

1999 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

Distributed in cooperation with U.S. Department of Agriculture in furtherance of the Acts of Congress of May 8 and June 30, 1914. Cooperative Extension work in agriculture, home economics, and 4-H. Zane R. Helsel, Director of Extension. Rutgers Cooperative Extension provides information and educational services to all people without regard to sex, race, color, national origin, disability or handicap, or age. Rutgers Cooperative Extension is an Equal Opportunity Employer.

1999 RUTGERS TURFGRASS PROCEEDINGS

of the

**New Jersey Turfgrass Expo
December 7-9, 1999
Trump Taj Mahal
Atlantic City, New Jersey**

**Volume 31
Published July, 2000**

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.

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 Turf Research Program at Cook College - Rutgers, The State University of New Jersey.

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

CONTROL OF GRAY LEAF SPOT ON PERENNIAL RYEGRASS WITH SELECTED FUNGICIDES

G. W. Towers, P. R. Majumdar, E. N. Weibel, J. N. DiMarco,
M. Peacos, and B. B. Clarke¹

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 ft²) and 4 June (0.5 lb N/1000 ft²), and as 46-0-0 on 25 June (1.0 lb N/1000 ft²) and 26 July (0.25 lb N/1000 ft²). ProStar 70W was applied to the entire study on 23 June (2.0 oz/1000 ft²), 27 July (2.0 oz/1000 ft²), 30 August (2.0 oz/1000 ft²), and 14 September (2.0 oz/1000 ft²) to prevent brown patch. Weeds were controlled with Acclaim Extra 0.57E (0.46 fl oz/1000 ft²) on 9 June, MCPP-2 amine (0.55 fl oz/1000 ft²) on 1 July, and 2,4-D-1 amine (3.67 fl oz/1000 ft²) plus Banvel-4 amine (0.18 fl oz/1000 ft²) 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 ft² with a CO₂ 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 18 August. The natural epiphytotic developed rapidly until mid-September when 74.5% of the untreated turf (trt 10) exhibited foliar symptoms. Disease severity peaked in mid-September and began to subside soon after. Only Heritage 50WG (trt 1) provided good to excellent disease control throughout the study. Heritage 50WG (trt 1) also exhibited the highest turf quality. Turf quality was closely associated with prior incidence of gray leaf spot (18 August to 4 October). Although TMI 41702 40W (trt 2 to 5), UBI 4205 2.25W (trt 6 to 8), and UBI 4205 2.25W + Intac (trt 9) suppressed gray leaf spot on 24 September, compared to the untreated check (trt 10), they did not provide an acceptable level of gray leaf spot control at the rates tested. No phytotoxicity was observed.

¹ Graduate Research Assistant, Senior Laboratory Technician, Graduate Research Assistant, Graduate Research Assistant, Senior Greenhouse and Field Technician, and Extension Specialist in Turfgrass Pathology, respectively. New Jersey Agricultural Experiment Station, Cook College, Rutgers, The State University of New Jersey, New Brunswick, NJ 08901-8520.

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 ¹ (days) | Turf area infected (%) per plot ² | | Turf quality ³ 4 Oct. |
|--|---------------------------------------|---|----------|-------------------------------------|
| | | 15 Sept. | 22 Sept. | |
| 1. Heritage 50WG 0.2 oz | 14 | 10.3 a | 3.2 a | 6.8 d |
| 2. TMI 41702 40W 0.92 oz | 7 | 50.1 bc | 27.8 c | 4.8 bc |
| 3. TMI 41702 40W 0.92 oz | 14 | 50.4 bc | 28.0 c | 5.0 bc |
| 4. TMI 41702 40W 1.84 oz | 7 | 40.0 b | 16.2 b | 5.0 bc |
| 5. TMI 41702 40W 1.84 oz | 14 | 40.5 b | 17.2 b | 5.2 c |
| 6. UBI 4205 2.25W 4.0 oz | 14 | 56.7 b-d | 28.0 c | 4.8 bc |
| 7. UBI 4205 2.25W 8.0 oz | 14 | 49.9 bc | 23.2 bc | 5.0 bc |
| 8. UBI 4205 2.25W 8.0 oz | 28 | 70.2 de | 42.2 d | 4.2 ab |
| 9. UBI 4205 2.25W 4.0 oz + Intac 0.125% v/v | 14 | 60.4 c-e | 36.2 d | 4.8 bc |
| 10. Untreated Check | — | 74.5 e | 73.8 e | 3.8 a |
| | INT ⁴ | DAT ⁵ | DAT | DAT |
| | 7 | 2 | 4 | 7 |
| | 14 | 12 | 4 | 14 |
| | 28 | 27 | 4 | 14 |

- ¹ Fungicides were applied on 19 August (all treatments), 26 August (7 day treatment), 3 September (7 and 14 day treatments), 13 September (7 day treatment), 20 September (7, 14, and 28 day treatments), 27 September (7 day treatment), and 4 October (7 and 14 day treatments).
- ² 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).
- ³ Turf quality on a 1 to 9 scale, where 9 = best turf quality. Values above 6.0 represent acceptable turf quality.
- ⁴ Spray interval in days.
- ⁵ Days after treatment (DAT) for each spray interval.