

# DOLLAR SPOT DISEASE CONTROL, SUMMER 2003, BAYER

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## ABSTRACT

Thirteen chemical and control treatments were evaluated on a 10 year old sward of Penncross® creeping bentgrass (*Agrostis palustris*) at the Guelph Turfgrass Institute in Guelph, Ontario during August and September 2003 for control of dollar spot disease (caused by *Sclerotinia homoeocarpa*). In addition to inoculated and uninoculated control treatments, there was one standard fungicide treatment, Daconil 2787 EC (190 mL - 14 days), which is registered and recommended for control of dollar spot disease of turfgrass in Ontario. The treatments were applied over a 5-week period, but disease was monitored over a 7-week period to examine residual effects. Excellent results were achieved by the following treatments: Daconil 2787 EC (30 mL + 120 mL - 14 days), Compass + Chipco 26 GT (3.1 g + 62 mL - 14 days), Compass + Chipco 26 GT (4.6 g + 62 mL - 14 days), Compass + Chipco 26 GT (3.1 g + 4.1 mL - 14 days), Compass + Chipco 26 GT (4.6 g + 4.1 mL - 14 days), Compass + Chipco 26 GT, double application (4.6 g + 41 mL - 14 days), and Chipco 26 GT + Alliette (62 mL + 122 g - 14 days). Chipco 26 GT (62 mL - 14 days) provided excellent results but exceeded the aesthetically acceptable value of 5 spots/m<sup>2</sup> on 10 September. Compass (3.1 g - 14 days) and Compass (4.6 g - 14 days) significantly reduced disease symptoms but did not achieve satisfactory control. Alliette (122 g - 14 days) failed to significantly reduce disease. No phytotoxicity was observed during the trial.

## METHODS

Ten chemical treatments were evaluated on a 10 year old sward of Penncross® creeping bentgrass (*Agrostis palustris*) at the Guelph Turfgrass Institute in Guelph, Ontario. Turfgrass cul-

tural treatments were similar to those used for maintenance of golf course putting greens in Ontario. The plots were irrigated as needed, and mowing height was set at 5 mm. The green was constructed in 1994. Sulphur-coated urea (N-P-K: 25-4-10) was applied three times annually in spring and early and late summer at a product rate of 2 kg/100 m<sup>2</sup>. Experimental design consisted of a randomized complete block design with 4 replications. Each treatment plot measured 1 m x 2 m. Inoculum was prepared by incubating four strains of *Sclerotinia homoeocarpa* on autoclaved wheat bran for 2 to 3 weeks. The inoculum was dried and chopped into small particles with a domestic mixer. Inocula from the four strains were combined, and 2 g of inoculum plus 8 g of wheat bran as a carrier were evenly applied to each plot. Inoculum was applied three days after the first fungicide application. Fungicide treatments were first applied on 13 August 2003, with a wheel-mounted compressed air boom sprayer at 140 kPa in water at 11 L /100 m<sup>2</sup> using Lurmark 03-F110 nozzles. Fungicides were reapplied on a 14day schedule according to specifications over a 7week period. Dollar spot disease was evaluated weekly for twelve weeks by estimating number of infection centres per 1 m x 2 m plot. Significant yellowing due to phytotoxicity was noted if present. Analysis of variance was performed with PROC ANOVA in SAS®. When a significant treatment effect was found, mean separation was done with the test of least significant difference (LSD). Treatment means that differ by more than the LSD value are significantly different at p=0.05.

## RESULTS AND DISCUSSION

During the summer of 2003, development of disease on the inoculated plots was higher than average and lower than average on the uninoculated plots. When the plots were inocu-



lated on 16 August there was a very light infection of dollar spot with symptoms that increased steadily until 27 August and then declined slowly. Excellent results were achieved by the following treatments: Daconil 2787 EC (30 mL + 120 mL - 14 days), Compass + Chipco 26 GT (3.1 g + 62 mL - 14 days), Compass + Chipco 26 GT (4.6 g + 62 mL - 14 days), Compass + Chipco 26 GT (3.1 g + 4.1 mL - 14 days), Compass + Chipco 26 GT (4.6 g + 4.1 mL - 14 days), Compass + Chipco 26 GT, double application (4.6 g + 41 mL - 14 days),

and Chipco 26 GT + Alliette (62 mL + 122 g - 14 days). Chipco 26 GT (62 mL - 14 days) provided excellent results but exceeded the aesthetically acceptable value of 5 spots/m<sup>2</sup> on 10 September. Compass (3.1 g - 14 days), Compass (4.6 g - 14 days) significantly reduced disease symptoms but did not achieve satisfactory control. Alliette (122 g - 14 days) failed to significantly reduce disease. No phytotoxicity from any treatments was observed during the trial. Results are presented in Table 1.



Table 1: Treatment, application rate and schedule, and counts of dollar spot disease during August and September 2003. Plots were inoculated with *Sclerotinia homoeocarpa* 3 days after the first treatment on 13 August. Counts are expressed as number of infection centres in each 1 m by 2 m plot based on 4 replicates.

Treatment	Active Ingredient	Product Rate /100m <sup>5</sup>	Mean Number of Infection Centres						
			12 Aug	19 Aug	27 Aug	3 Sept	10 Sept	17 Sept	24 Sept
Uninoculated Check			13	54	83	73	98	84	80
Inoculated Check	<i>Sclerotinia homoeocarpa</i>	100 g	9	41	93	183	170	157	175
Daconil 2787	chlorothalonil 40%	190 mL	5	6	1	3	0	1	0
26GT	iprodione 23%	62 mL	7	7	0	1	14	0	5
Compass	trifloxystrobin 50%	3.1 g	14	24	29	98	108	90	138
Compass	trifloxystrobin 50%	4.6 g	8	8	14	103	80	70	105
Compass + 26GT	trifloxystrobin 50% + iprodione 23%	3.1 g + 62 mL	13	2	0	0	0	0	0
Compass + 26GT	trifloxystrobin 50% + iprodione 23%	4.6 g + 62 mL	12	3	0	0	0	0	0
Compass + 26GT	trifloxystrobin 50% + iprodione 23%	3.1 g + 41 mL	11	3	0	1	0	0	7
Compass + 26GT	trifloxystrobin 50% + iprodione 23%	4.6 g + 41 mL	4	2	0	0	0	0	3
Compass + 26GT double application	trifloxystrobin 50% + iprodione 23%	4.6 g + 62 mL	9	1	0	0	0	0	0
Alliette	fosetyl AL 80%	122 g	15	7	49	93	123	125	167
26GT + Alliette	iprodione 23% + fosetyl AL 80%	62 mL + 122 g	12	3	0	0	1	0	8
LSD (p=0.05)			10	14	20	30	16	19	26
Application Schedule									
Application Date			13 Aug		27 Aug		10 Sept		
14 days			X		X		X		

exceeded the aesthetically acceptable value of 5 spots/m<sup>2</sup>