



Fungicides With Ulterior Motives to Promote Golf Green Health

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Goal: Suppress dollar spot and brown patch and evaluate plant health effects.

Location: Sunshine Course's 1 green in play – Lemont, Illinois

Background: Dollar spot (*Sclerotinia homoeocarpa*) and brown patch (*Rhizoctonia solani*) are two common fungal diseases that negatively affect golf course greens. Together they require more input than any other pests. Because fungicides are necessarily applied with frequency, about every 14 days, additional plant health benefits may be gained. Since the 1990s one approach was use of fungicides on golf greens that are formulated with green pigments (e.g., Fore and Aliette Signature). Such products are now known capable of reducing harmful solar radiation and may protect turfgrass from physiological decline at midsummer. Increasingly, newer fungicides contain pigments and more research is needed to better understand effects.

Brief Material and Methods: Sunshine Course's number 2 green used a randomized complete block design with 3 replications. Individual plot size was 4 ft by 6 ft. The USGA-constructed green is creeping bentgrass seeded in 2002 to Penn G2 plus L93. It is maintained at 0.150 inch. Dollar spot existed (1-2%) when first applications were made on 23 May. Eleven treatments were applied every 14 days, one treatment every 21 days, and one treatment once (Table 1). Data collected included; dollar spot number, dollar spot percent, and brown patch percent. NDVI and visual quality (1-9 scale with 6= acceptable) assessed plant health / phytotoxicity.

Results: Dollar spot and brown patch percent

- Dollar spot. All treatments effectively controlled dollar spot under high disease pressure with Interface and Concert performing best. In general, treatments with levels of breakthrough contained the contact chlorothalonil. An early application of Bayleton did delay dollar spot development. (Fig. 1)
- Brown patch. All treatments except an early application of Bayleton controlled brown patch. Emerald and Iprodione Pro allowed moderate breakthrough given disease pressure was especially high. (Fig. 2)
- Visual quality. Quality was enhanced by StressGard products and all were in the top 8. Of those, the best 4 included; Interface (all 3 rates) and Reserve (3.5 oz).

Plant health was negatively impacted by brown patch (e.g., Emerald, Iprodione Pro) or repeat DMI use (e.g., Concert). A single application of Bayleton FLO delayed disease development somewhat. (Fig. 3)

- NDVI (dollar spot avoided) indicated multiple fungicides were similar in ability to improve plant health. Plant health was negatively impacted by brown patch (e.g., Emerald, Iprodione PRO) or repeat DMI use (e.g., Concert). (Fig. 4)

Table 1. Treatments for disease control on 2 green at Sunshine Course, Lemont, IL in 2010.

Number	Treatments	Interval	Rate per 1,000 sq ft
1	Untreated
2	Reserve	14 day	2.5 fl oz
3	Reserve	14 day	3.2 fl oz
4	Reserve	14 day	3.5 fl oz
5	Concert	14 day	5.5 fl oz
6	Interface	14 day	3.0 fl oz
7	Interface	14 day	4.0 fl oz
8	Interface	14 day	5.0 fl oz
9	Iprodione Pro	14 day	4.0 floz
10	Emerald	14 day	0.13 oz
11	Rotation Honor & Iprodione	14 day	see below
A, B	Honor		0.6 oz
C	Iprodione Pro		4.0 fl oz
D, E	Honor		0.6 oz
12	Rotation + StressGard	14 day	see below
A	Triton FLO + Signature		0.5 fl oz + 4.0 oz
B	Daconil Ultrex + Signature		3.2 oz + 4.0 oz
C	Reserve + Signature		3.6 fl oz + 4.0 oz
D	Daconil Ultrex + Signature		3.2 oz + 4.0 oz
E	Chip26GT + Signature		4.0 fl oz + 4.0 oz
F	Reserve + Signature		3.6 fl oz + 4.0 oz
13	Rotation StressGard Formulations	21 day	see below
A	Tartan + Signature		1.5 oz + 4.0 oz
B	Triton FLO		4 fl oz
C	Interface		4.5 fl oz
D	Reserve		4 fl oz
E	Interface		1.5 fl oz
F	Tartan		1.0 fl oz
14	Bayleton FLO once on 23 May	1 app.	1.0 fl oz

Figure 1. All treatments effectively controlled dollar spot under high disease pressure with Interface and Concert tending to be best. In general, treatments that allowed low levels of breakthrough were those containing the contact chlorothalonil. An early application of Bayleton did delay dollar spot development. Sunshine Course, Lemont, IL in 2010.

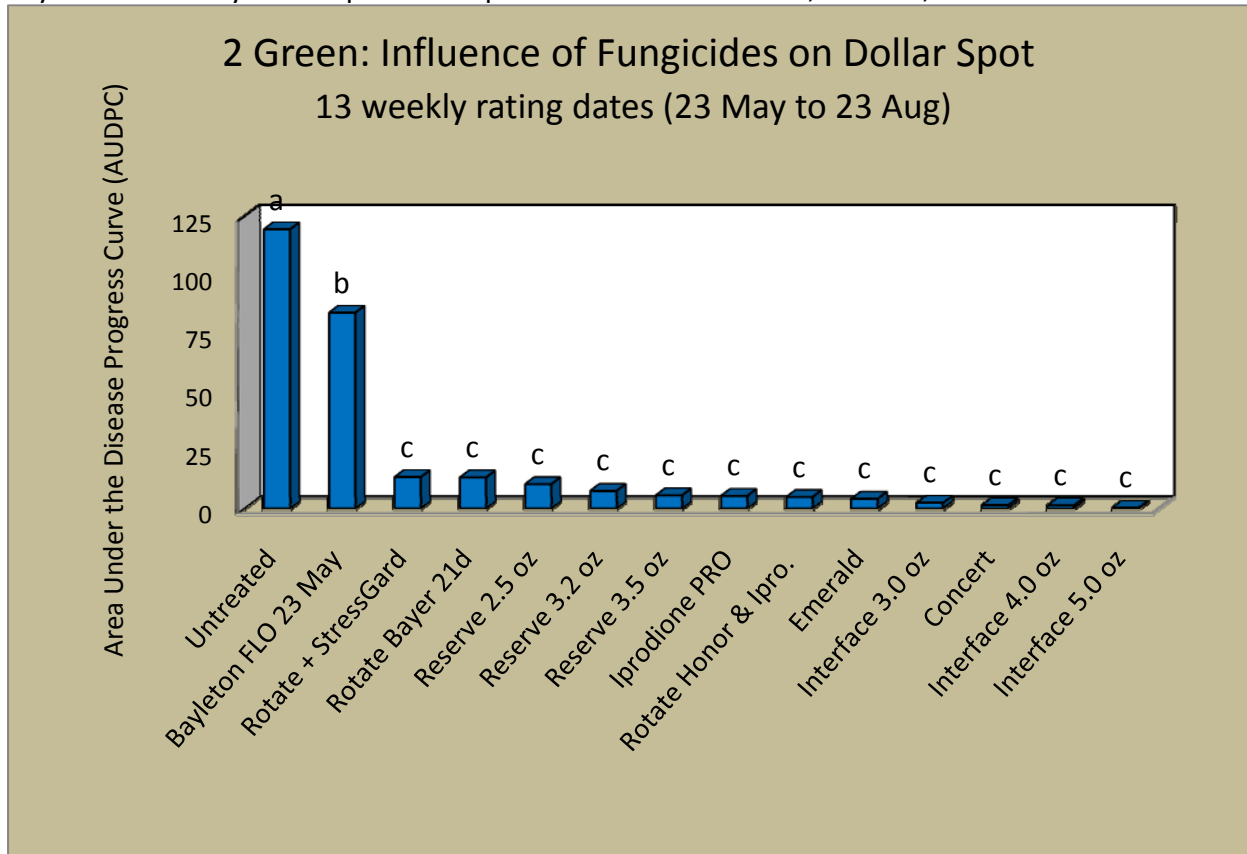


Figure 2. All treatments except an early application of Bayleton controlled brown patch. Emerald and Iprodione Pro allowed moderate breakthrough given disease pressure was especially high this summer at Sunshine Course, Lemont, IL in 2010.

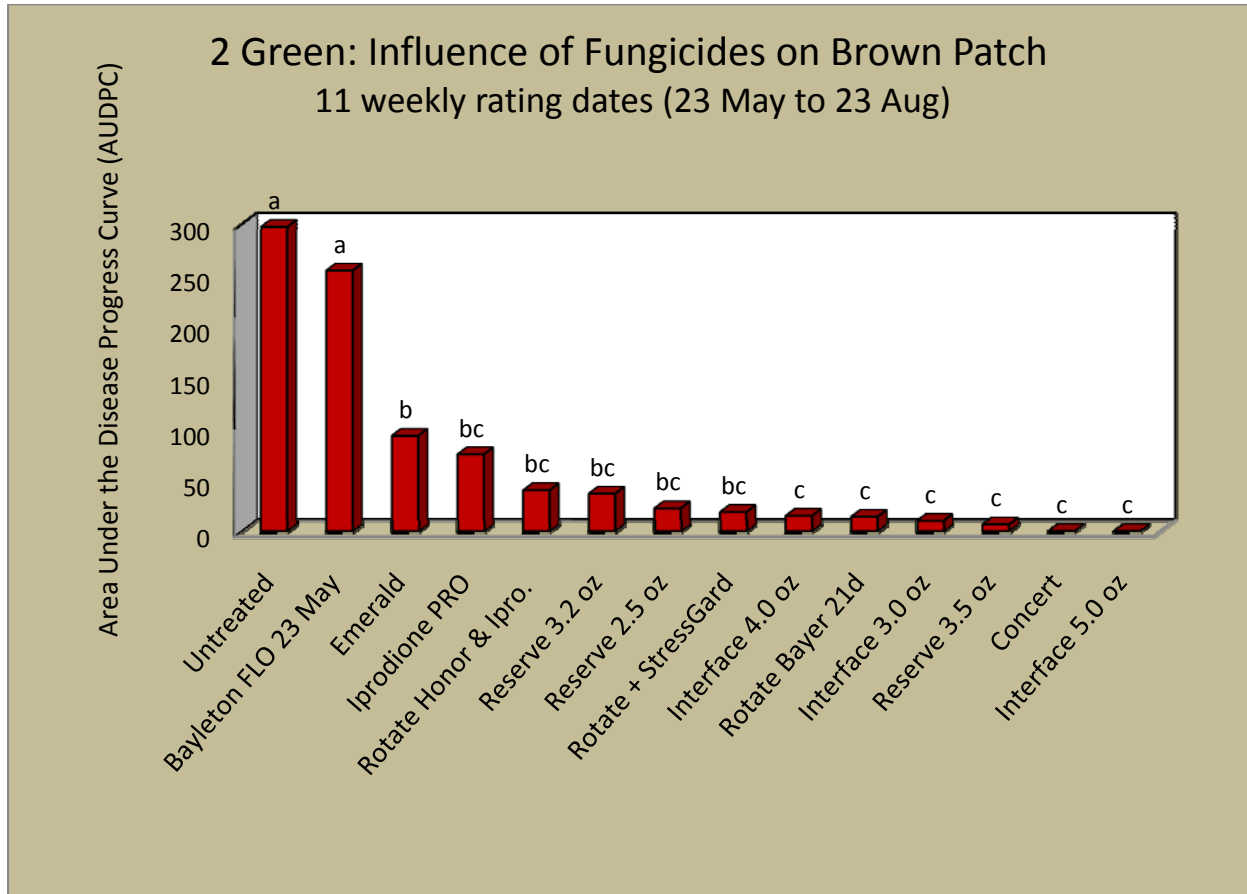


Figure 3. Visual quality was enhanced by StressGard products and all were in the top 8. Of those, the best 4 included; Interface (all 3 rates) and Reserve (3.5 oz). Plant health was negatively impacted by brown patch (e.g., Emerald, Iprodione PRO) or repeat DMI use (e.g., Concert). A single application of Bayleton delayed disease development somewhat. Sunshine Course, Lemont, IL in 2010.

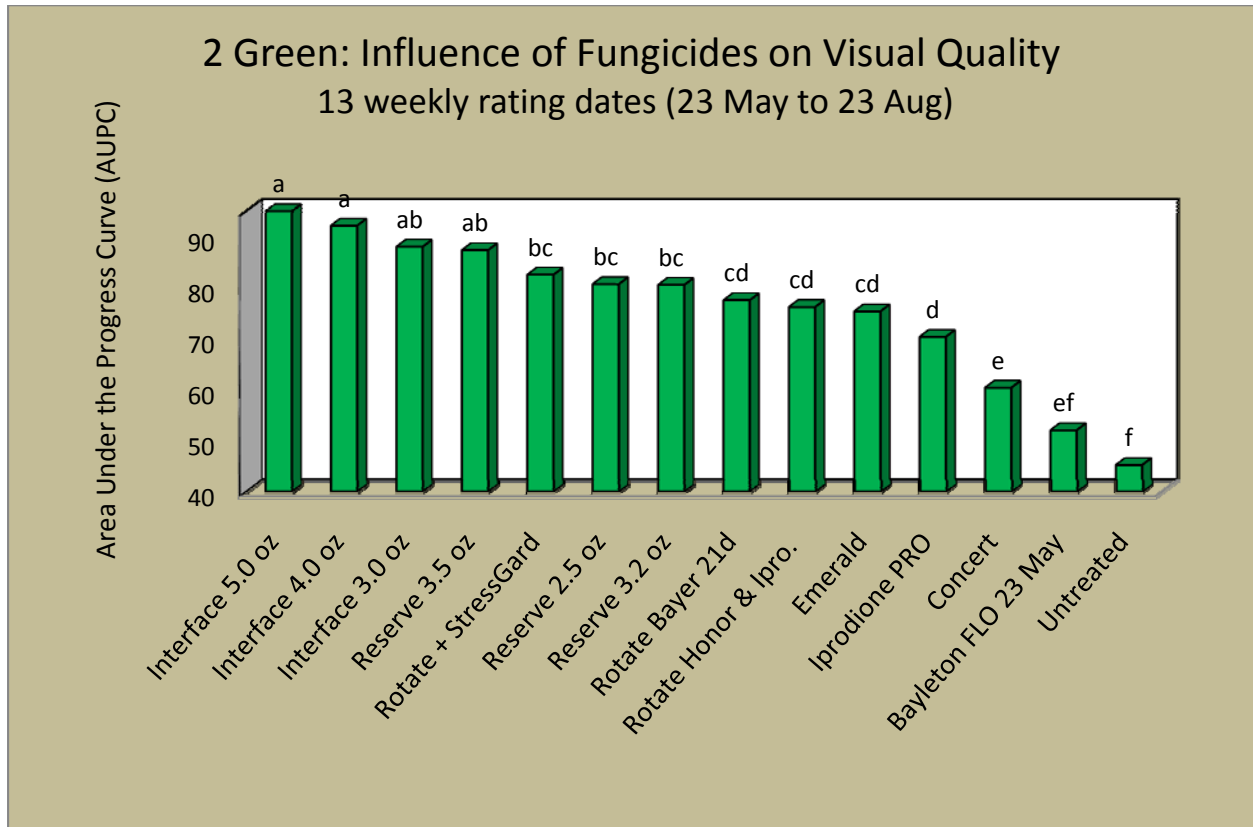


Figure 4. NDVI (dollar spot avoided) indicated multiple fungicides were similar in ability to improve plant health. Plant health was negatively impacted by brown patch (e.g., Emerald, Iprodione Pro) or repeat DMI use (e.g., Concert) at Sunshine Course, Lemont, IL in 2010.

