

2000 RUTGERS Turfgrass Proceedings



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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.

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Dr. Ann B. Gould, Editor
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EFFICACY OF SELECTED FUNGICIDES FOR THE CONTROL OF BROWN PATCH IN CREEPING BENTGRASS

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Fungicides were evaluated in 2000 for their ability to control brown patch (caused by *Rhizoctonia solani*) at the Rutgers Turf Research Farm in North Brunswick, NJ on creeping bentgrass (*Agrostis palustris* 'Crenshaw') maintained under golf course green conditions. The turf was established in September 1996 on a Norton loam with a pH of 6.5. Mowing was performed three times weekly at a height of 0.152 inch with clippings collected. Turf was irrigated to prevent drought stress.

Fertilizer was applied as 16-4-8 on 7 April (0.63 lb nitrogen (N)/1000 ft²), 14 May (0.51 lb N/1000 ft²), and 14 June (0.5 lb N/1000 ft²). Insect pests were suppressed with Turcam 76W (1 oz/1000 ft²) on 22 June. Daconil Ultrex 82.5 WDG (3.8 oz/1000 ft²) was applied to the entire test area on 12 May to suppress dollar spot prior to the current study. Primer wetting agent (4 fl oz/1000 ft²) was applied on 2 May to control localized dry spots. Aerification was performed on 26 April with 0.5 inch hollow tines on 4-inch centers. Betasan 4E (6.8 fl oz/1000 ft²) was applied on 28 April for preemergence weed control. Plots were 3 X 9 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 8003VS flat fan nozzles. Treatments (trt) were initiated on 21 June. Fungicides were reapplied as indicated in Table 1. Percent turf area infested with *R. solani* was assessed on 3 July, 12 July, 27 July, 10 August, 17 August, and 31 August. Data were subjected to analysis of variance and means separation by Waller-Duncan *k*-ratio *t*-test (*k* = 100).

Brown patch infection was first observed on 26 June. Disease pressure was moderate, but consistent throughout the season. Heritage 50WG (trt 10) and Chipco Aliette Signature 80WG + Daconil Ultrex 82.5SDG (trt 11) provided season long control of brown patch. Excellent disease control was also provided by Pentathlon DF at the 3.0 oz and 4.0 oz rates (trt 1, 2), and by the higher rates of Concorde SST 82.5DF and Concorde SST 720L (trt 4 and 6, respectively). On most rating dates no significant differences were observed between Concorde SST 82.5DF at the 1.8 oz rate (trt 3) and Daconil Ultrex 82.5SDG at the 1.8 oz rate (trt 13). F-155 20W (trt 7 to 9) did not provide acceptable control of brown patch at any rate. Phytotoxicity was not observed from any of the tested fungicides.

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Table 1. Impact of fungicides on the incidence of brown patch in creeping bentgrass in North Brunswick, NJ: 2000.

Treatment and rate/1000 sq ft	Spray interval (days) ²	Turf area infected (%) per plot ¹					
		3 July	12 July	27 July	10 Aug.	17 Aug.	31 Aug.
1 Pentathlon 75DF 3.0 oz	7	5.2 a-d	11.2 cd	6.8 a	2.8 ab	3.2 ab	3.0 a
2 Pentathlon 75DF 4.0 oz	7	6.2 b-d	11.0 cd	7.8 ab	2.0 a	2.5 a	3.8 ab
3 Concorde SST 82.5DF 1.8 oz	7	9.5 cd	9.5 b-d	15.0 cd	10.0 cd	12.2 d-f	16.0 e
4 Concorde SST 82.5DF 3.2 oz	7	2.5 ab	8.2 bc	4.5 a	6.5 a-c	9.0 c-f	12.8 c-e
5 Concorde SST 720L 2.0 fl oz	7	3.8 a-c	8.0 bc	8.2 a-c	7.0 a-c	12.2 d-f	15.5 e
6 Concorde SST 720L 3.5 fl oz	7	4.5 a-c	10.0 b-d	6.8 a	7.2 bc	8.8 c-e	12.0 c-e
7 F-155 20W 0.8 oz	14	6.0 b-d	12.2 cd	14.2 b-d	13.5 d	14.0 ef	14.5 de
8 F-155 20W 1.2 oz	14	5.5 a-d	15.0 d	15.8 d	8.8 cd	14.2 f	13.0 c-e
9 F-155 20W 1.6 oz	14	4.2 a-c	15.5 d	10.5 a-d	9.8 cd	11.5 d-f	10.2 cd
10 Heritage 50WG 0.2 oz	14	4.5 a-c	8.0 bc	8.2 a-c	6.5 a-c	4.8 a-c	4.2 ab
11 Chipco Aliette Signature 80WG 4.0 oz + Daconil Ultrex 82.5SDG 3.8 oz	14	0.0 a	1.2 a	7.8 ab	3.5 ab	4.0 a-c	8.2 bc
12 Daconil Ultrex 82.5SDG 3.8 oz	14	0.0 a	4.0 ab	9.2 a-d	9.5 cd	8.0 b-d	14.0 de
13 Daconil Ultrex 82.5SDG 1.8 oz	7	0.8 ab	10.8 cd	8.5 a-c	6.8 a-c	12.0 d-f	13.2 c-e
14 Untreated Check	—	10.5 d	24.2 e	31.0 e	26.8 e	26.2 g	23.8 f

INT ³	DAT ⁴	DAT	DAT	DAT	DAT
7	5	1	2	2	9
14	12	9	9	2	16

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 21 June (all treatments), 28 June (7 day treatment), 3 July (7 and 14 day treatments), 11 July (7 day treatment), 18 July (7 and 14 day treatments), 25 July (7 day treatment), 1 August (7 and 14 day treatments), 8 August (7 day treatment), 15 August (7 and 14 day treatments), and 22 August (7 day treatment).

³Spray interval in days.

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