

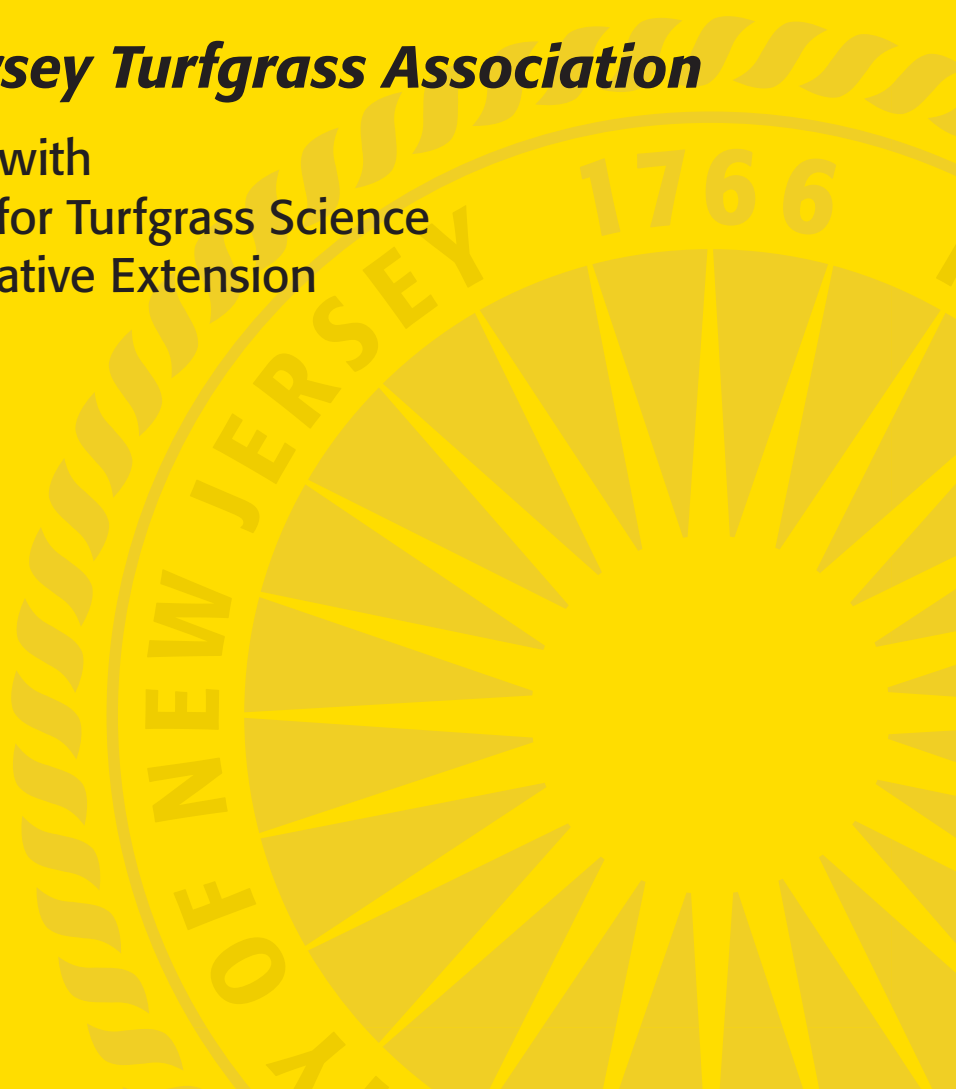
RUTGERS

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 GREEN

Bruce B. Clarke, Pradip R. Majumdar, Dennis Fitzgerald, Mark Peacos, Amy Matlack, Annemarie Scholz, Lindsay Jepsen, Sam Camuso, John Inguagiato, and Tracy J. Lawson¹

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 greens conditions. Turf was established September 1996 on a Norton loam with a pH of 6.0. Mowing was performed daily at a height of 0.125 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 ft²) on 26 April, 20-20-20 (0.2 lb N/1000 ft²) on 6 May, 15.5-0-0 (0.2 lb N/1000 ft²) on 10 and 27 May, and urea (0.46 lb N/1000 ft²) on 13 July. Broad-leaf weeds were controlled with Trimec Bentgrass 1.3L (1.5 fl oz/1000 ft²) + Lontrel T/O 3L (0.18 fl oz/1000 ft²) 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 ft²) 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 ft²) on 5 July and Telstar GC 0.67F (0.25 oz/1000 ft²) 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 9 ft and were arranged in a randomized complete block with four replications.

Fungicides were applied in water equivalent to 1.9 gal/1000 ft² with a CO₂ 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, 1B, and 1C. Turf was visually evaluated for number of dollar spot in-

fection 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, for percent turf area infested with brown patch (caused by *Rhizoctonia solani*) on 30 June and 30 August, and for algae (cyanobacteria) on 30 August. Turf quality was rated on 6 July and 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 90 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 8 August), except for EcoGuard L (trt 4) or EcoGuard L alternated with Seed Boost L (trt 5) or Turf Vigor L 9-3-6 + KCS L 0-0-14 (trt 6), RU2125-06D (trts 18 and 19), RU192514A-06 (trts 33 to 35), and Heritage TL 0.8ME (trt 46). Excellent residual control was reported at the end of the study (18 September; 41 to 55 days post-treatment) for GF-1798 1.23MEC (trt 1), Spectator 3.48MEC (trt 2), Banner MAXX 1.3ME (trt 3), RU2125-06A (trts 10 and 12), RU2125-06B (trts 11 and 13), RU2125-06C (trt 14), RU2125-06C + RU2125-06D (trt 15), RU2125-06E (trt 16), RU2125-06F (trt 17), RU2125-06G (trt 20), RU2125-06H (trts 21-24), Tartan 2.4SC (trts 25 and 26), Con-

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

cert 4.3SE (trts 53 and 54), A7402 EC (trt 57), Banner MAXX 1.3ME (trt 60), A7402 EC + Heritage TL 0.8ME (trt 63), RU42116-06A (trts 67 and 68), Emerald 70WG (trt 71), Disarm 480SC + Banner MAXX 1.3ME (trt 73) or Banner MAXX 1.3ME and TM-90109 (trt 75), Propensity 1.3ME (trt 78), 3336 Plus 19.4F + Spotrete 4F (trt 80), Spectro 90WDG (trt 82), Spectator Ultra 1.3EC alone (trts 84 and 85) or in combination with Manicure Ultra 82.5WDG (trts 89 and 90), Insignia 20WG (trt 93), RU42116D (trts 95 to 97), Disarm 480SC + or alternated with Lynx 45WP (trts 98 and 99, respectively), and PEX-60021 4.25F (trts 100 and 101).

All entries afforded adequate brown patch control on 30 June and 30 August with the exception of EcoGuard L (trt 4) or EcoGuard L alternated with Seed Boost L (trt 5), Turf Vigor L 9-3-6 + KCS L 0-0-14 (trt 6) or Daconil Ultrex 82.5WDG (trt 9), RU2125-06D (trts 18 and 19), Plant Food Program #1 (trt 27) or #2 (trt 28), RU192514A-06 (trts 33 to 35), RU192514A-06 + RU192514B-06 (trts 40 to 42), Banner MAXX 1.3ME (trt 58 and 59), Emerald 70WG (trt 71), 3336 Plus 19.4F + Spotrete 4F (trt 80), Spectro 90WDG (trt 82), and Daconil Ultrex 82.5WDG (trt 92).

Excellent suppression of algae was observed on 30 August for turf treated with EcoGuard L + Daconil Ultrex 82.5WDG (trt 7), Daconil Ultrex 82.5WDG (trts 8, 31, 91, 92, and 105 to 108), Plant Food Program #1 (trt 27), Chipco Aliette Signature 80WDG + Daconil Ultrex 82.5WDG (trt 29), RU192514A-06 + RU192514B-06 (trt 40), Daconil Weather Stik 6F (trts 47, 48, and 104), Heritage TL 0.8ME + Daconil Weather Stik 6F (trt 50), Concert 4.3SE (trts 53 and 54), RU42116-06B (trt 69) and RU42116-06C (trt 70), Echo Ultimate 82.5WDG (trt 77), CL-EXP-10F (trt 81), Spectro 90WDG (trt 83), Manicure Ultra 82.5WDG (trts 86 and 87), Manicure 6F (trt 88), Manicure Ultra 82.5WDG + Spectator Ultra 1.3EC (trt 90), PEX-6015 DF (trt 102), and PEX-6016 SC (trt 103).

With few exceptions, turf quality was acceptable for all entries on 6 July and 18 August. Slight foliar chlorosis was noted on 9 June for turf treated with Chipco Aliette Signature 80WDG + Chipco 26GT 2SC (trt 30), Chipco 26GT 2SC (trt 32), and RU192514A-06 (trt 34). No phytotoxicity was observed for any other treatment.

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

Treatment	Rate (per 1000 sq ft)	Spray Interval (days) ²	Number of Lesion Centers per Plot ¹						
			2 June	9 June	16 June	23 June	30 June	10 July	
1 GF-1798 1.23MEC	1.0 fl oz	14	0.0 a	0.3 ab	0.0 a	0.0 a	0.5 ab	0.3 a	
2 Spectator 3.48MEC	0.37 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.5 ab	0.0 a	
3 Banner MAXX 1.3ME	1.0 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.5 ab	0.0 a	
4 EcoGuard L	20.0 fl oz	7	0.0 a	2.3 a-c	1.3 ab	2.3 b-e	5.8 f-i	24.5 gh	
5 EcoGuard L	20.0 fl oz								
6 /Seed Boost L	1.0 fl oz	Alt ³	0.8 ab	3.8 a-e	3.8 a-d	3.5 d-g	7.8 i	25.5 gh	
7 /TurtVigor L 9-3-6	15.0 fl oz								
+ KCS L 0-0-14	3.0 fl oz	Alt ³	2.0 c	3.5 a-e	3.8 a-d	3.8 e-g	8.5 i	32.8 i	
8 /Daconil Ultrex 82.5WDG	3.25 oz	Alt ³	0.3 ab	0.8 a-c	0.5 ab	0.0 a	2.0 a-e	6.5 ab	
9 EcoGuard L	20.0 fl oz	14	0.0 a	1.3 a-c	0.0 a	0.0 a	0.0 a	0.5 a	
10 /Daconil Ultrex 82.5WDG	3.25 oz	Alt ⁴	0.0 a	2.0 a-c	0.0 a	0.0 a	3.8 c-g	3.5 ab	
11 RU2125-06A	2.0 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
12 RU2125-06B	2.0 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
13 RU2125-06A	4.0 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
14 RU2125-06B	4.0 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
15 RU2125-06C	2.0 oz	14	0.0 a	0.0 a	0.0 a	0.5 ab	0.0 a	0.0 a	
+ RU2125-06D	0.38 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.3 a	
16 RU2125-06E	2.0 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
17 RU2125-06F	2.0 fl oz	14	0.0 a	0.0 a	0.0 a	0.3 a	0.0 a	0.3 a	
18 RU2125-06D	0.19 fl oz	14	1.3 bc	9.5 fg	6.0 d	5.0 g	7.8 i	28.5 hi	
19 RU2125-06D	0.38 fl oz	14	0.0 a	3.5 a-e	4.0 b-d	3.5 d-g	5.8 f-i	22.5 fg	
20 RU2125-06G	2.0 fl oz	14	0.0 a	0.0 a	0.0 a	0.3 a	0.0 a	0.0 a	
21 RU 2125-06H	1.0 fl oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.5 ab	0.0 a	
22 RU 2125-06H	1.5 fl oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.3 a	
23 RU 2125-06H	2.0 fl oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.5 a	
24 RU 2125-06H	2.5 fl oz	21	0.0 a	0.0 a	0.0 a	0.5 ab	0.0 a	0.0 a	

(Continued)

Table 1A (continued).

Treatment	Rate (per 1000 sq ft)	Spray Interval (days) ²	Number of Lesion Centers per Plot ¹						
			2 June	9 June	16 June	23 June	30 June	10 July	
25 Tartan 2.4SC	1.0 fl oz	21	0.0 a	0.8 a-c	0.0 a	0.0 a	0.0 a	1.3 a-d	2.5 ab
26 Tartan 2.4SC	2.0 fl oz	21	0.0 a	0.0 a	0.0 a	0.5 ab	0.0 a	0.3 ab	0.0 a
27 Plant Food Program #1	— ⁵	14	0.0 a	2.8 a-e	0.0 a	2.0 a-e	0.0 a	1.5 a-d	5.3 ab
28 Plant Food Program #2	— ⁶	14	0.8 ab	6.3 d-f	4.8 cd	4.8 g	0.0 a	7.0 hi	25.3 gh
29 Chipco Allette Signature 80WDG	4.0 oz	14	0.0 a	0.3 ab	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a
+ Daconil Ultrex 82.5WDG	3.2 oz								
30 Chipco Allette Signature 80WDG	4.0 oz	14	0.0 a	0.3 ab	0.0 a	0.0 a	0.0 a	0.0 a	0.3 a
+ Chipco 26GT 2SC	4.0 fl oz	14	0.0 a	0.3 ab	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a
31 Daconil Ultrex 82.5WDG	3.2 oz	14	0.0 a	0.3 ab	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a
32 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
33 RU192514A-06	0.0057 oz	21	0.0 a	6.3 d-f	3.8 a-d	4.3 fg	7.5 i	6.3 g-i	26.0 gh
34 RU192514A-06	0.0115 oz	21	0.0 a	3.8 a-e	2.3 a-c	2.3 b-e	6.3 g-i	6.3 g-i	26.3 gh
35 RU192514A-06	0.0172 oz	21	1.0 ab	2.5 a-d	2.5 a-c	2.5 c-f	6.5 g-i	6.5 g-i	18.3 ef
36 RU192514B-06	1.8 oz	21	0.3 ab	2.8 a-e	0.5 ab	0.8 a-c	3.3 b-f	3.3 b-f	7.5 bc
37 RU192514B-06	3.2 oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.5 ab	0.5 ab	2.3 ab
38 RU192514C-06	0.5 fl oz	21	0.0 a	2.0 a-c	0.3 a	0.0 a	2.0 a-e	2.0 a-e	2.8 ab
39 RU192514C-06	1.0 fl oz	21	0.0 a	1.3 a-c	0.3 a	0.3 a	1.3 a-d	1.3 a-d	1.8 ab
40 RU192514A-06	0.0057 oz	21	0.0 a	0.5 ab	0.0 a	0.0 a	0.0 a	3.0 a-e	4.0 ab
+ RU192514B-06	1.8 oz								
41 RU192514A-06	0.0115 oz	21	0.0 a	3.5 a-e	2.3 a-c	0.8 a-c	3.8 c-g	3.8 c-g	6.3 ab
+ RU192514B-06	1.8 oz								
42 RU192514A-06	0.0172 oz	21	0.0 a	1.0 a-c	0.0 a	0.0 a	0.0 a	1.3 a-d	3.5 ab
+ RU192514B-06	1.8 oz								
43 RU192514A-06	0.0057 oz	21	0.0 a	0.3 ab	0.0 a	0.0 a	0.0 a	2.0 a-e	4.3 ab
+ RU192514C-06	0.5 fl oz								
44 RU192514A-06	0.0115 oz	21	0.0 a	0.5 ab	0.0 a	0.0 a	0.0 a	1.5 a-d	3.5 ab
+ RU192514C-06	0.5 fl oz								
45 RU192514A-06	0.0172 oz	21	0.0 a	1.3 a-c	1.0 ab	0.0 a	1.8 a-d	1.8 a-d	2.5 ab
+ RU192514C-06	0.5 fl oz								
46 Heritage TL 0.8ME	1.0 fl oz	14	0.0 a	3.8 a-e	2.5 a-c	2.0 a-e	6.0 g-i	6.0 g-i	16.8 de

(Continued)

Table 1A (continued).

Treatment	Rate (per 1000 sq ft)	Spray Interval (days) ²	Number of Lesion Centers per Plot ¹						
			2 June	9 June	16 June	23 June	30 June	10 July	
47 Daconil Weather Stik 6F	2.0 fl oz	14	0.0 a	1.0 a-c	0.0 a	1.8 a-d	1.3 a-d	4.8 ab	
48 Daconil Weather Stik 6F	3.6 fl oz	14	0.0 a	0.5 ab	0.3 a	0.5 ab	0.0 a	0.0 a	
49 Heritage TL 0.8ME	1.0 fl oz	14	0.0 a	0.3 ab	0.0 a	0.3 a	0.0 a	1.3 ab	
+ Daconil Weather Stik 6F	2.0 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
50 Heritage TL 0.8ME	1.0 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.3 a	
+ Daconil Weather Stik 6F	3.6 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.3 a	
51 EXC 990 SC	4.0 fl oz	14	0.5 ab	4.5 c-e	0.5 ab	1.0 a-c	0.5 ab	1.0 a	
52 EXC 991 SC	2.5 fl oz	14	0.0 a	3.0 a-e	0.5 ab	1.8 a-d	1.3 a-d	2.8 ab	
53 Concert 4.3SE	3.0 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.3 a	
54 Concert 4.3SE	5.4 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
55 A7402 EC	0.16 fl oz	21	0.0 a	4.3 b-e	1.3 ab	1.0 a-c	4.0 d-g	12.0 cd	
56 A7402 EC	0.31 fl oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.8 a	
57 A7402 EC	0.63 fl oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
58 Banner MAXX 1.3 ME	0.25 fl oz	21	0.0 a	0.3 ab	0.5 ab	0.3 a	2.0 a-e	5.3 ab	
59 Banner MAXX 1.3 ME	0.5 fl oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.8 ab	2.8 ab	
60 Banner MAXX 1.3 ME	1.0 fl oz	21	0.0 a	0.0 a	0.0 a	0.0 a	1.5 a-d	1.8 ab	
61 A7402 EC	0.16 fl oz	21	0.0 a	1.3 a-c	0.5 ab	0.0 a	1.5 a-d	2.3 ab	
+ Heritage TL 0.8ME	1.0 fl oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.5 ab	0.8 a	
62 A7402 EC	0.31 fl oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.5 ab	0.8 a	
+ Heritage TL 0.8ME	1.0 fl oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.5 ab	0.8 a	
63 A7402 EC	0.63 fl oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.3 a	
+ Heritage TL 0.8ME	1.0 fl oz	21	0.0 a	0.3 ab	0.0 a	0.0 a	0.8 ab	1.5 ab	
64 Headway 1.39EC	0.75 fl oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.5 ab	1.3 ab	
65 Headway 1.39EC	1.5 fl oz	21	0.0 a	0.3 ab	0.5 ab	0.0 a	0.0 a	0.5 a	
66 RU42116-06A	0.75 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
67 RU42116-06A	1.0 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
68 RU42116-06A	1.25 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.3 a	
69 RU42116-06B	0.313 oz	1	0.0 a	0.0 a	0.0 a	0.8 a-c	0.5 ab	1.0 a	
70 RU42116-06C	0.313 oz	14	0.0 a	0.0 a	0.0 a	0.5 ab	0.0 a	1.0 a	
71 Emerald 70WG	0.184 oz	14	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) ²	Number of Lesion Centers per Plot ¹						
			2 June	9 June	16 June	23 June	30 June	10 July	
72 Disarm 480SC	0.36 fl oz	21	0.0 a	1.3 a-c	0.3 a	0.0 a	1.3 a-d	4.0 ab	
73 Disarm 480SC	0.18 fl oz	21	0.0 a	1.3 a-c	0.0 a	0.0 a	1.8 a-d	2.3 ab	
74 Disarm 480SC	0.18 fl oz	21	0.0 a	2.8 a-e	0.5 ab	0.0 a	2.3 a-e	3.5 ab	
75 Disarm 480SC	0.18 fl oz	21	0.0 a	0.3 ab	0.0 a	0.3 a	0.0 a	0.3 a	
+ Banner MAXX 1.3 ME	4.0 fl oz	14	0.0 a	1.3 a-c	0.0 a	0.3 a	0.5 ab	1.0 a	
+ TM-90109	3.6 fl oz	14	0.0 a	1.8 a-c	0.3 a	1.0 a-c	0.0 a	1.0 a	
76 Echo 720 F	3.25 oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
77 Echo Ultimate 82.5WDG	2.0 fl oz	14	0.0 a	6.5 ef	4.0 b-d	2.3 b-e	4.8 e-h	23.5 f-h	
78 Propensity 1.3ME	0.18 fl oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
79 Disarm 480SC	0.18 fl oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
80 3336 Plus 19.4F	4.0 fl oz	CUR-14 ⁷	0.0 a	0.0 a	0.0 a	0.3 a	0.0 a	3.8 ab	
+ Spotrete 4F	7.0 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
81 CL-EXP-10F	7.25 fl oz	CUR-14 ⁷	0.0 a	0.0 a	0.0 a	0.0 a	0.8 ab	2.8 ab	
82 Spectro 90WDG	4.0 oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
83 Spectro 90WDG	4.0 oz	14	0.0 a	0.0 a	0.0 a	0.5 ab	0.0 a	0.0 a	
84 Spectator Ultra 1.3EC	1.0 fl oz	21	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
85 Spectator Ultra 1.3EC	2.0 fl oz	7	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
86 Manicure Ultra 82.5WDG	1.8 oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
87 Manicure Ultra 82.5WDG	3.25 oz	14	0.0 a	0.0 a	0.0 a	1.3 a-c	0.0 a	0.0 a	
88 Manicure 6F	3.6 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
89 Spectator Ultra 1.3EC	2.0 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
+ Manicure Ultra 82.5WDG	3.25 oz	7	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
90 Manicure Ultra 82.5WDG	1.8 oz	14	0.0 a	1.8 a-c	0.3 a	1.3 a-c	1.0 a-c	3.3 ab	
+ Spectator Ultra 1.3EC	1.0 fl oz	21	0.0 a	1.0 a-c	0.0 a	0.3 a	2.5 a-e	6.5 ab	
91 Daconil Ultrex 82.5WDG	1.8 oz	14	0.0 a	0.3 ab	0.0 a	0.5 ab	0.5 ab	1.0 a	
92 Daconil Ultrex 82.5WDG	1.8 oz	14	0.0 a	1.5 a-c	0.8 ab	0.0 a	0.0 a	0.3 a	
93 Insignia 20WG	0.9 oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
94 Curalan 50DF	1.0 oz	14	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) ²	Number of Lesion Centers per Plot ¹						
			2 June	9 June	16 June	23 June	30 June	10 July	
95 RU42116D	0.194 fl oz	14	0.0 a	0.8 a-c	0.0 a	0.5 ab	0.8 ab	1.8 ab	
96 RU42116D	0.29 fl oz	14	0.0 a	0.0 a	0.0 a	0.3 a	0.5 ab	0.5 a	
97 RU42116D	0.44 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
98 Disarm 480SC + Lynx 45WP	0.2 fl oz 0.28 oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.5 a	
99 Disarm 480SC /Lynx 45WP	0.28 oz	Alt ⁸	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
100 PEX-60021 4.25F ⁹	4.0 fl oz	14	0.0 a	0.3 ab	0.0 a	0.0 a	0.0 a	0.5 a	
101 PEX-60021 4.25F ⁹	8.0 fl oz	14	0.0 a	0.8 a-c	0.0 a	0.0 a	0.0 a	0.3 a	
102 PEX-6015 DF ⁹	4.0 oz	14	0.0 a	0.5 ab	0.0 a	0.5 ab	0.0 a	0.3 a	
103 PEX-6016 SC ⁹	4.0 fl oz	14	0.0 a	0.3 ab	0.5 ab	0.0 a	0.0 a	0.0 a	
104 Daconil Weather Stik 6F ⁹	4.0 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
105 Daconil Ultrex 82.5WDG ¹⁰	3.25 oz	14	0.0 a	0.5 ab	0.3 a	0.0 a	0.0 a	0.8 a	
106 Daconil Ultrex 82.5WDG ⁹	4.0 oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	
107 Daconil Ultrex 82.5WDG	3.25 oz	14	0.0 a	1.0 a-c	0.0 a	0.0 a	0.0 a	0.0 a	
108 Daconil Ultrex 82.5WDG	3.25 oz	14	0.0 a	0.8 a-c	0.0 a	0.0 a	0.0 a	0.3 a	
109 Untreated Check	—	—	6.8 e	49.0 h	23.5 e	16.3 h	19.3 j	87.3 j	
		INT ¹¹	DAT ¹²	DAT	DAT	DAT	DAT	DAT	
		7	3	3	3	3	3	5	
		14	10	3	10	3	10	5	
		21	10	17	3	10	17	5	

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 Fungicides were applied on 23 May (all treatments, except treatments 51, 52, 80, 82, 98, and 99), 30 May (7-day treatment, treatments 98 and 99 started), 6 June (7- and 14-day treatments, treatments 51 and 52 initiated), 13 June (7- and 21-day treatments), 20 June (7- and 14-day treatments,

(Continued)

Table 1A (continued).

- treatments 80, 82, 100 to 104, and 106 initiated), 27 June (7-day treatment), 5 July (7-, 14-, and 21-day treatments), 11 July (7-day treatment), 18 July (7- and 14-day treatments), 25 July (7- and 21-day treatments), 1 August (7- and 14-day treatments), and 8 August (7-day treatment).
- ³ Alternation of fungicides on a 7-day schedule where treatments 5, 6, and 7 received EcoGuard L (20.0 fl oz) on 23 May, 6 June, 20 June, 5 July, 18 July and 1 August and either Seed Boost L (1.0 fl oz, treatment 5), Turf Vigor L 9-3-6 (15.0 fl oz) + KCS L 0-0-14 (3.0 fl oz, treatment 6), or Daconil Ultrex 82.5WDG (3.25 oz, treatment 7) on 30 May, 13 June, 27 June, 11 July, 25 July, and 8 August.
- ⁴ Alternation of fungicides on a 14-day schedule where treatment 9 received EcoGuard L (20.0 fl oz) on 23 May, 20 June, and 18 July and Daconil Ultrex 82.5WDG (3.25 oz) on 6 June, 5 July, and 1 August.
- ⁵ Treatment 27 (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) + Primo MAXX 1MC (0.125 fl oz).
- ⁶ Treatment 28 (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) + Primo MAXX 1MC (0.125 fl oz).
- ⁷ Curative application schedule, where treatments 80 and 82 were applied after a dollar spot threshold of 10 lesion centers was exceeded on any of four replicate plots (i.e., 20 June) and then repeated on a 14-day application schedule.
- ⁸ Alternation of fungicides on a 7-day schedule where treatment 99 received Disarm 480SC (0.2 fl oz) on 23 May, 6 June, 20 June, 5 July, 18 July, and 1 August and Lynx 45WP (0.28 oz) on 30 May, 13 June, 27 June, 11 July, 25 July, and 8 August.
- ⁹ Treatments 100 to 104 and 106 received Daconil Ultrex 82.5WDG at 3.25 oz/1000 sq. ft on 23 May and 6 June and then were treated with the products and rates indicated in this table from 20 June to 1 August.
- ¹⁰ Treatment 105 was applied when dew was present; all other treatments were applied to dry turf.
- ¹¹ Spray intervals in days.
- ¹² Days after the last treatment.

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

Treatment	Rate (per 1000 sq ft)	Spray Interval (days) ²	Number of Lesion Centers per Plot ¹					
			25 July	4 Aug.	14 Aug.	24 Aug.	6 Sept.	18 Sept.
1	GF-1798 1.23MEC	14	0.0 a	0.0 a	0.3 a	0.5 ab	2.5 a-g	2.3 a-e
2	Spectator 3.48MEC	14	0.0 a	0.0 a	0.0 a	0.3 a	2.3 a-g	3.3 a-f
3	Banner MAXX 1.3ME	14	0.0 a	0.0 a	0.0 a	0.8 ab	3.3 a-i	3.8 a-g
4	EcoGuard L	7	7.0 e-i	5.0 d-f	19.8 lm	32.3 o-q	26.3 z'd'-j'	14.3 i-u
5	EcoGuard L							
6	/Seed Boost L	Alt ³	9.0 h-l	9.0 g	29.8 op	33.5 p-q	20.8 w-z'g'	18.5 q-z'b'
	EcoGuard L							
7	/TurtVigor L 9-3-6	Alt ³	7.3 f-i	5.0 d-f	17.3 k-m	30.8 op	26.3 z'd'-j'	11.0 c-r
	+ KCS L 0-0-14							
8	/Daconil Ultrex 82.5WDG	Alt ³	4.0 a-f	0.0 a	1.8 a-c	5.5 a-e	16.3 o-z'd'	16.5 m-y
9	Daconil Ultrex 82.5WDG	14	0.0 a	0.3 a	0.8 a	4.3 a-e	14.3 j-z'a'	20.0 r-z'c'
	EcoGuard L							
10	/Daconil Ultrex 82.5WDG	Alt ⁴	4.5 b-g	5.3 e-f	5.8 a-h	15.8 i-m	20.5 v-z'g'	33.8 z'f'-h'
11	RU2125-06A	14	0.0 a	0.0 a	0.0 a	0.0 a	1.5 a-d	0.8 ab
12	RU2125-06B	14	0.0 a	0.0 a	0.0 a	0.0 a	1.3 a-d	1.5 a-c
13	RU2125-06A	14	0.0 a	0.0 a	0.0 a	0.0 a	0.5 ab	0.0 a
14	RU2125-06B	14	0.0 a	0.0 a	0.0 a	0.0 a	0.8 a-c	0.5 ab
15	RU2125-06C	14	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.5 ab
	+ RU2125-06D							
16	RU2125-06E	14	0.0 a	0.0 a	0.0 a	0.0 a	0.8 a-c	0.0 a
17	RU2125-06F	14	0.0 a	0.0 a	0.0 a	0.0 a	2.0 a-f	1.8 a-d
18	RU2125-06D	14	13.8 n	13.0 h	36.8 q	41.8 r	1.5 a-d	1.8 a-d
19	RU2125-06D	14	9.3 h-m	13.0 h	34.3 pq	35.5 p-r	29.5 z'g'-j'	15.5 k-x
20	RU2125-06G	14	0.0 a	0.0 a	0.0 a	0.0 a	36.0 z'j'	29.3 z'c'-f'
21	RU 2125-06H	21	0.0 a	0.0 a	0.8 a	2.0 a-c	0.3 ab	0.8 ab
22	RU 2125-06H	21	0.0 a	0.0 a	0.0 a	1.0 ab	5.8 a-o	6.3 a-l
23	RU 2125-06H	21	0.0 a	0.0 a	0.0 a	0.5 ab	5.8 a-o	6.5 a-l
24	RU 2125-06H	21	0.0 a	0.0 a	0.0 a	1.8 a-c	4.5 a-l	4.5 a-l

(Continued)

Table 1B (continued).

Treatment	Rate (per 1000 sq ft)	Spray Interval (days) ²	Number of Lesion Centers per Plot ¹					
			25 July	4 Aug.	14 Aug.	24 Aug.	6 Sept.	18 Sept.
25 Tartan 2.4SC	1.0 fl oz	21	1.5 a-c	0.0 a	0.8 a	3.0 a-d	8.5 a-s	9.8 a-q
26 Tartan 2.4SC	2.0 fl oz	21	0.0 a	0.0 a	0.0 a	0.3 a	4.0 a-k	4.3 a-h
27 Plant Food Program #1	⁵	14	1.0 ab	2.5 a-e	5.8 a-h	15.0 g-l	16.0 o-z'd'	18.0 p-z'a'
28 Plant Food Program #2	⁶	14	9.8 h-m	8.0 fg	21.3 mn	32.3 o-q	18.0 s-z'e'	12.8 ft
29 Chipco Aliette Signature 80WDG	4.0 oz	14	0.0 a	0.5 a	1.0 a	3.0 a-d	12.8 g-x	22.0 t-z'd'
+ Daconil Ultrex 82.5WDG	3.2 oz							
30 Chipco Aliette Signature 80WDG	4.0 oz	14	0.0 a	0.0 a	0.0 a	4.3 a-e	14.5 k-z'a'	24.0 v-z'e'
+ Chipco 26GT 2SC	4.0 fl oz	14	0.0 a	0.0 a	0.3 a	4.5 a-e	10.8 b-w	16.8 n-z
31 Daconil Ultrex 82.5WDG	3.2 oz	14	0.0 a	0.0 a	0.3 a	2.8 a-d	9.5 a-u	16.5 m-y
32 Chipco 26GT 2SC	4.0 fl oz	14	0.0 a	0.0 a	0.3 a	2.8 a-d	9.5 a-u	16.5 m-y
33 RU192514A-06	0.0057 oz	21	11.5 k-n	12.0 h	32.8 pq	35.8 p-r	28.0 z'e'-j'	25.8 y-z'f'
34 RU192514A-06	0.0115 oz	21	11.3 j-n	12.3 h	34.3 pq	42.3 r	29.3 z'f'-j'	29.0 z'c'-f'
35 RU192514A-06	0.0172 oz	21	8.0 g-k	12.8 h	26.5 o	36.0 p-r	33.3 z'i'j'	27.5 z'a'-f'
36 RU192514B-06	1.8 oz	21	7.8 g-j	3.0 a-e	15.5 j-l	19.8 l-n	25.3 z'c'-i'	31.0 z'd'-g'
37 RU192514B-06	3.2 oz	21	3.3 a-d	0.0 a	5.5 a-h	10.8 d-k	14.8 l-z'b'	26.0 y-z'f'
38 RU192514C-06	0.5 fl oz	21	3.3 a-d	1.3 ab	5.3 a-g	7.3 a-g	14.0 j-z'a'	16.5 m-y
39 RU192514C-06	1.0 fl oz	21	1.5 a-c	0.0 a	3.3 a-d	4.8 a-e	8.0 a-s	10.3 b-q
40 RU192514A-06	0.0057 oz	21	10.0 i-m	0.5 a	8.8 d-i	16.0 j-m	16.3 o-z'd'	18.0 p-z'a'
+ RU192514B-06	1.8 oz							
41 RU192514A-06	0.0115 oz	21	9.5 h-m	1.8 a-d	13.8 i-k	20.5 l-n	23.0 x-z'h'	28.0 z'b'-f'
+ RU192514B-06	1.8 oz							
42 RU192514A-06	0.0172 oz	21	4.5 b-g	1.0 a	7.5 b-h	15.0 g-l	25.0 z'b'-i'	22.8 u-z'e'
+ RU192514B-06	1.8 oz							
43 RU192514A-06	0.0057 oz	21	5.0 c-g	1.8 a-d	7.8 c-h	14.3 f-l	19.8 u-z'g'	22.0 t-z'd'
+ RU192514C-06	0.5 fl oz							
44 RU192514A-06	0.0115 oz	21	3.5 a-e	0.3 a	4.8 a-f	7.8 a-i	10.3 b-w	14.5 j-v
+ RU192514C-06	0.5 fl oz							
45 RU192514A-06	0.0172 oz	21	3.0 a-d	0.0 a	5.0 a-f	10.3 c-k	13.3 h-y	16.5 m-y
+ RU192514C-06	0.5 fl oz							
46 Heritage TL 0.8ME	1.0 fl oz	14	12.8 mn	8.3 g	26.0 no	39.3 qr	49.0 z'k'	39.5 z'h'

(Continued)

Table 1B (continued).

Treatment	Rate (per 1000 sq ft)	Spray Interval (days) ²	Number of Lesion Centers per Plot ¹					
			25 July	4 Aug.	14 Aug.	24 Aug.	6 Sept.	18 Sept.
47 Daconil Weather Stik 6F	2.0 fl oz	14	1.3 a-c	4.8 c-e	11.3 h-j	16.8 k-m	19.3 t-z'f'	26.5 z'z'-f'
48 Daconil Weather Stik 6F	3.6 fl oz	14	0.0 a	0.0 a	1.5 ab	4.5 a-e	12.3 e-w	21.0 s-z'c'
49 Heritage TL 0.8ME	1.0 fl oz							
+ Daconil Weather Stik 6F	2.0 fl oz	14	0.5 a	1.5 a-c	3.3 a-d	7.5 a-h	17.8 s-z'd'	24.8 w-z'f'
50 Heritage TL 0.8ME	1.0 fl oz							
+ Daconil Weather Stik 6F	3.6 fl oz	14	0.0 a	0.0 a	0.0 a	0.5 ab	7.5 a-s	12.8 ft
51 EXC 990 SC	4.0 fl oz	14	0.0 a	0.0 a	1.5 ab	7.0 a-g	17.0 q-z'd'	25.5 y-z'f'
52 EXC 991 SC	2.5 fl oz	14	0.5 a	1.5 a-c	5.8 a-h	11.8 e-k	19.5 u-z'g'	28.3 z'c'-f'
53 Concert 4.3SE	3.0 fl oz	14	0.0 a	0.0 a	0.3 a	0.0 a	4.8 a-m	7.0 a-n
54 Concert 4.3SE	5.4 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	1.3 a-d	5.8 a-k
55 A7402 EC	0.16 fl oz	21	7.3 f-i	1.5 a-c	14.8 j-l	23.3 mn	23.8 z-z'i'	27.0 z'z'-f'
56 A7402 EC	0.31 fl oz	21	1.0 ab	0.0 a	1.8 a-c	9.0 b-k	11.3 c-w	13.0 ft
57 A7402 EC	0.63 fl oz	21	0.0 a	0.0 a	0.0 a	2.3 a-c	6.3 a-p	6.5 a-l
58 Banner MAXX 1.3 ME	0.25 fl oz	21	2.3 a-c	0.3 a	3.3 a-d	7.0 a-g	11.3 c-w	13.8 h-u
59 Banner MAXX 1.3 ME	0.5 fl oz	21	3.0 a-d	0.3 a	2.3 a-c	6.5 a-f	11.3 c-w	13.0 ft
60 Banner MAXX 1.3 ME	1.0 fl oz	21	3.3 a-d	0.0 a	1.3 a	5.0 a-e	8.0 a-s	8.5 a-p
61 A7402 EC	0.16 fl oz							
+ Heritage TL 0.8ME	1.0 fl oz	21	3.0 a-d	0.0 a	4.3 a-e	10.3 c-k	13.5 i-z	12.8 ft
62 A7402 EC	0.31 fl oz							
+ Heritage TL 0.8ME	1.0 fl oz	21	0.8 ab	0.0 a	1.3 a	6.5 a-f	13.3 h-y	16.8 n-z
63 A7402 EC	0.63 fl oz							
+ Heritage TL 0.8ME	1.0 fl oz	21	0.0 a	0.0 a	0.0 a	1.5 ab	4.8 a-m	3.8 a-g
64 Headway 1.39EC	0.75 fl oz	21	1.8 a-c	0.3 a	2.3 a-c	5.5 a-e	14.3 j-z'a'	15.3 k-w
65 Headway 1.39EC	1.5 fl oz	21	0.8 ab	0.0 a	1.5 ab	3.5 a-e	9.8 a-u	13.8 h-u
66 RU42116-06A	0.75 fl oz	14	0.0 a	0.3 a	0.0 a	2.8 a-d	7.8 a-s	13.3 g-u
67 RU42116-06A	1.0 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	7.0 a-r	8.5 a-p
68 RU42116-06A	1.25 fl oz	14	0.0 a	0.0 a	0.0 a	0.5 ab	4.8 a-m	6.8 a-m
69 RU42116-06B	0.313 oz	14	0.0 a	1.3 ab	2.5 a-c	6.8 a-f	10.8 b-w	17.8 o-z'z'
70 RU42116-06C	0.313 oz	14	0.0 a	0.8 a	1.0 a	5.5 a-e	11.8 d-w	16.8 n-z
71 Emerald 70WG	0.184 oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.5 ab	0.5 ab

(Continued)

Table 1B (continued).

Treatment	Rate (per 1000 sq ft)	Spray Interval (days) ²	Number of Lesion Centers per Plot ¹					
			25 July	4 Aug.	14 Aug.	24 Aug.	6 Sept.	18 Sept.
72 Disarm 480SC	0.36 fl oz	21	2.3 a-c	0.0 a	0.8 a	6.3 a-f	15.8 n-z'c'	13.5 g-u
73 Disarm 480SC	0.18 fl oz							
+ Banner MAXX 1.3 ME	1.0 fl oz	21	1.0 ab	0.0 a	0.8 a	4.0 a-e	8.8 a-t	4.3 a-h
74 Disarm 480SC	0.18 fl oz							
+ Daconil Ultrex 82.5WDG	1.8 oz	21	5.0 c-g	0.0 a	6.3 a-h	15.5 h-l	24.3 z'a'-i'	25.0 x-z'f'
75 Disarm 480SC	0.18 fl oz							
+ Banner MAXX 1.3 ME	1.0 fl oz							
+ TM-90109	4.0 fl oz	21	0.0 a	0.3 a	0.0 a	1.3 ab	8.8 a-t	9.5 a-q
76 Echo 720 F	3.6 fl oz	14	1.0 ab	2.3 a-e	1.8 a-c	7.8 a-i	16.8 p-z'd'	26.5 z'z'-f'
77 Echo Ultimate 82.5WDG	3.25 oz	14	0.0 a	0.8 a	1.3 a	8.0 a-j	15.3 m-z'c'	22.0 t-z'd'
78 Propensity 1.3ME	2.0 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.5 ab	0.5 ab
79 Disarm 480SC	0.18 fl oz	21	12.3 l-n	0.3 a	10.0 e-j	25.5 no	32.8 z'h'-j'	29.5 z'c'-f'
80 3336 Plus 19.4F	4.0 fl oz							
+ Spotrete 4F	7.0 fl oz	CUR-14 ⁷	0.0 a	0.0 a	0.0 a	0.3 a	4.5 a-l	5.0 a-j
81 CL-EXP-10F	7.25 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	7.0 a-r	13.0 ft
82 Spectro 90WDG	4.0 oz	CUR-14 ⁷	0.0 a	0.0 a	0.0 a	0.0 a	5.8 a-o	7.8 a-n
83 Spectro 90WDG	4.0 oz	14	0.0 a	0.0 a	0.0 a	0.0 a	6.8 a-r	11.0 c-r
84 Spectator Ultra 1.3EC	1.0 fl oz	14	0.0 a	0.0 a	0.0 a	0.3 a	3.8 a-j	5.3 a-j
85 Spectator Ultra 1.3EC	2.0 fl oz	21	0.0 a	0.0 a	0.0 a	0.5 ab	4.0 a-k	5.0 a-j
86 Manicure Ultra 82.5WDG	1.8 oz	7	0.0 a	0.0 a	0.0 a	0.3 a	5.3 a-n	12.0 e-s
87 Manicure Ultra 82.5WDG	3.25 oz	14	0.0 a	0.0 a	0.0 a	1.0 ab	6.5 a-q	14.5 j-v
88 Manicure 6F	3.6 fl oz	14	0.0 a	0.8 a	1.5 ab	9.0 b-k	17.3 r-z'd'	26.0 y-z'f'
89 Spectator Ultra 1.3EC	2.0 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	0.5 ab	2.8 a-e
+ Manicure Ultra 82.5WDG	3.25 oz							
90 Manicure Ultra 82.5WDG	1.8 oz							
+ Spectator Ultra 1.3EC	1.0 fl oz	7	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a
91 Daconil Ultrex 82.5WDG	1.8 oz	14	2.8 a-d	4.5 b-e	10.3 f-j	14.3 f-l	23.5 y-z'i'	32.0 z'e'-h'
92 Daconil Ultrex 82.5WDG	1.8 oz	21	6.3 d-h	0.8 a	11.0 g-j	17.0 k-m	16.8 p-z'd'	26.3 z-z'f'
93 Insignia 20WG	0.9 oz	14	0.3 a	0.0 a	0.0 a	1.8 a-c	8.5 a-s	7.5 a-n
94 Curalan 50DF	1.0 oz	14	0.0 a	0.5 a	1.0 a	4.8 a-e	12.5 f-w	14.8 j-v

(Continued)

Table 1B (continued).

Treatment	Rate (per 1000 sq ft)	Spray Interval (days) ²	Number of Lesion Centers per Plot ¹					
			25 July	4 Aug.	14 Aug.	24 Aug.	6 Sept.	18 Sept.
95 RU42116D	0.194 fl oz	14	0.8 ab	0.8 a	0.5 a	3.3 a-d	8.3 a-s	9.8 a-q
96 RU42116D	0.29 fl oz	14	0.0 a	0.0 a	0.3 a	0.3 a	4.5 a-l	6.0 a-l
97 RU42116D	0.44 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	2.8 a-h	2.5 a-e
98 Disarm 480SC + Lynx 45WP	0.2 fl oz	14	0.0 a	0.5 a	0.0 a	0.3 a	6.5 a-q	8.0 a-o
99 Disarm 480SC / Lynx 45WP	0.28 oz	Alt ⁸	0.0 a	0.0 a	0.0 a	0.3 a	4.0 a-k	7.5 a-n
100 PEX-60021 4.25F ⁹	4.0 fl oz	14	0.0 a	0.0 a	0.0 a	1.8 a-c	5.8 a-o	6.0 a-l
101 PEX-60021 4.25F ⁹	8.0 fl oz	14	0.0 a	0.0 a	0.0 a	0.0 a	1.8 a-e	2.8 a-e
102 PEX-6015 DF ⁹	4.0 oz	14	0.0 a	0.0 a	1.0 a	5.5 a-e	16.5 p-z'd'	25.5 y-z'f'
103 PEX-6016 SC ⁹	4.0 fl oz	14	0.0 a	0.0 a	0.3 a	3.5 a-e	9.3 a-u	15.8 l-x
104 Daconil Weather Stik 6F ⁹	4.0 fl oz	14	0.0 a	0.0 a	0.3 a	1.8 a-c	7.8 a-s	16.5 m-y
105 Daconil Ultrex 82.5WDG ¹⁰	3.25 oz	14	0.0 a	0.0 a	0.0 a	1.8 a-c	8.3 a-s	20.3 r-z'c'
106 Daconil Ultrex 82.5WDG ⁹	4.0 oz	14	0.0 a	0.0 a	0.0 a	1.3 ab	6.5 a-q	11.5 d-s
107 Daconil Ultrex 82.5WDG	3.25 oz	14	0.0 a	0.3 a	0.3 a	2.8 a-d	10.0 a-v	20.3 r-z'c'
108 Daconil Ultrex 82.5WDG	3.25 oz	14	0.0 a	0.0 a	0.3 a	5.0 a-e	13.8 i-z	21.0 s-z'c'
109 Untreated Check	—	—	24.3 o	47.5 i	90.3 r	90.3 s	72.8 z'l'	38.8 z'g'h'

	INT ¹¹	DAT ¹²	DAT	DAT	DAT	DAT	DAT
	7	7	7	6	16	29	41
	14	7	14	13	23	36	48
	21	20	21	20	30	43	55

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 Fungicides were applied on 23 May (all treatments, except treatments 51, 52, 80, 82, 98, and 99), 30 May (7-day treatment, treatments 98 and 99 started), 6 June (7- and 14-day treatments, treatments 51 and 52 initiated), 13 June (7- and 21-day treatments), 20 June (7- and 14-day treatments,

(Continued)

Table 1B (continued).

- treatments 80, 82, 100 to 104, and 106 initiated), 27 June (7-day treatment), 5 July (7-, 14-, and 21-day treatments), 11 July (7-day treatment), 18 July (7- and 14-day treatments), 25 July (7- and 21-day treatments), 1 August (7- and 14-day treatments), and 8 August (7-day treatment).
- ³ Alternation of fungicides on a 7-day schedule where treatments 5, 6, and 7 received EcoGuard L (20.0 fl oz) on 23 May, 6 June, 20 June, 5 July, 18 July and 1 August and either Seed Boost L (1.0 fl oz, treatment 5), Turf Vigor L 9-3-6 (15.0 fl oz) + KCS L 0-0-14 (3.0 fl oz, treatment 6), or Daconil Ultrex 82.5WDG (3.25 oz, treatment 7) on 30 May, 13 June, 27 June, 11 July, 25 July, and 8 August.
- ⁴ Alternation of fungicides on a 14-day schedule where treatment 9 received EcoGuard L (20.0 fl oz) on 23 May, 20 June, and 18 July and Daconil Ultrex 82.5WDG (3.25 oz) on 6 June, 5 July, and 1 August.
- ⁵ Treatment 27 (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) + Primo MAXX 1MC (0.125 fl oz).
- ⁶ Treatment 28 (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) + Primo MAXX 1MC (0.125 fl oz).
- ⁷ Curative application schedule, where treatments 80 and 82 were applied after a dollar spot threshold of 10 lesion centers was exceeded on any of four replicate plots (i.e., 20 June) and then repeated on a 14-day application schedule.
- ⁸ Alternation of fungicides on a 7-day schedule where treatment 99 received Disarm 480SC (0.2 fl oz) on 23 May, 6 June, 20 June, 5 July, 18 July, and 1 August and Lynx 45WP (0.28 oz) on 30 May, 13 June, 27 June, 11 July, 25 July, and 8 August.
- ⁹ Treatments 100 to 104 and 106 received Daconil Ultrex 82.5WDG at 3.25 oz/1000 sq. ft on 23 May and 6 June and then were treated with the products and rates indicated in this table from 20 June to 1 August.
- ¹⁰ Treatment 105 was applied when dew was present; all other treatments were applied to dry turf.
- ¹¹ Spray intervals in days.
- ¹² Days after the last treatment.

Table 1C. Efficacy of fungicides and biorational products for the control of dollar spot on a creeping bentgrass green: New Brunswick, NJ, 2006.

Treatment	Rate (per 1000 sq ft)	Spray Interval (days) ⁶	Phyto- toxicity ^{1,2} 9 June	Turf Quality ^{1,3}			Brown Patch ^{1,4}		Algae ^{1,5} 30 Aug.
				6 July	18 Aug.	30 June	30 Aug.		
1	GF-1798 1.23MEC	1.0 fl oz	1.0 a	6.0 a-e	6.0 ab	0.0 a	0.3 ab	48.8 p-x	
2	Spectator 3.48MEC	0.37 fl oz	1.0 a	6.3 a-f	6.5 a-d	2.5 a-c	0.5 a-c	53.8 s-z	
3	Banner MAXX 1.3ME	1.0 fl oz	1.0 a	6.5 b-g	6.5 a-d	2.5 a-c	4.3 a-g	48.8 p-x	
4	EcoGuard L	20.0 fl oz	1.0 a	6.5 b-g	7.8 c-h	9.3 c-f	33.8 op	16.3 a-k	
5	EcoGuard L	20.0 fl oz	1.0 a	5.8 a-d	7.8 c-h	20.0 jk	41.3 pq	20.0 a-m	
6	/Seed Boost L	1.0 fl oz	1.0 a	6.0 a-e	7.3 a-g	20.0 jk	43.8 q	22.5 c-m	
7	/TurfVigor L 9-3-6	15.0 fl oz	1.0 a	8.0 hi	9.0 h	1.3 ab	6.3 a-g	3.8 a-d	
8	+ KCS L 0-0-14	3.0 fl oz	1.0 a	7.0 d-i	7.3 a-g	0.0 a	8.0 a-h	2.5 a-c	
9	EcoGuard L	20.0 fl oz	1.0 a	6.8 c-h	8.3 e-h	2.5 a-c	17.8 i-n	13.8 a-j	
10	/Daconil Ultrex 82.5WDG	3.25 oz	1.0 a	5.5 a-c	6.5 a-d	0.0 a	0.0 a	66.3 w-z'c'	
11	RU2125-06A	2.0 fl oz	1.0 a	7.5 f-i	7.0 a-f	0.0 a	1.3 a-d	60.0 v-z'b'	
12	RU2125-06B	2.0 fl oz	1.0 a	5.5 a-c	6.0 ab	0.0 a	0.0 a	66.3 w-z'c'	
13	RU2125-06A	4.0 fl oz	1.0 a	7.5 f-i	7.5 b-h	0.0 a	0.0 a	80.0 z'c'	
14	RU2125-06B	4.0 fl oz	1.0 a	6.0 a-e	6.8 a-e	0.0 a	0.0 a	48.8 p-x	
15	RU2125-06C	2.0 oz	1.0 a	8.0 hi	6.0 ab	0.0 a	0.0 a	60.0 v-z'b'	
16	+ RU2125-06D	0.38 fl oz	1.0 a	7.0 d-i	8.3 e-h	0.0 a	0.0 a	61.3 v-z'c'	
17	RU2125-06E	2.0 fl oz	1.0 a	7.5 f-i	7.5 b-h	0.0 a	0.0 a	80.0 z'c'	
18	RU2125-06F	2.0 fl oz	1.0 a	6.8 c-h	8.0 d-h	10.0 d-g	13.8 g-l	36.3 k-s	
19	RU2125-06D	0.19 fl oz	1.0 a	6.3 a-f	7.3 a-g	21.8 j-l	26.3 no	27.5 f-n	
20	RU2125-06G	0.38 fl oz	1.0 a	7.0 d-i	5.8 a	1.3 ab	0.0 a	60.0 v-z'b'	
21	RU 2125-06H	1.0 fl oz	1.0 a	7.0 d-i	7.5 b-h	0.0 a	0.0 a	47.5 o-w	
22	RU 2125-06H	1.5 fl oz	1.0 a	6.8 c-h	7.8 c-h	0.0 a	0.0 a	68.8 y-z'c'	
23	RU 2125-06H	2.0 fl oz	1.0 a	6.8 c-h	7.5 b-h	0.0 a	0.0 a	77.5 z'a'-c'	
24	RU 2125-06H	2.5 fl oz	1.0 a	7.5 f-i	8.3 e-h	0.0 a	0.0 a	65.0 w-z'c'	

(Continued)

Table 1C (continued).

Treatment	Rate (per 1000 sq ft)	Spray Interval (days) ⁶	Phyto- toxicity ^{1,2} 9 June	Turf Quality ^{1,3}		Brown Patch ^{1,4}		Algae ^{1,5} 30 Aug.
				6 July	18 Aug.	30 June	30 Aug.	
25 Tartan 2.4SC	1.0 fl oz	21	1.0 a	7.5 f-i	7.5 b-h	0.0 a	0.5 a-c	56.3 t-z
26 Tartan 2.4SC	2.0 fl oz	21	1.0 a	8.0 hi	7.5 b-h	0.0 a	0.0 a	70.0 z-z'c'
27 Plant Food Program #1	— ⁹	14	1.0 a	8.0 hi	9.0 h	1.3 ab	22.5 l-n	6.3 a-e
28 Plant Food Program #2	— ¹⁰	14	1.0 a	6.8 c-h	8.3 e-h	20.0 jk	58.8 r	33.8 j-r
29 Chipco Aliette Signature 80WDG	4.0 oz	14	1.0 a	8.3 i	8.3 e-h	0.0 a	6.8 a-g	3.8 a-d
+ Daconil Ultrex 82.5WDG	3.2 oz							
30 Chipco Aliette Signature 80WDG	4.0 oz	14	2.0 c	7.3 e-i	8.3 e-h	0.0 a	10.3 c-j	20.0 a-m
+ Chipco 26GT 2SC	4.0 fl oz	14	1.0 a	7.8 g-i	7.3 a-g	0.0 a	8.8 a-i	5.8 a-d
31 Daconil Ultrex 82.5WDG	3.2 oz	14	1.3 b	6.3 a-f	7.5 b-h	0.0 a	1.3 a-d	8.8 a-f
32 Chipco 26GT 2SC	4.0 fl oz	21	1.0 a	5.0 a	7.5 b-h	27.5 l	33.8 op	22.5 c-m
33 RU192514A-06	0.0057 oz	21	1.3 b	5.3 ab	7.3 a-g	18.8 i-k	16.3 h-m	20.0 a-m
34 RU192514A-06	0.0115 oz	21	1.0 a	5.5 a-c	9.0 h	10.0 d-g	13.8 g-l	36.3 k-s
35 RU192514A-06	0.0172 oz	21	1.0 a	6.8 c-h	8.0 d-h	1.3 ab	6.3 a-g	26.3 e-n
36 RU192514B-06	1.8 oz	21	1.0 a	7.8 g-i	8.0 d-h	0.0 a	3.8 a-f	18.8 a-l
37 RU192514B-06	3.2 oz	21	1.0 a	6.8 c-h	8.3 e-h	0.0 a	2.5 a-e	21.3 b-m
38 RU192514C-06	0.5 fl oz	21	1.0 a	6.8 c-h	7.0 a-f	0.0 a	3.8 a-f	23.8 d-m
39 RU192514C-06	1.0 fl oz	21	1.0 a	6.3 a-f	8.0 d-h	2.3 a-c	13.8 g-l	6.3 a-e
40 RU192514A-06	0.0057 oz	21	1.0 a	6.0 a-e	8.5 f-h	5.0 a-e	21.3 k-n	15.0 a-j
+ RU192514B-06	1.8 oz							
41 RU192514A-06	0.0115 oz	21	1.0 a	6.5 b-g	8.5 f-h	1.8 ab	18.8 j-n	16.3 a-k
+ RU192514B-06	1.8 oz							
42 RU192514A-06	0.0172 oz	21	1.0 a	6.5 b-g	8.3 e-h	3.8 a-d	3.8 a-f	16.3 a-k
+ RU192514B-06	1.8 oz							
43 RU192514A-06	0.0057 oz	21	1.0 a	5.5 a-c	8.0 d-h	9.8 d-g	10.0 b-j	15.0 a-j
+ RU192514C-06	0.5 fl oz							
44 RU192514A-06	0.0115 oz	21	1.0 a	5.8 a-d	8.5 f-h	2.3 a-c	5.5 a-g	8.8 a-f
+ RU192514C-06	0.5 fl oz							
45 RU192514A-06	0.0172 oz	14	1.0 a	7.5 f-i	8.3 e-h	0.0 a	2.5 a-e	50.0 q-y
+ RU192514C-06	0.5 fl oz							
46 Heritage TL 0.8ME	1.0 fl oz							

(Continued)

Table 1C (continued).

Treatment	Rate (per 1000 sq ft)	Spray Interval (days) ⁶	Phyto- toxicity ^{1,2} 9 June	Turf Quality ^{1,3}		Brown Patch ^{1,4}		Algae ^{1,5} 30 Aug.
				6 July	18 Aug.	30 June	30 Aug.	
47	Daconil Weather Stik 6F 2.0 fl oz	14	1.0 a	7.5 f-i	8.3 e-h	0.0 a	10.5 d-j	6.3 a-e
48	Daconil Weather Stik 6F 3.6 fl oz	14	1.0 a	7.8 g-i	8.5 f-h	0.0 a	10.0 b-j	2.5 a-c
49	Heritage TL 0.8ME 1.0 fl oz	14	1.0 a	7.3 e-i	7.5 b-h	0.0 a	1.3 a-d	28.8 f-o
50	+ Daconil Weather Stik 6F 2.0 fl oz	14	1.0 a					
	Heritage TL 0.8ME 1.0 fl oz	14	1.0 a	7.8 g-i	8.0 d-h	0.0 a	0.5 a-c	2.5 a-c
	+ Daconil Weather Stik 6F 3.6 fl oz	14	1.0 a	7.8 g-i	8.5 f-h	0.0 a	1.0 a-d	16.3 a-k
51	EXC 990 SC 4.0 fl oz	14	1.0 a	7.5 f-i	8.0 d-h	0.0 a	0.0 a	15.0 a-j
52	EXC 991 SC 2.5 fl oz	14	1.0 a	6.5 b-g	6.5 a-d	0.0 a	2.3 a-e	8.8 a-f
53	Concert 4.3SE 3.0 fl oz	14	1.0 a	7.0 d-i	6.5 a-d	0.0 a	0.0 a	10.0 a-g
54	Concert 4.3SE 5.4 fl oz	14	1.0 a	6.5 b-g	7.8 c-h	3.8 a-d	8.5 a-i	15.0 a-j
55	A7402 EC 0.16 fl oz	21	1.0 a	6.3 a-f	8.8 gh	6.3 a-f	10.5 d-j	20.0 a-m
56	A7402 EC 0.31 fl oz	21	1.0 a	6.8 c-h	8.5 f-h	3.8 a-d	3.8 a-f	32.5 l-r
57	A7402 EC 0.63 fl oz	21	1.0 a	5.8 a-d	8.5 f-h	12.5 f-i	18.8 j-n	11.3 a-h
58	Banner MAXX 1.3 ME 0.25 fl oz	21	1.0 a	6.0 a-e	8.3 e-h	11.3 e-h	12.8 f-k	17.5 a-k
59	Banner MAXX 1.3 ME 0.5 fl oz	21	1.0 a	6.3 a-f	7.3 a-g	2.5 a-c	8.0 a-h	23.8 d-m
60	Banner MAXX 1.3 ME 1.0 fl oz	21	1.0 a	7.0 d-i	8.0 d-h	0.0 a	0.0 a	51.3 l-z
61	A7402 EC 0.16 fl oz	21	1.0 a	7.8 g-i	8.5 f-h	0.0 a	0.0 a	62.5 v-z'c'
62	+ Heritage TL 0.8ME 1.0 fl oz	21	1.0 a					
63	A7402 EC 0.63 fl oz	21	1.0 a	7.0 d-i	8.0 d-h	0.0 a	0.0 a	78.8 z'b'-c'
	+ Heritage TL 0.8ME 1.0 fl oz	21	1.0 a	7.0 d-i	7.8 c-h	0.0 a	1.0 a-d	55.0 s-z
64	Headway 1.39EC 0.75 fl oz	21	1.0 a	6.5 b-g	7.8 c-h	0.0 a	0.5 a-c	76.3 z'a'-c'
65	Headway 1.39EC 1.5 fl oz	21	1.0 a	6.8 c-h	8.0 d-h	0.0 a	3.3 a-f	26.3 e-n
66	RU42116-06A 0.75 fl oz	14	1.0 a	7.3 e-i	8.3 e-h	0.0 a	1.0 a-d	23.8 d-m
67	RU42116-06A 1.0 fl oz	14	1.0 a	7.3 e-i	8.3 e-h	0.0 a	1.3 a-d	30.0 g-p
68	RU42116-06A 1.25 fl oz	14	1.0 a	7.0 d-i	8.0 d-h	0.0 a	5.5 a-g	10.0 a-g
69	RU42116-06B 0.313 oz	14	1.0 a	7.3 e-i	8.5 f-h	0.0 a	1.8 a-e	8.8 a-f
70	RU42116-06C 0.313 oz	14	1.0 a	6.8 c-h	8.5 f-h	18.8 i-k	11.3 e-j	28.8 f-o
71	Emerald 70WG 0.184 oz	14	1.0 a					

(Continued)

Table 1C (continued).

Treatment	Rate (per 1000 sq ft)	Spray Interval (days) ⁶	Phyto- toxicity ^{1,2} 9 June	Turf Quality ^{1,3}			Brown Patch ^{1,4}		Algae ^{1,5} 30 Aug.
				6 July	18 Aug.	30 June	30 Aug.		
72 Disarm 480SC	0.36 fl oz	21	1.0 a	7.5 f-i	8.3 e-h	0.0 a	0.0 a	63.8 v-z'c'	
73 Disarm 480SC	0.18 fl oz								
+ Banner MAXX 1.3 ME	1.0 fl oz	21	1.0 a	6.8 c-h	6.3 a-c	0.0 a	0.0 a	78.8 z'b'-c'	
74 Disarm 480SC	0.18 fl oz								
+ Daconil Ultrex 82.5WDG	1.8 oz	21	1.0 a	7.8 g-i	8.8 gh	0.0 a	0.0 a	38.8 l-t	
75 Disarm 480SC	0.18 fl oz								
+ Banner MAXX 1.3 ME	1.0 fl oz								
+ TM-90109	4.0 fl oz	21	1.0 a	7.0 d-i	7.0 a-f	0.0 a	0.5 a-c	50.0 q-y	
76 Echo 720 F	3.6 fl oz	14	1.0 a	7.5 f-i	7.3 a-g	0.0 a	11.3 e-j	12.5 a-i	
77 Echo Ultimate 82.5WDG	3.25 oz	14	1.0 a	8.0 hi	7.8 c-h	0.0 a	2.5 a-e	2.5 a-c	
78 Propensity 1.3ME	2.0 fl oz	14	1.0 a	6.5 b-g	6.3 a-c	0.0 a	1.3 a-d	58.8 u-z'a'	
79 Disarm 480SC	0.18 fl oz	21	1.0 a	7.8 g-i	8.3 e-h	0.0 a	1.0 a-d	67.5 x-z'c'	
80 3336 Plus 19.4F	4.0 fl oz								
+ Spotrete 4F	7.0 fl oz	CUR-14 ¹¹	1.0 a	6.0 a-e	8.3 e-h	16.3 g-j	25.0 mn	53.8 s-z	
81 CL-EXP-10F	7.25 fl oz	14	1.0 a	8.0 hi	8.5 f-h	0.0 a	1.5 a-d	5.5 a-d	
82 Spectro 90WDG	4.0 oz	CUR-14 ¹¹	1.0 a	6.0 a-e	8.5 f-h	17.5 h-k	16.5 h-m	12.5 a-i	
83 Spectro 90WDG	4.0 oz	14	1.0 a	8.0 hi	7.8 c-h	0.0 a	1.0 a-d	2.5 a-c	
84 Spectator Ultra 1.3EC	1.0 fl oz	14	1.0 a	6.8 c-h	6.5 a-d	0.5 a	0.0 a	45.0 n-v	
85 Spectator Ultra 1.3EC	2.0 fl oz	21	1.0 a	6.5 b-g	6.8 a-e	1.3 ab	2.5 a-e	40.0 m-u	
86 Manicure Ultra 82.5WDG	1.8 oz	7	1.0 a	7.3 e-i	8.0 d-h	0.0 a	0.0 a	6.3 a-e	
87 Manicure Ultra 82.5WDG	3.25 oz	14	1.0 a	8.0 hi	8.3 e-h	0.0 a	2.5 a-e	3.8 a-d	
88 Manicure 6F	3.6 fl oz	14	1.0 a	7.8 g-i	7.5 b-h	0.0 a	7.5 a-h	6.3 a-e	
89 Spectator Ultra 1.3EC	2.0 fl oz	14	1.0 a	7.5 f-i	6.3 a-c	0.0 a	0.0 a	17.5 a-k	
+ Manicure Ultra 82.5WDG	3.25 oz								
90 Manicure Ultra 82.5WDG	1.8 oz								
+ Spectator Ultra 1.3EC	1.0 fl oz	7	1.0 a	6.5 b-g	6.0 ab	0.0 a	0.0 a	4.3 a-d	
91 Daconil Ultrex 82.5WDG	1.8 oz	14	1.0 a	7.3 e-i	7.8 c-h	0.0 a	6.8 a-g	3.8 a-d	
92 Daconil Ultrex 82.5WDG	1.8 oz	21	1.0 a	6.8 c-h	8.8 gh	1.3 ab	13.8 g-l	12.5 a-i	
93 Insignia 20WG	0.9 oz	14	1.0 a	8.0 hi	9.0 h	0.0 a	0.0 a	66.3 w-z'c'	
94 Curalan 50DF	1.0 oz	14	1.0 a	6.8 c-h	8.8 gh	1.3 ab	7.5 a-h	23.8 d-m	

(Continued)

Table 1C (continued).

Treatment	Rate (per 1000 sq ft)	Spray Interval (days) ⁶	Phyto- toxicity ^{1,2} 9 June	Turf Quality ^{1,3}			Brown Patch ^{1,4}		Algae ^{1,5} 30 Aug.
				6 July	18 Aug.	30 June	30 Aug.		
95 RU42116D	0.194 fl oz	14	1.0 a	6.8 c-h	8.3 e-h	0.5 a	3.8 a-f	26.3 e-n	
96 RU42116D	0.29 fl oz	14	1.0 a	6.8 c-h	7.8 c-h	0.5 a	0.0 a	33.8 j-r	
97 RU42116D	0.44 fl oz	14	1.0 a	7.3 e-i	8.0 d-h	0.0 a	0.0 a	36.3 k-s	
98 Disarm 480SC + Lynx 45WP	0.2 fl oz 0.28 oz	14	1.0 a	7.3 e-i	7.8 c-h	0.0 a	0.0 a	45.0 n-v	
99 Disarm 480SC /Lynx 45WP	0.28 oz 0.28 oz	Alt ¹²	1.0 a	7.5 f-i	8.8 gh	0.0 a	0.0 a	55.0 s-z	
100 PEX-60021 4.25F ¹³	4.0 fl oz	14	1.0 a	6.8 c-h	7.0 a-f	0.0 a	2.5 a-e	32.5 i-r	
101 PEX-60021 4.25F ¹³	8.0 fl oz	14	1.0 a	6.5 b-g	5.8 a	0.0 a	0.0 a	31.3 h-q	
102 PEX-6015 DF ¹³	4.0 oz	14	1.0 a	7.8 g-i	7.5 b-h	0.0 a	5.0 a-g	5.0 a-d	
103 PEX-6016 SC ¹³	4.0 fl oz	14	1.0 a	7.3 e-i	8.0 d-h	0.0 a	0.8 a-d	4.3 a-d	
104 Daconil Weather Stik 6F ¹³	4.0 fl oz	14	1.0 a	7.5 f-i	8.3 e-h	0.0 a	1.5 a-d	0.0 a	
105 Daconil Ultrex 82.5WDG ¹⁴	3.25 oz	14	1.0 a	8.0 hi	8.5 f-h	0.0 a	6.0 a-g	0.0 a	
106 Daconil Ultrex 82.5WDG ¹³	4.0 oz	14	1.0 a	8.0 hi	7.8 c-h	0.0 a	1.0 a-d	2.5 a-c	
107 Daconil Ultrex 82.5WDG	3.25 oz	14	1.0 a	7.5 f-i	7.8 c-h	0.0 a	3.0 a-e	1.3 ab	
108 Daconil Ultrex 82.5WDG	3.25 oz	14	1.0 a	7.5 f-i	8.5 f-h	0.0 a	2.5 a-e	6.3 a-e	
109 Untreated Check	—	—	1.0 a	5.3 ab	6.0 ab	8.0 b-f	56.3 r	28.8 f-o	

	INT ¹⁵	DAT ¹⁶	DAT	DAT	DAT	DAT	DAT
	7	3	1	10	3	22	22
	14	3	1	18	10	29	29
	21	17	1	24	17	36	36

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 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.

(Continued)

Table 1C (continued).

- ³ Turf quality on a scale of 1 to 9, where 9 = best turf quality and 6 = commercially acceptable.
- ⁴ Percent turf area infested with brown patch.
- ⁵ Percent turf area infested with algae.
- ⁶ Fungicides were applied on 23 May (all treatments, except treatments 51, 52, 80, 82, 98, and 99), 30 May (7-day treatment, treatments 98 and 99 started), 6 June (7- and 14-day treatments, treatments 51 and 52 initiated), 13 June (7- and 21-day treatments), 20 June (7- and 14-day treatments, treatments 80, 82, 100 to 104, and 106 initiated), 27 June (7-day treatment), 5 July (7-, 14-, and 21-day treatments), 11 July (7-day treatment), 18 July (7- and 14-day treatments), 25 July (7- and 21-day treatments), 1 August (7- and 14-day treatments), and 8 August (7-day treatment).
- ⁷ Alternation of fungicides on a 7-day schedule where treatments 5, 6, and 7 received EcoGuard L (20.0 fl oz) on 23 May, 6 June, 20 June, 5 July, 18 July and 1 August and either Seed Boost L (1.0 fl oz, treatment 5), Turf Vigor L 9-3-6 (15.0 fl oz) + KCS L 0-0-14 (3.0 fl oz, treatment 6), or Daconil Ultrex 82.5WDG (3.25 oz, treatment 7) on 30 May, 13 June, 27 June, 11 July, 25 July, and 8 August.
- ⁸ Alternation of fungicides on a 14-day schedule where treatment 9 received EcoGuard L (20.0 fl oz) on 23 May, 20 June, and 18 July and Daconil Ultrex 82.5WDG (3.25 oz) on 6 June, 5 July, and 1 August.
- ⁹ Treatment 27 (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) + Primo MAXX 1MC (0.125 fl oz).
- ¹⁰ Treatment 28 (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) + Primo MAXX 1MC (0.125 fl oz).
- ¹¹ Curative application schedule, where treatments 80 and 82 were applied after a dollar spot threshold of 10 lesion centers was exceeded on any of four replicate plots (i.e., 20 June) and then repeated on a 14-day application schedule.
- ¹² Alternation of fungicides on a 7-day schedule where treatment 99 received Disarm 480SC (0.2 fl oz) on 23 May, 6 June, 20 June, 5 July, 18 July, and 1 August and Lynx 45WP (0.28 oz) on 30 May, 13 June, 27 June, 11 July, 25 July, and 8 August.
- ¹³ Treatments 100 to 104 and 106 received Daconil Ultrex 82.5WDG at 3.25 oz/1000 sq. ft on 23 May and 6 June and then were treated with the products and rates indicated in this table from 20 June to 1 August.
- ¹⁴ Treatment 105 was applied when dew was present; all other treatments were applied to dry turf.
- ¹⁵ Spray intervals in days.
- ¹⁶ 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.