

2000 RUTGERS Turfgrass Proceedings



THE NEW JERSEY TURFGRASS ASSOCIATION

In Cooperation With

RUTGERS COOPERATIVE EXTENSION
NEW JERSEY AGRICULTURAL EXPERIMENT STATION
RUTGERS, THE STATE UNIVERSITY OF NEW JERSEY
NEW BRUNSWICK

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2000 RUTGERS TURFGRASS PROCEEDINGS

of the

**New Jersey Turfgrass Expo
December 12-14, 2000
Trump Taj Mahal
Atlantic City, New Jersey**

**Volume 32
Published July, 2001**

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.

This publication includes lecture notes of papers presented at the 2000 New Jersey Turfgrass Expo. Publication of these lectures pro-

vides a readily available source of information covering a wide range of topics and includes technical and popular presentations of importance to the turfgrass industry.

This proceedings also includes research papers that contain original research findings and reviews of selected subjects in turfgrass science. These papers are presented primarily to facilitate the timely dissemination of original turfgrass research for use by the turfgrass industry.

Special thanks are given to those who have submitted papers for this proceedings, to the New Jersey Turfgrass Association for financial assistance, and to those individuals who have provided support to the Rutgers Turfgrass Research Program at Cook College, Rutgers, The State University of New Jersey.

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CONTROL OF GRAY LEAF SPOT IN PERENNIAL RYEGRASS WITH SELECTED FUNGICIDES

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Fungicides were evaluated in 2000 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, NJ. Turf was established 13 July 2000 on a Norton loam with a pH of 6.4. Mowing was performed two times weekly at a height of 3.0 inch and clippings were not collected. The site was irrigated as needed to prevent drought stress.

Fertilizer was applied as 10-10-10 on 13 July (1.0 lb nitrogen (N)/1000 ft²), 26 July (0.50 lb N/1000 ft²), and 25 August (1.0 lb N/1000 ft²). ProStar 70W was applied to the entire test on 20 July (2.2 oz/1000 ft²), 11 August (2.2 oz/1000 ft²), and 31 August (2.2 oz/1000 ft²) to prevent brown patch. Plots were 3 X 7 ft and were arranged in a randomized complete block with four replications.

Fungicides were applied in water equivalent to 2 gal per 1000 ft² with a CO₂ powered sprayer at 30 psi using TeeJet 8003E nozzles. Treatments (trt) were initiated on 28 August. Fungicides were reapplied at the appropriate intervals as indicated in Table 1. Turf was inoculated with infested perennial ryegrass clippings from an adjacent study (50 oz leaf tissue/1000 ft²) and was sprayed with a conidial suspension of *P. grisea* (22 fl oz conidial suspension/1000 ft² at a concentration of 1.5 x 10⁶ conidia/fl oz) on 23

August and 30 August. Percent turf area exhibiting foliar symptoms of gray leaf spot was assessed on 7 and 20 September. 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 24 August. Disease activity peaked on 7 September and quickly subsided due to cool daily temperatures. BAS 500 02F 20WG (trt 1 to 3), Heritage 50WG (trt 4, 9, 37), Fore Rainshield 80W (trt 5 to 7), Daconil Ultrex 82.5SDG (trt 8), the 0.18 oz rate of AMS 21618 55W (trt 11), AMS 21618 250SC (trt 12, 13), the 4.0 oz rate of Pentathlon 75DF (trt 17), the 3.2 oz rate of Concorde SST 82.5DF (trt 19), the 3.5 fl oz rate of Concorde SST 720L (trt 21), Banner MAXX 1.3MC + Heritage 50WG (trt 23, 24), Banner MAXX 1.3MC + Daconil Ultrex 82.5SDG (trt 25), Compass 50WG + Banner MAXX 1.3MC (trt 28), CGA 245704 50WG + Banner MAXX 1.3MC (trt 31), CGA 245704 50WG + Heritage 50WG (trt 32), and RU041523A + Genapol 26-L-50 (trt 33 to 36) provided good to excellent gray leaf spot control throughout the study. Junction 61.1DF (trt 14, 15), the 1.8 oz rate of Concorde SST 82.5DF (trt 18), the 2.0 fl oz rate of Concorde SST 720L (trt 20), Banner MAXX 1.3MC (trt 22), Compass 50WG (trt 26, 27), CGA 245704 50WG (trt 29, 30), and TM 43801 2.5W (trt 38) did not provide acceptable control of the target disease. No phytotoxicity was observed.

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Table 1. Impact of selected fungicides on the incidence of gray leaf spot in perennial ryegrass in North Brunswick, NJ: 2000.

Treatment and rate/1000 sq ft	Spray intervals (days) ²	Turf area infected (%) per plot ¹	
		07 Sept.	20 Sept.
1. BAS 500 02F 20WG 0.5 oz.....	14	0.0 a	0.0 a
2. BAS 500 02F 20WG 0.9 oz.....	14	8.8 a-d	3.8 ab
3. BAS 500 02F 20WG 0.9 oz.....	28	3.8 ab	0.0 a
4. Heritage 50WG 0.4 oz.....	28	2.5 ab	0.0 a
5. Fore Rainshield 80W 4.0 oz.....	14	6.2 ab	1.2 a
6. Fore Rainshield 80W 6.0 oz.....	14	7.5 a-c	10.0 a-c
7. Fore Rainshield 80W 8.0 oz.....	21	10.0 a-e	10.0 a-c
8. Daconil Ultrex 82.5SDG 3.2 oz.....	14	9.5 a-e	5.0 ab
9. Heritage 50WG 0.2 oz.....	14	6.2 ab	2.5 ab
10. AMS 21618 55W 0.14 oz.....	14	12.5 b-f	5.0 ab
11. AMS 21618 55W 0.18 oz.....	14	7.8 a-c	2.5 ab
12. AMS 21618 250SC 0.29 fl oz.....	14	5.0 ab	0.0 a
13. AMS 21618 250SC 0.38 fl oz.....	14	3.8 ab	5.0 ab
14. Junction 61.1DF 2.0 oz.....	7	32.5 hi	28.8 d
15. Junction 61.1DF 4.0 oz.....	7	21.2 e-g	15.0 a-d
16. Pentathlon 75DF 3.0 oz.....	7	13.2 b-f	8.0 a-c
17. Pentathlon 75DF 4.0 oz.....	7	10.2 a-e	8.8 a-c
18. Concorde SST 82.5DF 1.8 oz.....	7	20.0 d-g	7.5 a-c
19. Concorde SST 82.5DF 3.2 oz.....	7	6.2 ab	2.5 ab
20. Concorde SST 720L 2.0 fl oz.....	7	20.0 d-g	17.5 b-d
21. Concorde SST 720L 3.5 fl oz.....	7	11.2 a-f	7.5 a-c
22. Banner MAXX 1.3 MC 1.0 fl oz.....	14	22.5 f-h	11.2 a-c
23. Banner MAXX 1.3 MC 1.0 fl oz..... + Heritage 50WG 0.2 oz.....	14	6.2 ab	0.0 a
24. Banner MAXX 1.3MC 1.0 fl oz..... + Heritage 50WG 0.2 oz.....	21	3.8 ab	1.2 a
25. Banner MAXX 1.3MC 1.0 fl oz..... + Daconil Ultrex 82.5SDG 3.7 oz.....	14	3.8 ab	1.2 a
26. Compass 50WG 0.15 oz.....	14	18.8 c-g	11.2 a-c
27. Compass 50WG 0.2 oz.....	14	12.8 b-f	5.0 ab
28. Compass 50WG 0.15 oz..... + Banner MAXX 1.3MC 1.0 fl oz.....	14	7.5 a-c	1.2 a
29. CGA 245704 50WG 0.66 oz.....	Once	27.5 gh	22.5 cd
30. CGA 245704 50WG 0.66 oz.....	14	22.5 f-h	7.5 a-c
31. CGA 245704 50WG 0.33 oz..... + Banner MAXX 1.3MC 1.0 fl oz.....	14	11.2 a-f	2.5 ab
32. CGA 245704 50WG 0.33 oz..... + Heritage 50WG 0.2 oz.....	14	8.2 a-d	1.2 a
33. RU041523A 0.47 fl oz..... + Genapol 26-L-50 0.1% v/v.....	35	11.2 a-f	8.8 a-c

Table 1 (continued).

Treatment and rate/1000 sq ft	Spray intervals (days) ²	Turf area infected (%) per plot ¹	
		07 Sept.	20 Sept.
34. RU041523A 0.94 fl oz			
+ Genapol 26-L-50 0.1% v/v	35	7.5 a-c	3.8 ab
35. RU041523A 1.89 fl oz			
+ Genapol 26-L-50 0.1% v/	35	2.5 ab	1.2 a
36. RU041523A 2.83 fl oz			
+ Genapol 26-L-50 0.1% v/v	35	0.0 a	0.0 a
37. Heritage 50WG 0.4 oz.....	35	8.8 a-d	1.2 a
38. TM 43801 2.5W 4.0 oz.....	14	20.0 d-g	15.0 a-b
39. Untreated Check	—	38.8 i	22.5 cd

INT ³	DAT ⁴	DAT
Once	10	23
7	2	2
14	10	9
21	10	2
28	10	23
35	10	23

¹Values 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).

²Fungicides were applied on 28 August (all treatments), 5 September (7 day treatment), 11 September (7 and 14 day treatments), 18 September (7 and 21 day treatments), 25 September (7, 14 and 28 day treatments), and 2 October (7 and 35 day treatments).

³Spray interval in days.

⁴Days after treatment (DAT) for each spray interval.