

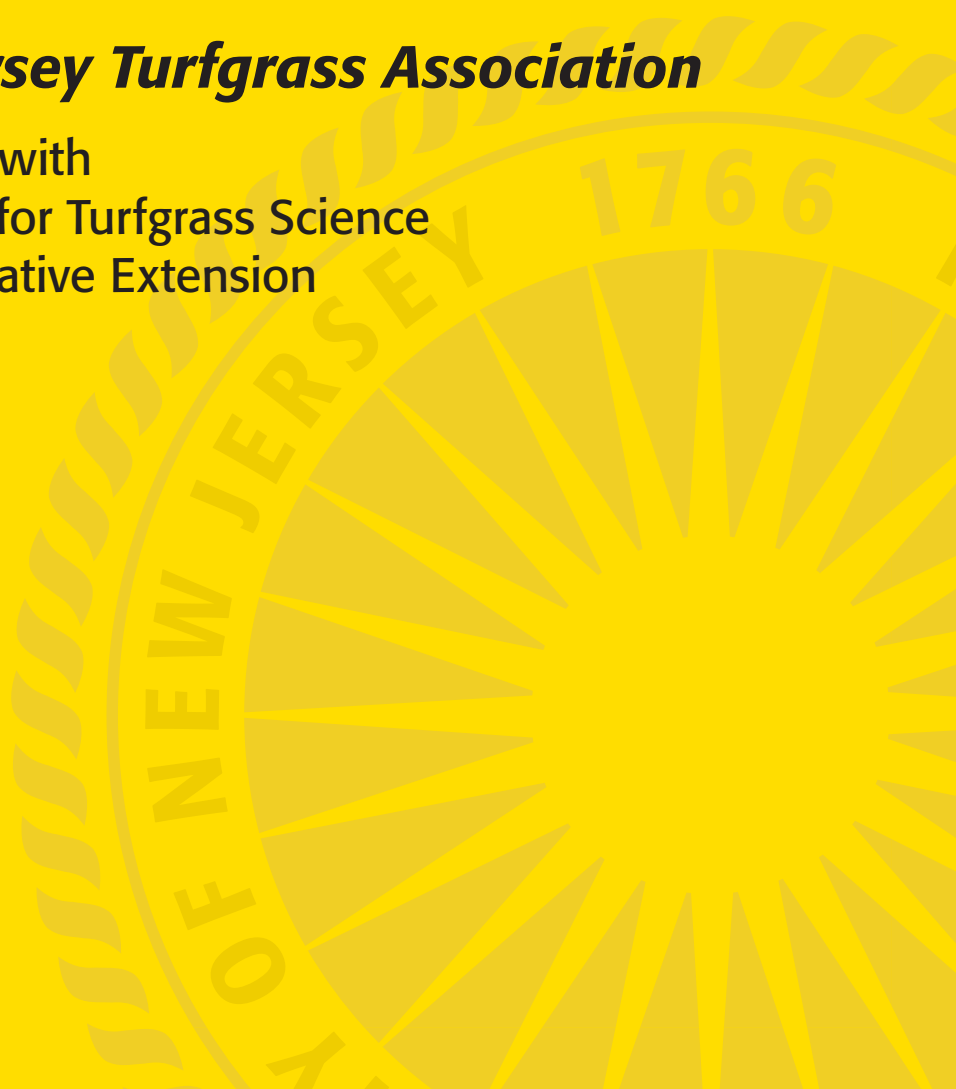
# RUTGERS

New Jersey Agricultural  
Experiment Station

## **2006 Turfgrass Proceedings**

***The New Jersey Turfgrass Association***

In Cooperation with  
Rutgers Center for Turfgrass Science  
Rutgers Cooperative Extension



# **2006 RUTGERS TURFGRASS PROCEEDINGS**

**of the**

## **New Jersey Turfgrass Expo December 5-7, 2006 Trump Taj Mahal Atlantic City, New Jersey**

The Rutgers Turfgrass Proceedings is published yearly by the Rutgers Center for Turfgrass Science, Rutgers Cooperative Extension, and the New Jersey Agricultural Experiment Station, School of Environmental and Biological Sciences, Rutgers, The State University of New Jersey 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 2006 New Jersey Turfgrass Expo. Publication of these lectures provides a readily avail-

able 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 Barbara Fitzgerald and Marlene Karasik for administrative and secretarial support.

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

# EFFICACY OF FUNGICIDES AND BIORATIONAL PRODUCTS FOR THE CONTROL OF DOLLAR SPOT ON A CREEPING BENTGRASS FAIRWAY

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Fungicides were evaluated in 2006 for their ability to control dollar spot (caused by *Sclerotinia homoeocarpa*) at the Rutgers Turf Research Farm in North Brunswick, NJ on creeping bentgrass (*Agrostis stolonifera*) maintained under golf course fairway conditions. Turf was established September 1996 on a Norton loam with a pH of 6.0. Mowing was performed three times weekly at a height of 0.375 inches with clippings collected. The site was irrigated as needed to prevent drought stress.

Fertilizer was applied as 18-0-6 (0.57 lb nitrogen (N)/1000 ft<sup>2</sup>) on 26 April, 20-20-20 (0.2 lb N/1000 ft<sup>2</sup>) on 6 May, 15.5-0-0 (0.2 lb N/1000 ft<sup>2</sup>) on 10 and 27 May, and urea (0.46 lb N/1000 ft<sup>2</sup>) on 13 July. Broad-leaf weeds were controlled with Trimec Bentgrass 1.3L (1.5 fl oz/1000 ft<sup>2</sup>) + Lontrel T/O 3L (0.18 fl oz/1000 ft<sup>2</sup>) on 25 April. Dimension 0.15G was applied on 26 April (26.5 oz/A) and 21 June (24 oz/A) for pre-emergence weed control. Heritage 50WG (0.4 oz/1000 ft<sup>2</sup>) was applied to the entire test area on 13 July to suppress brown patch. Insect pests were controlled with Merit 75WSP (0.16 oz/1000 ft<sup>2</sup>) on 5 July and Telstar GC 0.67F (0.25 oz/1000 ft<sup>2</sup>) on 14 July. The site was aerified to a depth of 3.5 inch with 0.5-inch hollow tines on 4-inch centers and topdressed with a sand root zone mix on 20 April. Plots were 3 x 5 ft and were arranged in a randomized complete block with four replications.

Fungicides were applied in water equivalent to 1.9 gal/1000 ft<sup>2</sup> with a CO<sub>2</sub> powered sprayer at 30 psi using TeeJet 8003VS flat fan nozzles. Treatments (trt) were initiated on 23 May when environmental conditions were conducive to dollar spot development. Fungicides were reapplied at the appropriate intervals as indicated in Tables 1A and 1B. Turf was

visually evaluated for number of dollar spot infection centers per plot on 2, 9, 16, 23, and 30 June, 10 and 25 July, 4, 14, and 24 August, and 6 and 18 September. Turf quality was rated on 18 August using a 1 to 9 scale, where 9 = best turf quality and 6 = acceptable quality. Phytotoxicity was evaluated on 9 June using a 1 to 5 scale, where 1 = no foliar discoloration, 1 = slight chlorosis or necrosis, 3 = moderate chlorosis or necrosis, 4 = severe chlorosis or necrosis, and 5 = all turf dead. Data were subjected to analysis of variance and means were separated using the Waller-Duncan *k*-ratio *t*-test (*k* = 100).

Dollar spot was first observed on 30 May and became uniform throughout the study by 9 June (Table 1A). Disease severity ranged from 7 to 54 lesion centers per plot on untreated turf (Tables 1A and 1B), which was considered a low to moderate level of dollar spot infestation, respectively. Less than 10 infection centers per plot represented an acceptable level of disease control. All fungicide entries in this study provided good to excellent control of dollar spot throughout the application period (23 May to 2 August) except for Bayleton 4SC (trt 1), Tartan 2SC (trt 2), RU 2125-06E (trt 3), Chipco 26GT 2SC (trt 4), all early season treatments applied once on 3 May 20 days before other treatments were initiated, and Plant Food Programs #1 (trt 10), #2 (trt 11), and #3 (trt 13), Daconil Ultrex 82.5WDG (trts 22 to 25 and 27), Rhapsody AS (trt 26), CS-P 30%SC (trt 50), CS-Q 30%SC (trt 51), CS-R 30%SC (trt 52), CS-S 30%SC (trt 53), and CS-U 15%SC (trt 55). Excellent residual control was reported at the end of the study (18 September; 47 to 61 days post-treatment) for all of the remaining treatments except Chipco 26GT 2SC + Bayleton 4SC (trt 5, an early season entry that provided acceptable disease control through 4 Aug, 103

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days post-treatment, when applied once on 3 May), Rhapsody AS + Daconil Ultrex 82.5WDG (trt 28), CS-A 15%EC (trt 56), and 3336 4F (trt 79).

Sync 100XL did not improve dollar spot control when tank mixed with Tartan 2.4SC (trts 7 and 9) or Banner MAXX 1.3ME (trts 20 and 21), compared to Tartan 2.4SC (trts 6 and 8) or Banner MAXX 1.3ME (trts 18 and 19) applied alone. This may be because both fungicides provided almost complete control of dollar spot when applied alone at the rates tested.

Water carrier volume (1 vs. 2 gal water/1000 ft<sup>2</sup>) did not affect efficacy of Tartan 2.4SC or Banner MAXX 1.3ME when applied alone (trts 6 vs. 8 and trts 18 vs. 19, respectively) or with Sync 100XL (trts 7 vs. 9 and trts 20 vs. 21, respectively).

Turf quality was acceptable for all entries on 18 August. Slight foliar chlorosis was noted on 9 June for turf treated with RU21196D-06 (trt 77) and Chipco 26GT 2SC (trt 83). No phytotoxicity was observed for any other treatment.

Table 1A. Evaluation of fungicides and biorational products for the control of dollar spot on a creeping bentgrass fairway: New Brunswick, NJ, 2006.

Treatment	Rate per 1000 sq ft)	Spray Interval (days) <sup>2</sup>	Number of Lesion Centers per Plot <sup>1</sup>						
			2 June	9 June	16 June	23 June	30 June	10 July	25 July
1 Bayleton 4SC .....	1.0 fl oz	Once <sup>3</sup>	0.0 a	0.0 a	0.0 a	0.5 ab	1.3 a-e	5.8 a-f	7.0 e-h
2 Tartan 2SC .....	2.0 fl oz	Once <sup>3</sup>	0.0 a	0.3 a	0.0 a	1.5 ab	2.8 a-e	7.8 a-g	9.5 h
3 RU 2125-06E .....	2.0 fl oz	Once <sup>3</sup>	0.0 a	0.0 a	0.0 a	0.5 ab	1.0 a-d	9.3 a-h	9.3 gh
4 Chipco 26GT 2SC .....	4.0 fl oz	Once <sup>3</sup>	2.0 a	4.0 a	4.8 a-c	4.8 bc	5.3 e	17.0 h-j	13.3 i
5 Chipco 26GT 2SC .....	2.0 fl oz	Once <sup>3</sup>	0.0 a	0.0 a	0.0 a	0.0 a	1.5 a-e	5.8 a-f	7.0 e-h
+ Bayleton 4SC .....	0.5 fl oz	21 <sup>4</sup>	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	1.5 a-c	0.3 a
6 Tartan 2.4SC .....	1.5 fl oz	21 <sup>4</sup>	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	6.3 a-g	0.5 a
7 Tartan 2.4SC .....	1.5 fl oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	1.3 a-c	1.3 a-c
+ Sync 100XL .....	0.32 fl oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	1.3 a-c	0.5 a
8 Tartan 2.4SC .....	1.5 fl oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	1.3 a-c	1.3 a-c
9 Tartan 2.4SC .....	1.5 fl oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	1.3 a-c	0.5 a
+ Sync 100XL .....	0.32 fl oz	14	0.0 a	5.3 ab	3.0 ab	3.8 a-c	3.5 a-e	24.0 j-l	0.0 a
10 Plant Food Program #1 .....	— <sup>5</sup>	14	6.0 b	25.3 d	19.8 f	11.8 e	12.0 fg	29.3 lm	5.3 c-g
11 Plant Food Program #2 .....	— <sup>6</sup>	14	0.3 a	2.5 a	1.8 a	2.8 ab	5.0 de	25.0 kl	5.8 d-h
12 Plant Food Program #3 .....	— <sup>7</sup>	14	0.0 a	1.5 a	0.3 a	0.0 a	0.0 a	1.3 a-c	0.0 a
13 Headway 1.39EC .....	0.75 fl oz	14	1.8 a	0.0 a	0.0 a	0.0 a	0.0 a	1.3 a-c	1.5 a-c
14 Headway 1.39EC .....	1.5 fl oz	21	0.0 a	0.0 a	0.8 a	3.0 a-c	0.0 a	4.3 a-e	0.0 a
15 Headway 1.39EC .....	2.25 fl oz	28	0.0 a	0.3 a	0.0 a	0.0 a	0.0 a	1.5 a-c	0.0 a
16 Tartan 2.4SC .....	1.0 fl oz	14	0.0 a	0.0 a	0.0 a	0.5 ab	0.0 a	1.0 a-c	0.0 a
17 Tartan 2.4SC .....	2.0 fl oz	28	0.0 a	0.5 a	0.5 a	9.3 de	0.5 ab	10.0 c-h	2.5 a-d
18 Banner MAXX 1.3ME .....	1.0 fl oz	Alt <sup>8</sup>	0.0 a	1.3 a	1.0 a	8.8 de	0.8 a-c	9.5 b-h	1.5 a-c
/Banner MAXX 1.3ME .....	1.0 fl oz	Alt <sup>9</sup>	0.0 a	0.0 a	0.3 a	3.0 a-c	1.0 a-d	6.0 a-g	5.0 b-f
19 Banner MAXX 1.3ME .....	1.0 fl oz	Alt <sup>10</sup>	0.0 a	0.8 a	0.3 a	6.8 cd	1.8 a-e	11.3 d-h	3.0 a-e
/Banner MAXX 1.3ME .....	1.0 fl oz	Alt <sup>11</sup>	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a
20 Banner MAXX 1.3ME .....	1.0 fl oz	Alt <sup>10</sup>	0.0 a	0.0 a	0.3 a	3.0 a-c	1.0 a-d	6.0 a-g	5.0 b-f
+ Sync 100XL .....	0.32 fl oz	Alt <sup>10</sup>	0.0 a	0.0 a	0.3 a	3.0 a-c	1.0 a-d	6.0 a-g	5.0 b-f
21 Banner MAXX 1.3ME .....	1.0 fl oz	Alt <sup>10</sup>	0.0 a	0.0 a	0.3 a	3.0 a-c	1.0 a-d	6.0 a-g	5.0 b-f
+ Sync 100XL .....	0.32 fl oz	Alt <sup>11</sup>	0.0 a	0.8 a	0.3 a	6.8 cd	1.8 a-e	11.3 d-h	3.0 a-e
/Banner MAXX 1.3ME .....	1.0 fl oz	Alt <sup>11</sup>	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a

(Continued)

Table 1A (continued).

Treatment	Rate per 1000 sq ft)	Spray Interval (days) <sup>2</sup>	Number of Lesion Centers per Plot <sup>1</sup>									
			2 June	9 June	16 June	23 June	30 June	10 July	25 July			
22 Daconil Ultrex 82.5WDG .....	3.2 oz	— <sup>12</sup>	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	3.8 a-e	14.5 f-i	0.0 a	0.0 a	
23 Daconil Ultrex 82.5WDG .....	3.2 oz	— <sup>12</sup>	0.0 a	1.3 a	0.0 a	0.0 a	3.3 a-e	16.5 h-j	0.0 a	0.0 a		
24 Daconil Ultrex 82.5WDG .....	3.2 oz	— <sup>12</sup>	0.0 a	0.0 a	0.3 a	1.0 ab	4.8 c-e	19.8 i-k	0.0 a	0.0 a		
25 Daconil Ultrex 82.5WDG .....	3.2 oz	— <sup>12</sup>	0.3 a	0.0 a	0.0 a	0.0 a	2.8 a-e	14.0 f-i	1.0 ab	0.0 a		
26 Rhapsody AS .....	5.0 fl oz	14	0.5 a	2.5 a	2.8 ab	1.0 ab	3.3 a-e	13.0 e-i	8.3 f-h	0.0 a		
27 Daconil Ultrex 82.5WDG .....	1.8 oz	14	0.8 a	9.0 b	7.0 b-d	3.8 a-c	4.5 b-e	40.5 n	0.0 a	0.0 a		
28 Rhapsody AS .....	5.0 fl oz	14	0.0 a	0.3 a	0.3 a	0.0 a	0.5 ab	7.0 a-g	0.3 a	0.0 a		
+ Daconil Ultrex 82.5WDG .....	1.8 oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a		
29 26/36 39.3F .....	4.0 fl oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a		
30 3336 Plus 19.4F .....	4.0 fl oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a		
31 3336 Plus 19.4F .....	4.0 fl oz	21	0.0 a	0.0 a	0.3 a	0.0 a	1.3 a-e	0.0 a	0.0 a	0.0 a		
+ CL-EXP-8 .....	4.0 oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a		
32 3336 Plus 19.4F .....	4.0 fl oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a		
+ CL-EXP-8 .....	8.0 oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a		
33 CL-EXP-8 .....	4.0 oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a		
34 CL-EXP-8 .....	8.0 oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a		
35 CL-EXP-9 .....	0.6 oz	21	0.0 a	0.0 a	0.3 a	0.0 a	0.0 a	0.3 ab	0.8 ab	0.0 a		
36 CL-EXP-9 .....	1.2 oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	2.5 a-d	0.8 ab	0.0 a		
37 Headway 1.39EC .....	0.75 fl oz	21	0.0 a	0.8 a	2.0 a	0.0 a	0.8 a-c	6.5 a-g	3.5 a-e	0.0 a		
38 Headway 1.39EC .....	1.0 fl oz	21	0.0 a	0.0 a	1.3 a	0.0 a	1.0a-d	6.5 a-g	3.0 a-e	0.0 a		
39 Headway 1.39EC .....	1.25 fl oz	21	0.0 a	0.0 a	1.0 a	0.0 a	0.0 a	2.5 a-d	0.8 ab	0.0 a		
40 SARS-346 40WP <sup>13</sup> .....	0.3 oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a		
41 SARS-346 40WP <sup>13</sup> .....	0.4 oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.5 ab	0.0 a	0.0 a		
42 SARS-346 40WP <sup>13</sup> .....	0.6 oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a		
43 SARS-346 40WP <sup>14</sup> .....	0.4 oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.8 a-c	0.0 a	0.0 a		
44 SARS-346 40WP <sup>14</sup> .....	0.6 oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.3 ab	0.0 a	0.0 a		
45 SARS-346 40WP <sup>15</sup> .....	0.6 oz	28	0.0 a	0.0 a	0.0 a	1.3 ab	0.0 a	0.5 ab	0.0 a	0.0 a		
46 SARS-346 40WP <sup>14</sup> .....	0.4 oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.5 ab	0.0 a	0.0 a		
+ 3336 4F .....	2.0 fl oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.5 ab	0.0 a	0.0 a		
47 SARS-346 40WP <sup>15</sup> .....	0.4 oz	28	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a		
+ 3336 4F .....	2.0 fl oz	28	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a		

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Table 1A (continued).

Treatment	Rate per 1000 sq ft)	Spray Interval (days) <sup>2</sup>	Number of Lesion Centers per Plot <sup>1</sup>									
			2 June	9 June	16 June	23 June	30 June	10 July	25 July			
48 Banner MAXX 1.3ME	1.0 fl oz	14	0.0 a	0.0 a	0.5 a	0.0 a	0.0 a	0.0 a	0.5 ab	0.0 a		
49 Banner MAXX 1.3ME	2.0 fl oz	21	0.0 a	0.0 a	0.3 a	0.0 a	0.0 a	0.0 a	0.8 a-c	0.0 a		
50 CS-P 30%SC	1.08 fl oz	14	5.8 b	17.5 c	12.3 e	10.8 e	14.3 g	14.3 g	54.3 o	3.8 a-e		
51 CS-Q 30%SC	1.06 fl oz	14	1.5 a	10.0 b	8.5 c-e	9.0 de	10.3 f	10.3 f	38.8 n	14.0 ij		
52 CS-R 30%SC	1.08 fl oz	14	5.8 b	16.5 c	10.8 de	11.5 e	12.3 fg	12.3 fg	42.5 n	14.3 ij		
53 CS-S 30%SC	1.05 fl oz	14	6.0 b	16.3 c	6.5 bc	8.5 de	14.5 g	14.5 g	52.3 o	9.0 f-h		
54 CS-T 30%SC	1.08 fl oz	14	2.8 a	8.8 b	4.8 a-c	0.0 a	0.0 a	0.0 a	3.0 a-d	0.0 a		
55 CS-U 15%EC	2.44 fl oz	14	0.5 a	2.0 a	0.5 a	0.8 ab	3.3 a-e	3.3 a-e	14.8 g-i	0.0 a		
56 CS-A 15%EC <sup>16</sup>	2.4 fl oz	14	0.0 a	0.8 a	0.0 a	0.0 a	0.0 a	0.0 a	4.0 a-e	0.0 a		
57 CS-V 15%EC <sup>16</sup>	2.4 fl oz	14	0.0 a	0.0 a	0.8 a	0.0 a	0.0 a	0.0 a	4.3 a-e	0.0 a		
58 Emerald 70WG	0.13 oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a		
59 Emerald 70WG	0.18 oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a		
60 Emerald 70WG	0.13 oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a		
61 Emerald 70WG	0.13 oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	1.8 a-c	0.0 a		
+ Sync 100XL	0.32 fl oz	21	0.0 a	0.0 a	1.0 a	0.5 ab	0.0 a	0.0 a	1.5 a-c	0.5 a		
62 Emerald 70WG	0.18 oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.3 ab	0.0 a		
+ Curalan 50DF	1.0 oz	14	0.0 a	1.8 a	0.0 a	0.0 a	0.5 ab	0.5 ab	4.5 a-e	0.5 a		
63 Insignia 20WG	0.9 oz	14	0.0 a	0.5 a	0.3 a	0.8 ab	1.3 a-e	1.3 a-e	9.0 a-h	0.0 a		
64 Insignia 20WG	0.9 oz	14	0.0 a	0.3 a	0.0 a	0.0 a	0.0 a	0.0 a	4.5 a-e	0.0 a		
+ Sync 100XL	0.32 fl oz	14	0.0 a	0.5 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a		
65 Insignia 20WG	0.9 oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a		
+ EcoGuard L	20.0 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	4.5 a-e	0.0 a		
66 RU21196A-06	0.53 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a		
67 RU21196A-06	0.88 fl oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a		
68 RU21196A-06	0.35 fl oz	14	0.0 a	0.5 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a		
+ RU21196B-06	0.37 oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a		
69 RU21196A-06	0.44 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a		
+ RU21196B-06	0.46 oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a		
70 RU21196A-06 2SC	0.53 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a		
+ RU21196B-06	0.55 oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a		

(Continued)

Table 1A (continued).

Treatment	Rate per 1000 sq ft)	Spray Interval (days) <sup>2</sup>	Number of Lesion Centers per Plot <sup>1</sup>							
			2 June	9 June	16 June	23 June	30 June	10 July	25 July	
71 RU21196A-06 .....	0.44 fl oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.5 ab	3.5 a-d	1.0 ab	
+ RU21196B-06 .....	0.46 oz									
72 RU21196A-06 .....	0.53 fl oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	1.5 a-c	0.5 a	
+ RU21196B-06 .....	0.55 oz									
73 RU21196A-06 .....	0.617 fl oz	21	0.0 a	0.0 a	0.3 a	0.0 a	0.0 a	1.0 a-c	0.0 a	
+ RU21196B-06 20 .....	0.643 oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
74 RU21196C-06 WG .....	0.83 oz	21	0.0 a	0.0 a	0.8 a	0.0 a	0.0 a	1.5 a-c	0.0 a	
75 RU21196C-06 WG .....	1.1 oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
76 RU21196D-06 .....	0.13 oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.5 ab	0.0 a	
77 RU21196D-06 .....	0.18 oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
78 3336 4F .....	2.0 fl oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.3 a	
79 3336 4F .....	2.0 fl oz	28	0.0 a	1.5 a	1.3 a	1.5 ab	3.3 a-e	8.8 a-h	6.8 e-h	
80 Curalan 50DF .....	1.0 oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.8 a-c	0.0 a	
81 Daconil Ultrix 82.5WDG .....	3.2 oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	1.8 a-c	0.0 a	
82 Banner MAXX 1.3ME .....	2.0 fl oz	28	0.0 a	0.0 a	0.0 a	0.5 ab	0.0 a	0.0 a	0.0 a	
83 Chipco 26GT 2SC .....	4.0 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
84 Banner MAXX 1.3ME .....	2.0 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
85 Untreated check .....	—	—	7.3 b	20.0 c	11.0 de	10.8 e	13.8 fg	36.0 mn	17.5 j	

INT <sup>17</sup>	DAT <sup>18</sup>	DAT	DAT	DAT	DAT	DAT	DAT
Once	30	37	44	51	58	68	83
14	10	2	9	2	9	5	6
21	10	17	2	9	16	5	19
28	10	17	24	2	9	19	6

<sup>1</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).

(Continued)

Table 1A (continued).

- <sup>2</sup> Fungicides were applied on 23 May (all treatments, except treatments 1 to 5, 22 to 25, 26, 28, and 50 to 57), 7 June (14-day treatment, treatments 50 to 55 initiated), 14 June (21-day treatment), 21 June (14- and 28-day treatments), 6 July (14- and 21- day treatments), 19 July (14- and 28-day treatments, treatments 56 and 57 initiated), 26 July (21-day treatment), and 2 August (14-day treatment).
- <sup>3</sup> Treatments 1 to 5 were applied once on 3 May 2006, 20 days before the rest of the trial was initiated on 24 May.
- <sup>4</sup> Treatments 6 and 7 were applied in 1 gal water/1000 sq ft. All other treatments were applied at 2 gal water/1000 sq ft unless otherwise noted.
- <sup>5</sup> Treatment 10 (Plant Food Program #1) consisted of Foliar Phosphate 0-29-26 (3.0 fl oz), Green T 12-3-12 50% SRN (6.0 fl oz), Green T N 28-0-0 72% SRN (6.0 fl oz), Sugar Cal 10% Ca (2.0 fl oz), Daconil Ultrex 82.5WDG (1.8 oz), and Primo MAXX 1MC (0.125 fl oz).
- <sup>6</sup> Treatment 11 (Plant Food Program #2) consisted of Foliar Phosphate 0-29-26 (3.0 fl oz), Green T 12-3-12 50% SRN (6.0 fl oz), Green T N 28-0-0 72% SRN (6.0 fl oz), Sugar Cal 10% Ca (2.0 fl oz), EcoGuard L (10.0 fl oz), and Primo MAXX 1MC (0.125 fl oz).
- <sup>7</sup> Treatment 12 (Plant Food Program #3) consisted of Foliar Phosphate 0-29-26 (3.0 fl oz), Green T 12-3-12 50% SRN (6.0 fl oz), Green T N 28-0-0 72% SRN (6.0 fl oz), Sugar Cal 10% Ca (2.0 fl oz), and Primo MAXX 1MC (0.125 fl oz).
- <sup>8</sup> Treatment 18 received Banner MAXX 1.3ME (1.0 fl oz) in 1.0 gal water/1000 sq ft on 7 June followed by Banner MAXX 1.3ME (1.0 fl oz) in 2.0 gal water/1000 sq ft when the number of dollar spot lesion centers exceeded 10 spots in any of the four replicate plots on 22 June. The sequence was repeated a second time 14 days later on 6 July (i.e., Banner MAXX 1.3ME (1.0 fl oz) in 1.0 gal water/1000 sq ft) followed by Banner MAXX 1.3ME (1.0 fl oz) in 2.0 gal water/1000 sq ft when the number of dollar spot lesion centers exceeded 10 spots in any of the four replicate plots on 31 July. The sequence was repeated a third and final time 14 days later on 14 August (i.e., Banner MAXX 1.3ME (1.0 fl oz) in 1.0 gal water/1000 sq ft) and the number of dollar spot lesion centers exceeded 10 spots in any of the four replicates again on 30 August.
- <sup>9</sup> Treatment 19 received Banner MAXX 1.3ME (1.0 fl oz) in 2.0 gal water/1000 sq ft on 7 June followed by Banner MAXX 1.3ME (1.0 fl oz) in 2.0 gal water/1000 sq ft when the number of dollar spot lesion centers exceeded 10 spots in any of the four replicate plots on 22 June. The sequence was repeated a second time 14 days later on 6 July (i.e., Banner MAXX 1.3ME (1.0 fl oz) in 2.0 gal water/1000 sq ft) followed by Banner MAXX 1.3ME (1.0 fl oz) in 2.0 gal water/1000 sq ft when the number of dollar spot lesion centers exceeded 10 spots in any of the four replicate plots on 2 August. The sequence was repeated a third and final time 14 days later on 16 August (i.e., Banner MAXX 1.3ME (1.0 fl oz) in 2.0 gal water/1000 sq ft) and the number of dollar spot lesion centers exceeded 10 spots in any of the four replicates again on 30 August.
- <sup>10</sup> Treatment 20 received Banner MAXX 1.3ME (1.0 fl oz) + Sync 100XL (0.32 fl oz) in 1.0 gal water/1000 sq ft on 7 June followed by Banner MAXX 1.3ME (1.0 fl oz) in 2.0 gal water/1000 sq ft when the number of dollar spot lesion centers exceeded 10 spots in any of the four replicate plots on 22 June. The sequence was repeated a second time 14 days later on 6 July (i.e., Banner MAXX 1.3ME (1.0 fl oz) + Sync 100XL (0.32 fl oz) in 1.0 gal water/1000 sq ft) followed by Banner MAXX 1.3ME (1.0 fl oz) in 2.0 gal water/1000 sq ft when the number of dollar spot lesion centers exceeded 10 spots in any of the four replicate plots on 2 August. The sequence was repeated a third and final time 14 days later on 11 August (i.e., Banner MAXX 1.3ME (1.0 fl oz) + Sync 100XL (0.32 fl oz) in 1.0 gal water/1000 sq ft) and the number of dollar spot lesion centers exceeded 10 spots in any of the four replicates again on 30 August.
- <sup>11</sup> Treatment 21 received Banner MAXX 1.3ME (1.0 fl oz) + Sync 100XL (0.32 fl oz) in 2.0 gal water/1000 sq ft on 7 June followed by Banner MAXX 1.3ME (1.0 fl oz) in 2.0 gal water/1000 sq ft when the number of dollar spot lesion centers exceeded 10 spots in any of the four replicate plots on 22 June. The sequence was repeated a second time 14 days later on 6 July (i.e., Banner MAXX 1.3ME (1.0 fl oz) + Sync 100XL (0.32 fl oz) in 2.0 gal water/1000 sq ft) followed by Banner MAXX 1.3ME (1.0 fl oz) in 2.0 gal water/1000 sq ft when the number of dollar spot lesion centers exceeded 10 spots in any of the four replicate plots on 28 July. The sequence was repeated a third and final time 14 days later on 11 August (i.e., Banner MAXX 1.3ME (1.0 fl oz) + Sync 100XL (0.32 fl oz) in 1.0 gal water/1000 sq ft) and the number of dollar spot lesion centers exceeded 10 spots in any of the four replicates again on 30 August.

(Continued)

Table 1A (continued).

1.3ME (1.0 fl oz) + Sync 100XL (0.32 fl oz) in 2.0 gal water/1000 sq ft) and the number of dollar spot lesion centers exceeded 10 spots in any of the four replicates again on 30 August.

<sup>12</sup> Treatment 22 to 25 received Daconil Ultrex 82.5WDG (3.2 oz) every 14 days from 23 May to 16 August, except 6 July.

<sup>13</sup> Treatments 40 to 42 received SARS-346 30EW on 23 May and 7 June at 0.35, 0.5, and 0.75 fl oz/1000 sq ft, respectively, and then SARS-346 40WP at the rates indicated in this table every 14 days from 21 June to 2 August.

<sup>14</sup> Treatments 43, 44, and 46 received SARS-346 30EW on 23 May at 0.5, 0.75, and 0.5 fl oz/1000 sq ft, respectively, and then SARS-346 40WP at the rates indicated in this table on 14 June, 6 July, and 26 July.

<sup>15</sup> Treatments 45 and 47 received SARS-346 30EW on 23 May at 0.75 and 0.5 fl oz/1000 sq ft, respectively, and then SARS-346 40WP at the rates indicated in this table on 21 June and 19 July.

<sup>16</sup> Treatment 56 to 57 received Daconil Ultrex 82.5WDG (3.2 oz) from 23 May to 6 July and then CS-A 15%EC and CS-V15%EC from 19 July to 2 August.

<sup>17</sup> Spray interval in days.

<sup>18</sup> Days after the last treatment.

Table 1B. Evaluation of fungicides and biorational products for the control of dollar spot on a creeping bentgrass fairway: New Brunswick, NJ, 2006.

Treatment	Rate per 1000 sq ft)	Spray Interval (days) <sup>4</sup>	Number of Lesion Centers per Plot <sup>1</sup>					Phytotoxicity <sup>2</sup> 9 June	Turf Quality <sup>3</sup> 18 Aug.
			4 Aug.	14 Aug.	24 Aug.	6 Sept.	18 Sept.		
1 Bayleton 4SC .....	1.0 fl oz	Once <sup>5</sup>	14.0 fg	20.0 ef	36.0 ef	28.3 k-m	25.5 n-q	1.0 a	7.5 c-f
2 Tartan 2SC .....	2.0 fl oz	Once <sup>5</sup>	20.0 h	26.3 gh	44.8 g	48.8 o	23.3 m-p	1.0 a	7.3 b-e
3 RU 2125-06E .....	2.0 fl oz	Once <sup>5</sup>	13.5 fg	21.8 fg	39.0 fg	49.3 o	33.0 r	1.0 a	8.3 e-h
4 Chipco 26GT 2SC .....	4.0 fl oz	Once <sup>5</sup>	17.0 gh	29.0 h	40.5 fg	34.3 mn	28.3 o-r	1.0 a	7.5 c-f
5 Chipco 26GT 2SC .....	2.0 fl oz	Once <sup>5</sup>	10.5 ef	17.5 ef	35.8 d-f	30.3 lm	31.8 qr	1.0 a	7.8 c-g
+ Bayleton 4SC .....	0.5 fl oz	21 <sup>6</sup>	0.0 a	0.0 a	0.0 a	1.0 ab	4.0 a-f	1.0 a	8.0 d-h
6 Tartan 2.4SC .....	1.5 fl oz	21 <sup>6</sup>	0.0 a	0.0 a	0.0 a	0.5 ab	1.3 a-c	1.0 a	8.5 f-h
Tartan 2.4SC .....	1.5 fl oz	21	0.0 a	0.0 a	2.3 a	6.5 a-h	3.8 a-f	1.0 a	9.0 h
+ Sync 100XL .....	0.32 fl oz	21	0.0 a	0.0 a	0.0 a	1.3 a-c	1.8 a-d	1.0 a	8.0 d-h
7 Tartan 2.4SC .....	1.5 fl oz	21	0.0 a	0.0 a	0.0 a	5.8 a-g	7.8 a-i	1.0 a	8.0 d-h
+ Sync 100XL .....	0.32 fl oz	14	1.3 a	0.0 a	0.8 a	11.5 e-h	2.8 a-d	1.0 a	7.0 a-d
8 Tartan 2.4SC .....	1.5 fl oz	21	9.3 c-f	15.5 e	20.3 c	13.3 g-i	9.8 d-j	1.0 a	7.5 c-f
Tartan 2.4SC .....	1.5 fl oz	14	6.0 a-e	9.5 d	21.8 c	3.5 a-e	2.3 a-d	1.0 a	8.3 e-h
+ Sync 100XL .....	0.32 fl oz	14	1.3 a	0.0 a	0.0 a	3.3 a-d	4.0 a-f	1.0 a	8.5 f-h
9 Tartan 2.4SC .....	1.5 fl oz	21	0.8 a	0.0 a	0.0 a	6.5 a-h	8.3 a-i	1.0 a	7.3 b-e
+ Sync 100XL .....	0.32 fl oz	28	0.3 a	6.0 a-d	0.0 a	0.5 ab	0.5 ab	1.0 a	8.3 e-h
10 Plant Food Program #1 .....	— <sup>7</sup>	14	0.0 a	0.0 a	0.0 a	0.8 ab	1.3 a-c	1.0 a	9.0 h
Plant Food Program #2 .....	— <sup>8</sup>	14	3.5 ab	1.8 ab	0.8 a	7.5 a-h	4.0 a-f	1.0 a	8.3 e-h
Plant Food Program #3 .....	— <sup>9</sup>	14	3.5 ab	0.3 a	0.0 a	7.3 a-h	7.8 a-i	1.0 a	8.3 e-h
Headway 1.39EC .....	0.75 fl oz	14	4.0 a-c	1.8 ab	1.0 a	6.8 a-h	7.3 a-h	1.0 a	8.3 e-h
Headway 1.39EC .....	1.5 fl oz	21	4.0 a-c	1.8 ab	1.0 a	6.8 a-h	7.3 a-h	1.0 a	8.3 e-h
Headway 1.39EC .....	2.25 fl oz	28	4.0 a-c	1.8 ab	1.0 a	6.8 a-h	7.3 a-h	1.0 a	8.3 e-h
Tartan 2.4SC .....	1.0 fl oz	14	4.8 a-d	2.0 ab	0.0 a	7.0 a-h	6.3 a-h	1.0 a	8.0 d-h
Tartan 2.4SC .....	2.0 fl oz	28	4.8 a-d	2.0 ab	0.0 a	7.0 a-h	6.3 a-h	1.0 a	8.0 d-h
Banner MAXX 1.3ME .....	1.0 fl oz	Alt <sup>10</sup>	4.8 a-d	2.0 ab	0.0 a	7.0 a-h	6.3 a-h	1.0 a	8.0 d-h
/Banner MAXX 1.3ME .....	1.0 fl oz	Alt <sup>10</sup>	4.8 a-d	2.0 ab	0.0 a	7.0 a-h	6.3 a-h	1.0 a	8.0 d-h
Banner MAXX 1.3ME .....	1.0 fl oz	Alt <sup>11</sup>	4.8 a-d	2.0 ab	0.0 a	7.0 a-h	6.3 a-h	1.0 a	8.0 d-h
/Banner MAXX 1.3ME .....	1.0 fl oz	Alt <sup>11</sup>	4.8 a-d	2.0 ab	0.0 a	7.0 a-h	6.3 a-h	1.0 a	8.0 d-h
Banner MAXX 1.3ME .....	1.0 fl oz	Alt <sup>12</sup>	4.8 a-d	2.0 ab	0.0 a	7.0 a-h	6.3 a-h	1.0 a	8.0 d-h
+ Sync 100XL .....	0.32 fl oz	Alt <sup>12</sup>	4.8 a-d	2.0 ab	0.0 a	7.0 a-h	6.3 a-h	1.0 a	8.0 d-h
/Banner MAXX 1.3ME .....	1.0 fl oz	Alt <sup>12</sup>	4.8 a-d	2.0 ab	0.0 a	7.0 a-h	6.3 a-h	1.0 a	8.0 d-h
Banner MAXX 1.3ME .....	1.0 fl oz	Alt <sup>13</sup>	4.8 a-d	2.0 ab	0.0 a	7.0 a-h	6.3 a-h	1.0 a	8.0 d-h
+ Sync 100XL .....	0.32 fl oz	Alt <sup>13</sup>	4.8 a-d	2.0 ab	0.0 a	7.0 a-h	6.3 a-h	1.0 a	8.0 d-h
/Banner MAXX 1.3ME .....	1.0 fl oz	Alt <sup>13</sup>	4.8 a-d	2.0 ab	0.0 a	7.0 a-h	6.3 a-h	1.0 a	8.0 d-h

(Continued)

Table 1B (continued).

Treatment	Rate per 1000 sq ft)	Spray Interval (days) <sup>4</sup>	Number of Lesion Centers per Plot <sup>1</sup>					Phytotoxicity <sup>2</sup> 9 June	Turf Quality <sup>3</sup> 18 Aug.
			4 Aug.	14 Aug.	24 Aug.	6 Sept.	18 Sept.		
22 Daconil Ultrex 82.5WDG .....	3.2 oz	— <sup>14</sup>	0.5 a	2.0 ab	0.3 a	5.0 a-f	13.3 h-k	1.0 a	8.0 d-h
23 Daconil Ultrex 82.5WDG .....	3.2 oz	— <sup>14</sup>	0.5 a	3.5 a-c	0.0 a	3.5 a-e	9.3 c-j	1.0 a	8.3 e-h
24 Daconil Ultrex 82.5WDG .....	3.2 oz	— <sup>14</sup>	1.8 a	7.5 b-d	1.8 a	7.0 a-h	12.3 g-k	1.0 a	8.5 f-h
25 Daconil Ultrex 82.5WDG .....	3.2 oz	— <sup>14</sup>	2.0 a	9.8 d	1.5 a	4.5 a-e	15.3 l-l	1.0 a	8.0 d-h
26 Rhapsody AS .....	5.0 fl oz	14	11.0 ef	16.3 ef	29.8 de	37.5 n	29.0 o-r	1.0 a	8.0 d-h
27 Daconil Ultrex 82.5WDG .....	1.8 oz	14	1.8 a	0.5 a	0.0 a	20.0 ij	20.5 l-n	1.0 a	8.0 d-h
28 Rhapsody AS .....	5.0 fl oz								
+ Daconil Ultrex 82.5WDG ..	1.8 oz	14	1.5 a	0.3 a	1.5 a	14.3 hi	16.5 j-m	1.0 a	8.8 gh
29 26/36 39.3F .....	4.0 fl oz	21	0.0 a	0.0 a	0.0 a	0.8 ab	2.8 a-d	1.0 a	8.5 f-h
30 3336 Plus 19.4F .....	4.0 fl oz	21	0.0 a	0.0 a	0.3 a	0.5 ab	1.8 a-d	1.0 a	8.8 gh
31 3336 Plus 19.4F .....	4.0 fl oz								
+ CL-EXP-8 .....	4.0 oz	21	0.0 a	0.0 a	0.0 a	0.0 a	1.5 a-c	1.0 a	9.0 h
32 3336 Plus 19.4F .....	4.0 fl oz								
+ CL-EXP-8 .....	8.0 oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.5 ab	1.0 a	8.8 gh
33 CL-EXP-8 .....	4.0 oz	21	0.0 a	0.0 a	0.0 a	1.5 a-d	0.8 ab	1.0 a	8.8 gh
34 CL-EXP-8 .....	8.0 oz	21	0.0 a	0.0 a	0.0 a	1.0 ab	2.0 a-d	1.0 a	8.3 e-h
35 CL-EXP-9 .....	0.6 oz	21	0.0 a	1.3 a	0.0 a	4.0 a-e	3.0 a-e	1.0 a	9.0 h
36 CL-EXP-9 .....	1.2 oz	21	0.0 a	0.0 a	0.0 a	2.3 a-d	2.0 a-d	1.0 a	8.5 f-h
37 Headway 1.39EC .....	0.75 fl oz	21	0.5 a	0.8 a	2.8 a	9.5 d-h	6.0 a-h	1.0 a	8.3 e-h
38 Headway 1.39EC .....	1.0 fl oz	21	0.0 a	0.0 a	0.8 a	8.3 a-h	8.3 a-i	1.0 a	8.0 d-h
39 Headway 1.39EC .....	1.25 fl oz	21	0.0 a	0.0 a	0.0 a	3.0 a-d	4.0 a-f	1.0 a	8.3 e-h
40 SARS-346 40WP <sup>15</sup> .....	0.3 oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.5 ab	1.0 a	8.5 f-h
41 SARS-346 40WP <sup>15</sup> .....	0.4 oz	14	0.0 a	0.0 a	0.0 a	0.0 a	1.0 a-c	1.0 a	8.8 gh
42 SARS-346 40WP <sup>15</sup> .....	0.6 oz	14	0.0 a	0.3 a	0.0 a	0.0 a	0.8 ab	1.0 a	8.5 f-h
43 SARS-346 40WP <sup>16</sup> .....	0.4 oz	21	0.0 a	0.0 a	0.0 a	0.8 ab	1.3 a-c	1.0 a	9.0 h
44 SARS-346 40WP <sup>16</sup> .....	0.6 oz	21	0.0 a	0.0 a	0.0 a	0.0 ab	1.3 a-c	1.0 a	8.8 gh
45 SARS-346 40WP <sup>17</sup> .....	0.6 oz	28	0.0 a	1.0 a	0.5 a	1.0 ab	0.5 ab	1.0 a	8.5 f-h
46 SARS-346 40WP <sup>16</sup> .....	0.4 oz								
+ 3336 4F .....	2.0 fl oz	21	0.0 a	0.0 a	0.0 a	0.0 a	1.3 a-c	1.0 a	8.5 f-h
47 SARS-346 40WP <sup>17</sup> .....	0.4 oz								
+ 3336 4F .....	2.0 fl oz	28	0.0 a	0.0 a	0.0 a	0.5 ab	0.0 a	1.0 a	8.3 e-h

(Continued)

Table 1B (continued).

Treatment	Rate per 1000 sq ft)	Spray Interval (days) <sup>4</sup>	Number of Lesion Centers per Plot <sup>1</sup>					Phytotoxicity <sup>2</sup> 9 June	Turf Quality <sup>3</sup> 18 Aug.
			4 Aug.	14 Aug.	24 Aug.	6 Sept.	18 Sept.		
48 Banner MAXX 1.3ME	1.0 fl oz	14	0.3 a	0.0 a	0.0 a	2.3 a-d	4.3 a-g	1.0 a	8.0 d-h
49 Banner MAXX 1.3ME	2.0 fl oz	21	0.0 a	0.0 a	0.0 a	2.5 a-d	4.8 a-g	1.0 a	7.5 c-f
50 CS-P 30%SC	1.08 fl oz	14	10.0 d-f	8.3 cd	11.5 b	12.8 f-h	8.8 b-i	1.0 a	8.0 d-h
51 CS-Q 30%SC	1.06 fl oz	14	27.0 i	29.0 h	40.3 fg	32.3 mn	29.8 p-r	1.0 a	7.0 a-d
52 CS-R 30%SC	1.08 fl oz	14	25.8 i	28.8 h	29.3 d	23.8 j-l	22.3 l-o	1.0 a	7.3 b-e
53 CS-S 30%SC	1.05 fl oz	14	20.0 h	21.5 fg	21.5 c	21.8 jk	19.3 k-n	1.0 a	6.3 ab
54 CS-T 30%SC	1.08 fl oz	14	0.5 a	0.0 a	0.0 a	6.0 a-g	7.0 a-h	1.0 a	8.8 gh
55 CS-U 15%EC	2.44 fl oz	14	0.8 a	0.3 a	7.3 ab	8.5 b-h	11.0 e-j	2.5 c	8.3 e-h
56 CS-A 15%EC <sup>18</sup>	2.4 fl oz	14	0.5 a	0.0 a	1.3 a	9.3 c-h	11.3 f-j	1.0 a	7.5 c-f
57 CS-V 15%EC <sup>18</sup>	2.4 fl oz	14	1.5 a	0.0 a	0.0 a	4.8 a-f	3.8 a-f	1.0 a	6.0 a
58 Emerald 70WG	0.13 oz	14	0.0 a	0.0 a	0.0 a	0.0 a	1.5 a-c	1.0 a	8.5 f-h
59 Emerald 70WG	0.18 oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	1.0 a	8.0 d-h
60 Emerald 70WG	0.13 oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.5 ab	1.0 a	9.0 h
61 Emerald 70WG	0.13 oz	21	0.0 a	1.3 a	0.0 a	0.0 a	0.3 a	1.0 a	8.0 d-h
+ Sync 100XL	0.32 fl oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.8 ab	1.0 a	9.0 h
62 Emerald 70WG	0.18 oz	21	0.0 a	0.0 a	0.0 a	0.0 a	9.8 d-j	1.0 a	8.5 f-h
+ Curalan 50DF	1.0 oz	14	1.3 a	0.3 a	0.5 a	5.5 a-g	6.5 a-h	1.0 a	9.0 h
63 Insignia 20WG	0.9 oz	14	0.8 a	0.0 a	0.0 a	6.0 a-g	3.0 a-e	1.0 a	8.3 e-h
64 Insignia 20WG	0.9 oz	14	0.8 a	0.0 a	0.0 a	3.3 a-d	0.0 a	1.0 a	9.0 h
+ Sync 100XL	0.32 fl oz	14	0.5 a	0.0 a	0.0 a	0.0 a	0.0 a	1.0 a	8.0 d-h
65 Insignia 20WG	0.9 oz	14	0.0 a	0.5 a	0.0 a	0.0 a	1.3 a-c	1.0 a	8.0 d-h
+ EcoGuard L	20.0 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.8 ab	1.0 a	8.8 gh
66 RU21196A-06	0.53 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	1.3 a-c	1.0 a	8.8 gh
67 RU21196A-06	0.88 fl oz	21	0.0 a	0.5 a	0.0 a	0.0 a	1.0 a	1.0 a	8.8 gh
68 RU21196A-06	0.35 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	1.0 a	1.0 a	8.8 gh
+ RU21196B-06	0.37 oz	14	0.0 a	0.0 a	0.0 a	0.0 a	1.0 a	1.0 a	8.8 gh
69 RU21196A-06	0.44 fl oz	14	0.0 a	0.0 a	0.0 a	0.5 ab	1.3 a-c	1.0 a	8.8 gh
+ RU21196B-06	0.46 oz	14	0.0 a	0.0 a	0.0 a	0.5 ab	1.3 a-c	1.0 a	8.8 gh
70 RU21196A-06 2SC	0.53 fl oz	14	0.0 a	0.0 a	0.0 a	0.5 ab	1.0 a	1.0 a	8.8 gh
+ RU21196B-06	0.55 oz	14	0.0 a	0.0 a	0.0 a	0.5 ab	1.0 a	1.0 a	8.8 gh

(Continued)

Table 1B (continued).

Treatment	Rate per 1000 sq ft)	Spray Interval (days) <sup>4</sup>	Number of Lesion Centers per Plot <sup>1</sup>					Phytotoxicity <sup>2</sup> 9 June	Turf Quality <sup>3</sup> 18 Aug.
			4 Aug.	14 Aug.	24 Aug.	6 Sept.	18 Sept.		
71 RU21196A-06	0.44 fl oz	21	0.0 a	0.0 a	0.0 a	1.3 a-c	1.0 a	8.5 f-h	
+ RU21196B-06	0.46 oz								
72 RU21196A-06	0.53 fl oz	21	0.0 a	0.0 a	0.0 a	0.3 a	1.0 a	8.5 f-h	
+ RU21196B-06	0.55 oz								
73 RU21196A-06	0.617 fl oz	21	0.0 a	0.0 a	0.0 a	0.5 ab	1.0 a	8.8 gh	
+ RU21196B-06	0.643 oz								
74 RU21196C-06	0.83 oz	14	0.3 a	0.0 a	0.0 a	0.0 a	1.0 a	8.8 gh	
75 RU21196C-06	1.1 oz	21	0.0 a	0.0 a	0.0 a	0.0 a	1.0 a	8.5 f-h	
76 RU21196D-06	0.13 oz	14	0.0 a	0.0 a	0.0 a	0.5 ab	1.0 a	8.8 gh	
77 RU21196D-06	0.18 oz	21	0.0 a	0.0 a	0.0 a	0.5 ab	1.3 b	9.0 h	
78 3336 4F	2.0 fl oz	21	0.5 a	7.5 ab	2.3 a-d	5.0 a-g	1.0 a	8.5 f-h	
79 3336 4F	2.0 fl oz	28	8.8 b-f	9.8 b	12.8 f-h	6.0 a-h	1.0 a	8.0 d-h	
80 Curalan 50DF	1.0 oz	21	0.0 a	0.3 a	6.5 a-h	8.3 a-i	1.0 a	9.0 h	
81 Daconil Ultrix 82.5WDG	3.2 oz	14	0.3 a	0.0 a	4.5 a-e	7.8 a-i	1.0 a	8.8 gh	
82 Banner MAXX 1.3ME	2.0 fl oz	28	0.3 a	0.5 a	2.8 a-d	4.5 a-g	1.0 a	7.8 c-g	
83 Chipco 26GT 2SC	4.0 fl oz	14	0.3 a	0.0 a	1.0 ab	3.0 a-e	1.3 b	8.0 d-h	
84 Banner MAXX 1.3ME	2.0 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	1.0 a	7.8 c-g	
85 Untreated check	—	—	26.5 i	36.0 i	53.8 h	41.3 s	1.0 a	6.8 a-c	

INT <sup>19</sup>	DAT <sup>20</sup>	DAT	DAT	DAT	DAT	DAT	DAT
Once	93	103	113	126	138	37	107
14	2	12	22	35	47	2	16
21	9	19	29	42	54	17	23
28	16	26	36	49	61	17	30

<sup>1</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).

(Continued)

Table 1B (continued).

- <sup>2</sup> Phytotoxicity on a 1 to 5 scale where 1 = no discoloration, 2 = slight foliar chlorosis or necrosis, 3 = moderate chlorosis or necrosis, 4 = severe chlorosis or necrosis, and 5 = all turf dead.
- <sup>3</sup> Turf quality on a 1 to 9 scale, where 9 = best turf quality and 6 = commercially acceptable.
- <sup>4</sup> Fungicides were applied on 23 May (all treatments, except treatments 1 to 5, 22 to 25, 26, 28, and 50 to 57), 7 June (14-day treatment, treatments 50 to 55 initiated), 14 June (21-day treatment), 21 June (14- and 28-day treatments), 6 July (14- and 21- day treatments), 19 July (14- and 28-day treatments, treatments 56 and 57 initiated), 26 July (21-day treatment), and 2 August (14-day treatment).
- <sup>5</sup> Treatments 1 to 5 were applied once on 3 May 2006, 20 days before the rest of the trial was initiated on 24 May.
- <sup>6</sup> Treatments 6 and 7 were applied in 1 gal water/1000 sq ft. All other treatments were applied at 2 gal water/1000 sq ft unless otherwise noted.
- <sup>7</sup> Treatment 10 (Plant Food Program #1) consisted of Foliar Phosphate 0-29-26 (3.0 fl oz), Green T 12-3-12 50% SRN (6.0 fl oz), Green T N 28-0-0 72% SRN (6.0 fl oz), Sugar Cal 10% Ca (2.0 fl oz), Daconil Ultrex 82.5WDG (1.8 oz), and Primo MAXX 1MC (0.125 fl oz).
- <sup>8</sup> Treatment 11 (Plant Food Program #2) consisted of Foliar Phosphate 0-29-26 (3.0 fl oz), Green T 12-3-12 50% SRN (6.0 fl oz), Green T N 28-0-0 72% SRN (6.0 fl oz), Sugar Cal 10% Ca (2.0 fl oz), EcoGuard L (10.0 fl oz), and Primo MAXX 1MC (0.125 fl oz).
- <sup>9</sup> Treatment 12 (Plant Food Program #3) consisted of Foliar Phosphate 0-29-26 (3.0 fl oz), Green T 12-3-12 50% SRN (6.0 fl oz), Green T N 28-0-0 72% SRN (6.0 fl oz), Sugar Cal 10% Ca (2.0 fl oz), and Primo MAXX 1MC (0.125 fl oz).
- <sup>10</sup> Treatment 18 received Banner MAXX 1.3ME (1.0 fl oz) in 1.0 gal water/1000 sq ft on 7 June followed by Banner MAXX 1.3ME (1.0 fl oz) in 2.0 gal water/1000 sq ft when the number of dollar spot lesion centers exceeded 10 spots in any of the four replicate plots on 22 June. The sequence was repeated a second time 14 days later on 6 July (i.e., Banner MAXX 1.3ME (1.0 fl oz) in 1.0 gal water/1000 sq ft) followed by Banner MAXX 1.3ME (1.0 fl oz) in 2.0 gal water/1000 sq ft when the number of dollar spot lesion centers exceeded 10 spots in any of the four replicate plots on 31 July. The sequence was repeated a third and final time 14 days later on 14 August (i.e., Banner MAXX 1.3ME (1.0 fl oz) in 1.0 gal water/1000 sq ft) and the number of dollar spot lesion centers exceeded 10 spots in any of the four replicates again on 30 August.
- <sup>11</sup> Treatment 19 received Banner MAXX 1.3ME (1.0 fl oz) in 2.0 gal water/1000 sq ft on 7 June followed by Banner MAXX 1.3ME (1.0 fl oz) in 2.0 gal water/1000 sq ft when the number of dollar spot lesion centers exceeded 10 spots in any of the four replicate plots on 22 June. The sequence was repeated a second time 14 days later on 6 July (i.e., Banner MAXX 1.3ME (1.0 fl oz) in 2.0 gal water/1000 sq ft) followed by Banner MAXX 1.3ME (1.0 fl oz) in 2.0 gal water/1000 sq ft when the number of dollar spot lesion centers exceeded 10 spots in any of the four replicate plots on 2 August. The sequence was repeated a third and final time 14 days later on 16 August (i.e., Banner MAXX 1.3ME (1.0 fl oz) in 2.0 gal water/1000 sq ft) and the number of dollar spot lesion centers exceeded 10 spots in any of the four replicates again on 30 August.
- <sup>12</sup> Treatment 20 received Banner MAXX 1.3ME (1.0 fl oz) + Sync 100XL (0.32 fl oz) in 1.0 gal water/1000 sq ft on 7 June followed by Banner MAXX 1.3ME (1.0 fl oz) in 2.0 gal water/1000 sq ft when the number of dollar spot lesion centers exceeded 10 spots in any of the four replicate plots on 22 June. The sequence was repeated a second time 14 days later on 6 July (i.e., Banner MAXX 1.3ME (1.0 fl oz) + Sync 100XL (0.32 fl oz) in 1.0 gal water/1000 sq ft) followed by Banner MAXX 1.3ME (1.0 fl oz) in 2.0 gal water/1000 sq ft when the number of dollar spot lesion centers exceeded 10 spots in any of the four replicate plots on 2 August. The sequence was repeated a third and final time 14 days later on 16 August (i.e., Banner MAXX 1.3ME (1.0 fl oz) in 2.0 gal water/1000 sq ft) and the number of dollar spot lesion centers exceeded 10 spots in any of the four replicates again on 30 August.
- <sup>13</sup> Treatment 21 received Banner MAXX 1.3ME (1.0 fl oz) + Sync 100XL (0.32 fl oz) in 2.0 gal water/1000 sq ft on 7 June followed by Banner MAXX 1.3ME (1.0 fl oz) in 2.0 gal water/1000 sq ft when the number of dollar spot lesion centers exceeded 10 spots in any of the four replicate plots on 22 June. The sequence was repeated a third and final time 14 days later on 11 August (i.e., Banner MAXX 1.3ME (1.0 fl oz) + Sync 100XL (0.32 fl oz) in 1.0 gal water/1000 sq ft) and the number of dollar spot lesion centers exceeded 10 spots in any of the four replicates again on 30 August.

(Continued)

Table 1B (continued).

June. The sequence was repeated a second time 14 days later on 6 July (i.e., Banner MAXX 1.3ME (1.0 fl oz) + Sync 100XL (0.32 fl oz) in 2.0 gal water/1000 sq ft) followed by Banner MAXX 1.3ME (1.0 fl oz) in 2.0 gal water/1000 sq ft when the number of dollar spot lesion centers exceeded 10 spots in any of the four replicate plots on 31 July. The sequence was repeated a third and final time 14 days later on 14 August (i.e., Banner MAXX 1.3ME (1.0 fl oz) + Sync 100XL (0.32 fl oz) in 2.0 gal water/1000 sq ft) and the number of dollar spot lesion centers exceeded 10 spots in any of the four replicates again on 30 August.

<sup>14</sup> Treatment 22 to 25 received Daconil Ultrex 82.5WDG (3.2 oz) every 14 days from 23 May to 16 August, except 6 July.

<sup>15</sup> Treatments 40 to 42 received SARS-346 30EW on 23 May and 7 June at 0.35, 0.5, and 0.75 fl oz/1000 sq ft, respectively, and then SARS-346 40WP at the rates indicated in this table every 14 days from 21 June to 2 August.

<sup>16</sup> Treatments 43, 44, and 46 received SARS-346 30EW on 23 May at 0.5, 0.75, and 0.5 fl oz/1000 sq ft, respectively, and then SARS-346 40WP at the rates indicated in this table on 14 June, 6 July, and 26 July.

<sup>17</sup> Treatments 45 and 47 received SARS-346 30EW on 23 May at 0.75 and 0.5 fl oz/1000 sq ft, respectively, and then SARS-346 40WP at the rates indicated in this table on 21 June and 19 July.

<sup>18</sup> Treatment 56 to 57 received Daconil Ultrex 82.5WDG (3.2 oz) from 23 May to 6 July and then CS-A 15%EC and CS-V15%EC from 19 July to 2 August.

<sup>19</sup> Spray interval in days.

<sup>20</sup> Days after the last treatment.



*Cooperating Agencies:* Rutgers, The State University of New Jersey, U.S. Department of Agriculture, and County Boards of Chosen Freeholders. Rutgers Cooperative Extension, a unit of the Rutgers New Jersey Agricultural Experiment Station, is an equal opportunity program provider and employer.