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

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 provides 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.

Dr. Ann B. Gould, Editor
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CHEMICAL CONTROL OF BROWN PATCH IN COLONIAL BENTGRASS

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Fungicides were evaluated in 2000 for their ability to control brown patch (caused by *Rhizoctonia solani*) at the Rutgers Research Farm in North Brunswick, NJ on a colonial bentgrass (*Agrostis tenuis* 'SR 7100') turf maintained under golf course fairway conditions. Turf was established September 1995 on a Norton loam with a pH of 6.1. The site was mowed at 0.4 inch, three times a week, and clippings were collected. Turf was irrigated to prevent drought stress and localized dry spots were controlled with Primer (4 fl oz/1000 ft^2) wetting agent on 2 May and 2 June. The site was aerified on 25 April with 0.5 inch hollow tines on 4.0 inch centers.

Fertilizer was applied as 16-4-8 on 7 April (0.63 lb nitrogen (N)/1000 ft^2), 11 May (0.51 lb N/1000 ft^2), and on 10 June (0.50 lb N/1000 ft^2). Preemergent weed control was provided with an application of Betasan 4E (6.8 fl oz/1000 ft^2) on 28 April. To suppress dollar spot prior to the start of the study, turf was treated with Daconil Ultrex 82.5SDG (3.8 oz/1000 ft^2) on 17 May. Plots were 3 X 9 ft and were arranged in a randomized complete block with four replications.

Fungicides were applied in 2.0 gal of water per 1000 ft^2 with CO_2 powered sprayer at 30 psi using TeeJet 8003VS flat fan nozzles. Treatments (trt) were initiated on 9 June and were reapplied as indicated in Table 1. Percent turf area infested with *R. solani* was assessed on 28 June, 12 July, 27 July, 10 August, 17 August, and 31 August. Turf quality was evaluated on 7 September on a 1 to 9 scale, where 9 = best turf quality. Data were subjected to an analysis of variance by Waller-Duncan *k*-ratio *t*-test (*k* = 100) following arcsine transformation.

Brown patch infection was first observed on 26 June. Disease pressure was greatest from the end of July through the middle of August. On 28 June, excellent brown patch control was obtained with all preventive treatments. Chipco Triton 1.7SC (trt 10), Heritage 50WG (trt 15, 16, and 30), Chipco 26GT 2SC + Chipco Signature 80WG (trt 18), Chipco Signature 80WG + ProStar 70W (trt 20), BAS500 02F 20WG (trt 37, 38), and AMS 21618 55W/250SC (trt 40 to 43) were among the most efficacious products evaluated in the study and provided excellent season-long control of brown patch. Good to excellent residual control (13 to 48 days post-treatment) was also observed on 31 August for turf treated with RU 141522B (trt 1), Compass 50WG (trt 2), RU 141522A (trt 3), Compass 50WG + Banner MAXX 1.3MC (trt 4), Medallion 50WG applied every 7 days (trt 6), Chipco Triton 1.7SC (trt 9, 12), TADS12529 70WG (trt 13, 14), WAC79 + Cleary 3336 4.25F (trt 22 to 24), and BAS 505 03F 50WG (trt 39). All of the RU041523A + Genapol 26-L-50 treatments (trt 25 to 29), which were applied at 35 day intervals, provided significantly less disease control than treatments made at shorter intervals (i.e., 7, 14, 21, and 28 days). The 4.0 oz rate of Heritage 50WG (trt

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30) was the only 35 day treatment to successfully control brown patch throughout the test.

When examining treatments applied on a curative basis, only Heritage 50WG (trt 36) reduced disease to acceptable levels.

Table 1. Impact of chemical products on the incidence of brown patch in colonial bentgrass in North Brunswick, NJ: 2000.

Treatment and rate/1000 sq ft	Spray interval (days)[3]	Turf area infected (%) per plot[1] 28 June	12 July	27 July	10 Aug.	17 Aug.	31 Aug.	Turf Quality[2] 7 Sept.
1. RU141522B 1.5 fl oz	14	0.0 a	8.5 e-n	7.0 g-n	3.0 f-k	5.2 gh	4.0 c-h	6.0 g-k
2. Compass 50WG 0.15 oz	14	1.5 ab	5.8 b-k	6.5 g-n	2.8 e-j	5.8 gh	4.2 c-i	6.5 h-l
3. RU141522A 2 fl oz	21	0.0 a	7.5 c-l	3.3 a-f	1.0 b-e	1.0 a-c	3.8 c-g	8.0 m-p
4. Compass 50WG 0.15 oz +Banner MAXX 1.3MC 1 fl oz	21	0.3 a	11.8 h-p	8.5 h-o	1.0 b-e	2.5 c-f	4.2 c-i	8.0 m-p
5. Medallion-Gowan 50WG 0.25 oz	7	3.0 b-d	9.0 f-n	11.8 k-p	5.5 j-n	12.0 j-l	14.2 m-o	5.5 e-i
6. Medallion 50WG 0.25 oz	7	2.8 a-c	6.8 b-j	2.8 a-d	2.8 e-j	6.8 g-i	7.0 f-k	7.2 k-n
7. Medallion-Gowan 50WG 0.5 oz	14	0.8 ab	9.3 f-n	4.3 b-h	7.5 l-p	13.8 k-m	15.0 m-p	6.0 g-k
8. Medallion 50WG 0.5 oz	14	0.0 a	7.3 c-l	6.3 f-n	5.5 j-n	11.0 i-l	11.0 j-n	5.2 d-h
9. Chipco Triton 1.7SC 0.5 fl oz	14	0.0 a	12.3 j-p	8.5 h-o	1.0 b-e	1.8 b-d	6.0 f-k	7.5 l-o
10. Chipco Triton 1.7SC 1.0 fl oz	14	0.0 a	7.8 c-m	5.8 c-j	0.8 a-d	0.5 ab	0.5 ab	8.2 n-p
11. Chipco Triton 1.7SC 0.5 fl oz	21	0.5 a	12.3 j-p	10.3 j-p	6.0 j-o	12.2 k-m	12.5 k-n	5.8 f-j
12. Chipco Triton 1.7SC 1.0 fl oz	21	0.3 a	3.5 ab	5.5 b-j	0.8 a-d	4.5 e-g	4.2 c-i	7.5 l-o
13. TADS12529 70WG 0.15 oz	14	3.0 b-d	13.5 k-q	8.8 i-o	1.2 b-f	2.0 b-e	5.0 d-i	7.5 l-o
14. TADS12529 70WG 0.30 oz	14	6.0 d-g	8.2 c-m	9.2 i-o	1.2 b-f	1.8 b-d	3.2 c-g	7.5 l-o
15. Heritage 50WG 0.2 oz	14	0.0 a	8.8 f-n	5.8 c-j	0.2 ab	0.0 a	0.0 a	7.5 l-o
16. Heritage 50WG 0.3 oz	21	0.0 a	7.3 c-l	2.8 a-d	0.0 a	0.0 a	0.0 a	7.8 l-p
17. Chipco 26GT 2SC 4.0 fl oz	14	0.5 a	7.8 c-m	14.3 m-p	10.2 pq	16.2 l-n	13.5 l-o	5.8 f-j
18. Chipco 26GT 2SC 4.0 fl oz +Chipco Signature 80WG 4 oz	14	0.0 a	0.0 a	1.5 a-c	1.5 c-g	0.8 a-c	2.8 b-e	7.0 j-n
19. ProStar 70WG 2.2 oz	14	0.0 a	16.0 m-s	13.5 l-p	2.0 d-i	3.2 d-g	6.5 f-k	7.5 l-o
20. Chipco Signature 80WG 4.0 oz +ProStar 70W 2.2 oz	14	5.3 c-f	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	8.2 n-p
21. ProStar 70W 1.5 oz +Chipco 26GT 2SC 4.0 fl oz	14	0.8 ab	12.0 i-p	12.5 k-p	1.8 c-h	2.0 b-e	4.2 c-i	6.8 i-m
22. WAC79 2.0 fl oz +Cleary 3336 4.25F 4.0 fl oz	14	0.0 a	6.3 b-i	5.0 b-h	9.2 o-q	9.5 h-k	7.2 g-l	4.8 b-g

Table 1 (continued).

Treatment and rate/1000 sq ft	Spray interval (days)[3]	Turf area infected (%) per plot[1] 28 June		12 July		27 July		10 Aug.		17 Aug.		31 Aug.		Turf Quality[2] 7 Sept.	
23. WAC79 3.0 fl oz +Cleary 3336 4.25F 4.0 fl oz	14	0.0	a	5.0	b-f	3.8	b-g	4.0	h-l	5.8	gh	3.0	c-f	5.0	c-g
24. WAC79 4.0 fl oz +Cleary 3336 4.25F 4.0 fl oz	14	0.0	a	5.3	b-g	2.5	a-d	4.8	i-m	6.5	gh	5.8	e-i	5.8	f-j
25. RU041523A 0.24 fl oz +Genapol 26-L-50 0.1% v/v	35	2.5	a-d	16.5	n-s	19.3	p-r	17.8	rs	32.8	p-r	29.8	q	3.5	ab
26. RU041523A 0.47 fl oz +Genapol 26-L-50 0.1% v/v	35	0.0	a	19.3	o-s	16.8	o-q	22.8	st	35.0	qr	26.5	q	3.8	a-c
27. RU041523A 0.94 fl oz +Genapol 26-L-50 0.1% v/v	35	2.5	a-d	13.8	l-r	18.8	pq	13.5	qr	27.0	o-q	28.5	q	4.0	a-d
28. RU041523A 1.9 fl oz +Genapol 26-L-50 0.1% v/v	35	0.0	a	10.3	g-o	6.0	c-j	8.5	m-p	18.0	mn	26.5	q	3.5	ab
29. RU041523A 2.8 fl oz +Genapol 26-L-50 0.1% v/v	35	0.5	a	4.3	bc	3.3	a-f	6.2	k-p	16.2	l-n	22.8	pq	3.8	a-c
30. Heritage 50WG 0.4 oz	35	2.0	ab	3.3	ab	3.3	a-f	0.5	a-c	1.8	b-d	5.0	d-i	4.5	a-f
31. RU041523A 0.24 fl oz +Genapol 26-L-50 0.1% v/v	35[4]	10.0	hi	24.0	s	30.5	r	20.2	st	38.5	r	13.2	l-o	4.2	a-e
32. RU041523A 0.47 fl oz +Genapol 26-L-50 0.1% v/v	35[4]	8.5	f-i	23.5	rs	26.5	qr	25.2	t	52.5	s	21.0	o-q	3.8	a-c
33. RU041523A 0.94 fl oz +Genapol 26-L-50 0.1% v/v	35[4]	6.8	e-h	18.8	o-s	19.3	p-r	18.2	rs	38.2	r	16.2	n-p	5.5	e-i
34. RU041523A 1.9 fl oz +Genapol 26-L-50 0.1% v/v	35[4]	8.2	f-i	20.3	p-s	14.5	n-p	9.0	n-q	20.8	no	11.0	j-n	5.8	f-j
35. RU041523A 2.8 fl oz +Genapol 26-L-50 0.1% v/v	35[4]	8.2	f-i	24.2	s	9.5	i-o	8.2	m-p	25.8	op	8.5	h-m	5.8	f-j
36. Heritage 50WG 0.4 oz	35[4]	9.8	g-i	22.3	q-s	12.5	k-p	1.2	b-f	5.0	fg	1.8	a-d	7.5	l-o
37. BAS 500 02F 20WG 0.5 oz	14	4.3	b-e	3.3	ab	0.8	ab	0.0	a	0.0	a	0.5	ab	9.0	p

Table 1 (continued).

Treatment and rate/1000 sq ft	Spray interval (days)[3]	Turf area infected (%) per plot[1] 28 June	12 July	27 July	10 Aug.	17 Aug.	31 Aug.	Turf Quality[2] 7 Sept.
38. BAS 500 02F 20WG 0.9 oz	28	0.0 a	7.3 c-l	1.0 ab	0.0 a	0.0 a	1.8 a-c	8.2 n-p
39. BAS 505 03F 50WG 0.2 oz	14	0.0 a	8.0 d-n	18.8 pq	3.5 g-k	6.8 g-j	9.2 i-n	7.0 j-n
40. AMS 21618 55W 0.14 oz	14	0.0 a	7.3 c-l	2.3 a-d	0.0 a	0.0 a	0.0 a	8.2 n-p
41. AMS 21618 55W 0.18 oz	14	0.5 a	4.8 b-d	0.8 ab	0.0 a	0.0 a	0.0 a	8.8 op
42. AMS 21618 250SC 0.29 fl oz	14	1.0 ab	6.0 b-h	3.0 a-e	0.0 a	0.0 a	0.0 a	8.8 op
43. AMS 21618 250SC 0.38 fl oz	14	0.0 a	6.3 b-i	2.5 a-d	0.0 a	0.0 a	2.5 a-d	8.0 m-p
44. Untreated Check	—	14.3 i	24.5 s	55.3 s	34.0 u	41.0 r	23.0 pq	3.2 a
	INT[5]	DAT[6]	DAT	DAT	DAT	DAT	DAT	DAT
	7	5	5	6	6	6	13	20
	14	5	5	6	6	13	13	20
	21	19	12	6	20	6	20	27
	28	19	5	20	6	13	27	34
	35	19	33	13	27	34	48	55
	35[4]	NA	5	20	34	6	20	27

[1]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).

[2]Turf quality on a scale of 1 to 9, where 9 = best turf quality. Values above 6.0 represent acceptable turf quality.

[3]Fungicides were applied on 9 June (all treatments), 16 June (7 day treatment), 23 June (7 and 14 day treatments), 30 June (7 and 21 day treatments), 7 July (7, 14, 28 treatments), 14 July (7 and 35 preventive day treatments), 21 July (7, 14, and 21 day treatments), 28 July (7 day treatment), 4 August (7, 14, and 28 day treatments), 11 August (7 and 21 day treatments), and 18 August (7 and 14 day treatments).

[4]Treatments 31 to 36 were applied on a curative basis (when the percent turf area infected with brown patch exceeded a threshold of 10%) on 7 July and 11 August.

[5]Spray interval in days.

[6]Days after treatment (DAT) for each spray interval.