clarke, Coordinator

## EVALUATION OF SELECTED FUNGICIDES FOR THE CONTROL OF GRAY LEAF SPOT ON PERENNIAL RYEGRASS

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Fungicides were evaluated in 1999 for their ability to control gray leaf spot caused by *Pyricularia grisea* on perennial ryegrass (*Lolium perenne* 'Palmer II') at the Rutgers Turf Research Farm in North Brunswick, New Jersey. Turf was established 12 May 1999 on a Norton loam with a pH of 6.5. Turf was mowed two times weekly at a height of 2.5 inches and clippings were collected. The site was irrigated to prevent drought stress.

Fertilizer was applied as 10-10-10 on 12 May (0.5 lb N/1000 ft<sup>2</sup>) and 4 June (0.5 lb N/1000 ft<sup>2</sup>), and as 46-0-0 on 25 June (1.0 lb N/1000 ft<sup>2</sup>) and 26 July (0.25 lb N/1000 ft<sup>2</sup>). ProStar 70W was applied to the entire study on 23 June (2.0 oz/1000 ft<sup>2</sup>), 27 July (2.0 oz/1000 ft<sup>2</sup>), 30 August (2.0 oz/1000 ft<sup>2</sup>), and 14 September (2.0 oz/1000 ft<sup>2</sup>) to prevent brown patch. Weeds were controlled with Acclaim Extra 0.57E (0.46 fl oz/1000 ft<sup>2</sup>) on 9 June, MCPP-2 amine (0.55 fl oz/1000 ft<sup>2</sup>) on 1 July, and 2,4-D-1 amine (3.67 fl oz/1000 ft<sup>2</sup>) plus Banvel-4 amine (0.18 fl oz/1000 ft<sup>2</sup>) on 3 August. Plots were 4 ft x 6 ft and were arranged in a randomized complete block with four replications.

Fungicides were applied in water equivalent to 2 gal/1000 ft<sup>2</sup> with a CO<sub>2</sub> powered sprayer at 30 psi using TeeJet 8003E nozzles. Treatments (trt) were initiated on 19 August. Fungicides were reapplied at the appropriate intervals as indicated

in Table 1. Percent turf exhibiting foliar symptoms of gray leaf spot was assessed on 15 September and 22 September. Turf quality was evaluated on 4 October using a 1 to 9 scale, where 9 = the best turf quality. Data were subjected to analysis of variance and means separation by Waller-Duncan *k*-ratio *t*-test (*k* = 100).

Gray leaf spot was first observed on 22 July, one of the earliest diagnosed cases of natural infection in New Jersey, but did not become evenly distributed throughout the test until 19 August. The disease developed rapidly from 19 August to 15 September, resulting in 76.5% turf area infected in untreated plots (trt 23). S4693 G (trt 4), Zyban 80WSB (trt 11, 12), Fungo 50WSB (trt 13, 14), Fore 80W (trt 15), BASF 500 2.1E (trt 16 to 18), Banol 6S + Cleary 3336 50W (trt 20), and Heritage 50WG (trt 22) provided good to excellent disease control throughout the study. With the exception of S4693 G (trt 4), these treatments also exhibited the highest turf quality on 4 October.

Turf quality was closely associated with prior incidence of gray leaf spot (19 August to 4 October). S4693 G (trt 1 to 3), S7395 G (trt 5), S7511 G (trt 6,7), S8322 G (trt 8), S8323 G (trt 9, 10), BASF 505 50WG (trt 19), and AE B066752 (trt 21) did not provide acceptable control of gray leaf spot on either rating date. No phytotoxicity was observed.

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Table 1. Impact of fungicides on the severity of gray leaf spot on perennial ryegrass turf in North Brunswick, NJ: 1999.

Treatment and rate/1000 sq ft	Spray interval <sup>1</sup> (days)	Turf area infected (%) per plot <sup>2</sup>		Turf quality <sup>3</sup> 4 Oct.
		15 Sept.	22 Sept.	
1. S4693 G 21.7 oz .....	14 <sup>4</sup>	74.5 k	59.0 l	4.0 a
2. S4693 G 43.5 oz .....	14 <sup>4</sup>	50.0 j	33.8 k	5.0 a-c
3. S4693 G 87.0 oz .....	14 <sup>4</sup>	27.0 g-i	23.2 gh	5.8 c-f
4. S4693 G 174.0 oz .....	14 <sup>4</sup>	10.0 ef	8.8 b-d	5.5 c-e
5. S7395 G 40.3 oz .....	14 <sup>4</sup>	50.0 j	32.2 jk	6.0 c-g
6. S7511 G 64.0 oz .....	14 <sup>4</sup>	50.0 j	29.2 i-k	5.2 b-d
7. S7511 G 128.0 oz .....	14 <sup>4</sup>	40.0 ij	26.2 hi	5.0 a-c
8. S8322 G 19.2 oz .....	14 <sup>4</sup>	30.0 hi	27.0 h-j	6.0 c-g
9. S8323 G 40.0 oz .....	14 <sup>4</sup>	40.0 ij	25.8 hi	5.8 c-f
10. S8323 G 80.0 oz .....	14 <sup>4</sup>	19.5 f-h	18.0 fg	6.2 d-h
11. Zyban 80WSB 4.0 oz .....	14	1.8 a-d	4.5 a-c	7.0 g-j
12. Zyban 80WSB 5.3 oz .....	14	0.8 ab	1.8 a	6.8 f-j
13. Fungo 50WSB 4.0 oz .....	14	3.0 b-d	4.2 a-c	6.8 f-j
14. Fungo 50WSB 8.0 oz .....	14	0.5 a	0.5 a	7.2 h-j
15. Fore 80W 8.0 oz .....	14	5.0 de	10.0 cd	6.5 e-i
16. BASF 500 2.1E 0.4 fl oz .....	14	1.0 a-c	3.8 ab	7.5 ij
17. BASF 500 2.1E 0.7 fl oz .....	14	1.8 a-d	3.2 ab	7.8 j
18. BASF 500 2.1E 0.7 fl oz .....	28	4.2 c-e	8.5 b-d	7.0 gj
19. BASF 505 50WG 0.2 oz .....	14	19.5 f-h	11.2 de	6.0 c-g
20. Banol 6S 2.0 fl oz				
+ Cleary 3336 50W 6.0 oz .....	14	0.8 ab	1.8 a	7.0 g-j
21. AE B066752 6.0 oz .....	14	15.0 fg	16.0 ef	5.5 c-e
22. Heritage 50WG 0.2 oz .....	14	4.2 c-e	8.0 b-d	6.8 f-j
23. Untreated Check .....	—	76.5 k	68.0 m	4.2 ab
		INT <sup>5</sup>	DAT <sup>6</sup>	DAT
		14	12	2
		28	26	2
				DAT
				14
				14

- <sup>1</sup> Fungicides were applied on 19 August (all treatments), 3 September (14 day treatment), 20 September (14 and 28 day treatments), and 4 October (14 day treatment).
- <sup>2</sup> Values are means of four replicates. Means followed by the same letter are not significantly different according to Waller-Duncan *k*-ratio *t*-test (*k* = 100).
- <sup>3</sup> Turf quality on a 1 to 9 scale, where 9 = best turf quality. Values above 6.0 represent acceptable turf quality.
- <sup>4</sup> Treatments were irrigated with 1 gal water/plot immediately following application.
- <sup>5</sup> Spray interval in days.
- <sup>6</sup> Days after treatment (DAT) for each spray interval.