



Disease Control Using Newer Fungicide Products on a Chicago Golf Green

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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 effects beyond disease suppression can occur. Necessarily, only trace levels of disease damage can be allowed on golf greens and so fungicides must offer broad spectrum control. Increasingly, newer fungicides are combo-products that contain 2 or more chemistries. Also they are reformulated as a liquid to increase ease-of-use and performance. Combo-products tested in this study were; Reserve (Bayer), Honor (BASF), Concert (Syngenta) and Renown (Syngenta). Insignia SC (BASF) is a new liquid formulation.

Brief Material and Methods: Sunshine Course's number 1 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. Eight fungicides were applied every 14 days and three others every 21 days (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, Brown patch, Visual quality, and NDVI / Plant health

- Dollar spot. All treatments effectively controlled dollar spot. All fungicides except Concert allowed low levels of breakthrough. (Fig. 1)
- Brown patch. All treatments effectively controlled brown patch. Emerald, Chipco GT, and Daconil Ultrex had moderate levels of breakthrough. (Fig. 2)
- Visual quality. Untreated was never had acceptable quality (≥ 6.0). In contrast three fungicides were 100% acceptable out of 13 dates rated. (Fig. 3)
- NDVI/Health. Multiple fungicides improved plant health. Plant health was negatively impacted by brown patch breakthrough or repeat DMI use. (Fig. 4)

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

Number	Treatments	Interval	Rate per 1,000 sq ft
1	Untreated	
2	Daconil Ultrex	14 day	3.2 oz
3	Chipco 26GT	14 day	4.0 fl oz
4	Insignia SC	14 day	0.7 fl oz
5	Concert	14 day	5.0 fl oz
6	Renown	14 day	4.5 fl oz
7	Heritage + Daconil Weatherstick	14 day	0.4 oz + 3.6 oz
8	Reserve	14 day	3.2 fl oz
9	Reserve	14 day	3.6 fl oz
10	Reserve	21 day	4.5 fl oz
11	Emerald	14 day	0.18 oz
12	Honor	21 day	1.1 oz

Figure 1. All treatments effectively controlled dollar spot. All fungicides except Concert allowed low levels of breakthrough given high disease pressure at Sunshine Course, Lemont, IL in 2010.

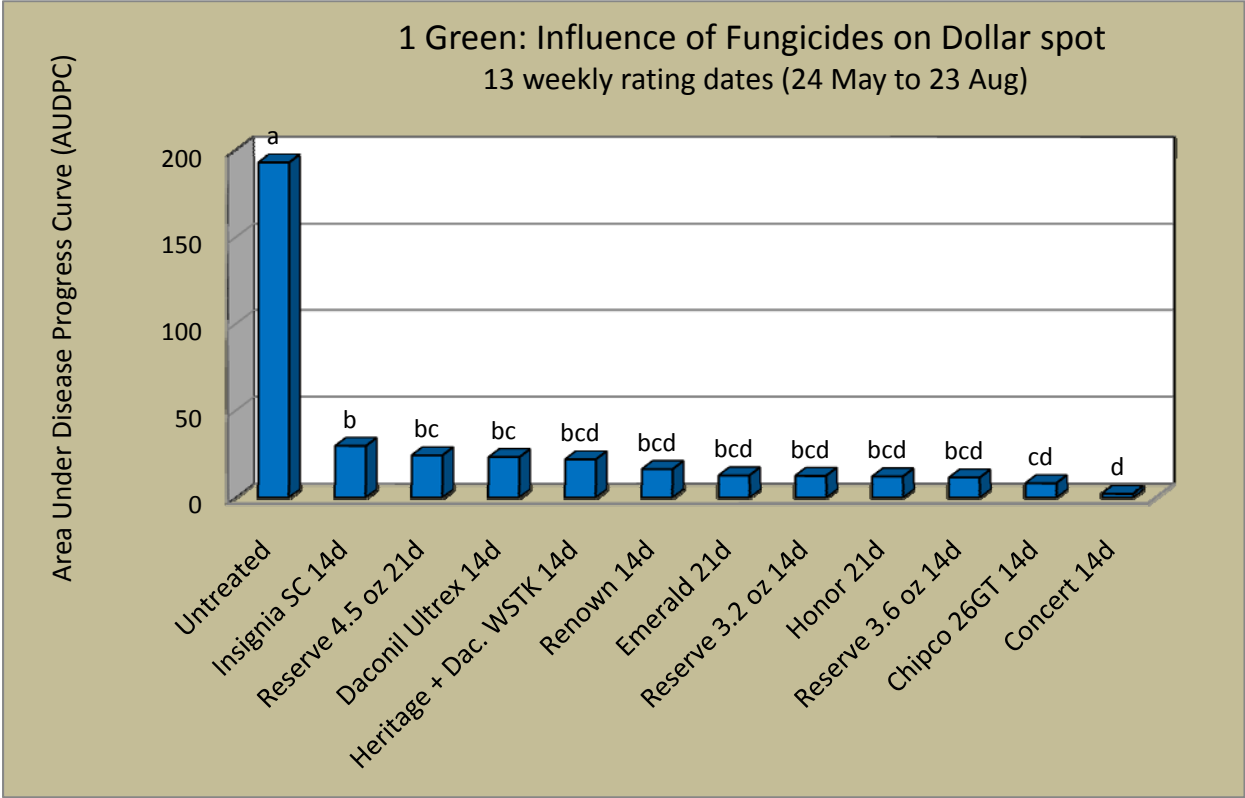


Figure 2. All treatments effectively controlled brown patch. Emerald, Chipco GT, and Daconil Ultrex had moderate levels of breakthrough given high disease pressure at Sunshine Course, Lemont, IL in 2010.

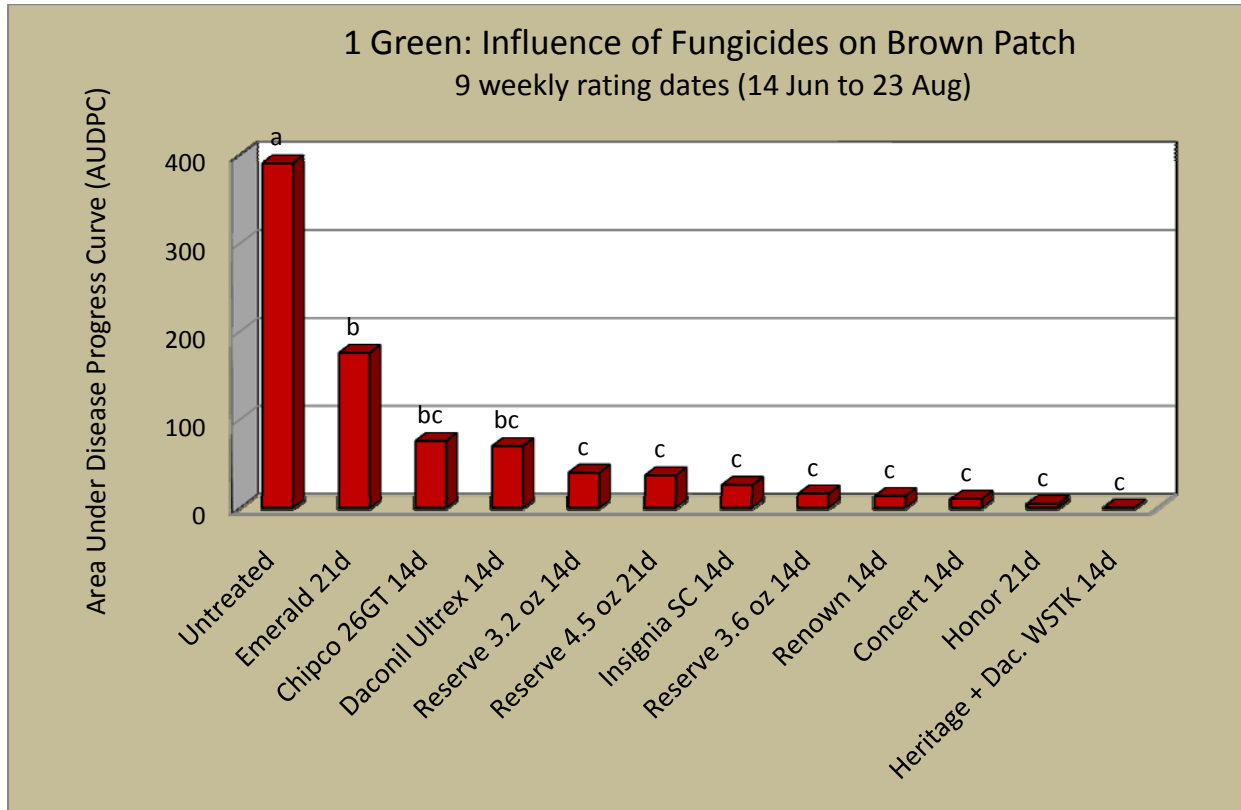


Figure 3. Across 13 weekly dates rated, untreated was never acceptable. In contrast 3 fungicides always displayed acceptable quality on 100% of all dates rated at Sunshine Course, Lemont, IL in 2010.

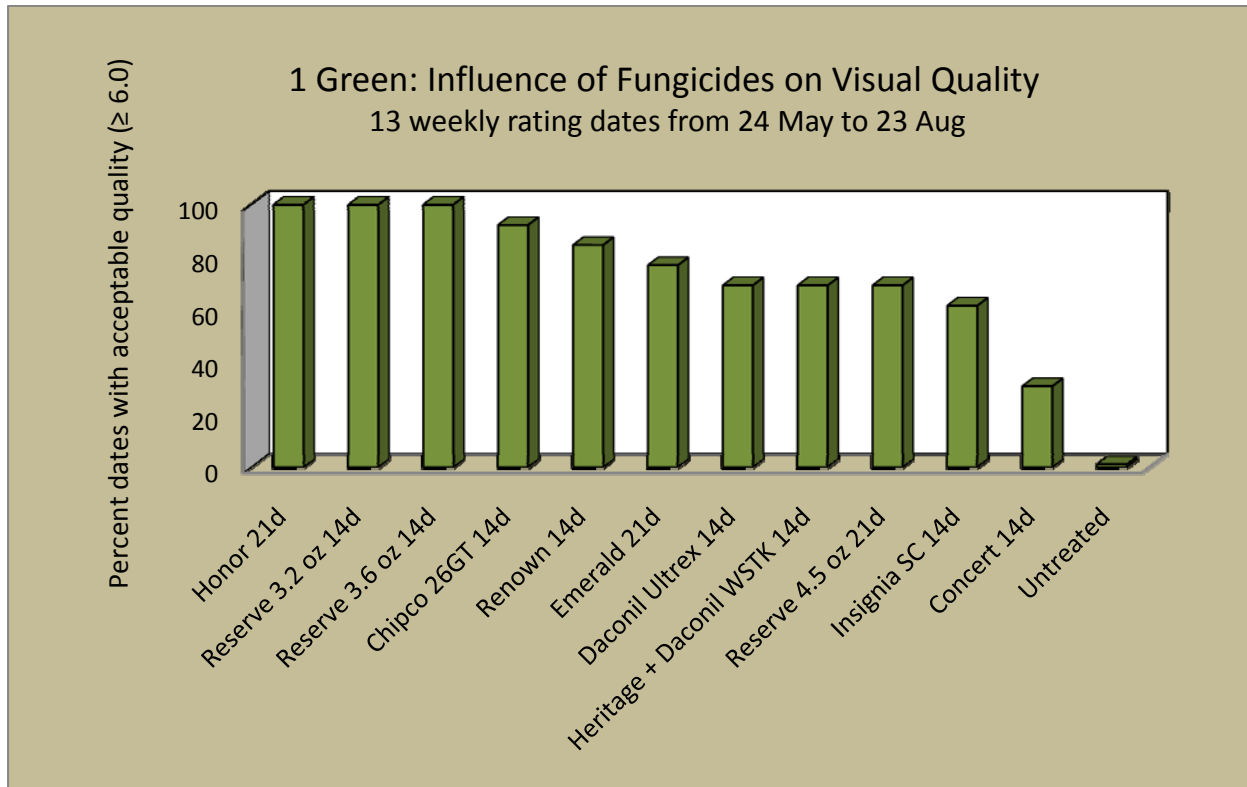


Figure 4. Across 5 rating dates NDVI (dollar spot avoided) indicated multiple fungicides are similar in ability to improve plant health. Plant health was negatively impacted by brown patch (e.g., Chipco GT) or repeat DMI (e.g., Concert) use at Sunshine Course, Lemont, IL in 2010.

