

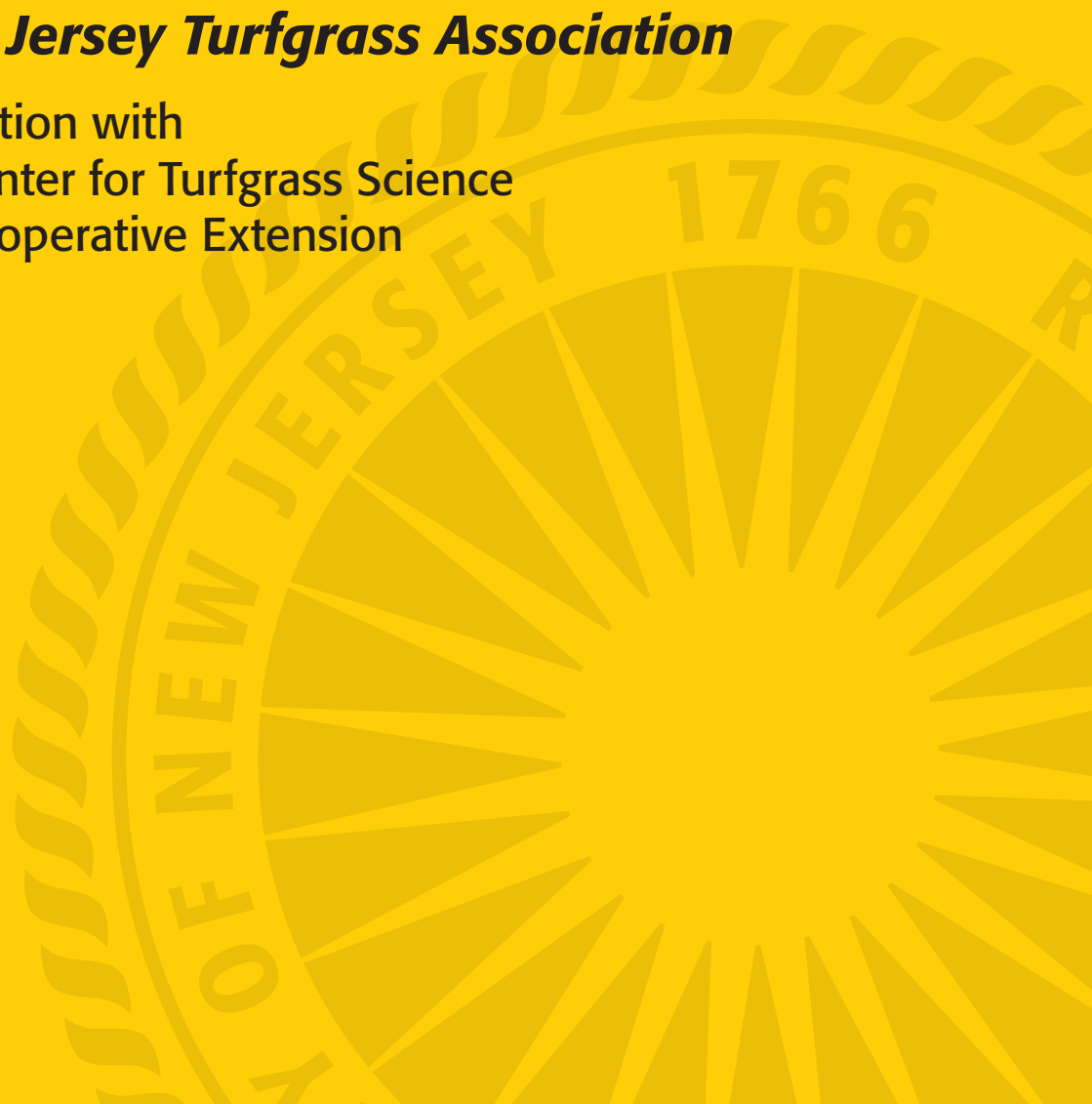
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The Rutgers Turfgrass Proceedings is published yearly by the Rutgers Center for Turfgrass Science, Rutgers Cooperative Extension, and the New Jersey Agricultural Experiment Station, School of Environmental and Biological Sciences, Rutgers, The State 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 2011 GREEN EXPO Turf and Landscape Conference. 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.

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

CONTROL OF ANTHRACNOSE WITH SELECTED FUNGICIDES AND BIORATIONAL PRODUCTS ON ANNUAL BLUEGRASS PUTTING GREEN TURF, 2011

Bruce B. Clarke, Pradip R. Majumdar, Andra Pitonak, Samantha Flatley, Stephanie Alea, Connor Estler, Mark Peacos, Tracy J. Lawson, Charles Schmid, James Hempfling, Katherine Clarke, Ruying Wang, William K. Dickson, and Joseph B. Clark¹

Fungicides were evaluated in 2011 for their ability to control anthracnose basal rot (caused by *Colletotrichum cereale*) on an annual bluegrass (*Poa annua*) putting green at the Rutgers Turf Research Farm in North Brunswick, NJ. The green was established October 2004 on a Nixon loam with a pH of 6.3 by killing the existing stand of creeping bentgrass (*Agrostis stolonifera*) and annual bluegrass with Roundup Pro 3LC (3 qt per A) and then core aerifying the site in two directions to bring dormant annual bluegrass seed to the soil surface. The site was inoculated with *C. cereale* isolate ValP-04 on 17 July 2005 using a 2 gal per 1,000 ft² spore suspension (4 x 10⁵ conidia per ml); the disease has developed naturally on the site each year thereafter. Plots were 3 x 5 ft and were arranged in a randomized complete block with four replications. Mowing was performed daily at a height of 0.110-inch with clippings collected. The site was irrigated as needed to prevent drought stress.

Fertilizer was applied as 34-0-0 (0.1 lb N per 1000 ft²) on 7 and 19 April, 46-0-0 (0.2 lb N per 1000 ft²) on 27 April and 5 and 25 May, 46-0-0 (0.1 lb N per 1000 ft²) on 12 May, 14 and 27 June, 15 and 24 July, and 13, 26, and 31 August, and 20-20-20 (0.2 lb N per 1000 ft²) on 31 August. The growth regulators Primo MAXX 1ME (0.125 fl oz per 1000 ft²) + Proxy 2SL (5.0 fl oz per 1000 ft²) were sprayed over the trial on 22 March and 6 and 25 April to suppress seedheads, and Primo MAXX 1ME (0.125 fl oz per 1000 ft²) was continued every 14 days from 1 May to 26 October.

Dollar spot (caused by *Sclerotinia homoeocarpa*) was suppressed with Emerald 70WG (0.18 oz per 1000 ft²) on 14 April, 15 May, 10 June, 10 July, and 6 August and Curalan 50EG (1.0 oz per 1000 ft²) on 1 and 28 May, 26 June, 22 July, and 20 August. Brown

patch (caused by *Rhizoctonia solani*) was prevented with ProStar 70W (3.0 oz per 1000 ft²) on 6 and 26 May, 10 and 24 June, 8 and 22 July, and 5 and 19 August. Previous research by the authors has shown that Curalan 50EG, ProStar 70W, and Emerald 70WG did not affect anthracnose development on the site at the rates used in this study. Insect pests were controlled with Acelypryn 1.67SC (0.275 fl oz per A) on 3 May and Telstar GC 0.67F (0.5 fl oz per 1000 ft²) on 22 June. Turf was topdressed with a sand (2 ft³ per 1,000 ft²) on 22 May, 4 June, 27 July, and 26 August.

Fungicides were applied in water equivalent to 1.9 gal per 1000 ft² with a CO₂ powered sprayer at 30 psi using Tee Jet 8003E nozzles. Treatments (trt) were initiated on 17 May, prior to the development of anthracnose. Fungicides were reapplied at the appropriate intervals until 23 August as indicated in Tables 1A to 1C. Turf was visually evaluated for percent turf area infested with anthracnose on 8, 20, and 29 July, 5, 16, and 26 August, and 2 September. Phytotoxicity was determined on 11 June and 8 July using a 1 to 5 scale, where 1 = no foliar discoloration, 2 = slight chlorosis or necrosis, 3 = moderate chlorosis or necrosis, 4 = severe chlorosis or necrosis, and 5 = all turf dead. Turf quality was evaluated on 13 June, 8 July, 5 August, and 2 September using a 1 to 9 scale, where 9 = best turf quality and 5 = acceptable quality. Color of foliage was visually estimated on 13 June, 8 July, 5 August, and 2 September using a 1 to 5 scale, where 1 = very chlorotic turf, 2 = slight reduction in green color, 3 = normal green color of healthy turf, 4 = slight dark green color, and 5 = very dark green color. Data were subjected to analysis of variance and means were separated by Waller-Duncan *k*-ratio *t*-test (*k* = 100).

¹Extension Specialist in Turfgrass Pathology, Senior Laboratory Technician, Research Assistant, Research Assistant, Research Assistant, Research Assistant, Senior Greenhouse and Field Technician, Research Farm Supervisor I, Graduate Assistant, Graduate Assistant, Research Assistant, Graduate Assistant, Turfgrass Research Farm Supervisor, 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.

Anthrachnose developed on 26 June as a natural infection and became uniformly distributed throughout the green by 6 July. Disease severity peaked on 26 August (90% turfgrass area infested on non-fungicide treated turf). Due to the extreme severity of this natural epidemic, only 8% of the treatments provided season-long control of anthracnose (i.e., less than 15% turf area infested from 17 May through 23 August; Tables 1A and 1B). These treatments included products containing mixtures of DMI and other fungicides [i.e., Petro-Canada 2011 Anth Program #14 (Tourney 50WDG + 651-0350 LC; trt 28), Petro-Canada 2011 Anth Program #18 (Torque 3.6SC + 651-0350 LC; trt 32), Reserve 4.8SC @ 3.2 (trt 69) and 6.4 fl oz (trt 70), Triton 1.67SC @ 0.817 fl oz + Compass 50WG @ 0.0328 oz (trt 72), and Triton 1.67SC @ 1.634 fl oz + Compass 50WG @ 0.0655 oz (trt 73)].

Several other products and product combinations adequately suppressed anthracnose throughout the treatment period (17 May to 23 August; see 26 August evaluation date, Table 1A), but had an unacceptable level of disease on the last evaluation date (2 September; Table 1B) [i.e., several nutritional programs containing phosphonates and chlorothalonil including Harrell's 2011 Anth Programs #8 to 10 (trts 20 to 22, respectively) and Plant Food 2011 Anth Programs #30 (trt 58) and #31 (trt 59); fungicide mixtures containing a phosphonate and chlorothalonil such as Chipco Signature 80WG + Daconil Ultrex 82.5WDG alone (trts 7, 23) and in combination with CoRoN 28-0-0 70%CRN LC (trt 8), and Rutgers 2011 Anth Program #28 (trt 42); combinations of a DMI and chlorothalonil including Daconil Ultrex 82.5WDG + Banner MAXX 1.3MC (trts 9, 66), Cleary 2011 Anth Program #29 (trt 43) and Reserve 4.8SC @ 2.5 fl oz (trt 68); and Petro-Canada 2011 Anth Programs #17 (Trinity 1.67SC + 651-0350 LC; trt 31), #19 (Endorse 2.5W + 651-0350 LC; trt 33) and #21 (Quali Pro Fosetyl AI 80WG + 651-0350 LC; trt 35)].

Fungicides in the QoI (e.g., trts 13 to 19, 30, 46 to 51, 74), dicarboximide (trt 34), and phenylpyrrole

(e.g., trt 27) groups, as well as fosetyl-AI (trt 24) and chlorothalonil (trt 75) alone, did not adequately control anthracnose during the severe epidemic in 2011 (Tables 1A and 1B). As in past anthracnose efficacy studies at Rutgers University, tank mixtures often controlled this disease better than the individual components [e.g., Chipco Signature 80WG + Daconil Ultrex 82.5WDG (trt 7) was more efficacious than Chipco Signature 80WG (trt 24) or Daconil Ultrex 82.5WDG (trt 75) when used alone at the same active ingredient rates].

Several treatments resulted in visually darker green foliage (greater or equal to a color rating of 4) on at least 50% of the evaluation dates [i.e., Chipco Signature 80WG + Daconil Ultrex 82.5WDG + CoRoN 28-0-0 70%CRN LC (trt 8), Daconil Ultrex 82.5WDG + Banner MAXX 1.3MC + CoRoN 28-0-0 70%CRN LC (trt 10), Harrell's 2011 Anth Programs #8 to 10 (trts 20 to 22, respectively), Petro-Canada 2011 Anth Programs #14 (trt 28), #17 to 21 (trts 31 to 35, respectively), and #26 (trt 40), Plant Food 2011 Anth Programs #30 to 32 (trts 58 to 60, respectively), Legacy G SC @ 1.57 and 2.04 fl oz (trts 64, 65), Reserve 4.8SC @ 3.2 (trt 69) and 6.4 fl oz (trt 70), and Triton 1.67SC + Compass 50WG (trts 71 to 73)], presumably because they contained either a pigment, a plant growth regulator, and/or a fertilizer (Tables 1B).

Slight foliar chlorosis was noted between 11 June and 8 July for turf treated with 12-2-12 LC + Heritage TL 0.8ME + Adjuvant #2 LC (trt 15), 12-2-12 LC + Heritage TL 0.8ME + Adjuvant #3 LC (trt 16), MBI-106020B SP + Honor 28WG (trt 51), Daconil Ultrex 82.5WDG @ 3.77 oz + Banner MAXX 1.3MC @ 0.942 fl oz (trt 66), and Triton 1.67SC + Compass 50WG (trts 72, 73), but the injury was temporary and did not persist after 8 July (Table 1B). Turf quality evaluated on 13 June, 8 July, 5 August, and 2 September was closely associated with the degree of anthracnose control; treatments affording good protection from this disease had good turf quality (Tables 1B and 1C).

Table 1A. Control of anthracnose with selected fungicides and biorational products on annual bluegrass putting green turf: Rutgers University, 2011.

Treatment	Rate per 1000 sq ft	Application Schedule (days) ²	Turf Area Infested (%) per Plot ¹					
			8 July	20 July	29 July	5 Aug.	16 Aug.	26 Aug.
1 RU071815-11D LC.....	3.0 fl oz	14	23.8 bc	33.5 b	55.3 c-e	52.8 c-e	78.5 b-e	83.8 a-e
2 RU071815-11D LC.....	6.0 fl oz	14	29.8 ab	32.0 b	52.5 d-f	72.5 ab	79.0 a-d	79.5 c-f
3 RU071815-11D LC.....	9.0 fl oz	14	23.8 bc	29.5 bc	58.5 b-d	79.5 a	89.8 a	87.3 a-d
4 RU071815-11E LC.....	3.0 fl oz	14	19.8 cd	18.8 d-i	25.3 l-n	38.3 g-k	50.8 i-k	64.3 h-k
5 RU071815-11E LC.....	6.0 fl oz	14	14.8 d-i	17.0 e-l	17.5 n-s	38.0 g-k	51.5 ij	57.0 k-m
6 RU071815-11E LC.....	9.0 fl oz	14	14.0 d-j	16.5 e-m	19.8 n-q	33.0 i-l	50.5 i-k	67.5 g-j
7 Chipco Signature 80WG	4.0 oz	–						
+ Daconil Ultrex 82.5WDG.....	3.2 oz	14	9.3 g-n	8.0 m-t	7.3 u-z'c'	14.5 o-w	14.3 w-z'c'	9.0 z'c'-h'
8 Chipco Signature 80WG	4.0 oz	–						
+ Daconil Ultrex 82.5WDG.....	3.2 oz	–						
+ CoRoN 28-0-0 70%CRN LC.....	4.4 fl oz	14	2.3 n-q	3.5 o-t	5.5 v-z'c'	10.0 r-z'a'	15.0 w-z'c'	14.0 z'a'-e'
9 Daconil Ultrex 82.5WDG.....	3.2 oz	–						
+ Banner MAXX 1.3MC	1.0 fl oz	14	2.8 n-q	5.8 n-t	8.0 t-z'c'	4.8 v-z'a'	7.0 z'a'-f'	14.3 z'a'-d'
10 Daconil Ultrex 82.5WDG.....	3.2 oz	–						
+ Banner MAXX 1.3ME.....	1.0 fl oz	–						
+ CoRoN 28-0-0 70%CRN LC.....	4.4 fl oz	14	3.3 m-q	3.0 p-t	6.0 u-z'c'	9.0 s-z'a'	11.3 z-z'f'	18.5 y-z'c'
11 HM0812 1.66SC	0.275 fl oz	14	8.8 h-o	17.3 e-k	32.5 j-l	50.5 d-f	80.5 a-c	83.8 a-e
12 HM0812 1.66SC	0.275 fl oz	–						
+ CoRoN 28-0-0 70%CRN LC.....	4.4 fl oz	14	5.5 k-q	8.0 m-t	29.5 k-m	40.8 f-j	68.0 e-g	78.0 d-f
13 12-2-12 LC.....	14.0 fl oz	–						
+ Heritage TL 0.8ME.....	1.0 fl oz	14	3.3 m-q	7.8 n-t	21.5 m-p	38.0 g-k	54.5 hi	70.0 fi
14 12-2-12 LC.....	14.0 fl oz	–						
+ Heritage TL 0.8ME.....	1.0 fl oz	–						
+ Adjuvant #1 LC	3.0 fl oz	14	5.0 k-q	11.5 h-p	22.8 m-o	44.8 d-h	52.0 ij	73.8 e-h
15 12-2-12 LC.....	14.0 fl oz	–						
+ Heritage TL 0.8ME.....	1.0 fl oz	–						
+ Adjuvant #2 LC	8.0 fl oz	14	3.0 n-q	5.5 n-t	9.0 r-z'c'	20.5 m-r	48.5 i-l	54.3 k-n
16 12-2-12 LC.....	14.0 fl oz	–						
+ Heritage TL 0.8ME.....	1.0 fl oz	–						
+ Adjuvant #3 LC	8.0 fl oz	14	10.3 f-m	7.8 n-t	22.5 m-o	29.8 k-m	45.8 i-m	62.3 i-l

(Continued)

Table 1A (continued).

Treatment	Rate per 1000 sq ft	Application Schedule (days) ²	Turf Area Infested (%) per Plot ¹					
			8 July	20 July	29 July	5 Aug.	16 Aug.	26 Aug.
17 12-2-12 LC	14.0 fl oz	—						
+ Heritage TL 0.8ME	1.0 fl oz	—						
+ Adjuvant #4 LC	3.0 fl oz	14	6.3 k-q	11.8 g-o	39.0 g-j	42.8 e-i	65.3 gh	77.8 d-g
18 12-2-12 LC	14.0 fl oz	—						
+ Heritage TL 0.8ME	1.0 fl oz	—						
+ Turf Lab Exp Adjuvant #1 LC	3.0 fl oz	14	7.5 j-p	8.5 l-t	13.8 o-v	19.3 m-s	22.3 s-y	34.0 q-v
19 12-2-12 LC	14.0 fl oz	—						
+ Heritage TL 0.8ME	1.0 fl oz	—						
+ Turf Lab Exp Adjuvant #1 LC	1.5 fl oz	14	5.3 k-q	10.3 i-q	12.5 p-w	20.5 m-r	43.0 j-n	47.8 m-p
20 2011 Anth Program #8	Harrell's	14-VAR ³	0.3 q	0.8 st	1.0 z'b'c'	2.5 x-z'a'	5.0 z'c'-f'	2.8 z'g'h'
21 2011 Anth Program #9	Harrell's	14-VAR ⁴	0.3 q	0.5 st	0.8 z'b'c'	1.5 y-z'a'	5.3 z'b'-f'	7.5 z'd'-h'
22 2011 Anth Program #10	Harrell's	14-VAR ⁵	0.8 pq	0.8 st	3.0 x-z'c'	3.3 x-z'a'	4.5 z'c'-f'	3.3 z'f'-h'
23 Chipco Signature 80WG	4.0 oz	—						
+ Daconil Ultrex 82.5 WDG	1.8 oz	14	4.3 l-q	5.0 o-t	8.5 s-z'c'	9.8 r-z'a'	8.5 z'a'-f'	8.0 z'd'-h'
24 Chipco Signature 80WG	4.0 oz	14	16.3 d-g	20.5 d-f	34.5 h-l	30.0 j-m	32.0 o-s	42.0 o-r
25 2011 Anth Program #11	Petro-Canada-1	14-VAR ⁶	1.0 pq	0.8 st	2.5 z-z'c'	1.8 y-z'a'	12.5 x-z'd'	29.0 t-x
26 2011 Anth Program #12	Petro-Canada-2	—						
Daconil Ultrex 82.5 WDG	1.5 oz	—						
+ 651-0350 LC	8.5 fl oz	14-VAR ⁷	1.8 o-q	3.5 o-t	0.3 z'c'	3.3 x-z'a'	13.3 x-z'c'	20.5 w-z'b'
27 2011 Anth Program #13	Petro-Canada-3	—						
Medallion 50WP	0.25 oz	—						
+ 651-0350 LC	8.5 fl oz	14-VAR ⁸	0.0 q	0.0 t	3.5 w-z'c'	9.0 s-z'a'	40.3 k-p	41.8 p-r
28 2011 Anth Program #14	Petro-Canada-4	—						
Tourney 50WDG	0.2 oz	—						
+ 651-0350 LC	8.5 fl oz	14-VAR ⁹	0.3 q	0.0 t	0.0 z'c'	0.8 z'a'	1.0 z'f'	3.0 z'f'-h'
29 2011 Anth Program #15	Petro-Canada-5	—						
Alude 46L	5.0 fl oz	—						
+ 651-0350 LC	8.5 fl oz	14-VAR ¹⁰	3.8 l-q	0.3 st	0.8 z'b'c'	5.8 v-z'a'	24.8 r-w	22.5 w-z'a'
30 2011 Anth Program # 16	Petro-Canada-6	—						
Insignia 20WG	0.5 oz	—						
+ 651-0350 LC	8.5 fl oz	14-VAR ¹¹	0.3 q	0.8 st	8.0 t-z'c'	25.3 l-o	47.8 i-m	52.3 l-o

(Continued)

Table 1A (continued).

Treatment	Rate per 1000 sq ft	Application Schedule (days) ²	Turf Area Infested (%) per Plot ¹					
			8 July	20 July	29 July	5 Aug.	16 Aug.	26 Aug.
31 2011 Anth Program #17Petro-Canada-7 Trinity 1.67SC0.5 fl oz		—						
+ 651-0350 LC8.5 fl oz		14-VAR ¹²	0.0 q	0.8 st	2.0 z'b'c'	3.8 w-z'a'	10.3 z-z'f'	13.0 z'a'-g'
32 2011 Anth Program #18Petro-Canada-8 Torque 3.6SC0.4 fl oz		—						
+ 651-0350 LC8.5 fl oz		14-VAR ¹³	1.8 o-q	1.5 r-t	2.5 z-z'c'	2.3 x-z'a'	4.8 z'c'-f'	9.5 z'c'-h'
33 2011 Anth Program #19Petro-Canada-9 Endorse 2.5W4.0 oz		—						
+ 651-0350 LC8.5 fl oz		14-VAR ¹⁴	2.0 o-q	0.5 st	1.8 z'b'c'	1.0 z-z'a'	8.0 z'a'-f'	9.0 z'c'-h'
34 2011 Anth Program #20Petro-Canada-10 Chipco 26GT 2SC3.0 fl oz		—						
+ 651-0350 LC8.5 fl oz		14-VAR ¹⁵	1.5 pq	0.8 st	1.5 z'b'c'	5.8 v-z'a'	21.0 t-z	30.5 s-w
35 2011 Anth Program # 21Petro-Canada-11 Quali Pro Fosetyl AI 80WG4.0 oz		—						
+ 651-0350 LC8.5 fl oz		14-VAR ¹⁶	2.5 n-q	4.0 o-t	2.0 z'b'c'	6.0 v-z'a'	5.8 z'b'-f'	10.3 z'b'-h'
36 2011 Anth Program #22Petro-Canada-12		14-VAR ¹⁷	4.5 l-q	1.5 r-t	6.3 u-z'c'	7.8 t-z'a'	28.0 q-u	38.0 p-t
37 2011 Anth Program #23Petro-Canada-13		14-VAR ¹⁸	3.8 l-q	9.5 j-r	17.0 n-t	18.5 n-t	24.3 r-w	39.5 p-s
38 2011 Anth Program #24Petro-Canada-14		14-VAR ¹⁹	5.3 k-q	0.8 st	2.5 z-z'c'	12.0 r-y	42.0 j-o	52.3 l-o
39 2011 Anth Program #25Petro-Canada-15 651-0350 LC8.5 fl oz		— 14 ²⁰	4.0 l-q	9.5 j-r	8.0 t-z'c'	25.3 l-o	37.0 m-q	52.3 l-o
40 2011 Anth Program #26Petro-Canada-16 651-0350 LC8.5 fl oz		— 14 ²¹	0.3 q	2.3 q-t	7.8 t-z'c'	15.3 o-v	30.5 p-t	34.3 q-v
41 2011 Anth Program #27Petro-Canada-17		14-VAR ²²	2.3 n-q	0.8 st	4.8 v-z'c'	2.3 x-z'a'	12.0 y-z'e'	20.0 x-z'b'
42 2011 Anth Program #28Rutgers		14-VAR ²³	6.0 k-q	3.3 o-t	6.3 u-z'c'	5.5 v-z'a'	6.0 z'b'-f'	8.5 z'c'-h'
43 2011 Anth Program #29Cleary		14-ALT ²⁴	2.3 n-q	3.5 o-t	1.5 z'b'c'	4.3 w-z'a'	7.5 z'a'-f'	7.8 z'd'-h'
44 MBI-106020 SC0.47 fl oz		14	18.5 c-e	31.8 b	53.5 de	73.0 ab	84.5 ab	86.8 a-d
45 MBI-106020B SP0.56 oz		14	28.3 ab	34.5 b	64.0 a-c	72.8 ab	77.0 b-f	86.5 a-d
46 MBI-106020 SC0.47 fl oz		—						
+ Heritage 50WG0.2 oz		14	16.3 d-g	27.0 b-d	58.8 b-d	72.3 ab	83.0 ab	85.3 a-d
47 MBI-106020B SP0.56 oz		—						
+ Heritage 50WG0.2 oz		14	18.3 c-e	22.8 c-e	65.5 ab	72.5 ab	84.5 ab	91.3 a

(Continued)

Table 1A (continued).

Treatment	Rate per 1000 sq ft	Application Schedule (days) ²	Turf Area Infested (%) per Plot ¹						
			8 July	20 July	29 July	5 Aug.	16 Aug.	26 Aug.	
48 MBI-106020 SC0.47 fl oz		—							
+ Insignia 20WG0.5 oz		14	15.3 d-h	22.5 c-e	48.0 e-g	63.3 bc	84.0 ab	90.0 ab	
49 MBI-106020B SP0.56 oz		—							
+ Insignia 20WG0.5 oz		14	20.3 cd	27.3 b-d	67.0 ab	62.3 bc	75.3 b-g	85.8 a-d	
50 MBI-106020 SC0.47 fl oz		—							
+ Honor 28WG0.55 oz		14	7.0 j-q	18.0 e-j	37.0 h-k	42.5 e-i	66.5 fg	85.3 a-d	
51 MBI-106020B SP0.56 oz		—							
+ Honor 28WG0.55 oz		14	11.8 e-k	20.3 d-g	42.0 g-i	63.5 bc	75.3 b-g	89.0 a-c	
52 MBI-106020 SC0.47 fl oz		—							
+ Eagle 20EW1.2 fl oz		14	18.0 c-e	18.3 e-i	61.5 b-d	75.5 a	80.3 a-c	90.8 a	
53 MBI-106020B SP0.56 oz		—							
+ Eagle 20EW1.2 fl oz		14	4.8 k-q	11.0 h-p	33.8 i-l	54.5 cd	72.0 c-g	83.0 a-e	
54 MBI-106020 SC0.47 fl oz		—							
+ Banner MAXX 1.3ME1.0 fl oz		14	10.5 f-l	13.8 f-n	25.3 l-n	25.3 l-o	43.0 j-n	55.5 k-m	
55 MBI-106020B SP0.56 oz		—							
+ Banner MAXX 1.3ME1.0 fl oz		14	5.0 k-q	8.8 k-s	15.3 o-u	24.0 l-p	39.5 l-p	58.0 j-m	
56 MBI-106020 SC0.47 fl oz		—							
+ Daconil Weather Stik 6F2.7 fl oz		14	17.3 c-f	8.8 k-s	11.8 q-z	14.3 p-w	26.0 r-v	33.3 r-v	
57 MBI-106020B SP0.56 oz		—							
+ Daconil Weather Stik 6F2.7 fl oz		14	3.0 n-q	1.8 q-t	4.0 w-z'c'	9.0 s-z'a'	17.3 u-z'a'	27.5 u-y	
58 2011 Anth Program #30 Plant Food		7-VAR ²⁵	1.3 pq	0.3 st	3.3 w-z'c'	7.3 u-z'a'	11.3 z-z'f	8.3 z'c'-h'	
59 2011 Anth Program #31 Plant Food		7-VAR ²⁶	3.3 m-q	3.0 p-t	3.0 x-z'c'	7.8 t-z'a'	11.8 y-z'f	13.3 z'a'-f'	
60 2011 Anth Program #32 Plant Food		7-VAR ²⁷	7.8 i-p	4.8 o-t	9.8 r-z'b'	11.3 r-z'a'	16.0 v-z'b'	16.3 z-z'd'	
61 2011 Anth Program #33 Plant Food		7-VAR ²⁸	4.0 l-q	7.5 n-t	12.0 q-y	18.0 n-u	34.8 n-r	39.8 p-s	
62 Legacy G SC0.628 fl oz		14	2.0 o-q	2.3 q-t	18.0 n-r	48.8 d-g	68.3 d-g	77.5 d-g	
63 Legacy G SC1.1 fl oz		14	2.3 n-q	4.5 o-t	12.3 p-x	34.0 h-l	48.5 i-l	61.8 i-l	
64 Legacy G SC1.57 fl oz		14	2.5 n-q	4.3 o-t	11.5 q-z'a'	28.0 k-n	37.8 l-q	44.3 n-q	
65 Legacy G SC2.04 fl oz		14	1.5 pq	0.3 st	4.5 v-z'c'	12.3 r-y	20.0 t-z	30.5 s-w	
66 Daconil Ultrex 82.5WDG3.77 oz		—							
+ Banner MAXX 1.3ME0.942 fl oz		14	2.8 n-q	1.0 r-t	2.0 z'b'c'	9.0 s-z'a'	4.3 z'c'-f'	9.5 z'c'-h'	

(Continued)

Table 1A (continued).

Treatment	Rate per 1000 sq ft	Application Schedule (days) ²	Turf Area Infested (%) per Plot ¹					
			8 July	20 July	29 July	5 Aug.	16 Aug.	26 Aug.
67 Reserve 4.8SC.....	1.25 fl oz	14	3.8 l-q	3.5 o-t	6.8 u-z'c'	12.8 q-x	23.3 s-x	29.0 t-x
68 Reserve 4.8SC.....	2.5 fl oz	14	2.0 o-q	0.8 st	2.3 z'a'-c'	2.8 x-z'a'	4.3 z'c'-f'	8.5 z'c'-h'
69 Reserve 4.8SC.....	3.2 fl oz	14	1.3 pq	1.0 r-t	2.0 z'b'c'	3.3 x-z'a'	1.8 z'd'-f'	3.8 z'e'-h'
70 Reserve 4.8SC.....	6.4 fl oz	14	0.0 q	1.0 r-t	1.8 z'b'c'	2.5 x-z'a'	2.0 z'd'-f'	2.5 z'h'
71 Triton 1.67SC.....	0.408 fl oz	–						
+ Compass 50WG.....	0.0164 oz	14	3.8 l-q	3.0 p-t	8.0 t-z'c'	23.5 l-q	27.5 q-u	37.8 p-u
72 Triton 1.67SC.....	0.817 fl oz	–						
+ Compass 50WG.....	0.0328 oz	14	0.0 q	0.0 t	1.5 z'b'c'	6.8 v-z'a'	6.8 z'a'-f'	9.3 z'c'-h'
73 Triton 1.67SC.....	1.634 fl oz	–						
+ Compass 50WG.....	0.0655 oz	14	0.8 pq	1.3 r-t	2.8 y-z'c'	2.3 x-z'a'	1.3 z'e'f'	1.3 z'h'
74 Heritage TL 0.8ME.....	1.0 fl oz	14	18.5 c-e	19.0 d-h	43.8 f-h	54.0 cd	71.3 c-g	79.8 b-f
75 Daconil Ultrex 82.5WDG.....	3.2 oz	14	3.5 l-q	5.8 n-t	3.8 w-z'c'	11.8 r-z	14.0 w-z'c'	25.5 v-z
76 Untreated check.....	–	–	32.0 a	61.3 a	71.8 a	81.8 a	86.0 ab	89.8 a-c
			INT ²⁹	DAT ³⁰	DAT	DAT	DAT	DAT
			7	3	1	2	3	7
			14	10	8	2	9	7

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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 17 May (all treatments, except treatments 44 to 57 and 60), 24 May (7-day treatment, except treatment 60; initiated treatments 44 to 57), 31 May (7- and 14-day treatments; initiated treatment 60), 7 June (7-day treatment), 14 June (7- and 14-day treatments), 21 June (7-day treatment), 28 June (7- and 14-day treatments), 5 July (7-day treatment), 12 July (7- and 14-day treatments), 19 July (7-day treatment), 27 July (7- and 14-day treatments), 2 August (7-day treatment), 9 August (7- and 14-day treatments), 16 August (7-day treatment), and 23 August (7- and 14-day treatments).

³ VAR = Variable spray schedule, where treatment 20 (Harrell's Anth Program #8) consisted of BioMax 4-0-0 LC (6.0 fl oz) + 12-0-0 LC (5.0 fl oz) + 12-2-12 LC (14.0 fl oz) + Primo MAXX 1ME (0.125 fl oz) + Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5 WDG (1.8 oz) applied every 14 days from 17 May to 9 August.

(Continued)

Table 1A (continued).

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- ⁴ VAR = Variable spray schedule, where treatment 21 (Harrell's Anth Program #9) consisted of BioMax 4-0-0 LC (6.0 fl oz) + 12-0-0 LC (5.0 fl oz) + 12-2-12 LC (14.0 fl oz) + Primo MAXX 1ME (0.125 fl oz) + Title Phyte LC (3.67 fl oz) + Daconil Ultrex 82.5 WDG (1.8 oz) + PAR Spi LC (0.37 fl oz) applied every 14 days from 17 May to 9 August.
 - ⁵ VAR = Variable spray schedule, where treatment 22 (Harrell's Anth Program #10) consisted of BioMax 4-0-0 LC (6.0 fl oz) + 12-0-0 LC (5.0 fl oz) + 12-2-12 LC (14.0 fl oz) + Primo MAXX 1ME (0.125 fl oz) + Title Phyte LC (2.0 fl oz) + Chipco Signature 80WG (2.0 oz) + Daconil Ultrex 82.5 WDG (1.8 oz) + PAR Spi LC (0.185 fl oz) applied every 14 days for 17 May to 9 August.
 - ⁶ VAR = Variable spray schedule for treatment 25 (Petro-Canada Anth "Heat/Injury Threshold" Program #11 where protocol reverts to Rutgers Anth Program treatment 42 if maximum temperature exceeds 90°F for three or more consecutive days or if more than 10% foliar injury is observed) consisted of (a) Banner MAXX 1.3ME (0.5 fl oz) + Daconil Ultrex 82.5WDG (1.5 oz) + 651-0350 LC (8.5 fl oz) applied on 17 May, (b) Daconil Ultrex 82.5WDG (3.2 oz) on 31 May (Rutgers Anth Program #28, due to excessive heat), (c) Banner MAXX 1.3ME (0.5 fl oz) + Daconil Ultrex 82.5WDG (1.5 oz) + 651-0350 LC (8.5 fl oz) on 14 and 28 June and 12 July (switched back to Petro-Canada Anth Program # 11), and finally switched back to (d) Rutgers Anth Program #28 consisting of 3336 Plus 19.4F (3.0 fl oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 27 July, Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August, and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August.
 - ⁷ VAR = Variable spray schedule for treatment 26 (Petro-Canada Anth "Injury Threshold" Program #12 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of (a) Daconil Ultrex 82.5WDG (1.5 oz) + 651-0350 LC (8.5 fl oz) applied on 17 May and every 14 days through 12 July, (b) 3336 Plus 19.4F (3.0 fl oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 27 July, Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August, and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August (switched to Rutgers Anth Program #28, due to more than 10% foliar injury on any replicate plot).
 - ⁸ VAR = Variable spray schedule for treatment 27 (Petro-Canada Anth "Injury Threshold" Program #13 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of (a) Medallion 50WP (0.25 oz) + 651-0350 LC (8.5 fl oz) applied every 14 days from 17 May through 27 July, (b) Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August (switched to Rutgers Anth Program #28, due to more than 10% foliar injury on any replicate plot).
 - ⁹ VAR = Variable spray schedule for treatment 28 (Petro-Canada Anth "Injury Threshold" Program #14 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of Tourney 50WDG (0.2 oz) + 651-0350 LC (8.5 fl oz) applied every 14 days from 17 May through 23 August unless injury threshold is reached, at which point the protocol switches to Rutgers Anth Program #28.
 - ¹⁰ VAR = Variable spray schedule for treatment 29 (Petro-Canada Anth "Injury Threshold" Program #15 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of (a) Alude 46L (5.0 fl oz) + 651-0350 LC (8.5 fl oz) applied every 14 days from 17 May through 27 July, (b) Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August (switched to Rutgers Anth Program #28, due to more than 10% foliar injury on any replicate plot).
 - ¹¹ VAR = Variable spray schedule for treatment 30 (Petro-Canada Anth "Injury Threshold" Program #16 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of (a) Insignia 20WG (0.5 oz) + 651-0350 LC (8.5 fl oz) applied every 14 days from 17 May through 27 July, (b) Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August (switched to Rutgers Anth Program #28, due to more than 10% foliar injury on any replicate plot).

(Continued)

Table 1A (continued).

- ¹² VAR = Variable spray schedule for treatment 31 (Petro-Canada Anth “Injury Threshold” Program #17 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of (a) Trinity 1.67SC (0.5 fl oz) + 651-0350 LC (8.5 fl oz) applied every 14 days from 17 May through 27 July, (b) Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August (switched to Rutgers Anth Program #28, due to more than 10% foliar injury on any replicate plot).
- ¹³ VAR = Variable spray schedule for treatment 32 (Petro-Canada Anth “Injury Threshold” Program #18 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of Torque 3.6SC (0.4 fl oz) + 651-0350 LC (8.5 fl oz) applied every 14 days from 17 May through 23 August unless injury threshold is reached, at which point the protocol switches to Rutgers Anth Program #28.
- ¹⁴ VAR = Variable spray schedule for treatment 33 (Petro-Canada Anth “Injury Threshold” Program #19 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of Endorse 2.5W (4.0 oz) + 651-0350 LC (8.5 fl oz) applied every 14 days from 17 May through 23 August unless injury threshold is reached, at which point the protocol switches to Rutgers Anth Program #28.
- ¹⁵ VAR = Variable spray schedule for treatment 34 (Petro-Canada Anth “Injury Threshold” Program #20 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of Chipco 26GT 2SC (3.0 fl oz) + 651-0350 LC (8.5 fl oz) applied every 14 days from 17 May through 23 August unless injury threshold is reached, at which point the protocol switches to Rutgers Anth Program #28.
- ¹⁶ VAR = Variable spray schedule for treatment 35 (Petro-Canada Anth “Injury Threshold” Program #21 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of Quali Pro Fosetyl A1 80WG (4.0 oz) + 651-0350 LC (8.5 fl oz) applied every 14 days from 17 May through 23 August unless injury threshold is reached, at which point the protocol switches to Rutgers Anth Program #28.
- ¹⁷ VAR = Variable spray schedule for treatment 36 (Petro-Canada Anth “Injury Threshold” Program #22 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of (a) 651-0350 LC (8.5 fl oz) applied on 17 May, Daconil Ultrex 82.5WDG (3.2 oz) on 31 May, 651-0350 LC (8.5 fl oz) on 14 June, Endorse 2.5W (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 28 June, 651-0350 LC (8.5 fl oz) on 12 July, 3336 Plus 19.4F (3.0 fl oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 27 July, (b) Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August (switched to Rutgers Anth Program #28, due to more than 10% foliar injury on any replicate plot).
- ¹⁸ VAR = Variable spray schedule for treatment 37 (Petro-Canada Anth “Heat/Injury Threshold” Program #23 where protocol reverts to Rutgers Anth Program treatment 42 if maximum temperature exceeds 90°F for three or more consecutive days or if more than 10% foliar injury is observed) consisted of (a) 651-0350 LC (8.5 fl oz) applied on 17 May, (b) Daconil Ultrex 82.5WDG (3.2 oz) on 31 May (Rutgers Anth Program #28, due to excessive heat), (c) 651-0350 LC (8.5 fl oz) on 14 and 28 June and 12 July (switched back to Petro-Canada Anth Program #23), and finally switched back to (d) Rutgers Anth Program #28 consisting of 3336 Plus 19.4F (3.0 fl oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 27 July, Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August, and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August.
- ¹⁹ VAR = Variable spray schedule, where treatment 38 (Petro-Canada Anth “Injury Threshold” Program #24 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of (a) 651-0350 LC (8.5 fl oz) applied on 17 May, Daconil Ultrex 82.5WDG (1.6 oz) on 31 May, 651-0350 LC (8.5 fl oz) on 14 June, Endorse 2.5W (2.0 oz) + Daconil Ultrex 82.5WDG (1.6 oz) on 28 June, 651-0350 LC (8.5 fl oz) on 12 July, 3336 Plus 19.4F (1.5 fl oz) + Daconil Ultrex 82.5WDG (1.6 oz) on 27 July, (b) Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August, and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August (switched to Rutgers Anth Program #28, due to more than 10% foliar injury on any replicate plot).

Table 1A (continued).

- ²⁰ VAR = Variable spray schedule for treatment 39 (Petro-Canada Anth “Injury Threshold” Program #25 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of (a) 651-0350 LC (8.5 fl oz) applied on 17 May and every 14 days through 12 July, (b) 3336 Plus 19.4F (3.0 fl oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 27 July, Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August, and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August (switched to Rutgers Anth Program #28, due to more than 10% foliar injury on any replicate plot).
- ²¹ VAR = Variable spray schedule for treatment 40 (Petro-Canada Anth “Injury Threshold” Program #26 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of (a) 651-0350 LC (8.5 fl oz) applied on 17 May and every 7 days through 27 July, (b) Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August, Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 16 August, and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August (switched to Rutgers Anth Program #28, due to more than 10% foliar injury on any replicate plot).
- ²² VAR = Variable spray schedule for treatment 41 (Petro-Canada Anth “Heat/Injury Threshold” Program #27 where protocol reverts to Rutgers Anth Program treatment 42 if maximum temperature exceeds 90°F for three or more consecutive days or if more than 10% foliar injury is observed) consisted of (a) 651-0351 LC (8.5 fl oz) + Daconil Ultrex 82.5WDG (1.5 oz) applied on 17 May, (b) Daconil Ultrex 82.5WDG (3.2 oz) on 31 May (Rutgers Anth Program #28, due to excessive heat), (c) 651-0351 LC (8.5 fl oz) + Daconil Ultrex 82.5WDG (1.5 oz) on 14 and 28 June and 12 July (switched back to Petro-Canada Anth Program # 27), and finally switched back to (d) Rutgers Anth Program #28 consisting of 3336 Plus 19.4F (3.0 fl oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 27 July, Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August, and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August.
- ²³ VAR = Variable spray schedule, where treatment 42 (Rutgers Anth Program #28) consisted of Banner MAXX 1.3ME (1.0 fl oz) applied on 17 May, Daconil Ultrex 82.5WDG (3.2 oz) on 31 May, Chipco Signature 80WG (4.0 oz) + Insignia 20WG (0.9 oz) on 14 June, Endorse 2.5W (4.0 oz) + Daconil Ultrex (3.2 oz) on 28 June, Chipco Signature 80WG (4.0 oz) + Chipco 26GT 2SC (4.0 fl oz) on 12 July, 3336 Plus 19.4F (3.0 fl oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 27 July, Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August, and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August.
- ²⁴ ALT = Alternation treatment, where treatment 43 (Cleary Anth Program #29) consisted of Torque 3.6SC (0.6 fl oz) + Legend 6F (3.0 fl oz) applied on 7 May, 14 June, 12 July, and 9 August, and Affirm 11.3WDG (0.9 oz) + Spectro 90WG (3.6 oz) on 31 May, 28 June, 27 July, and 23 August.
- ²⁵ VAR = Variable spray schedule, where treatment 58 (Plant Food Anth Program #30) consisted of 16-2-7 25% SRN LC (6.0 fl oz) + 10-34-0 LC (3.0 fl oz) + Flo Thru 2403 LC (2.0 fl oz) + Phosphite 30 0-0-27 LC (2.0 fl oz) + Adams Earth LC (2.0 fl oz) + Manganese 5% LC (3.0 fl oz) + pHusion Organic acid LC (3.0 fl oz) + Daconil Ultrex 82.5WDG (0.9 oz) applied every 7 days from 17 May to 23 August.
- ²⁶ VAR = Variable spray schedule, where treatment 59 (Plant Food Anth Program #31) consisted of 16-2-7 25% SRN LC (6.0 fl oz) + 10-34-0 LC (3.0 fl oz) + Regulate LC (1.5 fl oz) + Phosphite 30 0-0-27 LC (2.0 fl oz) + Adams Earth LC (2.0 fl oz) + Manganese 5% LC (3.0 fl oz) + pHusion Organic acid LC (3.0 fl oz) + Daconil Ultrex 82.5WDG (0.9 oz) applied every 7 days from 17 May to 23 August.
- ²⁷ VAR = Variable spray schedule, where treatment 60 (Plant Food Anth Program #32) consisted of 16-2-7 25% SRN LC (6.0 fl oz) + Lysine 10-0-0 LC (6.0 fl oz) + Flo Thru 2403 LC (3.0 fl oz) + Phosphite 30 0-0-27 LC (3.0 fl oz) + Adams Earth LC (3.0 fl oz) + Manganese 5% LC (3.0 fl oz) + pHusion Organic acid LC (6.0 fl oz) applied every 7 days from 17 May to 23 August.
- ²⁸ VAR = Variable spray schedule, where treatment 61 (Plant Food Anth Program #33) consisted of 16-2-7 25% SRN LC (6.0 fl oz) + 10-34-0 LC (3.0 fl oz) + Flo Thru 2403 LC (2.0 fl oz) + Phosphite 30 0-0-27 LC (2.0 fl oz) + Adams Earth LC (2.0 fl oz) + Manganese 5% LC (3.0 fl oz) + pHusion Organic acid LC (3.0 fl oz) applied every 7 days from 17 May to 23 August.

(Continued)

Table 1A (continued).

²⁹ Spray interval in days.

³⁰ Days after the last treatment.

Table 1B. Control of anthracnose with selected fungicides and biorational products on annual bluegrass putting green turf: Rutgers University, 2011.

Treatment	Rate per 1000 sq ft	Application Schedule (days) ³	Anthracnose ¹		Color ²		
			(%)				
			2 Sept.	13 June	8 July	5 Aug.	2 Sept.
1 RU071815-11D LC.....	3.0 fl oz	14	84.3 a-h	3.0 ef	2.5 ij	2.8 o-r	1.8 r-t
2 RU071815-11D LC.....	6.0 fl oz	14	82.5 b-i	3.0 ef	2.3 j	2.6 p-r	2.0 p-s
3 RU071815-11D LC.....	9.0 fl oz	14	85.3 a-g	2.8 f	2.5 ij	2.5 qr	1.4 t
4 RU071815-11E LC.....	3.0 fl oz	14	75.3 g-k	3.0 ef	2.8 h-j	2.9 n-r	2.1 o-s
5 RU071815-11E LC.....	6.0 fl oz	14	72.8 i-l	3.0 ef	2.8 h-j	3.0 m-q	2.5 l-p
6 RU071815-11E LC.....	9.0 fl oz	14	73.3 h-l	3.0 ef	2.5 ij	3.0 m-q	2.1 o-s
7 Chipco Signature 80WG	4.0 oz	-					
+ Daconil Ultrex 82.5WDG.....	3.2 oz	14	33.3 y-z'd'	3.0 ef	2.8 h-j	3.5 i-m	2.4 m-q
8 Chipco Signature 80WG	4.0 oz	-					
+ Daconil Ultrex 82.5WDG.....	3.2 oz	-					
+ CoRoN 28-0-0 70%CRN LC	4.4 fl oz	14	32.0 z-z'd'	3.5 cd	4.0 c-e	4.1 d-h	2.8 j-n
9 Daconil Ultrex 82.5WDG.....	3.2 oz	-					
+ Banner MAXX 1.3MC	1.0 fl oz	14	24.5 z'd'-h'	3.0 ef	3.8 d-f	3.8 g-k	3.4 f-i
10 Daconil Ultrex 82.5WDG.....	3.2 oz	-					
+ Banner MAXX 1.3ME.....	1.0 fl oz	-					
+ CoRoN 28-0-0 70%CRN LC	4.4 fl oz	14	31.0 z'b'-e'	3.5 cd	4.0 c-e	4.6 a-d	3.5 f-h
11 HM0812 1.66SC	0.275 fl oz	14	88.5 a-e	2.8 f	2.8 h-j	2.8 o-r	1.9 q-t
12 HM0812 1.66SC	0.275 fl oz	-					
+ CoRoN 28-0-0 70%CRN LC	4.4 fl oz	14	76.8 f-j	3.3 de	3.8 d-f	3.1 l-p	1.9 q-t
13 12-2-12 LC	14.0 fl oz	-					
+ Heritage TL 0.8ME	1.0 fl oz	14	72.5 i-l	3.3 de	3.5 e-g	3.0 m-q	2.6 k-o
14 12-2-12 LC	14.0 fl oz	-					
+ Heritage TL 0.8ME	1.0 fl oz	-					
+ Adjuvant #1 LC	3.0 fl oz	14	69.5 j-m	3.3 de	4.0 c-e	3.5 i-m	2.4 m-q
15 12-2-12 LC	14.0 fl oz	-					
+ Heritage TL 0.8ME	1.0 fl oz	-					
+ Adjuvant #2 LC	8.0 fl oz	14	54.5 n-r	3.5 cd	3.5 e-g	3.1 l-p	3.0 h-l

(Continued)

Table 1B (continued).

Treatment	Rate per 1000 sq ft	Application Schedule (days) ³	Anthracnose ¹		Color ²			
			(%)		2 Sept.	13 June	8 July	5 Aug.
16 12-2-12 LC	14.0 fl oz	—						
+ Heritage TL 0.8ME	1.0 fl oz	—						
+ Adjuvant #3 LC	8.0 fl oz	14	59.8 m-o	3.3 de	3.5 e-g	3.3 k-o	2.6 k-o	
17 12-2-12 LC	14.0 fl oz	—						
+ Heritage TL 0.8ME	1.0 fl oz	—						
+ Adjuvant #4 LC	3.0 fl oz	14	73.0 i-l	3.5 cd	3.8 d-f	3.0 m-q	2.0 p-s	
18 12-2-12 LC	14.0 fl oz	—						
+ Heritage TL 0.8ME	1.0 fl oz	—						
+ Turf Lab Exp Adjuvant #1 LC	3.0 fl oz	14	40.3 t-z'b'	3.3 de	3.5 e-g	3.1 l-p	2.5 l-p	
19 12-2-12 LC	14.0 fl oz	—						
+ Heritage TL 0.8ME	1.0 fl oz	—						
+ Turf Lab Exp Adjuvant #1 LC	1.5 fl oz	14	54.0 n-s	3.0 ef	3.8 d-f	3.6 h-l	2.9 i-m	
20 2011 Anth Program #8	Harrell's	14-VAR ⁴	17.3 z'f'-i'	4.8 a	5.0 a	5.0 a	4.3 cd	
21 2011 Anth Program #9	Harrell's	14-VAR ⁵	17.8 z'f'-i'	4.8 a	5.0 a	5.0 a	4.3 cd	
22 2011 Anth Program #10	Harrell's	14-VAR ⁶	16.5 z'g'-j'	5.0 a	5.0 a	5.0 a	4.4 b-d	
23 Chipco Signature 80WG	4.0 oz	—						
+ Daconil Ultrex 82.5 WDG	1.8 oz	14	40.8 t-z'b'	3.0 ef	3.0 g-i	3.3 k-o	2.9 i-m	
24 Chipco Signature 80WG	4.0 oz	14	55.8 n-q	3.0 ef	2.5 ij	2.4 r	2.3 n-r	
25 2011 Anth Program #11	Petro-Canada-1	14-VAR ⁷	31.8 z'a'-d'	3.0 ef	4.3 b-d	3.6 h-l	2.9 i-m	
26 2011 Anth Program #12	Petro-Canada-2	—						
Daconil Ultrex 82.5 WDG	1.5 oz	—						
+ 651-0350 LC	8.5 fl oz	14-VAR ⁸	41.8 t-z'b'	3.8 bc	4.3 b-d	3.5 i-m	3.4 f-i	
27 2011 Anth Program #13	Petro-Canada-3	—						
Medallion 50WP	0.25 oz	—						
+ 651-0350 LC	8.5 fl oz	14-VAR ⁹	48.8 o-v	3.3 de	3.3 f-h	4.4 b-f	3.0 h-l	
28 2011 Anth Program #14	Petro-Canada-4	—						
Tourney 50WDG	0.2 oz	—						
+ 651-0350 LC	8.5 fl oz	14-VAR ¹⁰	6.0 z'j'k'	3.5 cd	4.5 a-c	4.8 a-c	5.0 a	

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(Continued)

Table 1B (continued).

Treatment	Rate per 1000 sq ft	Application Schedule (days) ³	Anthracnose ¹		Color ²				
			(%)		2 Sept.	13 June	8 July	5 Aug.	2 Sept.
29	2011 Anth Program #15 Petro-Canada-5 Alude 46L..... 5.0 fl oz	—							
	+ 651-0350 LC 8.5 fl oz	14-VAR ¹¹	36.5 x-z'c'	3.0 ef	3.8 d-f	3.9 f-j	3.1 g-k		
30	2011 Anth Program # 16 Petro-Canada-6 Insignia 20WG 0.5 oz	—							
	+ 651-0350 LC 8.5 fl oz	14-VAR ¹²	50.3 o-u	3.3 de	3.5 e-g	3.8 g-k	3.1 g-k		
31	2011 Anth Program #17 Petro-Canada-7 Trinity 1.67SC 0.5 fl oz	—							
	+ 651-0350 LC 8.5 fl oz	14-VAR ¹³	17.5 z'f'-i'	4.0 b	4.3 b-d	4.5 a-e	4.1 c-e		
32	2011 Anth Program #18 Petro-Canada-8 Torque 3.6SC 0.4 fl oz	—							
	+ 651-0350 LC 8.5 fl oz	14-VAR ¹⁴	14.5 z'h'-k'	3.8 bc	3.8 d-f	4.5 a-e	4.9 ab		
33	2011 Anth Program #19 Petro-Canada-9 Endorse 2.5W 4.0 oz	—							
	+ 651-0350 LC 8.5 fl oz	14-VAR ¹⁵	24.0 z'd'-h'	3.8 bc	4.0 c-e	4.4 b-f	4.3 cd		
34	2011 Anth Program #20 Petro-Canada-10 Chipco 26GT 2SC..... 3.0 fl oz	—							
	+ 651-0350 LC 8.5 fl oz	14-VAR ¹⁶	38.0 v-z'b'	3.0 ef	3.5 e-g	4.3 c-g	4.1 c-e		
35	2011 Anth Program # 21Petro-Canada-11 Quali Pro Fosetyl AI 80WG 4.0 oz	—							
	+ 651-0350 LC 8.5 fl oz	14-VAR ¹⁷	33.3 y-z'd'	3.0 ef	4.0 c-e	4.3 c-g	4.3 cd		
36	2011 Anth Program #22 Petro-Canada-12	14-VAR ¹⁸	39.3 u-z'b'	3.0 ef	3.0 g-i	3.4 j-n	3.0 h-l		
37	2011 Anth Program #23 Petro-Canada-13	14-VAR ¹⁹	58.8 m-p	3.0 ef	3.3 f-h	3.1 l-p	2.6 k-o		
38	2011 Anth Program #24 Petro-Canada-14	14-VAR ²⁰	62.5 l-n	3.3 de	3.8 d-f	3.1 l-p	2.8 j-n		
39	2011 Anth Program #25 Petro-Canada-15 651-0350 LC 8.5 fl oz	—							
		14 ²¹	50.8 o-t	3.5 cd	3.5 e-g	3.1 l-p	2.5 l-p		
40	2011 Anth Program #26 Petro-Canada-16 651-0350 LC 8.5 fl oz	—							
		14 ²²	23.5 z'd'-h'	4.0 b	5.0 a	4.9 ab	4.3 cd		
41	2011 Anth Program #27 Petro-Canada-17	14-VAR ²³	33.3 y-z'd'	3.0 ef	4.0 c-e	3.3 k-o	3.0 h-l		

(Continued)

Table 1B (continued).

Treatment	Rate per 1000 sq ft	Application Schedule (days) ³	Anthracnose ¹		Color ²							
			(%)		2 Sept.	13 June	8 July	5 Aug.	2 Sept.			
42 2011 Anth Program #28	Rutgers	14-VAR ²⁴	25.0	z'd'-h'	3.0	ef	3.3	f-h	3.4	j-n	3.3	g-j
43 2011Anth Program #29	Cleary	14-ALT ²⁵	17.8	z'f'-i'	3.0	ef	3.5	e-g	4.1	d-h	3.9	d-f
44 MBI-106020 SC	0.47 fl oz	14	93.0	ab	3.0	ef	2.8	h-j	2.5	qr	1.4	t
45 MBI-106020B SP	0.56 oz	14	90.5	a-e	3.0	ef	2.5	ij	2.4	r	1.8	r-t
46 MBI-106020 SC	0.47 fl oz	—										
+ Heritage 50WG	0.2 oz	14	92.0	a-c	3.0	ef	3.0	g-i	2.5	qr	1.8	r-t
47 MBI-106020B SP	0.56 oz	—										
+ Heritage 50WG	0.2 oz	14	93.8	a	3.0	ef	2.5	ij	2.8	o-r	1.4	t
48 MBI-106020 SC	0.47 fl oz	—										
+ Insignia 20WG	0.5 oz	14	91.5	a-d	3.0	ef	2.3	j	2.8	o-r	1.6	st
49 MBI-106020B SP	0.56 oz	—										
+ Insignia 20WG	0.5 oz	14	82.5	b-i	2.8	f	2.5	ij	2.6	p-r	1.6	st
50 MBI-106020 SC	0.47 fl oz	—										
+ Honor 28WG	0.55 oz	14	86.8	a-f	3.0	ef	3.3	f-h	3.0	m-q	1.9	q-t
51 MBI-106020B SP	0.56 oz	—										
+ Honor 28WG	0.55 oz	14	81.5	c-i	3.0	ef	3.0	g-i	2.9	n-r	1.8	r-t
52 MBI-106020 SC	0.47 fl oz	—										
+ Eagle 20EW	1.2 fl oz	14	92.3	a-c	3.0	ef	2.8	h-j	2.8	o-r	1.8	r-t
53 MBI-106020B SP	0.56 oz	—										
+ Eagle 20EW	1.2 fl oz	14	80.8	d-i	3.0	ef	3.3	f-h	3.0	m-q	2.1	o-s
54 MBI-106020 SC	0.47 fl oz	—										
+ Banner MAXX 1.3ME	1.0 fl oz	14	71.5	i-l	3.0	ef	3.5	e-g	3.5	i-m	2.6	k-o
55 MBI-106020B SP	0.56 oz	—										
+ Banner MAXX 1.3ME	1.0 fl oz	14	47.8	p-w	3.0	ef	3.5	e-g	3.9	f-j	2.9	i-m
56 MBI-106020 SC	0.47 fl oz	—										
+ Daconil Weather Stik 6F	2.7 fl oz	14	42.5	t-z'a'	3.0	ef	2.8	h-j	2.9	n-r	2.9	i-m
57 MBI-106020B SP	0.56 oz	—										
+ Daconil Weather Stik 6F	2.7 fl oz	14	36.8	w-z'c'	3.0	ef	3.0	g-i	3.3	k-o	2.6	k-o

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(Continued)

Table 1B (continued).

Treatment	Rate per 1000 sq ft	Application Schedule (days) ³	Anthracnose ¹ (%)		Color ²		
			2 Sept.	13 June	8 July	5 Aug.	2 Sept.
58 2011 Anth Program #30	Plant Food	7-VAR ²⁶	22.8 z'd'-i'	3.8 bc	4.8 ab	4.0 e-i	3.5 f-h
59 2011 Anth Program #31	Plant Food	7-VAR ²⁷	25.8 z'c'-g'	3.3 de	4.3 b-d	4.1 d-h	3.5 f-h
60 2011 Anth Program #32	Plant Food	7-VAR ²⁸	26.3 z'c'-f'	3.8 bc	5.0 a	4.3 c-g	3.3 g-j
61 2011 Anth Program #33	Plant Food	7-VAR ²⁹	39.5 u-z'b'	3.5 cd	4.8 ab	3.9 f-j	2.6 k-o
62 Legacy G SC.....	0.628 fl oz	14	77.3 f-j	3.0 ef	3.3 f-h	3.1 l-p	2.0 p-s
63 Legacy G SC.....	1.1 fl oz	14	65.0 k-n	3.0 ef	3.8 d-f	3.3 k-o	2.5 l-p
64 Legacy G SC.....	1.57 fl oz	14	43.5 r-y	3.8 bc	4.3 b-d	4.1 d-h	2.9 i-m
65 Legacy G SC.....	2.04 fl oz	14	42.5 t-z'a'	3.5 cd	4.3 b-d	4.4 b-f	3.4 f-i
66 Daconil Ultrex 82.5WDG.....	3.77 oz	-					
+ Banner MAXX 1.3ME.....	0.942 fl oz	14	16.5 z'g'-j'	3.0 ef	3.5 e-g	4.0 e-i	2.8 j-n
67 Reserve 4.8SC.....	1.25 fl oz	14	43.0 s-z	3.0 ef	3.5 e-g	3.8 g-k	3.3 g-j
68 Reserve 4.8SC.....	2.5 fl oz	14	20.3 z'e'-i'	3.0 ef	3.8 d-f	4.0 e-i	3.6 e-g
69 Reserve 4.8SC.....	3.2 fl oz	14	14.8 z'g'-k'	3.3 de	4.3 b-d	4.6 a-d	4.1 c-e
70 Reserve 4.8SC.....	6.4 fl oz	14	5.8 z'j'k'	3.8 bc	4.8 ab	5.0 a	4.5 a-c
71 Triton 1.67SC.....	0.408 fl oz	-					
+ Compass 50WG.....	0.0164 oz	14	47.3 q-x	3.0 ef	4.0 c-e	4.0 e-i	3.3 g-j
72 Triton 1.67SC.....	0.817 fl oz	-					
+ Compass 50WG.....	0.0328 oz	14	12.0 z'i'-k'	3.5 cd	4.3 b-d	4.6 a-d	4.1 c-e
73 Triton 1.67SC.....	1.634 fl oz	-					
+ Compass 50WG.....	0.0655 oz	14	3.8 z'k'	4.0 b	4.8 ab	4.9 ab	4.9 ab
74 Heritage TL 0.8ME.....	1.0 fl oz	14	80.3 e-j	3.0 ef	2.8 h-j	2.6 p-r	2.0 p-s
75 Daconil Ultrex 82.5WDG.....	3.2 oz	14	40.0 t-z'b'	3.0 ef	3.0 g-i	3.3 k-o	2.5 l-p
76 Untreated check.....	-	-	89.0 a-e	3.0 ef	2.5 ij	2.6 p-r	1.9 q-t
		INT ³⁰	DAT ³¹	DAT	DAT	DAT	DAT
		7	10	6	3	3	10
		14	10	13	10	9	10

(Continued)

Table 1B (continued).

- 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 Color of foliage, where 1 = very chlorotic, 2 = slightly chlorotic, 3 = normal green color, 4 = slight dark green color, and 5 = very dark green color.
- ³ Fungicides were applied on 17 May (all treatments, except treatments 44 to 57 and 60), 24 May (7-day treatment, except treatment 60; initiated treatments 44 to 57), 31 May (7- and 14-day treatments; initiated treatment 60), 7 June (7-day treatment), 14 June (7- and 14-day treatments), 21 June (7-day treatment), 28 June (7- and 14-day treatments), 5 July (7-day treatment), 12 July (7- and 14-day treatments), 19 July (7-day treatment), 27 July (7- and 14-day treatments), 2 August (7-day treatment), 9 August (7- and 14-day treatments), 16 August (7-day treatment), and 23 August (7- and 14-day treatments).
- ⁴ VAR = Variable spray schedule, where treatment 20 (Harrell's Anth Program #8) consisted of BioMax 4-0-0 LC (6.0 fl oz) + 12-0-0 LC (5.0 fl oz) + 12-2-12 LC (14.0 fl oz) + Primo MAXX 1ME (0.125 fl oz) + Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5 WDG (1.8 oz) applied every 14 days from 17 May to 9 August.
- ⁵ VAR = Variable spray schedule, where treatment 21 (Harrell's Anth Program #9) consisted of BioMax 4-0-0 LC (6.0 fl oz) + 12-0-0 LC (5.0 fl oz) + 12-2-12 LC (14.0 fl oz) + Primo MAXX 1ME (0.125 fl oz) + Title Phyte LC (3.67 fl oz) + Daconil Ultrex 82.5 WDG (1.8 oz) + PAR Spi LC (0.37 fl oz) applied every 14 days from 17 May to 9 August.
- ⁶ VAR = Variable spray schedule, where treatment 22 (Harrell's Anth Program #10) consisted of BioMax 4-0-0 LC (6.0 fl oz) + 12-0-0 LC (5.0 fl oz) + 12-2-12 LC (14.0 fl oz) + Primo MAXX 1ME (0.125 fl oz) + Title Phyte LC (2.0 fl oz) + Chipco Signature 80WG (2.0 oz) + Daconil Ultrex 82.5 WDG (1.8 oz) + PAR Spi LC (0.185 fl oz) applied every 14 days for 17 May to 9 August.
- ⁷ VAR = Variable spray schedule for treatment 25 (Petro-Canada Anth "Heat/Injury Threshold" Program #11 where protocol reverts to Rutgers Anth Program treatment 42 if maximum temperature exceeds 90°F for three or more consecutive days or if more than 10% foliar injury is observed) consisted of (a) Banner MAXX 1.3ME (0.5 fl oz) + Daconil Ultrex 82.5WDG (1.5 oz) + 651-0350 LC (8.5 fl oz) applied on 17 May, (b) Daconil Ultrex 82.5WDG (3.2 oz) on 31 May (Rutgers Anth Program #28, due to excessive heat), (c) Banner MAXX 1.3ME (0.5 fl oz) + Daconil Ultrex 82.5WDG (1.5 oz) + 651-0350 LC (8.5 fl oz) on 14 and 28 June and 12 July (switched back to Petro-Canada Anth Program # 11), and finally switched back to (d) Rutgers Anth Program #28 consisting of 3336 Plus 19.4F (3.0 fl oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 27 July, Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August, and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August.
- ⁸ VAR = Variable spray schedule for treatment 26 (Petro-Canada Anth "Injury Threshold" Program #12 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of (a) Daconil Ultrex 82.5WDG (1.5 oz) + 651-0350 LC (8.5 fl oz) applied on 17 May and every 14 days through 12 July, (b) 3336 Plus 19.4F (3.0 fl oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 27 July, Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August, and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August (switched to Rutgers Anth Program #28, due to more than 10% foliar injury on any replicate plot).
- ⁹ VAR = Variable spray schedule for treatment 27 (Petro-Canada Anth "Injury Threshold" Program #13 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of (a) Medallion 50WP (0.25 oz) + 651-0350 LC (8.5 fl oz) applied every 14 days from 17 May through 27 July, (b) Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August (switched to Rutgers Anth Program #28, due to more than 10% foliar injury on any replicate plot).

Table 1B (continued).

- ¹⁰ VAR = Variable spray schedule for treatment 28 (Petro-Canada Anth "Injury Threshold" Program #14 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of Tourney 50WDG (0.2 oz) + 651-0350 LC (8.5 fl oz) applied every 14 days from 17 May through 23 August unless injury threshold is reached, at which point the protocol switches to Rutgers Anth Program #28.
- ¹¹ VAR = Variable spray schedule for treatment 29 (Petro-Canada Anth "Injury Threshold" Program #15 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of (a) Alude 46L (5.0 fl oz) + 651-0350 LC (8.5 fl oz) applied every 14 days from 17 May through 27 July, (b) Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August (switched to Rutgers Anth Program #28, due to more than 10% foliar injury on any replicate plot).
- ¹² VAR = Variable spray schedule for treatment 30 (Petro-Canada Anth "Injury Threshold" Program #16 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of (a) Insignia 20WG (0.5 oz) + 651-0350 LC (8.5 fl oz) applied every 14 days from 17 May through 27 July, (b) Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August (switched to Rutgers Anth Program #28, due to more than 10% foliar injury on any replicate plot).
- ¹³ VAR = Variable spray schedule for treatment 31 (Petro-Canada Anth "Injury Threshold" Program #17 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of (a) Trinity 1.67SC (0.5 fl oz) + 651-0350 LC (8.5 fl oz) applied every 14 days from 17 May through 27 July, (b) Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August (switched to Rutgers Anth Program #28, due to more than 10% foliar injury on any replicate plot).
- ¹⁴ VAR = Variable spray schedule for treatment 32 (Petro-Canada Anth "Injury Threshold" Program #18 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of Torque 3.6SC (0.4 fl oz) + 651-0350 LC (8.5 fl oz) applied every 14 days from 17 May through 23 August unless injury threshold is reached, at which point the protocol switches to Rutgers Anth Program #28.
- ¹⁵ VAR = Variable spray schedule for treatment 33 (Petro-Canada Anth "Injury Threshold" Program #19 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of Endorse 2.5W (4.0 oz) + 651-0350 LC (8.5 fl oz) applied every 14 days from 17 May through 23 August unless injury threshold is reached, at which point the protocol switches to Rutgers Anth Program #28.
- ¹⁶ VAR = Variable spray schedule for treatment 34 (Petro-Canada Anth "Injury Threshold" Program #20 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of Chipco 26GT 2SC (3.0 fl oz) + 651-0350 LC (8.5 fl oz) applied every 14 days from 17 May through 23 August unless injury threshold is reached, at which point the protocol switches to Rutgers Anth Program #28.
- ¹⁷ VAR = Variable spray schedule for treatment 35 (Petro-Canada Anth "Injury Threshold" Program #21 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of Quali Pro Fosetyl A1 80WG (4.0 oz) + 651-0350 LC (8.5 fl oz) applied every 14 days from 17 May through 23 August unless injury threshold is reached, at which point the protocol switches to Rutgers Anth Program #28.
- ¹⁸ VAR = Variable spray schedule for treatment 36 (Petro-Canada Anth "Injury Threshold" Program #22 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of (a) 651-0350 LC (8.5 fl oz) applied on 17 May, Daconil Ultrex 82.5WDG (3.2 oz) on 31 May, 651-0350 LC (8.5 fl oz) on 14 June, Endorse 2.5W (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 28 June, 651-0350 LC (8.5 fl oz) on 12 July, 3336 Plus 19.4F (3.0 fl oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 27 July, (b) Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August, and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August (switched to Rutgers Anth Program #28, due to more than 10% foliar injury on any replicate plot).

Table 1B (continued).

- ¹⁹ VAR = Variable spray schedule for treatment 37 (Petro-Canada Anth “Heat/Injury Threshold” Program #23 where protocol reverts to Rutgers Anth Program treatment 42 if maximum temperature exceeds 90°F for three or more consecutive days or if more than 10% foliar injury is observed) consisted of (a) 651-0350 LC (8.5 fl oz) applied on 17 May, (b) Daconil Ultrex 82.5WDG (3.2 oz) on 31 May (Rutgers Anth Program #28, due to excessive heat), (c) 651-0350 LC (8.5 fl oz) on 14 and 28 June and 12 July (switched back to Petro-Canada Anth Program #23), and finally switched back to (d) Rutgers Anth Program #28 consisting of 3336 Plus 19.4F (3.0 fl oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 27 July, Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August, and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August.
- ²⁰ VAR = Variable spray schedule, where treatment 38 (Petro-Canada Anth “Injury Threshold” Program #24 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of (a) 651-0350 LC (8.5 fl oz) applied on 17 May, Daconil Ultrex 82.5WDG (1.6 oz) on 31 May, 651-0350 LC (8.5 fl oz) on 14 June, Endorse 2.5W (2.0 oz) + Daconil Ultrex 82.5WDG (1.6 oz) on 28 June, 651-0350 LC (8.5 fl oz) on 12 July, 3336 Plus 19.4F (1.5 fl oz) + Daconil Ultrex 82.5WDG (1.6 oz) on 27 July, (b) Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August, and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August (switched to Rutgers Anth Program #28, due to more than 10% foliar injury on any replicate plot).
- ²¹ VAR = Variable spray schedule for treatment 39 (Petro-Canada Anth “Injury Threshold” Program #25 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of (a) 651-0350 LC (8.5 fl oz) applied on 17 May and every 14 days through 12 July, (b) 3336 Plus 19.4F (3.0 fl oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 27 July, Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August, and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August (switched to Rutgers Anth Program #28, due to more than 10% foliar injury on any replicate plot).
- ²² VAR = Variable spray schedule for treatment 40 (Petro-Canada Anth “Injury Threshold” Program #26 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of (a) 651-0350 LC (8.5 fl oz) applied on 17 May and every 7 days through 27 July, (b) Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August, Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 16 August, and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August (switched to Rutgers Anth Program #28, due to more than 10% foliar injury on any replicate plot).
- ²³ VAR = Variable spray schedule for treatment 41 (Petro-Canada Anth “Heat/Injury Threshold” Program #27 where protocol reverts to Rutgers Anth Program treatment 42 if maximum temperature exceeds 90°F for three or more consecutive days or if more than 10% foliar injury is observed) consisted of (a) 651-0351 LC (8.5 fl oz) + Daconil Ultrex 82.5WDG (1.5 oz) applied on 17 May, (b) Daconil Ultrex 82.5WDG (3.2 oz) on 31 May (Rutgers Anth Program #28, due to excessive heat), (c) 651-0351 LC (8.5 fl oz) + Daconil Ultrex 82.5WDG (1.5 oz) on 14 and 28 June and 12 July (switched back to Petro-Canada Anth Program # 27), and finally switched back to (d) Rutgers Anth Program #28 consisting of 3336 Plus 19.4F (3.0 fl oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 27 July, Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August, and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August.
- ²⁴ VAR = Variable spray schedule, where treatment 42 (Rutgers Anth Program #28) consisted of Banner MAXX 1.3ME (1.0 fl oz) applied on 17 May, Daconil Ultrex 82.5WDG (3.2 oz) on 31 May, Chipco Signature 80WG (4.0 oz) + Insignia 20WG (0.9 oz) on 14 June, Endorse 2.5W (4.0 oz) + Daconil Ultrex (3.2 oz) on 28 June, Chipco Signature 80WG (4.0 oz) + Chipco 26GT 2SC (4.0 fl oz) on 12 July, 3336 Plus 19.4F (3.0 fl oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 27 July, Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August, and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August.

Table 1B (continued).

- ²⁵ ALT = Alternation treatment, where treatment 43 (Cleary Anth Program #29) consisted of Torque 3.6SC (0.6 fl oz) + Legend 6F (3.0 fl oz) applied on 7 May, 14 June, 12 July, and 9 August, and Affirm 11.3WDG (0.9 oz) + Spectro 90WG (3.6 oz) on 31 May, 28 June, 27 July, and 23 August.
- ²⁶ VAR = Variable spray schedule, where treatment 58 (Plant Food Anth Program #30) consisted of 16-2-7 25% SRN LC (6.0 fl oz) + 10-34-0 LC (3.0 fl oz) + Flo Thru 2403 LC (2.0 fl oz) + Phosphite 30 0-0-27 LC (2.0 fl oz) + Adams Earth LC (2.0 fl oz) + Manganese 5% LC (3.0 fl oz) + pHusion Organic acid LC (3.0 fl oz) + Daconil Ultrex 82.5WDG (0.9 oz) applied every 7 days from 17 May to 23 August.
- ²⁷ VAR = Variable spray schedule, where treatment 59 (Plant Food Anth Program #31) consisted of 16-2-7 25% SRN LC (6.0 fl oz) + 10-34-0 LC (3.0 fl oz) + Regulate LC (1.5 fl oz) + Phosphite 30 0-0-27 LC (2.0 fl oz) + Adams Earth LC (2.0 fl oz) + Manganese 5% LC (3.0 fl oz) + pHusion Organic acid LC (3.0 fl oz) + Daconil Ultrex 82.5WDG (0.9 oz) applied every 7 days from 17 May to 23 August.
- ²⁸ VAR = Variable spray schedule, where treatment 60 (Plant Food Anth Program #32) consisted of 16-2-7 25% SRN LC (6.0 fl oz) + Lysine 10-0-0 LC (6.0 fl oz) + Flo Thru 2403 LC (3.0 fl oz) + Phosphite 30 0-0-27 LC (3.0 fl oz) + Adams Earth LC (3.0 fl oz) + Manganese 5% LC (3.0 fl oz) + pHusion Organic acid LC (6.0 fl oz) applied every 7 days from 17 May to 23 August.
- ²⁹ VAR = Variable spray schedule, where treatment 61 (Plant Food Anth Program #33) consisted of 16-2-7 25% SRN LC (6.0 fl oz) + 10-34-0 LC (3.0 fl oz) + Flo Thru 2403 LC (2.0 fl oz) + Phosphite 30 0-0-27 LC (2.0 fl oz) + Adams Earth LC (2.0 fl oz) + Manganese 5% LC (3.0 fl oz) + pHusion Organic acid LC (3.0 fl oz) applied every 7 days from 17 May to 23 August
- ³⁰ Spray interval in days.
- ³¹ Days after the last treatment.

Table 1C. Control of anthracnose with selected fungicides and biorational products on annual bluegrass putting green turf: Rutgers University, 2011.

Treatment	Rate per 1000 sq ft	Application Schedule (days) ⁴	Turf Quality ^{1,2}				Phytotoxicity ³	
			13 June	8 July	5 Aug.	2 Sept.	11 June	8 July
1 RU071815-11D LC.....	3.0 fl oz	14	7.5 a-c	5.0 i-l	3.3 y-z'b'	2.4 v-y	1.0 d	1.0 d
2 RU071815-11D LC.....	6.0 fl oz	14	6.8 c-f	4.5 kl	2.8 z'b'	2.4 v-y	1.0 d	1.0 d
3 RU071815-11D LC.....	9.0 fl oz	14	6.8 c-f	4.5 kl	2.9 z'a'b'	2.1 xy	1.0 d	1.0 d
4 RU071815-11E LC.....	3.0 fl oz	14	6.8 c-f	5.3 h-l	4.3 t-x	3.3 r-v	1.0 d	1.0 d
5 RU071815-11E LC.....	6.0 fl oz	14	7.3 a-d	6.0 e-i	4.4 s-w	3.0 s-x	1.0 d	1.0 d
6 RU071815-11E LC.....	9.0 fl oz	14	6.8 c-f	5.5 g-k	4.3 t-x	3.0 s-x	1.0 d	1.0 d
7 Chipco Signature 80WG	4.0 oz	-						
+ Daconil Ultrex 82.5WDG.....	3.2 oz	14	6.0 f	5.3 h-l	5.0 p-u	4.8 k-n	1.0 d	1.0 d
8 Chipco Signature 80WG	4.0 oz	-						
+ Daconil Ultrex 82.5WDG.....	3.2 oz	-						
+ CoRoN 28-0-0 70%CRN LC.....	4.4 fl oz	14	7.5 a-c	6.8 b-f	6.4 g-l	5.1 h-m	1.0 d	1.0 d
9 Daconil Ultrex 82.5WDG.....	3.2 oz	-						
+ Banner MAXX 1.3MC	1.0 fl oz	14	7.0 b-e	6.5 c-g	6.8 e-k	6.6 c-f	1.0 d	1.0 d
10 Daconil Ultrex 82.5WDG.....	3.2 oz	-						
+ Banner MAXX 1.3ME.....	1.0 fl oz	-						
+ CoRoN 28-0-0 70%CRN LC.....	4.4 fl oz	14	6.8 c-f	6.3 d-h	6.4 g-l	5.0 i-n	1.0 d	1.0 d
11 HM0812 1.66SC	0.275 fl oz	14	7.3 a-d	6.0 e-i	3.4 x-z'b'	2.3 w-y	1.0 d	1.0 d
12 HM0812 1.66SC	0.275 fl oz	-						
+ CoRoN 28-0-0 70%CRN LC.....	4.4 fl oz	14	7.0 b-e	6.5 c-g	3.9 v-z	2.8 t-x	1.0 d	1.0 d
13 12-2-12 LC	14.0 fl oz	-						
+ Heritage TL 0.8ME	1.0 fl oz	14	7.0 b-e	7.0 a-e	4.3 t-x	2.9 s-x	1.0 d	1.0 d
14 12-2-12 LC	14.0 fl oz	-						
+ Heritage TL 0.8ME	1.0 fl oz	-						
+ Adjuvant #1 LC	3.0 fl oz	14	7.3 a-d	6.5 c-g	4.1 u-y	2.6 u-y	1.0 d	1.0 d
15 12-2-12 LC	14.0 fl oz	-						
+ Heritage TL 0.8ME	1.0 fl oz	-						
+ Adjuvant #2 LC	8.0 fl oz	14	7.5 a-c	6.3 d-h	5.1 o-t	3.6 p-t	1.0 d	1.8 a
16 12-2-12 LC	14.0 fl oz	-						
+ Heritage TL 0.8ME	1.0 fl oz	-						
+ Adjuvant #3 LC	8.0 fl oz	14	7.3 a-d	5.5 g-k	4.3 t-x	3.5 q-u	2.0 a	1.0 d

(Continued)

Table 1C (continued).

Treatment	Rate per 1000 sq ft	Application Schedule (days) ⁴	Turf Quality ^{1,2}				Phytotoxicity ³	
			13 June	8 July	5 Aug.	2 Sept.	11 June	8 July
17 12-2-12 LC	14.0 fl oz	—						
+ Heritage TL 0.8ME	1.0 fl oz	—						
+ Adjuvant #4 LC	3.0 fl oz	14	7.3 a-d	7.5 a-c	3.8 v-z'a'	2.8 t-x	1.0 d	1.0 d
18 12-2-12 LC	14.0 fl oz	—						
+ Heritage TL 0.8ME	1.0 fl oz	—						
+ Turf Lab Exp Adjuvant #1 LC	3.0 fl oz	14	7.5 a-c	6.5 c-g	5.4 m-r	5.0 i-n	1.0 d	1.0 d
19 12-2-12 LC	14.0 fl oz	—						
+ Heritage TL 0.8ME	1.0 fl oz	—						
+ Turf Lab Exp Adjuvant #1 LC	1.5 fl oz	14	7.3 a-d	6.8 b-f	5.1 o-t	3.8 o-s	1.0 d	1.0 d
20 2011 Anth Program #8	Harrell's	14-VAR ⁵	8.0 a	8.0 a	8.3 a	7.5 bc	1.0 d	1.0 d
21 2011 Anth Program #9	Harrell's	14-VAR ⁶	8.0 a	8.0 a	8.0 ab	7.5 bc	1.0 d	1.0 d
22 2011 Anth Program #10	Harrell's	14-VAR ⁷	8.0 a	8.0 a	7.8 a-d	6.9 c-e	1.0 d	1.0 d
23 Chipco Signature 80WG	4.0 oz	—						
+ Daconil Ultrex 82.5 WDG	1.8 oz	14	6.8 c-f	5.8 f-j	5.4 m-r	4.9 j-n	1.0 d	1.0 d
24 Chipco Signature 80WG	4.0 oz	14	7.0 b-e	4.8 j-l	4.3 t-x	3.5 q-u	1.0 d	1.0 d
25 2011 Anth Program #11	Petro-Canada-1	14-VAR ⁸	7.0 b-e	6.8 b-f	7.3 b-g	4.8 k-n	1.0 d	1.0 d
26 2011 Anth Program #12	Petro-Canada-2	—						
Daconil Ultrex 82.5 WDG	1.5 oz	—						
+ 651-0350 LC	8.5 fl oz	14-VAR ⁹	7.5 a-c	7.0 a-e	6.9 d-j	4.6 k-o	1.0 d	1.0 d
27 2011 Anth Program #13	Petro-Canada-3	—						
Medallion 50WP	0.25 oz	—						
+ 651-0350 LC	8.5 fl oz	14-VAR ¹⁰	8.0 a	7.8 ab	5.8 l-q	4.1 n-r	1.0 d	1.0 d
28 2011 Anth Program #14	Petro-Canada-4	—						
Tourney 50WDG	0.2 oz	—						
+ 651-0350 LC	8.5 fl oz	14-VAR ¹¹	7.8 ab	7.0 a-e	7.8 a-d	8.1 ab	1.0 d	1.0 d
29 2011 Anth Program #15	Petro-Canada-5	—						
Alude 46L	5.0 fl oz	—						
+ 651-0350 LC	8.5 fl oz	14-VAR ¹²	7.8 ab	7.0 a-e	7.4 a-f	4.5 l-p	1.0 d	1.0 d
30 2011 Anth Program # 16	Petro-Canada-6	—						
Insignia 20WG	0.5 oz	—						
+ 651-0350 LC	8.5 fl oz	14-VAR ¹³	7.8 ab	7.3 a-d	5.0 p-u	4.4 m-q	1.0 d	1.0 d

(Continued)

Table 1C (continued).

Treatment	Rate per 1000 sq ft	Application Schedule (days) ⁴	Turf Quality ^{1,2}				Phytotoxicity ³	
			13 June	8 July	5 Aug.	2 Sept.	11 June	8 July
31 2011 Anth Program #17Petro-Canada-7 Trinity 1.67SC0.5 fl oz		—						
+ 651-0350 LC8.5 fl oz		14-VAR ¹⁴	7.8 ab	7.0 a-e	7.1 b-h	7.0 cd	1.0 d	1.0 d
32 2011 Anth Program #18Petro-Canada-8 Torque 3.6SC0.4 fl oz		—						
+ 651-0350 LC8.5 fl oz		14-VAR ¹⁵	8.0 a	7.3 a-d	7.8 a-d	5.9 f-i	1.0 d	1.0 d
33 2011 Anth Program #19Petro-Canada-9 Endorse 2.5W4.0 oz		—						
+ 651-0350 LC8.5 fl oz		14-VAR ¹⁶	8.0 a	7.8 ab	7.9 a-c	5.4 g-l	1.0 d	1.0 d
34 2011 Anth Program #20Petro-Canada-10 Chipco 26GT 2SC3.0 fl oz		—						
+ 651-0350 LC8.5 fl oz		14-VAR ¹⁷	7.8 ab	7.3 a-d	6.3 h-m	4.4 m-q	1.0 d	1.0 d
35 2011 Anth Program # 21Petro-Canada-11 Quali Pro Fosetyl AI 80WG4.0 oz		—						
+ 651-0350 LC8.5 fl oz		14-VAR ¹⁸	7.5 a-c	6.8 b-f	7.8 a-d	4.4 m-q	1.0 d	1.0 d
36 2011 Anth Program #22Petro-Canada-12		14-VAR ¹⁹	7.5 a-c	6.5 c-g	6.4 g-l	4.6 k-o	1.0 d	1.0 d
37 2011 Anth Program #23Petro-Canada-13		14-VAR ²⁰	6.8 c-f	6.5 c-g	6.0 j-o	3.3 r-v	1.0 d	1.0 d
38 2011 Anth Program #24Petro-Canada-14		14-VAR ²¹	7.3 a-d	6.5 c-g	5.6 l-q	3.8 o-s	1.0 d	1.0 d
39 2011 Anth Program #25Petro-Canada-15 651-0350 LC8.5 fl oz		— 14 ²²	8.0 a	6.3 d-h	5.3 n-s	4.8 k-n	1.0 d	1.0 d
40 2011 Anth Program #26Petro-Canada-16 651-0350 LC8.5 fl oz		— 14 ²³	8.0 a	7.5 a-c	6.0 j-o	5.5 g-k	1.0 d	1.0 d
41 2011 Anth Program #27Petro-Canada-17		14-VAR ²⁴	6.8 c-f	7.3 a-d	6.9 d-j	4.9 j-n	1.0 d	1.0 d
42 2011 Anth Program #28Rutgers		14-VAR ²⁵	7.0 b-e	7.0 a-e	7.1 b-h	6.1 d-g	1.0 d	1.0 d
43 2011 Anth Program #29Cleary		14-ALT ²⁶	7.0 b-e	6.5 c-g	7.9 a-c	6.9 c-e	1.0 d	1.0 d
44 MBI-106020 SC0.47 fl oz		14	7.0 b-e	5.0 i-l	2.9 z'a'b'	1.8 y	1.0 d	1.0 d
45 MBI-106020B SP0.56 oz		14	6.8 c-f	4.8 j-l	3.3 y-z'b'	2.1 xy	1.0 d	1.0 d
46 MBI-106020 SC0.47 fl oz + Heritage 50WG0.2 oz		— 14	6.5 d-f	4.8 j-l	3.1 z-z'b'	2.1 xy	1.0 d	1.0 d
47 MBI-106020B SP0.56 oz + Heritage 50WG0.2 oz		— 14	6.8 c-f	4.8 j-l	2.9 z'a'b'	2.4 v-y	1.0 d	1.0 d

(Continued)

Table 1C (continued).

Treatment	Rate per 1000 sq ft	Application Schedule (days) ⁴	Turf Quality ^{1,2}				Phytotoxicity ³	
			13 June	8 July	5 Aug.	2 Sept.	11 June	8 July
48 MBI-106020 SC0.47 fl oz		—						
+ Insignia 20WG0.5 oz		14	6.0 f	5.0 i-l	2.9 z'a'b'	2.1 xy	1.0 d	1.0 d
49 MBI-106020B SP0.56 oz		—						
+ Insignia 20WG0.5 oz		14	6.5 d-f	4.3 l	3.0 z-z'b'	2.3 w-y	1.0 d	1.0 d
50 MBI-106020 SC0.47 fl oz		—						
+ Honor 28WG0.55 oz		14	7.3 a-d	6.3 d-h	3.6 v-z'b'	2.5 v-y	1.0 d	1.0 d
51 MBI-106020B SP0.56 oz		—						
+ Honor 28WG0.55 oz		14	6.8 c-f	5.8 f-j	3.5 w-z'b'	2.4 v-y	2.0 a	1.0 d
52 MBI-106020 SC0.47 fl oz		—						
+ Eagle 20EW1.2 fl oz		14	6.5 d-f	4.8 j-l	2.8 z'b'	2.3 w-y	1.0 d	1.0 d
53 MBI-106020B SP0.56 oz		—						
+ Eagle 20EW1.2 fl oz		14	7.0 b-e	6.0 e-i	3.6 v-z'b'	2.8 t-x	1.0 d	1.0 d
54 MBI-106020 SC0.47 fl oz		—						
+ Banner MAXX 1.3ME1.0 fl oz		14	6.3 ef	5.3 h-l	4.3 t-x	3.3 r-v	1.0 d	1.0 d
55 MBI-106020B SP0.56 oz		—						
+ Banner MAXX 1.3ME1.0 fl oz		14	6.5 d-f	6.3 d-h	4.5 r-v	3.8 o-s	1.0 d	1.0 d
56 MBI-106020 SC0.47 fl oz		—						
+ Daconil Weather Stik 6F2.7 fl oz		14	6.0 f	5.3 h-l	5.3 n-s	4.4 m-q	1.0 d	1.0 d
57 MBI-106020B SP0.56 oz		—						
+ Daconil Weather Stik 6F2.7 fl oz		14	6.8 c-f	7.3 a-d	6.0 j-o	5.3 g-m	1.0 d	1.0 d
58 2011 Anth Program #30 Plant Food		7-VAR ²⁷	7.5 a-c	7.5 a-c	7.0 c-i	6.0 e-h	1.0 d	1.0 d
59 2011 Anth Program #31 Plant Food		7-VAR ²⁸	7.0 b-e	7.0 a-e	6.5 f-l	5.0 i-n	1.0 d	1.0 d
60 2011 Anth Program #32 Plant Food		7-VAR ²⁹	7.5 a-c	7.3 a-d	6.1 i-n	5.3 g-m	1.0 d	1.0 d
61 2011 Anth Program #33 Plant Food		7-VAR ³⁰	7.8 ab	6.5 c-g	5.3 n-s	4.1 n-r	1.0 d	1.0 d
62 Legacy G SC0.628 fl oz		14	7.5 a-c	7.5 a-c	3.6 v-z'b'	2.4 v-y	1.0 d	1.0 d
63 Legacy G SC1.1 fl oz		14	7.5 a-c	6.5 c-g	4.3 t-x	3.1 s-w	1.0 d	1.0 d
64 Legacy G SC1.57 fl oz		14	7.5 a-c	6.5 c-g	4.4 s-w	3.8 o-s	1.0 d	1.0 d
65 Legacy G SC2.04 fl oz		14	7.5 a-c	6.5 c-g	5.9 k-p	4.9 j-n	1.0 d	1.0 d
66 Daconil Ultrex 82.5WDG3.77 oz		—						
+ Banner MAXX 1.3ME0.942 fl oz		14	7.0 b-e	5.8 f-j	5.9 k-p	5.8 f-j	1.8 b	1.3 b

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(Continued)

Table 1C (continued).

Treatment	Rate per 1000 sq ft	Application Schedule (days) ⁴	Turf Quality ^{1,2}				Phytotoxicity ³	
			13 June	8 July	5 Aug.	2 Sept.	11 June	8 July
67 Reserve 4.8SC.....	1.25 fl oz	14	7.5 a-c	6.8 b-f	6.0 j-o	5.1 h-m	1.0 d	1.0 d
68 Reserve 4.8SC.....	2.5 fl oz	14	7.8 ab	7.3 a-d	7.4 a-f	6.0 e-h	1.0 d	1.0 d
69 Reserve 4.8SC.....	3.2 fl oz	14	7.5 a-c	6.5 c-g	6.9 d-j	6.9 c-e	1.0 d	1.0 d
70 Reserve 4.8SC.....	6.4 fl oz	14	7.8 ab	7.3 a-d	7.6 a-e	8.0 ab	1.0 d	1.0 d
71 Triton 1.67SC.....	0.408 fl oz	–						
+ Compass 50WG.....	0.0164 oz	14	7.8 ab	6.3 d-h	4.9 q-u	4.5 l-p	1.0 d	1.0 d
72 Triton 1.67SC.....	0.817 fl oz	–						
+ Compass 50WG.....	0.0328 oz	14	7.8 ab	8.0 a	6.9 d-j	7.0 cd	1.3 c	1.1 c
73 Triton 1.67SC.....	1.634 fl oz	–						
+ Compass 50WG.....	0.0655 oz	14	8.0 a	7.8 ab	7.0 c-i	8.8 a	1.0 d	1.3 b
74 Heritage TL 0.8ME.....	1.0 fl oz	14	7.0 b-e	5.0 i-l	3.4 x-z'b'	2.8 t-x	1.0 d	1.0 d
75 Daconil Ultrex 82.5WDG.....	3.2 oz	14	7.0 b-e	6.3 d-h	6.1 i-n	5.0 i-n	1.0 d	1.0 d
76 Untreated check.....	–	–	6.0 f	4.5 kl	2.9 z'a'b'	2.5 v-y	1.0 d	1.0 d
		INT ³¹	DAT ³²	DAT	DAT	DAT	DAT	DAT
		7	6	3	3	10	4	3
		14	13	10	9	10	11	10

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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 and 5 = commercially acceptable quality.

³ Phytotoxicity on a scale of 1 to 5, 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. No phytotoxicity was observed on 5 August.

⁴ Fungicides were applied on 17 May (all treatments, except treatments 44 to 57 and 60), 24 May (7-day treatment, except treatment 60; initiated treatments 44 to 57), 31 May (7- and 14-day treatments; initiated treatment 60), 7 June (7-day treatment), 14 June (7- and 14-day treatments), 21 June (7-day treatment), 28 June (7- and 14-day treatments), 5 July (7-day treatment), 12 July (7- and 14-day treatments), 19 July (7-day treatment), 27 July (7- and 14-day treatments), 2 August (7-day treatment), 9 August (7- and 14-day treatments), 16 August (7-day treatment), and 23 August (7- and 14-day treatments).

(Continued)

Table 1C (continued).

- ⁵ VAR = Variable spray schedule, where treatment 20 (Harrell's Anth Program #8) consisted of BioMax 4-0-0 LC (6.0 fl oz) + 12-0-0 LC (5.0 fl oz) + 12-2-12 LC (14.0 fl oz) + Primo MAXX 1ME (0.125 fl oz) + Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5 WDG (1.8 oz) applied every 14 days from 17 May to 9 August.
- ⁶ VAR = Variable spray schedule, where treatment 21 (Harrell's Anth Program #9) consisted of BioMax 4-0-0 LC (6.0 fl oz) + 12-0-0 LC (5.0 fl oz) + 12-2-12 LC (14.0 fl oz) + Primo MAXX 1ME (0.125 fl oz) + Title Phyte LC (3.67 fl oz) + Daconil Ultrex 82.5 WDG (1.8 oz) + PAR Spi LC (0.37 fl oz) applied every 14 days from 17 May to 9 August.
- ⁷ VAR = Variable spray schedule, where treatment 22 (Harrell's Anth Program #10) consisted of BioMax 4-0-0 LC (6.0 fl oz) + 12-0-0 LC (5.0 fl oz) + 12-2-12 LC (14.0 fl oz) + Primo MAXX 1ME (0.125 fl oz) + Title Phyte LC (2.0 fl oz) + Chipco Signature 80WG (2.0 oz) + Daconil Ultrex 82.5 WDG (1.8 oz) + PAR Spi LC (0.185 fl oz) applied every 14 days for 17 May to 9 August.
- ⁸ VAR = Variable spray schedule for treatment 25 (Petro-Canada Anth "Heat/Injury Threshold" Program #11 where protocol reverts to Rutgers Anth Program treatment 42 if maximum temperature exceeds 90°F for three or more consecutive days or if more than 10% foliar injury is observed) consisted of (a) Banner MAXX 1.3ME (0.5 fl oz) + Daconil Ultrex 82.5WDG (1.5 oz) + 651-0350 LC (8.5 fl oz) applied on 17 May, (b) Daconil Ultrex 82.5WDG (3.2 oz) on 31 May (Rutgers Anth Program #28, due to excessive heat), (c) Banner MAXX 1.3ME (0.5 fl oz) + Daconil Ultrex 82.5WDG (1.5 oz) + 651-0350 LC (8.5 fl oz) on 14 and 28 June and 12 July (switched back to Petro-Canada Anth Program # 11), and finally switched back to (d) Rutgers Anth Program #28 consisting of 3336 Plus 19.4F (3.0 fl oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 27 July, Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August, and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August.
- ⁹ VAR = Variable spray schedule for treatment 26 (Petro-Canada Anth "Injury Threshold" Program #12 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of (a) Daconil Ultrex 82.5WDG (1.5 oz) + 651-0350 LC (8.5 fl oz) applied on 17 May and every 14 days through 12 July, (b) 3336 Plus 19.4F (3.0 fl oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 27 July, Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August, and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August (switched to Rutgers Anth Program #28, due to more than 10% foliar injury on any replicate plot).
- ¹⁰ VAR = Variable spray schedule for treatment 27 (Petro-Canada Anth "Injury Threshold" Program #13 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of (a) Medallion 50WP (0.25 oz) + 651-0350 LC (8.5 fl oz) applied every 14 days from 17 May through 27 July, (b) Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August (switched to Rutgers Anth Program #28, due to more than 10% foliar injury on any replicate plot).
- ¹¹ VAR = Variable spray schedule for treatment 28 (Petro-Canada Anth "Injury Threshold" Program #14 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of Tourney 50WDG (0.2 oz) + 651-0350 LC (8.5 fl oz) applied every 14 days from 17 May through 23 August unless injury threshold is reached, at which point the protocol switches to Rutgers Anth Program #28.
- ¹² VAR = Variable spray schedule for treatment 29 (Petro-Canada Anth "Injury Threshold" Program #15 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of (a) Alude 46L (5.0 fl oz) + 651-0350 LC (8.5 fl oz) applied every 14 days from 17 May through 27 July, (b) Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August (switched to Rutgers Anth Program #28, due to more than 10% foliar injury on any replicate plot).

Table 1C (continued).

- ¹³ VAR = Variable spray schedule for treatment 30 (Petro-Canada Anth “Injury Threshold” Program #16 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of (a) Insignia 20WG (0.5 oz) + 651-0350 LC (8.5 fl oz) applied every 14 days from 17 May through 27 July, (b) Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August (switched to Rutgers Anth Program #28, due to more than 10% foliar injury on any replicate plot).
- ¹⁴ VAR = Variable spray schedule for treatment 31 (Petro-Canada Anth “Injury Threshold” Program #17 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of (a) Trinity 1.67SC (0.5 fl oz) + 651-0350 LC (8.5 fl oz) applied every 14 days from 17 May through 27 July, (b) Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August (switched to Rutgers Anth Program #28, due to more than 10% foliar injury on any replicate plot).
- ¹⁵ VAR = Variable spray schedule for treatment 32 (Petro-Canada Anth “Injury Threshold” Program #18 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of Torque 3.6SC (0.4 fl oz) + 651-0350 LC (8.5 fl oz) applied every 14 days from 17 May through 23 August unless injury threshold is reached, at which point the protocol switches to Rutgers Anth Program #28.
- ¹⁶ VAR = Variable spray schedule for treatment 33 (Petro-Canada Anth “Injury Threshold” Program #19 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of Endorse 2.5W (4.0 oz) + 651-0350 LC (8.5 fl oz) applied every 14 days from 17 May through 23 August unless injury threshold is reached, at which point the protocol switches to Rutgers Anth Program #28.
- ¹⁷ VAR = Variable spray schedule for treatment 34 (Petro-Canada Anth “Injury Threshold” Program #20 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of Chipco 26GT 2SC (3.0 fl oz) + 651-0350 LC (8.5 fl oz) applied every 14 days from 17 May through 23 August unless injury threshold is reached, at which point the protocol switches to Rutgers Anth Program #28.
- ¹⁸ VAR = Variable spray schedule for treatment 35 (Petro-Canada Anth “Injury Threshold” Program #21 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of Quali Pro Fosetyl A1 80WG (4.0 oz) + 651-0350 LC (8.5 fl oz) applied every 14 days from 17 May through 23 August unless injury threshold is reached, at which point the protocol switches to Rutgers Anth Program #28.
- ¹⁹ VAR = Variable spray schedule for treatment 36 (Petro-Canada Anth “Injury Threshold” Program #22 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of (a) 651-0350 LC (8.5 fl oz) applied on 17 May, Daconil Ultrex 82.5WDG (3.2 oz) on 31 May, 651-0350 LC (8.5 fl oz) on 14 June, Endorse 2.5W (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 28 June, 651-0350 LC (8.5 fl oz) on 12 July, 3336 Plus 19.4F (3.0 fl oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 27 July, (b) Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August (switched to Rutgers Anth Program #28, due to more than 10% foliar injury on any replicate plot).
- ²⁰ VAR = Variable spray schedule for treatment 37 (Petro-Canada Anth “Heat/Injury Threshold” Program #23 where protocol reverts to Rutgers Anth Program treatment 42 if maximum temperature exceeds 90°F for three or more consecutive days or if more than 10% foliar injury is observed) consisted of (a) 651-0350 LC (8.5 fl oz) applied on 17 May, (b) Daconil Ultrex 82.5WDG (3.2 oz) on 31 May (Rutgers Anth Program #28, due to excessive heat), (c) 651-0350 LC (8.5 fl oz) on 14 and 28 June and 12 July (switched back to Petro-Canada Anth Program #23), and finally switched back to (d) Rutgers Anth Program #28 consisting of 3336 Plus 19.4F (3.0 fl oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 27 July, Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August, and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August.

Table 1C (continued).

- ²¹ VAR = Variable spray schedule, where treatment 38 (Petro-Canada Anth “Injury Threshold” Program #24 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of (a) 651-0350 LC (8.5 fl oz) applied on 17 May, Daconil Ultrex 82.5WDG (1.6 oz) on 31 May, 651-0350 LC (8.5 fl oz) on 14 June, Endorse 2.5W (2.0 oz) + Daconil Ultrex 82.5WDG (1.6 oz) on 28 June, 651-0350 LC (8.5 fl oz) on 12 July, 3336 Plus 19.4F (1.5 fl oz) + Daconil Ultrex 82.5WDG (1.6 oz) on 27 July, (b) Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August (switched to Rutgers Anth Program #28, due to more than 10% foliar injury on any replicate plot).
- ²² VAR = Variable spray schedule for treatment 39 (Petro-Canada Anth “Injury Threshold” Program #25 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of (a) 651-0350 LC (8.5 fl oz) applied on 17 May and every 14 days through 12 July, (b) 3336 Plus 19.4F (3.0 fl oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 27 July, Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August, and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August (switched to Rutgers Anth Program #28, due to more than 10% foliar injury on any replicate plot).
- ²³ VAR = Variable spray schedule for treatment 40 (Petro-Canada Anth “Injury Threshold” Program #26 where protocol reverts to Rutgers Anth Program treatment 42 if more than 10% foliar injury is observed) consisted of (a) 651-0350 LC (8.5 fl oz) applied on 17 May and every 7 days through 27 July, (b) Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August, Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 16 August, and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August (switched to Rutgers Anth Program #28, due to more than 10% foliar injury on any replicate plot).
- ²⁴ VAR = Variable spray schedule for treatment 41 (Petro-Canada Anth “Heat/Injury Threshold” Program #27 where protocol reverts to Rutgers Anth Program treatment 42 if maximum temperature exceeds 90°F for three or more consecutive days or if more than 10% foliar injury is observed) consisted of (a) 651-0351 LC (8.5 fl oz) + Daconil Ultrex 82.5WDG (1.5 oz) applied on 17 May, (b) Daconil Ultrex 82.5WDG (3.2 oz) on 31 May (Rutgers Anth Program #28, due to excessive heat), (c) 651-0351 LC (8.5 fl oz) + Daconil Ultrex 82.5WDG (1.5 oz) on 14 and 28 June and 12 July (switched back to Petro-Canada Anth Program # 27), and finally switched back to (d) Rutgers Anth Program #28 consisting of 3336 Plus 19.4F (3.0 fl oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 27 July, Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August, and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August.
- ²⁵ VAR = Variable spray schedule, where treatment 42 (Rutgers Anth Program #28) consisted of Banner MAXX 1.3ME (1.0 fl oz) applied on 17 May, Daconil Ultrex 82.5WDG (3.2 oz) on 31 May, Chipco Signature 80WG (4.0 oz) + Insignia 20WG (0.9 oz) on 14 June, Endorse 2.5W (4.0 oz) + Daconil Ultrex (3.2 oz) on 28 June, Chipco Signature 80WG (4.0 oz) + Chipco 26GT 2SC (4.0 fl oz) on 12 July, 3336 Plus 19.4F (3.0 fl oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 27 July, Chipco Signature 80WG (4.0 oz) + Medallion 50WP (0.33 oz) on 9 August, and Chipco Signature 80WG (4.0 oz) + Daconil Ultrex 82.5WDG (3.2 oz) on 23 August.
- ²⁶ ALT = Alternation treatment, where treatment 43 (Cleary Anth Program #29) consisted of Torque 3.6SC (0.6 fl oz) + Legend 6F (3.0 fl oz) applied on 7 May, 14 June, 12 July, and 9 August, and Affirm 11.3WDG (0.9 oz) + Spectro 90WG (3.6 oz) on 31 May, 28 June, 27 July, and 23 August.
- ²⁷ VAR = Variable spray schedule, where treatment 58 (Plant Food Anth Program #30) consisted of 16-2-7 25% SRN LC (6.0 fl oz) + 10-34-0 LC (3.0 fl oz) + Flo Thru 2403 LC (2.0 fl oz) + Phosphite 30 0-0-27 LC (2.0 fl oz) + Adams Earth LC (2.0 fl oz) + Manganese 5% LC (3.0 fl oz) + pHusion Organic acid LC (3.0 fl oz) + Daconil Ultrex 82.5WDG (0.9 oz) applied every 7 days from 17 May to 23 August.

Table 1C (continued).

²⁸ VAR = Variable spray schedule, where treatment 59 (Plant Food Anth Program #31) consisted of 16-2-7 25% SRN LC (6.0 fl oz) + 10-34-0 LC (3.0 fl oz) + Regulate LC (1.5 fl oz) + Phosphite 30 0-0-27 LC (2.0 fl oz) + Adams Earth LC (2.0 fl oz) + Manganese 5% LC (3.0 fl oz) + pHusion Organic acid LC (3.0 fl oz) + Daconil Ultrex 82.5WDG (0.9 oz) applied every 7 days from 17 May to 23 August.

²⁹ VAR = Variable spray schedule, where treatment 60 (Plant Food Anth Program #32) consisted of 16-2-7 25% SRN LC (6.0 fl oz) + Lysine 10-0-0 LC (6.0 fl oz) + Flo Thru 2403 LC (3.0 fl oz) + Phosphite 30 0-0-27 LC (3.0 fl oz) + Adams Earth LC (3.0 fl oz) + Manganese 5% LC (3.0 fl oz) + pHusion Organic acid LC (6.0 fl oz) applied every 7 days from 17 May to 23 August.

³⁰ VAR = Variable spray schedule, where treatment 61 (Plant Food Anth Program #33) consisted of 16-2-7 25% SRN LC (6.0 fl oz) + 10-34-0 LC (3.0 fl oz) + Flo Thru 2403 LC (2.0 fl oz) + Phosphite 30 0-0-27 LC (2.0 fl oz) + Adams Earth LC (2.0 fl oz) + Manganese 5% LC (3.0 fl oz) + pHusion Organic acid LC (3.0 fl oz) applied every 7 days from 17 May to 23 August

³¹ Spray interval in days.

³² Days after the last treatment.