

Preventive control of dollar spot on a creeping bentgrass fairway with various fungicides

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INTRODUCTION

Fungicides are commonly used for preventive and curative control of dollar spot (*Sclerotinia homoeocarpa*). As new fungicides are developed, their efficacy must be evaluated in both laboratory and field situations. In addition, field evaluation of these fungicides in various parts of the country is important. The objective of this study was to evaluate the relative efficacy and turf safety of commercially available and confidential fungicides against dollar spot.

MATERIALS & METHODS

This study was initiated at the University of Connecticut Plant Science Research and Education Facility located in Storrs, CT. Soil was a loam with a pH of 5.9 and 7.2% OM. Turfgrass used for the fungicide evaluation is a 1.5 year old stand of 'Crenshaw' creeping bentgrass (*Agrostis stolonifera*). The area was maintained as a bentgrass fairway and mowed three times per week to a height of 0.5 in. All treatments were applied with a CO₂ pressurized (40 psi) sprayer equipped with an air-induction flat fan nozzle, and calibrated to deliver 2.0 gal water per 1000 ft². Initial treatments were applied on 2 Jun and individual treatments were reapplied according to the schedule listed in the treatment table.

Plots measured 3 ft x 6 ft and were arranged in a randomized complete block with four replications. Dollar spot severity was assessed every 2 weeks throughout the study. Initial dollar spot severity was rated by counting the number of *S. homoeocarpa* infection centers per plot. As disease severity increased, percent plot area affected by *Sclerotinia homoeocarpa* was visually rated on a 0 to 100 scale where 0 = entire plot void of dollar spot and 100 = entire plot area covered with dollar spot symptoms. Other observations included quality, injury and color.

RESULTS

Dollar spot. Dollar spot symptoms first appeared within the study site 1 week after the initial application (10 Jun). In early to mid-Jul, dollar spot severity was low. Towards the end of Jul, percent dollar spot began to increase and the greatest amount of dollar spot was found within plots treated with SP2059 and the untreated control. Except for these plots, little to no dollar spot was present within all fungicide-treated plots until after the last treatments were applied on 4 or 12 Aug. Dollar spot activity increased in Sep. Dollar spot started to break through within 2 to 3 weeks after the final application in most fungicide treatments applied on a 14-d or 28-d interval. Several treatments, including Emerald (alone or tank-mixed), Trinity + Iprodione (3.0 fl oz), Curalan, A16422A (3.6 fl oz), Headway, Tartan, and Concert continued to show excellent disease suppression (<1%) for up to five weeks after the final application. Among 21-d interval treatments, dollar spot levels were low (<1.0%) within plots treated with Trinity (1.5 fl oz), A15925A, and 26/36 for 3 to 4 weeks after the final applications, but acceptable suppression for these treatments did not last for 5 weeks.

Plots treated with Emerald generally provided complete control during the application timing and approximately 4 to 5 weeks of continued suppression following the last application regardless of tank-mix combination. Trinity also provided excellent control for approximately 3 to 4 weeks, regardless of whether applied alone or in combination with Iprodione Pro. Curalan provided complete or near complete control of dollar spot for up to 4 to 5 weeks following application. The contact fungicide Daconil Weather Stik controlled the disease during application, but began to breakdown within 2 to 4 weeks after the final application and was rate dependent. Bayleton was the only fungicide applied on a 28-d interval in this study and provided complete or near complete control when applications were being made and for approximately 4 to 5 weeks after the final application.

Injury. Injury to the creeping bentgrass from a few of the treatments was observed after multiple applications. Although no treatments reached an unacceptable threshold (≥ 2.5) on any rating date, several treatments had slight to moderate

injury that was visibly noticeable (Table 2). Injury to the creeping bentgrass was moderate (2.0) when plots were rated about 2 weeks after the second or fifth application of Bayleton or Heritage, respectively. Injury within plots treated with Bayleton peaked on 6 Aug (2 days after the third and final application), but injury within these plots was among the highest on all rating dates after 23 Jul. Among all rating dates, treatments that had the highest injury ratings on one or more days included Headway, Tartan, Bayleton, Trinity (1.5 fl oz), and Tourney (0.28 oz).

DISCUSSION

Except for SP2059, all treatments provided excellent control of dollar spot when treatments were routinely applied. Due to the reduced activity of dollar spot during the season, few differences were observed among treatments. Once disease pressure increased and treatments ceased, most fungicides provided between 2 to 5 weeks of additional control before dollar spot became unacceptable. Although differences in dollar spot severity was observed later in the season when fungicides started to become less efficacious, most performed at or above labeled expectations of 14 to 28 days of control. When selecting fungicides for the suppression of dollar spot, caution should be used so as not to repeat applications of a single active ingredient or chemical class to prevent the development of resistance. Additionally, the repeated use of fungicides that can have growth regulation effects during the summer months (e.g., DMI) may cause an increase in injury to the turf and rotation of these products is recommended. Extended periods of control observed by select treatments in this study, however, may be viewed as an indicator of proper fungicide selection later in the season to carry dollar spot control until the period when the disease is likely to become inactive.

Table 1. Percent dollar spot following application of various confidential fungicides, Storrs, 2008.

Treatment and rate per 1000 sq ft	Application ^z		Percent dollar spot ^y			
	Timing	16 Jun	23 Jun	30 Jun	7 Jul	14 Jul
Emerald 0.13 oz + T-Methyl 4.5L 3.0 fl oz	14-d	0.0 a ^x	0.0 a	0.0 b	0.0 c	0.0 c
Emerald 0.13 oz + T-Methyl 4.5L 4.0 fl oz	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
Emerald 0.13 oz + Trinity 0.75 fl oz	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
Emerald 0.13 oz + Trinity 1.0 fl oz	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
Emerald 0.13 oz + Iprodione Pro 3.0 fl oz.....	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
Emerald 0.13 oz + Iprodione Pro 4.0 fl oz.....	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
Trinity 1.0 fl oz + Iprodione Pro 2.0 fl oz	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
Trinity 1.0 fl oz + Iprodione Pro 3.0 fl oz	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
Trinity 1.0 fl oz + Iprodione Pro 4.0 fl oz	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
Curalan 1.0 oz	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
SP2059 1.0 oz.....	14-d	0.0 a	0.0 a	0.1 a	0.1 b	0.2 a
SP2059 2.0 oz.....	14-d	0.0 a	0.0 a	0.1 a	0.1 a	0.2 a
Emerald 0.13 oz	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
Trinity 1.0 fl oz	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
Trinity 1.5 fl oz	21-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
Daconil Weather Stik 2.0 fl oz	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
Daconil Weather Stik 3.6 fl oz	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
A16422A 2.0 fl oz	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
A16422A 3.6 fl oz	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
A16422B 2.0 fl oz	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
A16422B 3.6 fl oz	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
Daconil Ultrex 1.8 oz	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 bc
Daconil Ultrex 3.2 oz	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
A15935A 2.5 fl oz	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 bc
A15935A 4.5 fl oz	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
A15935A 2.5 fl oz	21-d	0.0 a	0.0 a	0.0 b	0.0 c	0.1 b
A15935A 4.5 fl oz	21-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
Daconil Weather Stik 2.0 fl oz + Heritage TL 0.2 oz	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
Headway 1.5 fl oz.....	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
Tartan 1.0 fl oz	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
Concert 3.0 fl oz	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
Bayleton 1.0 oz.....	28-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
Tourney 0.18 oz	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
Tourney 0.28 oz	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
DPZ-LEM17-50-80 0.3 oz	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
DPZ-LEM17-50-80 0.5 oz	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
26/36 4.0 fl oz.....	21-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
Quali-Pro Chlorothalonil 3.24oz	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
Quali-Pro Iprodione 4.0 fl oz	14-d	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c
Check	-	0.0 a	0.0 a	0.1 a	0.1 a	0.2 a

^z Treatments were applied as follows: 14-d interval treatments were applied on 2, 18 and 30 Jun; 15 and 18 Jul; and 12 Aug; 21-d interval treatments were applied on 2 and 24 Jun; 15 Jul; and 4 Aug; 28-d interval treatments were applied on 2 Jun; 28 Jul; and 4 Aug. SP2059 treatments were applied on 2, 19, and 30 Jun; 15 and 28 Jul; and 12 Aug.

^y Percent of the plot area with dollar spot was visually rated on a 0 to 100 percent scale where 0 = no dollar spot was present or 100 = entire plot has dollar spot.

^x Means in a column followed by the same letter are not significantly different at P≤0.05 level according to the Fisher's protected least significant difference t-test.

Table 1. Percent dollar spot following application of various confidential fungicides, Storrs, 2008.

Treatment and rate per 1000 sq ft	Application ^z		Percent dollar spot ^y			
	Timing	21 Jul	28 Jul	4 Aug	11 Aug	18 Aug
Emerald 0.13 oz + T-Methyl 4.5L 3.0 fl oz ..	14-d	0.0 c ^x	0.0 c	0.0 c	0.0 c	0.0 c
Emerald 0.13 oz + T-Methyl 4.5L 4.0 fl oz ..	14-d	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
Emerald 0.13 oz + Trinity 0.75 fl oz	14-d	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
Emerald 0.13 oz + Trinity 1.0 fl oz	14-d	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
Emerald 0.13 oz + Iprodione Pro 3.0 fl oz...	14-d	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
Emerald 0.13 oz + Iprodione Pro 4.0 fl oz...	14-d	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
Trinity 1.0 fl oz + Iprodione Pro 2.0 fl oz	14-d	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
Trinity 1.0 fl oz + Iprodione Pro 3.0 fl oz	14-d	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
Trinity 1.0 fl oz + Iprodione Pro 4.0 fl oz	14-d	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
Curalan 1.0 oz	14-d	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
SP2059 1.0 oz	14-d	0.3 a	0.8 a	1.6 a	3.9 a	4.0 a
SP2059 2.0 oz	14-d	0.2 b	0.5 b	1.1 b	2.1 b	2.6 b
Emerald 0.13 oz	14-d	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
Trinity 1.0 fl oz	14-d	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
Trinity 1.5 fl oz	21-d	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
Daconil Weather Stik 2.0 fl oz	14-d	0.0 c	0.0 c	0.0 c	0.1 c	0.1 c
Daconil Weather Stik 3.6 fl oz	14-d	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
A16422A 2.0 fl oz	14-d	0.0 c	0.1 c	0.0 c	0.2 c	0.1 c
A16422A 3.6 fl oz	14-d	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
A16422B 2.0 fl oz	14-d	0.0 c	0.2 c	0.1 c	0.2 c	0.2 c c
A16422B 3.6 fl oz	14-d	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
Daconil Ultrex 1.8 oz	14-d	0.0 c	0.1 c	0.0 c	0.1 c	0.1 c
Daconil Ultrex 3.2 oz	14-d	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
A15935A 2.5 fl oz	14-d	0.0 c	0.0 c	0.0 c	0.0 c	0.1 c
A15935A 4.5 fl oz	14-d	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
A15935A 2.5 fl oz	21-d	0.1 c	0.1 c	0.2 c	0.1 c	0.0 c
A15935A 4.5 fl oz	21-d	0.0 c	0.0 c	0.1 c	0.0 c	0.0 c
Daconil Weather Stik 2.0 fl oz + Heritage TL 0.2 oz	14-d	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
Headway 1.5 fl oz	14-d	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
Tartan 1.0 fl oz	14-d	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
Concert 3.0 fl oz	14-d	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
Bayleton 1.0 oz	28-d	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
Tourney 0.18 oz	14-d	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
Tourney 0.28 oz	14-d	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
DPZ-LEM17-50-80 0.3 oz	14-d	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
DPZ-LEM17-50-80 0.5 oz	14-d	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
26/36 4.0 fl oz	21-d	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
Quali-Pro Chlorothalonil 3.24oz	14-d	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
Quali-Pro Iprodione 4.0 fl oz	14-d	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
Check	-	0.2 b	0.4 b	0.9 b	2.5 b	2.7 b

^z Treatments were applied as follows: 14-d interval treatments were applied on 2, 18 and 30 Jun; 15 and 18 Jul; and 12 Aug; 21-d interval treatments were applied on 2 and 24 Jun; 15 Jul; and 4 Aug; 28-d interval treatments were applied on 2 Jun; 28 Jul; and 4 Aug. SP2059 treatments were applied on 2, 19, and 30 Jun; 15 and 28 Jul; and 12 Aug.

^y Percent of the plot area with dollar spot was visually rated on a 0 to 100 percent scale where 0 = no dollar spot was present or 100 = entire plot has dollar spot.

^x Means in a column followed by the same letter are not significantly different at P≤0.05 level according to the Fisher's protected least significant difference t-test.

Table 1. Percent dollar spot following application of various confidential fungicides, Storrs, 2008.

Treatment and rate per 1000 sq ft	Application ^z		Percent dollar spot ^y		
	Timing	25 Aug	08 Sep	15 Sep	22 Sep
Emerald 0.13 oz + T-Methyl 4.5L 3.0 fl oz ..	14-d	0 cx	0 e	<1 g	<1 ij
Emerald 0.13 oz + T-Methyl 4.5L 4.0 fl oz ..	14-d	0 c	<1 e	<1 g	<1 ij
Emerald 0.13 oz + Trinity 0.75 fl oz.....	14-d	0 c	<1 e	<1 g	<1 hij
Emerald 0.13 oz + Trinity 1.0 fl oz.....	14-d	0 c	<1 e	<1 g	<1 ij
Emerald 0.13 oz + Iprodione Pro 3.0 fl oz...	14-d	<1 c	<1 e	<1 g	<1 ij
Emerald 0.13 oz + Iprodione Pro 4.0 fl oz...	14-d	0 c	0 e	<1 g	<1 ij
Trinity 1.0 fl oz + Iprodione Pro 2.0 fl oz	14-d	<1 c	<1 e	<1 g	2 f-j
Trinity 1.0 fl oz + Iprodione Pro 3.0 fl oz	14-d	0 c	<1 e	<1 g	<1 hij
Trinity 1.0 fl oz + Iprodione Pro 4.0 fl oz	14-d	0 c	<1 e	<1 g	4 e-j
Curalan 1.0 oz	14-d	0 c	0 e	<1 g	<1 j
SP2059 1.0 oz	14-d	4 a	12 a	25 a	29 a
SP2059 2.0 oz	14-d	3 b	9 c	18 b	22 b
Emerald 0.13 oz	14-d	0 c	<1 e	<1 g	<1 ij
Trinity 1.0 fl oz	14-d	0 c	<1 e	<1 fg	3 e-j
Trinity 1.5 fl oz	21-d	<1 c	<1 e	2 efg	5 d-g
Daconil Weather Stik 2.0 fl oz	14-d	<1 c	<1 e	2 fg	4 e-j
Daconil Weather Stik 3.6 fl oz	14-d	<1 c	<1 e	<1 g	1 g-j
A16422A 2.0 fl oz	14-d	<1 c	<1 e	2 fg	3 e-j
A16422A 3.6 fl oz	14-d	0 c	<1 e	<1 g	<1 hij
A16422B 2.0 fl oz	14-d	<1 c	<1 e	2 fg	4 e-i
A16422B 3.6 fl oz	14-d	0 c	<1 e	<1 g	2 f-j
Daconil Ultrex 1.8 oz	14-d	<1 c	<1 e	2 fg	5 d-g
Daconil Ultrex 3.2 oz	14-d	0 c	<1 e	2 fg	4 e-j
A15935A 2.5 fl oz	14-d	<1 c	<1 e	2 fg	4 e-h
A15935A 4.5 fl oz	14-d	0 c	<1 e	<1 g	2 f-j
A15935A 2.5 fl oz	21-d	<1 c	3 e	7 c	10 c
A15935A 4.5 fl oz	21-d	<1 c	<1 e	5 cde	8 cd
Daconil Weather Stik 2.0 fl oz + Heritage TL 0.2 oz	14-d	<1 c	<1 e	1 fg	4 e-j
Headway 1.5 fl oz.....	14-d	0 c	0 e	<1 g	<1 hij
Tartan 1.0 fl oz	14-d	0 c	<1 e	<1 g	<1 hij
Concert 3.0 fl oz	14-d	0 c	0 e	<1 g	<1 hij
Bayleton 1.0 oz.....	28-d	0 c	<1 e	1 fg	3 f-j
Tourney 0.18 oz	14-d	0 c	<1 e	2 fg	5 d-g
Tourney 0.28 oz	14-d	0 c	<1 e	1 fg	2 g-j
DPZ-LEM17-50-80 0.3 oz	14-d	<1 c	<1 e	3 def	7 cde
DPZ-LEM17-50-80 0.5 oz	14-d	0 c	<1 e	<1 fg	3 f-j
26/36 4.0 fl oz.....	21-d	<1 c	2 d	6 cd	10 c
Quali-Pro Chlorothalonil 3.24oz	14-d	<1 c	<1 e	2 fg	5 def
Quali-Pro Iprodione 4.0 fl oz	14-d	0 c	<1 e	1 fg	1 g-j
Check	-	3 b	11 b	22 a	28 a

^z Treatments were applied as follows: 14-d interval treatments were applied on 2, 18 and 30 Jun; 15 and 18 Jul; and 12 Aug; 21-d interval treatments were applied on 2 and 24 Jun; 15 Jul; and 4 Aug; 28-d interval treatments were applied on 2 Jun; 28 Jul; and 4 Aug. SP2059 treatments were applied on 2, 19, and 30 Jun; 15 and 28 Jul; and 12 Aug.

^y Percent of the plot area with dollar spot was visually rated on a 0 to 100 percent scale where 0 = no dollar spot was present or 100 = entire plot has dollar spot.

^x Means in a column followed by the same letter are not significantly different at P≤0.05 level according to the Fisher's protected least significant difference t-test.

Table 2 Creeping bentgrass injury following repeated applications of various fungicides for the control of dollar spot, 2008.

Treatment and rate per 1000 sq ft	Application ^z		Injury ^y			
	Timing	7 Jul	14 Jul	21 Jul	23 Jul	30 Jul
Emerald 0.13 oz + T-Methyl 4.5L 3.0 fl oz	14-d	0.0 e ^x	0.3 def	0.0 de	0.1 de	0.3 efg
Emerald 0.13 oz + T-Methyl 4.5L 4.0 fl oz	14-d	0.6 cd	0.5 b-e	0.1 cde	0.1 de	0.4 d-g
Emerald 0.13 oz + Trinity 0.75 fl oz	14-d	0.5 cde	0.5 b-e	0.3 b-e	0.1 de	0.4 d-g
Emerald 0.13 oz + Trinity 1.0 fl oz	14-d	0.0 e	0.3 def	0.0 de	0.0 e	0.1 fg
Emerald 0.13 oz + Iprodione Pro 3.0 fl oz.	14-d	0.3 de	0.3 def	0.0 de	0.0 e	0.1 fg
Emerald 0.13 oz + Iprodione Pro 4.0 fl oz.	14-d	0.3 de	0.0 f	0.0 de	0.0 e	0.0 g
Trinity 1.0 fl oz + Iprodione Pro 2.0 fl oz ...	14-d	0.5 cde	0.4 c-f	0.4 bcd	0.3 cde	0.8 bcd
Trinity 1.0 fl oz + Iprodione Pro 3.0 fl oz ...	14-d	0.5 cde	0.4 c-f	0.1 cde	0.3 cde	0.9 bc
Trinity 1.0 fl oz + Iprodione Pro 4.0 fl oz ...	14-d	0.1 de	0.4 c-f	0.5 abc	0.4 bcd	0.8 bcd
Curalan 1.0 oz	14-d	0.0 e	0.3 def	0.0 de	0.0 e	0.1 fg
SP2059 1.0 oz	14-d	0.0 e	0.1 ef	0.3 b-e	0.1 de	0.1 fg
SP2059 2.0 oz	14-d	0.1 de	0.1 ef	0.0 de	0.0 e	0.1 fg
Emerald 0.13 oz	14-d	0.0 e	0.1 ef	0.0 de	0.0 e	0.0 g
Trinity 1.0 fl oz	14-d	0.9 bc	0.4 c-f	0.3 b-e	0.1 de	0.3 efg
Trinity 1.5 fl oz	21-d	0.5 cde	0.4 c-f	0.4 bcd	0.0 e	0.6 cde
Daconil Weather Stik 2.0 fl oz	14-d	0.1 de	0.0 f	0.0 de	0.0 e	0.0 g
Daconil Weather Stik 3.6 fl oz	14-d	0.0 e	0.0 f	0.0 de	0.0 e	0.0 g
A16422A 2.0 fl oz	14-d	0.1 de	0.0 f	0.0 de	0.0 e	0.1 fg
A16422A 3.6 fl oz	14-d	0.1 de	0.0 f	0.0 de	0.0 e	0.0 g
A16422B 2.0 fl oz	14-d	0.0 e	0.0 f	0.0 de	0.0 e	0.0 g
A16422B 3.6 fl oz	14-d	0.0 e	0.0 f	0.0 de	0.0 e	0.0 g
Daconil Ultrex 1.8 oz	14-d	0.0 e	0.1 ef	0.0 de	0.0 e	0.0 g
Daconil Ultrex 3.2 oz	14-d	0.0 e	0.0 f	0.0 de	0.0 e	0.0 g
A15935A 2.5 fl oz	14-d	0.1 de	0.0 f	0.0 de	0.0 e	0.3 efg
A15935A 4.5 fl oz	14-d	0.0 e	0.0 f	0.0 de	0.0 e	0.1 fg
A15935A 2.5 fl oz	21-d	0.1 de	0.1 ef	0.0 de	0.0 e	0.0 g
A15935A 4.5 fl oz	21-d	0.0 e	0.0 f	0.0 de	0.0 e	0.0 g
Daconil Weather Stik 2.0 fl oz + Heritage TL 0.2 oz	14-d	0.1 de	0.2 def	0.0 e	0.0 e	0.2 efg
Headway 1.5 fl oz	14-d	1.8 a	0.9 ab	0.9 a	0.5 abc	2.0 a
Tartan 1.0 fl oz	14-d	0.4 cde	1.1 a	0.4 bcd	0.6 ab	1.1 b
Concert 3.0 fl oz	14-d	0.5 cde	0.4 c-f	0.3 b-e	0.3 cde	0.9 bc
Bayleton 1.0 oz	28-d	1.3 ab	0.8 abc	0.5 abc	0.8 a	2.0 a
Tourney 0.18 oz	14-d	0.0 e	0.5 b-e	0.1 cde	0.1 de	0.3 efg
Tourney 0.28 oz	14-d	0.1 de	0.5 b-e	0.6 ab	0.4 bcd	0.8 bcd
DPZ-LEM17-50-80 0.3 oz	14-d	0.5 cde	0.3 def	0.0 de	0.3 cde	0.3 efg
DPZ-LEM17-50-80 0.5 oz	14-d	0.5 cde	0.3 def	0.0 de	0.0 e	0.3 efg
26/36 4.0 fl oz	21-d	0.0 e	0.0 f	0.0 de	0.0 e	0.0 g
Quali-Pro Chlorothalonil 3.24oz	14-d	0.0 e	0.0 f	0.0 de	0.0 e	0.0 g
Quali-Pro Iprodione 4.0 fl oz	14-d	0.3 de	0.6 bcd	0.1 cde	0.1 de	0.5 c-f
Check	-	0.5 cde	0.5 b-e	0.0 de	0.1 de	0.3 efg

^z Treatments were applied as follows: 14-d interval treatments were applied on 2, 18 and 30 Jun; 15 and 18 Jul; and 12 Aug; 21-d interval treatments were applied on 2 and 24 Jun; 15 Jul; and 4 Aug; 28-d interval treatments were applied on 2 Jun; 28 Jul; and 4 Aug. SP2059 treatments were applied on 2, 19, and 30 Jun; 15 and 28 Jul; and 12 Aug.

^y Crabgrass injury was rated on a 0 to 5 scale where 0 = no injury visible and 5 = entire plot brown or dead.

^x Means in a column followed by the same letter are not significantly different at P≤0.05 level according to the Fisher's protected least significant difference t-test.

Table 2 (continued). Creeping bentgrass injury following repeated applications of various fungicides for the control of dollar spot, 2008.

Treatment and rate per 1000 sq ft	Application ^z		Injury ^y			
	Timing	4 Aug	6 Aug	11 Aug	18 Aug	25 Aug
Emerald 0.13 oz + T-Methyl 4.5L 3.0 fl oz	14-d	0.1 efx	0.3 efg	0.3 def	0.3 ef	0.1 d
Emerald 0.13 oz + T-Methyl 4.5L 4.0 fl oz	14-d	0.0 f	0.0 g	0.0 f	0.3 ef	0.0 d
Emerald 0.13 oz + Trinity 0.75 fl oz	14-d	0.3 def	0.3 efg	0.6 cde	0.5 c-f	0.5 bcd
Emerald 0.13 oz + Trinity 1.0 fl oz	14-d	0.3 def	0.0 g	0.3 def	0.0 f	0.1 d
Emerald 0.13 oz + Iprodione Pro 3.0 fl oz.	14-d	0.3 def	0.0 g	0.0 f	0.0 f	0.0 d
Emerald 0.13 oz + Iprodione Pro 4.0 fl oz ...	14-d	0.0 f	0.0 g	0.0 f	0.0 f	0.0 d
Trinity 1.0 fl oz + Iprodione Pro 2.0 fl oz ...	14-d	0.4 c-f	0.6 def	0.6 cde	0.6 c-f	0.4 cd
Trinity 1.0 fl oz + Iprodione Pro 3.0 fl oz ...	14-d	0.9 bcd	0.9 cd	0.9 bc	0.8 b-e	0.4 cd
Trinity 1.0 fl oz + Iprodione Pro 4.0 fl oz ...	14-d	0.5 c-f	0.8 de	0.6 cde	0.5 c-f	0.6 bcd
Curalan 1.0 oz	14-d	0.3 def	0.0 g	0.0 f	0.0 f	0.0 d
SP2059 1.0 oz	14-d	0.0 f	0.0 g	0.0 f	0.0 f	0.0 d
SP2059 2.0 oz	14-d	0.0 f	0.0 g	0.0 f	0.0 f	0.0 d
Emerald 0.13 oz	14-d	0.0 f	0.0 g	0.0 f	0.0 f	0.0 d
Trinity 1.0 fl oz	14-d	0.5 c-f	0.1 fg	0.5 c-f	0.4 def	0.3 d
Trinity 1.5 fl oz	21-d	0.5 c-f	0.9 cd	0.8 cd	0.8 b-e	1.0 abc
Daconil Weather Stik 2.0 fl oz	14-d	0.0 f	0.0 g	0.0 f	0.0 f	0.0 d
Daconil Weather Stik 3.6 fl oz	14-d	0.0 f	0.0 g	0.0 f	0.0 f	0.0 d
A16422A 2.0 fl oz	14-d	0.0 f	0.0 g	0.0 f	0.0 f	0.0 d
A16422A 3.6 fl oz	14-d	0.0 f	0.0 g	0.0 f	0.0 f	0.0 d
A16422B 2.0 fl oz	14-d	0.0 f	0.0 g	0.0 f	0.0 f	0.0 d
A16422B 3.6 fl oz	14-d	0.0 f	0.0 g	0.0 f	0.0 f	0.0 d
Daconil Ultrex 1.8 oz	14-d	0.0 f	0.0 g	0.0 f	0.0 f	0.0 d
Daconil Ultrex 3.2 oz	14-d	0.0 f	0.0 g	0.0 f	0.0 f	0.0 d
A15935A 2.5 fl oz	14-d	0.3 def	0.0 g	0.0 f	0.1 ef	0.0 d
A15935A 4.5 fl oz	14-d	0.0 f	0.0 g	0.0 f	0.3 ef	0.0 d
A15935A 2.5 fl oz	21-d	0.0 f	0.0 g	0.0 f	0.0 f	0.0 d
A15935A 4.5 fl oz	21-d	0.0 f	0.0 g	0.0 f	0.0 f	0.0 d
Daconil Weather Stik 2.0 fl oz + Heritage TL 0.2 oz	14-d	0.2 def	0.1 fg	0.1 ef	0.0 f	0.0 d
Headway 1.5 fl oz	14-d	1.8 a	1.4 bc	1.4 b	1.4 ab	1.0 abc
Tartan 1.0 fl oz	14-d	0.9 bcd	1.5 b	2.3 a	1.0 a-d	1.1 ab
Concert 3.0 fl oz	14-d	0.5 c-f	0.5 d-g	0.9 bc	0.6 c-f	0.0 d
Bayleton 1.0 oz	28-d	1.3 ab	2.3 a	2.0 a	1.5 a	1.1 ab
Tourney 0.18 oz	14-d	0.3 def	0.0 g	0.0 f	0.0 f	0.0 d
Tourney 0.28 oz	14-d	1.0 bc	0.5 d-g	0.8 cd	1.1 abc	1.4 a
DPZ-LEM17-50-80 0.3 oz	14-d	0.8 b-e	0.3 efg	0.3 def	0.1 ef	0.0 d
DPZ-LEM17-50-80 0.5 oz	14-d	0.3 def	0.0 g	0.0 f	0.0 f	0.0 d
26/36 4.0 fl oz	21-d	0.0 f	0.0 g	0.0 f	0.0 f	0.0 d
Quali-Pro Chlorothalonil 3.24oz	14-d	0.0 f	0.0 g	0.0 f	0.0 f	0.0 d
Quali-Pro Iprodione 4.0 fl oz	14-d	0.4 c-f	0.0 g	0.1 ef	0.6 c-f	0.1 d
Check	-	0.0 f	0.0 g	0.0 f	0.0 f	0.0 d

^z Treatments were applied as follows: 14-d interval treatments were applied on 2, 18 and 30 Jun; 15 and 18 Jul; and 12 Aug; 21-d interval treatments were applied on 2 and 24 Jun; 15 Jul; and 4 Aug; 28-d interval treatments were applied on 2 Jun; 28 Jul; and 4 Aug. SP2059 treatments were applied on 2, 19, and 30 Jun; 15 and 28 Jul; and 12 Aug.

^y Crabgrass injury was rated on a 0 to 5 scale where 0 = no injury visible and 5 = entire plot brown or dead.

^x Means in a column followed by the same letter are not significantly different at $P \leq 0.05$ level according to the Fisher's protected least significant difference t-test.

Table 3. Number of dollar spot infection centers and percent dollar spot per plot following application of various formulations of confidential,2008

Treatment and rate per 1000 sq ft	Application ^z		Dollar spot Infection center ^y			
	Timing	16 Jun	23 Jun	30 Jun	7 Jul	14Jul
Emerald 0.13 oz + T-Methyl 4.5L 3.0 fl oz ..	14-d	<1 a ^x	0 a	0 a	0 c	0 b
Emerald 0.13 oz + T-Methyl 4.5L 4.0 fl oz ..	14-d	0 a	0 a	0 a	0 c	0 b
Emerald 0.13 oz + Trinity 0.75 fl oz	14-d	<1 a	0 a	0 a	0 c	0 b
Emerald 0.13 oz + Trinity 1.0 fl oz	14-d	0 a	0 a	0 a	0 c	0 b
Emerald 0.13 oz + Iprodione Pro 3.0 fl oz...	14-d	0 a	0 a	0 a	0 c	0 b
Emerald 0.13 oz + Iprodione Pro 4.0 fl oz...	14-d	0 a	0 a	0 a	0 c	0 b
Trinity 1.0 fl oz + Iprodione Pro 2.0 fl oz	14-d	0 a	0 a	0 a	0 c	0 b
Trinity 1.0 fl oz + Iprodione Pro 3.0 fl oz	14-d	0 a	0 a	0 a	0 c	0 b
Trinity 1.0 fl oz + Iprodione Pro 4.0 fl oz	14-d	0 a	0 a	0 a	0 c	0 b
Curalan 1.0 oz	14-d	0 a	0 a	0 a	0 c	0 b
SP2059 1.0 oz	14-d	0 a	<1 a	1 a	2 b	5 a
SP2059 2.0 oz	14-d	0 a	<1 a	1 a	3 a	4 a
Emerald 0.13 oz	14-d	0 a	0 a	0 a	0 c	0 b
Trinity 1.0 fl oz	14-d	0 a	0 a	0 a	0 c	0 b
Trinity 1.5 fl oz	21-d	0 a	0 a	0 a	0 c	0 b
Daconil Weather Stik 2.0 fl oz	14-d	0 a	0 a	0 a	0 c	0 b
Daconil Weather Stik 3.6 fl oz	14-d	0 a	0 a	0 a	0 c	0 b
A16422A 2.0 fl oz	14-d	0 a	0 a	0 a	0 c	0 b
A16422A 3.6 fl oz	14-d	0 a	0 a	0 a	0 c	0 b
A16422B 2.0 fl oz	14-d	0 a	0 a	0 a	0 c	0 b
A16422B 3.6 fl oz	14-d	0 a	0 a	0 a	0 c	0 b
Daconil Ultrex 1.8 oz	14-d	0 a	0 a	0 a	0 c	<1 b
Daconil Ultrex 3.2 oz	14-d	0 a	0 a	0 a	0 c	0 b
A15935A 2.5 fl oz	14-d	0 a	0 a	0 a	0 c	<1 b
A15935A 4.5 fl oz	14-d	0 a	0 a	0 a	0 c	0 b
A15935A 2.5 fl oz	21-d	0 a	0 a	0 a	0 c	1 b
A15935A 4.5 fl oz	21-d	0 a	0 a	0 a	0 c	0 b
Daconil Weather Stik 2.0 fl oz + Heritage TL 0.2 oz	14-d	0 a	0 a	0 a	0 c	0 b
Headway 1.5 fl oz	14-d	0 a	0 a	0 a	0 c	0 b
Tartan 1.0 fl oz	14-d	0 a	0 a	0 a	0 c	0 b
Concert 3.0 fl oz	14-d	0 a	0 a	0 a	0 c	0 b
Bayleton 1.0 oz	28-d	0 a	0 a	0 a	0 c	0 b
Tourney 0.18 oz	14-d	0 a	0 a	0 a	0 c	0 b
Tourney 0.28 oz	14-d	0 a	0 a	0 a	0 c	0 b
DPZ-LEM17-50-80 0.3 oz	14-d	0 a	0 a	0 a	0 c	0 b
DPZ-LEM17-50-80 0.5 oz	14-d	0 a	0 a	0 a	0 c	0 b
26/36 4.0 fl oz	21-d	0 a	0 a	0 a	0 c	0 b
Quali-Pro Chlorothalonil 3.24oz	14-d	0 a	0 a	0 a	0 c	0 b
Quali-Pro Iprodione 4.0 fl oz	14-d	0 a	0 a	0 a	0 c	0 b
Check	-	0 a	<1 a	<1 a	2 b	5 a

^z Treatments were applied as follows: 14-d interval treatments were applied on 2, 18 and 30 Jun; 15 and 18 Jul; and 12 Aug; 21-d interval treatments were applied on 2 and 24 Jun; 15 Jul; and 4 Aug; 28-d interval treatments were applied on 2 Jun; 28 Jul; and 4 Aug. SP2059 treatments were applied on 2, 19, and 30 Jun; 15 and 28 Jul; and 12 Aug.

^y Dollar spot was rated by counting the total number of infection centers or percent plot area covered with dollar spot per 18 sq ft plot.

^x Means in a column followed by the same letter are not significantly different at $P \leq 0.05$ according to Fisher's protected least significant difference test.

Table 3 Number of dollar spot infection centers and percent dollar spot per plot following application of various formulations of confidential, 2008.

Treatment and rate per 1000 sq ft	Application ^z	Dollar spot Infection center ^y				
	Timing	21 Jul	28 Jul	4 Aug	11 Aug	18 Aug
Emerald 0.13 oz + T-Methyl 4.5L 3.0 fl oz ..	14-d	0 c ^x	0 d	0 e	0 d	0 c
Emerald 0.13 oz + T-Methyl 4.5L 4.0 fl oz ..	14-d	0 c	0 d	0 e	0 d	0 c
Emerald 0.13 oz + Trinity 0.75 fl oz	14-d	0 c	0 d	0 e	0 d	0 c
Emerald 0.13 oz + Trinity 1.0 fl oz	14-d	0 c	0 d	0 e	0 d	0 c
Emerald 0.13 oz + Iprodione Pro 3.0 fl oz	14-d	0 c	<1 d	0 e	<1 d	<1 c
Emerald 0.13 oz + Iprodione Pro 4.0 fl oz	14-d	0 c	0 d	0 e	0 d	0 c
Trinity 1.0 fl oz + Iprodione Pro 2.0 fl oz	14-d	0 c	0 d	0 e	<1 d	<1 c
Trinity 1.0 fl oz + Iprodione Pro 3.0 fl oz	14-d	0 c	0 d	0 e	0 d	0 c
Trinity 1.0 fl oz + Iprodione Pro 4.0 fl oz	14-d	0 c	0 d	0 e	0 d	0 c
Curalan 1.0 oz	14-d	0 c	0 d	0 e	0 d	0 c
SP2059 1.0 oz	14-d	9 a	18 a	32 a	42 a	49 a
SP2059 2.0 oz	14-d	4 b	10 b	23 b	34 b	43 b
Emerald 0.13 oz	14-d	0 c	0 d	0 e	0 d	0 c
Trinity 1.0 fl oz	14-d	0 c	0 d	0 e	0 d	0 c
Trinity 1.5 fl oz	21-d	0 c	0 d	0 e	<1 d	<1 c
Daconil Weather Stik 2.0 fl oz	14-d	0 c	0 d	<1 e	2 cd	2 c
Daconil Weather Stik 3.6 fl oz	14-d	0 c	0 d	0 e	<1 d	<1 c
A16422A 2.0 fl oz	14-d	0 c	1 d	1 e	3 cd	4 c
A16422A 3.6 fl oz	14-d	0 c	0 d	0 e	0 d	0 c
A16422B 2.0 fl oz	14-d	0 c	5 c	2 de	5 c	5 c
A16422B 3.6 fl oz	14-d	0 c	0 d	0 e	0 d	0 c
Daconil Ultrex 1.8 oz	14-d	<1 c	<1 d	<1 e	1 cd	1 c
Daconil Ultrex 3.2 oz	14-d	0 c	0 d	0 e	0 d	<1 c
A15935A 2.5 fl oz	14-d	0 c	<1 d	0 e	<1 d	2 c
A15935A 4.5 fl oz	14-d	0 c	0 d	0 e	0 d	0 c
A15935A 2.5 fl oz	21-d	1 c	1 d	5 d	2 cd	5 c
A15935A 4.5 fl oz	21-d	0 c	0 d	1 e	<1 d	<1 c
Daconil Weather Stik 2.0 fl oz + Heritage TL 0.2 oz	14-d	0 c	<1 d	<1 e	<1 d	<1 c
Headway 1.5 fl oz	14-d	0 c	0 d	0 e	0 d	0 c
Tartan 1.0 fl oz	14-d	0 c	0 d	1.0 e	0 d	0 c
Concert 3.0 fl oz	14-d	0 c	0 d	0 e	0 d	0 c
Bayleton 1.0 oz	28-d	0 c	0 d	0 e	0 d	0 c
Tourney 0.18 oz	14-d	0 c	0 d	0 e	0 d	0 c
Tourney 0.28 oz	14-d	0 c	0 d	0 e	0 d	0 c
DPZ-LEM17-50-80 0.3 oz	14-d	0 c	0 d	0 e	1 cd	<1 c
DPZ-LEM17-50-80 0.5 oz	14-d	0 c	0 d	0 e	0 d	0 c
26/36 4.0 fl oz	21-d	0 c	0 d	<1 e	0 d	<1 c
Quali-Pro Chlorothalonil 3.24oz	14-d	0 c	0 d	0 e	<1 d	<1 c
Quali-Pro Iprodione 4.0 fl oz	14-d	0 c	0 d	0 e	0 d	0 c
Check	-	5.0 b	11.0 b	19 c	33 b	44 ab

^z Treatments were applied as follows: 14-d interval treatments were applied on 2, 18 and 30 Jun; 15 and 18 Jul; and 12 Aug; 21-d interval treatments were applied on 2 and 24 Jun; 15 Jul; and 4 Aug; 28-d interval treatments were applied on 2 Jun; 28 Jul; and 4 Aug. SP2059 treatments were applied on 2, 19, and 30 Jun; 15 and 28 Jul; and 12 Aug.

^y Dollar spot was rated by counting the total number of infection centers or percent plot area covered with dollar spot per 18 sq ft plot.

^x Means in a column followed by the same letter are not significantly different at $P \leq 0.05$ according to Fisher's protected least significant difference test.

Table 3 Number of dollar spot infection centers and percent dollar spot per plot following application of various formulations of confidential, 2008.

Treatment and rate per 1000 sq ft	Application ^z		Dollar spot Infection centers ^y		
	Timing	25 Aug	8 Sep	15 Sep	22 Sep
Emerald 0.13 oz + T-Methyl 4.5L 3.0 fl oz	14-d	0 d ^x	0 k	5 mn	14 o-r
Emerald 0.13 oz + T-Methyl 4.5L 4.0 fl oz	14-d	0 d	<1 jk	5 mn	16 n-r
Emerald 0.13 oz + Trinity 0.75 fl oz	14-d	0 d	<1 k	<1 n	6 r
Emerald 0.13 oz + Trinity 1.0 fl oz	14-d	0 d	<1 jk	2 n	10 qr
Emerald 0.13 oz + Iprodione Pro 3.0 fl oz.....	14-d	0 d	1 jk	7 lmn	18 n-r
Emerald 0.13 oz + Iprodione Pro 4.0 fl oz.....	14-d	0 d	0 k	7 lmn	18 n-r
Trinity 1.0 fl oz + Iprodione Pro 2.0 fl oz	14-d	0 d	4 h-k	20 g-n	40 h-r
Trinity 1.0 fl oz + Iprodione Pro 3.0 fl oz	14-d	0 d	2 jk	10 k-n	22 m-r
Trinity 1.0 fl oz + Iprodione Pro 4.0 fl oz	14-d	0 d	2 jk	26 f-l	72 c-j
Curalan 1.0 oz	14-d	0 d	0 k	<1 n	5 r
SP2059 1.0 oz.....	14-d	61 a	113 a	143 a	203 a
SP2059 2.0 oz.....	14-d	58 ab	101 b	123 a	177 a
Emerald 0.13 oz	14-d	0 d	<1 k	5 mn	17 n-r
Trinity 1.0 fl oz	14-d	0 d	9 g-k	31 e-i	59 e-m
Trinity 1.5 fl oz	21-d	<1 d	22 ef	58 bcd	84 c-f
Daconil Weather Stik 2.0 fl oz	14-d	2 cd	10 f-k	39 d-g	65 e-k
Daconil Weather Stik 3.6 fl oz	14-d	<1 d	1 jk	18 i-n	35 j-r
A16422A 2.0 fl oz	14-d	3 cd	12 f-j	30 e-k	59 e-m
A16422A 3.6 fl oz	14-d	0 d	1 jk	11 j-n	32 k-r
A16422B 2.0 fl oz	14-d	2 cd	14 f-i	38 e-h	66 d-k
A16422B 3.6 fl oz	14-d	0 d	<1 jk	20 g-n	52 f-n
Daconil Ultrex 1.8 oz	14-d	<1 d	16 fgh	45 c-f	78 c-h
Daconil Ultrex 3.2 oz	14-d	0 d	8 g-k	32 e-i	60 e-l
A15935A 2.5 fl oz	14-d	<1 d	9 g-k	37 e-i	74 c-i
A15935A 4.5 fl oz	14-d	0 d	<1 k	19 h-n	46 g-q
A15935A 2.5 fl oz	21-d	7 c	55 c	70 b	103 bcd
A15935A 4.5 fl oz	21-d	3 cd	35 d	63 bc	108 bc
Daconil Weather Stik 2.0 fl oz + Heritage TL 0.2 oz.....	14-d	<1 cd	8 g-k	32 e-i	73 c-j
Headway 1.5 fl oz.....	14-d	0 d	0 k	11 j-n	25 l-r
Tartan 1.0 fl oz	14-d	0 d	1.0 jk	8 lmn	20 n-r
Concert 3.0 fl oz	14-d	0 d	0 k	5 mn	14 pqr
Bayleton 1.0 oz.....	28-d	0 d	4 ijk	30 e-j	52 f-o
Tourney 0.18 oz	14-d	0 d	12 f-k	47 cde	73 c-j
Tourney 0.28 oz	14-d	0 d	6 g-k	20 g-n	38 i-r
DPZ-LEM17-50-80 0.3 oz	14-d	<1 cd	30 de	58 bcd	96 b-e
DPZ-LEM17-50-80 0.5 oz	14-d	0 d	10 g-k	33 e-i	50 f-p
26/36 4.0 fl oz.....	21-d	<1 d	57 c	77 b	129 b
Quali-Pro Chlorothalonil 3.24oz	14-d	<1 d	17 fg	44 c-f	79 c-g
Quali-Pro Iprodione 4.0 fl oz	14-d	0 d	5 h-k	22 g-m	38 i-r
Check	-	54 b	100 b	133 a	196 a

^z Treatments were applied as follows: 14-d interval treatments were applied on 2, 18 and 30 Jun; 15 and 18 Jul; and 12 Aug; 21-d interval treatments were applied on 2 and 24 Jun; 15 Jul; and 4 Aug; 28-d interval treatments were applied on 2 Jun; 28 Jul; and 4 Aug. SP2059 treatments were applied on 2, 19, and 30 Jun; 15 and 28 Jul; and 12 Aug.

^y Dollar spot was rated by counting the total number of infection centers or percent plot area covered with dollar spot per 18 sq ft plot.

^x Means in a column followed by the same letter are not significantly different at $P \leq 0.05$ according to Fisher's protected least significant difference test.

Table 4 Turfgrass quality following the application of various fungicides, 2008.

Treatment and rate per 1000 sq ft	Application ^z			Quality ^y		
	Timing	16 Jun	23 Jun	30 Jun	7 Jul	14 Jul
Emerald 0.13 oz + T-Methyl 4.5L 3.0 fl oz ..	14-d	6.5 a ^x	7.8 a	8.0 a	8.0 c-f	8.3 b-e
Emerald 0.13 oz + T-Methyl 4.5L 4.0 fl oz ..	14-d	7.0 a	7.8 a	9.0 a	8.3 cde	8.5 a-d
Emerald 0.13 oz + Trinity 0.75 fl oz	14-d	6.5 a	7.3 a	8.3 a	7.5 efg	8.0 cde
Emerald 0.13 oz + Trinity 1.0 fl oz	14-d	6.8 a	7.8 a	8.5 a	8.3 cde	8.3 b-e
Emerald 0.13 oz + Iprodione Pro 3.0 fl oz	14-d	7.0 a	8.3 a	9.0 a	8.0 c-f	8.5 a-d
Emerald 0.13 oz + Iprodione Pro 4.0 fl oz	14-d	6.8 a	8.3 a	8.8 a	7.8 d-g	8.8 abc
Trinity 1.0 fl oz + Iprodione Pro 2.0 fl oz	14-d	6.8 a	7.5 a	8.8 a	8.0 c-f	8.3 b-e
Trinity 1.0 fl oz + Iprodione Pro 3.0 fl oz	14-d	7.0 a	7.8 a	9.3 a	8.0 c-f	8.3 b-e
Trinity 1.0 fl oz + Iprodione Pro 4.0 fl oz	14-d	6.8 a	7.8 a	8.8 a	8.3 cde	8.5 a-d
Curalan 1.0 oz	14-d	6.8 a	7.8 a	9.0 a	8.3 cde	9.0 ab
SP2059 1.0 oz	14-d	7.0 a	8.0 a	8.8 a	8.0 c-f	8.0 cde
SP2059 2.0 oz	14-d	6.3 a	7.8 a	7.8 a	8.3 cde	7.5 e
Emerald 0.13 oz	14-d	6.3 a	7.3 a	7.8 a	7.3 fg	8.3 b-e
Trinity 1.0 fl oz	14-d	6.8 a	7.8 a	8.8 a	7.8 d-g	8.3 b-e
Trinity 1.5 fl oz	21-d	6.3 a	6.8 a	8.0 a	7.3 fg	7.8 de
Daconil Weather Stik 2.0 fl oz	14-d	7.0 a	7.8 a	9.0 a	8.8 abc	8.8 abc
Daconil Weather Stik 3.6 fl oz	14-d	6.5 a	7.5 a	8.5 a	8.0 c-f	8.5 a-d
A16422A 2.0 fl oz	14-d	6.8 a	8.0 a	8.8 a	8.0 c-f	8.8 abc
A16422A 3.6 fl oz	14-d	6.5 a	8.0 a	8.8 a	8.3 cde	9.3 a
A16422B 2.0 fl oz	14-d	7.3 a	8.5 a	9.5 a	9.3 ab	9.3 a
A16422B 3.6 fl oz	14-d	6.5 a	7.8 a	8.8 a	8.5 bcd	9.0 ab
Daconil Ultrex 1.8 oz	14-d	6.5 a	8.3 a	8.3 a	8.3 cde	8.5 a-d
Daconil Ultrex 3.2 oz	14-d	6.5 a	8.0 a	8.5 a	8.3 cde	9.0 ab
A15935A 2.5 fl oz	14-d	7.3 a	8.0 a	9.5 a	8.5 bcd	8.8 abc
A15935A 4.5 fl oz	14-d	7.0 a	7.8 a	8.8 a	8.8 abc	9.3 a
A15935A 2.5 fl oz	21-d	6.5 a	8.0 a	8.8 a	8.3 cde	8.5 a-d
A15935A 4.5 fl oz	21-d	6.8 a	8.3 a	8.8 a	8.0 c-f	8.8 abc
Daconil Weather Stik 2.0 fl oz + Heritage TL 0.2 oz	14-d	7.0 a	8.5 a	9.3 a	9.6 a	9.0 ab
Headway 1.5 fl oz	14-d	6.8 a	7.0 a	8.3 a	7.0 g	7.8 de
Tartan 1.0 fl oz	14-d	7.0 a	8.0 a	8.5 a	8.0 c-f	7.8 de
Concert 3.0 fl oz	14-d	6.8 a	7.5 a	8.5 a	7.8 d-g	8.0 cde
Bayleton 1.0 oz	28-d	6.5 a	7.5 a	8.5 a	7.3 fg	7.8 de
Tourney 0.18 oz	14-d	6.5 a	8.0 a	8.8 a	8.0 c-f	7.8 de
Tourney 0.28 oz	14-d	6.8 a	7.8 a	8.3 a	7.5 efg	8.3 b-e
DPZ-LEM17-50-80 0.3 oz	14-d	7.3 a	7.8 a	8.3 a	8.0 c-f	8.3 b-e
DPZ-LEM17-50-80 0.5 oz	14-d	6.8 a	7.8 a	8.5 a	8.0 c-f	8.3 b-e
26/36 4.0 fl oz	21-d	6.5 a	7.3 a	8.5 a	8.3 cde	8.3 b-e
Quali-Pro Chlorothalonil 3.24oz	14-d	6.3 a	7.8 a	8.5 a	8.5 bcd	8.8 abc
Quali-Pro Iprodione 4.0 fl oz	14-d	7.0 a	7.8 a	9.0 a	8.3 cde	8.5 a-d
Check	-	6.8 a	7.8 a	8.5 a	7.8 d-g	7.8 de

^z Treatments were applied as follows: 14-d interval treatments were applied on 2, 18 and 30 Jun; 15 and 18 Jul; and 12 Aug; 21-d interval treatments were applied on 2 and 24 Jun; 15 Jul; and 4 Aug; 28-d interval treatments were applied on 2 Jun; 28 Jul; and 4 Aug. SP2059 treatments were applied on 2, 19, and 30 Jun; 15 and 28 Jul; and 12 Aug.

^y Quality was rated visually on 0 to 10 scale where 0 = entire plot area brown or dead; 7 = minimum acceptable quality for a home lawn; and 10 = optimum density and dark green color.

^x Means in a column followed by the same letter are not significantly different at $P \leq 0.05$ according to Fisher's protected least significant difference test

Table 4 Turfgrass quality following the application of various fungicides, 2008.

Treatment and rate per 1000 sq ft	App.	Quality ^y				
	Timing ^z	21 Jul	28 Jul	4 Aug	11 Aug	18 Aug
Emerald 0.13 oz + T-Methyl 4.5L 3.0 fl oz.....	14-d	8.5 b-e ^x	8.0 bcd	8.3 cde	8.3 bc	9.3 ab
Emerald 0.13 oz + T-Methyl 4.5L 4.0 fl oz.....	14-d	8.8 a-d	7.8 cde	8.5 bcd	8.5 abc	8.8 a-d
Emerald 0.13 oz + Trinity 0.75 fl oz.....	14-d	8.0 def	7.8 cde	8.3 cde	8.0 bc	8.8 a-d
Emerald 0.13 oz + Trinity 1.0 fl oz.....	14-d	8.5 b-e	8.3 abc	8.3 cde	8.3 bc	9.0 abc
Emerald 0.13 oz + Iprodione Pro 3.0 fl oz.....	14-d	9.0 abc	8.0 bcd	8.8 abc	8.5 abc	8.8 a-d
Emerald 0.13 oz + Iprodione Pro 4.0 fl oz.....	14-d	8.3 cde	8.0 bcd	8.3 cde	8.5 abc	9.0 abc
Trinity 1.0 fl oz + Iprodione Pro 2.0 fl oz.....	14-d	8.3 cde	7.5 def	8.0 cde	8.0 bc	8.5 b-e
Trinity 1.0 fl oz + Iprodione Pro 3.0 fl oz.....	14-d	8.3 cde	7.5 def	8.0 cde	7.8 bcd	8.3 b-e
Trinity 1.0 fl oz + Iprodione Pro 4.0 fl oz.....	14-d	8.0 def	7.5 def	8.8 abc	8.3 bc	8.8 a-d
Curalan 1.0 oz.....	14-d	8.8 a-d	8.0 bcd	8.3 cde	8.0 bc	8.8 a-d
SP2059 1.0 oz.....	14-d	7.3 f	6.0 h	6.0 g	6.0 e	6.0 f
SP2059 2.0 oz.....	14-d	7.8 ef	6.5 gh	6.0 g	6.0 e	6.0 f
Emerald 0.13 oz.....	14-d	8.5 b-e	8.0 bcd	8.3 cde	8.3 bc	8.8 a-d
Trinity 1.0 fl oz.....	14-d	8.5 b-e	7.8 cde	8.3 cde	8.3 bc	9.3 ab
Trinity 1.5 fl oz.....	21-d	8.3 cde	7.3 ef	8.0 cde	8.0 bc	7.8 de
Daconil Weather Stik 2.0 fl oz.....	14-d	9.0 abc	8.0 bcd	8.8 abc	8.5 abc	8.8 a-d
Daconil Weather Stik 3.6 fl oz.....	14-d	8.5 b-e	8.3 abc	8.5 bcd	8.5 abc	8.8 a-d
A16422A 2.0 fl oz.....	14-d	8.8 a-d	8.5 ab	8.5 bcd	8.3 bc	8.3 b-e
A16422A 3.6 fl oz.....	14-d	9.0 abc	8.3 abc	8.5 bcd	8.5 abc	9.3 ab
A16422B 2.0 fl oz.....	14-d	9.5 a	8.8 a	9.3 ab	7.5 cd	7.5 e
A16422B 3.6 fl oz.....	14-d	9.5 a	8.8 a	9.5 a	9.5 a	9.8 a
Daconil Ultrex 1.8 oz.....	14-d	8.3 cde	8.3 abc	8.3 cde	8.5 abc	8.8 a-d
Daconil Ultrex 3.2 oz.....	14-d	8.8 a-d	8.3 abc	8.5 bcd	8.8 ab	9.0 abc
A15935A 2.5 fl oz.....	14-d	8.3 cde	8.0 bcd	8.8 abc	8.5 abc	8.5 b-e
A15935A 4.5 fl oz.....	14-d	8.8 a-d	8.3 abc	8.5 bcd	8.8 ab	8.8 a-d
A15935A 2.5 fl oz.....	21-d	8.0 def	8.0 bcd	6.8 fg	8.0 bc	8.0 cde
A15935A 4.5 fl oz.....	21-d	8.5 b-e	8.5 ab	8.3 cde	8.8 ab	9.0 abc
Daconil Weather Stik 2.0 fl oz + Heritage TL 0.2 fl oz.....	14-d	8.6 bcd	7.6 c-f	8.6 a-d	8.2 bc	9.0 abc
Headway 1.5 fl oz.....	14-d	8.0 def	7.3 ef	7.5 ef	7.5 cd	7.5 e
Tartan 1.0 fl oz.....	14-d	8.5 b-e	7.5 def	7.5 ef	6.8 de	8.3 b-e
Concert 3.0 fl oz.....	14-d	8.3 cde	8.0 bcd	8.3 cde	7.8 bcd	8.5 b-e
Bayleton 1.0 oz.....	28-d	8.0 def	7.0 fg	7.8 de	6.8 de	7.5 e
Tourney 0.18 oz.....	14-d	7.8 ef	8.0 bcd	8.3 cde	8.5 abc	8.8 a-d
Tourney 0.28 oz.....	14-d	8.3 cde	7.8 cde	8.0 cde	7.8 bcd	7.8 de
DPZ-LEM17-50-80 0.3 oz.....	14-d	8.5 b-e	8.3 abc	8.3 cde	8.5 abc	9.0 abc
DPZ-LEM17-50-80 0.5 oz.....	14-d	8.8 a-d	8.3 abc	8.5 bcd	8.8 ab	9.0 abc
26/36 4.0 fl oz.....	21-d	8.5 b-e	8.3 abc	8.8 abc	8.8 ab	9.0 abc
Quali-Pro Chlorothalonil 3.24oz.....	14-d	9.3 ab	8.3 abc	8.5 bcd	8.5 abc	9.0 abc
Quali-Pro Iprodione 4.0 fl oz.....	14-d	8.5 b-e	8.0 bcd	8.0 cde	8.0 bc	7.8 de
Check.....	-	7.3 f	6.5 gh	6.0 g	6.0 e	6.0 f

^z Treatments were applied as follows: 14-d interval treatments were applied on 2, 18 and 30 Jun; 15 and 18 Jul; and 12 Aug; 21-d interval treatments were applied on 2 and 24 Jun; 15 Jul; and 4 Aug; 28-d interval treatments were applied on 2 Jun; 28 Jul; and 4 Aug. SP2059 treatments were applied on 2, 19, and 30 Jun; 15 and 28 Jul; and 12 Aug.

^y Quality was rated visually on 0 to 10 scale where 0 = entire plot area brown or dead; 7 = minimum acceptable quality for a home lawn; and 10 = optimum density and dark green color.

^x Means in a column followed by the same letter are not significantly different at $P \leq 0.05$ according to Fisher's protected least significant difference test

Table 4. Turfgrass quality following the application of various fungicides, 2008.

Treatment and rate per 1000 sq ft	Application ^z		Quality ^y		
	Timing	25 Aug	8 Sep	15 Sep	22 Sep
Emerald 0.13 oz + T-Methyl 4.5L 3.0 fl oz ...	14-d	8.5 bcd ^x	9.5 abc	8.3 abc	6.0 bcd
Emerald 0.13 oz + T-Methyl 4.5L 4.0 fl oz ...	14-d	8.5 bcd	9.8 ab	8.3 abc	6.0 bcd
Emerald 0.13 oz + Trinity 0.75 fl oz.....	14-d	8.5 bcd	9.8 ab	9.3 a	6.5 bc
Emerald 0.13 oz + Trinity 1.0 fl oz.....	14-d	8.8 bcd	9.8 ab	8.8 ab	6.8 ab
Emerald 0.13 oz + Iprodione Pro 3.0 fl oz....	14-d	8.8 bcd	9.5 abc	7.5 cd	6.8 ab
Emerald 0.13 oz + Iprodione Pro 4.0 fl oz....	14-d	9.0 abc	10.0 a	6.8 de	6.0 bcd
Trinity 1.0 fl oz + Iprodione Pro 2.0 fl oz.....	14-d	8.8 bcd	8.3 cde	6.0 ef	6.0 bcd
Trinity 1.0 fl oz + Iprodione Pro 3.0 fl oz.....	14-d	8.3 b-e	9.3 a-d	6.8 de	6.0 bcd
Trinity 1.0 fl oz + Iprodione Pro 4.0 fl oz.....	14-d	8.8 bcd	9.3 a-d	6.0 ef	6.0 bcd
Curalan 1.0 oz	14-d	9.0 abc	9.8 ab	9.3 a	7.5 a
SP2059 1.0 oz	14-d	6.0 f	5.3 h	5.0 f	4.5 g
SP2059 2.0 oz	14-d	6.0 f	5.8 gh	5.0 f	5.0 efg
Emerald 0.13 oz	14-d	8.5 bcd	9.8 ab	7.5 cd	6.0 bcd
Trinity 1.0 fl oz	14-d	9.0 abc	6.8 fg	6.0 ef	6.0 bcd
Trinity 1.5 fl oz	21-d	8.3 b-e	6.0 gh	6.0 ef	6.0 bcd
Daconil Weather Stik 2.0 fl oz	14-d	8.5 bcd	6.8 fg	6.0 ef	6.0 bcd
Daconil Weather Stik 3.6 fl oz	14-d	8.8 bcd	9.5 abc	6.0 ef	6.0 bcd
A16422A 2.0 fl oz	14-d	8.3 b-e	6.8 fg	6.0 ef	6.0 bcd
A16422A 3.6 fl oz	14-d	9.0 abc	9.5 abc	6.8 de	6.0 bcd
A16422B 2.0 fl oz	14-d	8.5 bcd	6.0 gh	6.0 ef	6.0 bcd
A16422B 3.6 fl oz	14-d	10.0 a	9.5 abc	6.0 ef	6.0 bcd
Daconil Ultrex 1.8 oz	14-d	9.0 abc	6.0 gh	6.0 ef	6.0 bcd
Daconil Ultrex 3.2 oz	14-d	9.0 abc	8.5 b-e	6.0 ef	5.8 cde
A15935A 2.5 fl oz	14-d	9.0 abc	6.8 fg	6.0 ef	6.0 bcd
A15935A 4.5 fl oz	14-d	9.0 abc	9.8 ab	6.0 ef	6.0 bcd
A15935A 2.5 fl oz	21-d	7.3 e	6.0 gh	5.8 ef	5.5 def
A15935A 4.5 fl oz	21-d	8.8 bcd	6.0 gh	6.0 ef	6.0 bcd
Daconil Weather Stik 2.0 fl oz + Heritage TL 0.2 fl oz.....	14-d	9.3 ab	6.8 fg	6.0 ef	6.0 bcd
Headway 1.5 fl oz.....	14-d	7.8 de	10.0 a	6.8 de	6 bcd
Tartan 1.0 fl oz	14-d	8.0 cde	9.3 a-d	7.8 bcd	6.5 bc
Concert 3.0 fl oz	14-d	8.8 bcd	10.0 a	8.3 abc	6.5 bc
Bayleton 1.0 oz.....	28-d	7.8 de	8.5 b-e	6.0 ef	6.0 bcd
Tourney 0.18 oz	14-d	8.8 bcd	6.0 gh	6.0 ef	6.0 bcd
Tourney 0.28 oz	14-d	7.3 e	8.3 cde	6.0 ef	6.0 bcd
DPZ-LEM17-50-80 0.3 oz	14-d	8.5 bcd	6.0 gh	6.0 ef	5.8 cde
DPZ-LEM17-50-80 0.5 oz	14-d	9.0 abc	7.5 ef	6.0 ef	6.0 bcd
26/36 4.0 fl oz.....	21-d	8.8 bcd	6.0 gh	6.0 ef	5.8 cde
Quali-Pro Chlorothalonil 3.24oz	14-d	9.0 abc	6.8 fg	6.0 ef	5.8 cde
Quali-Pro Iprodione 4.0 fl oz.....	14-d	8.0 cde	8.0 def	6.0 ef	6.0 bcd
Check	-	6.0 f	5.8 gh	5.0 f	4.8 fg

^z Treatments were applied as follows: 14-d interval treatments were applied on 2, 18 and 30 Jun; 15 and 18 Jul; and 12 Aug; 21-d interval treatments were applied on 2 and 24 Jun; 15 Jul; and 4 Aug; 28-d interval treatments were applied on 2 Jun; 28 Jul; and 4 Aug. SP2059 treatments were applied on 2, 19, and 30 Jun; 15 and 28 Jul; and 12 Aug.

^y Quality was rated visually on 0 to 10 scale where 0 = entire plot area brown or dead; 7 = minimum acceptable quality for a home lawn; and 10 = optimum density and dark green color.

^x Means in a column followed by the same letter are not significantly different at $P \leq 0.05$ according to Fisher's protected least significant difference test

Table 5. Creeping bentgrass color ratings as measured by the NDVI (Normalized Difference Vegetative Index) color meter.

Treatment and rate per 1000 sq ft	Application ^z		NDVI ^y	
	Timing	16 Jul	29 Jul	11 Aug
Emerald 0.13 oz + T-Methyl 4.5L 3.0 fl oz	14-d	0.702 a-e ^x	0.740 b-e	0.733 a-f
Emerald 0.13 oz + T-Methyl 4.5L 4.0 fl oz	14-d	0.686 efg	0.735 b-g	0.740 a-d
Emerald 0.13 oz + Trinity 0.75 fl oz	14-d	0.694 b-g	0.736 b-g	0.734 a-f
Emerald 0.13 oz + Trinity 1.0 fl oz	14-d	0.708 a-d	0.733 b-g	0.733 a-f
Emerald 0.13 oz + Iprodione Pro 3.0 fl oz.....	14-d	0.694 b-g	0.735 b-g	0.732 b-f
Emerald 0.13 oz + Iprodione Pro 4.0 fl oz.....	14-d	0.699 a-g	0.740 b-e	0.734 a-f
Trinity 1.0 fl oz + Iprodione Pro 2.0 fl oz	14-d	0.691 c-g	0.727 c-h	0.731 b-f
Trinity 1.0 fl oz + Iprodione Pro 3.0 fl oz	14-d	0.688 d-g	0.732 b-g	0.725 e-h
Trinity 1.0 fl oz + Iprodione Pro 4.0 fl oz	14-d	0.685 e-h	0.730 b-g	0.732 b-g
Curalan 1.0 oz	14-d	0.705 a-e	0.741 b-e	0.733 a-f
SP2059 1.0 oz.....	14-d	0.695 b-g	0.736 b-g	0.733 a-f
SP2059 2.0 oz.....	14-d	0.699 a-f	0.744 abc	0.734 a-f
Emerald 0.13 oz	14-d	0.696 a-g	0.738 b-f	0.730 c-f
Trinity 1.0 fl oz	14-d	0.693 c-g	0.745 abc	0.733 a-f
Trinity 1.5 fl oz	21-d	0.687 efg	0.733 b-g	0.721 f-i
Daconil Weather Stik 2.0 fl oz	14-d	0.700 a-e	0.738 b-f	0.739 a-e
Daconil Weather Stik 3.6 fl oz	14-d	0.698 a-g	0.731 b-g	0.737 a-e
A16422A 2.0 fl oz	14-d	0.700 a-g	0.746 ab	0.746 a
A16422A 3.6 fl oz	14-d	0.708 a-d	0.738 b-f	0.743 abc
A16422B 2.0 fl oz	14-d	0.713 ab	0.759 a	0.741 a-d
A16422B 3.6 fl oz	14-d	0.715 a	0.738 b-f	0.731 b-f
Daconil Ultrex 1.8 oz	14-d	0.695 a-g	0.737 b-f	0.744 ab
Daconil Ultrex 3.2 oz	14-d	0.696 a-g	0.748 ab	0.743 abc
A15935A 2.5 fl oz	14-d	0.690 c-g	0.735 b-g	0.736 a-e
A15935A 4.5 fl oz	14-d	0.697 a-g	0.737 b-f	0.745 ab
A15935A 2.5 fl oz	21-d	0.696 a-g	0.747 ab	0.733 a-f
A15935A 4.5 fl oz	21-d	0.693 b-g	0.748 ab	0.740 a-d
Daconil Weather Stik 2.0 fl oz + Heritage TL 0.2 fl oz	14-d	0.695 a-g	0.738 b-f	0.737 a-e
Headway 1.5 fl oz.....	14-d	0.680 fgh	0.719 gh	0.713 hi
Tartan 1.0 fl oz	14-d	0.665 h	0.711 h	0.710 i
Concert 3.0 fl oz	14-d	0.687 efg	0.721 fgh	0.731 b-f
Bayleton 1.0 oz.....	28-d	0.679 gh	0.724 e-h	0.716 b-f
Tourney 0.18 oz	14-d	0.695 b-g	0.737 b-f	0.734 a-f
Tourney 0.28 oz	14-d	0.688 d-g	0.726 d-h	0.721 f-i
DPZ-LEM17-50-80 0.3 oz	14-d	0.687 efg	0.739 b-f	0.738 a-e
DPZ-LEM17-50-80 0.5 oz	14-d	0.701 a-e	0.739 b-e	0.740 a-d
26/36 4.0 fl oz.....	21-d	0.700 a-e	0.744 a-d	0.740 a-d
Quali-Pro Chlorothalonil 3.24oz	14-d	0.709 abc	0.742 a-e	0.746 a
Quali-Pro Iprodione 4.0 fl oz	14-d	0.686 efg	0.740 b-e	0.728 d-g
Check	-	0.691 c-g	0.740 b-e	0.732 b-f

^z Treatments were applied as follows: 14-d interval treatments were applied on 2, 18 and 30 Jun; 15 and 18 Jul; and 12 Aug; 21-d interval treatments were applied on 2 and 24 Jun; 15 Jul; and 4 Aug; 28-d interval treatments were applied on 2 Jun; 28 Jul; and 4 Aug. SP2059 treatments were applied on 2, 19, and 30 Jun; 15 and 28 Jul; and 12 Aug.

^y Color ratings for reeping bentgrass fairway were measured with the NDVI color meter.

^x Means in a column followed by the same letter are not significantly different at $P \leq 0.05$ level according to the Fisher's protected least significant difference t-test.