



Early Dollar Spot Control Effects of Fungicides and Plant Growth Regulators

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Goal: Suppress disease and evaluate seedhead control and plant health effects.

Location: North Shore Country Club's 8 fairway in play – Glenview, Illinois

Background: Benefits may exist when fungicides and/or plant growth regulators are applied about 1 month prior to disease outbreaks. We investigated disease development of dollar spot (*Sclerotinia homoeocarpa*) and brown patch (*Rhizoctonia solani*) as well as the potential for *Poa annua* seedhead control. Embark, a plant growth regulator, was selected for its potential to reduce disease given preliminary evidence. In 2009 a single June Embark application showed considerably less dollar spot and improved color/health on a 'L93' plus 'Providence' bentgrass nursery green at North Shore Country Club. However, the impact of Embark on turf health during early spring frost events had not yet been documented at the site.

Brief Materials and Methods: North Shore Country Club's 8 fairway using a randomized complete block design with 4 replications. Individual plot size was 4 ft by 6 ft. This study was conducted on a fairway mixed stand (50/50) of *Poa annua* and creeping bentgrass. Sixteen fungicides and five plant growth regulators were applied either once or twice at label rates (Table 1). The first application was critically timed to coincide with forsythia bloom on April 14th. Neither disease nor seedheads existed when first applications were made. Data collected included; dollar spot percent, brown patch percent, *Poa* seedhead percent. Microdochium occurred on 17 May and Waitea occurred on 24 May but outbreaks were not well distributed. Visual quality (1-9, 6 = acceptable) assessed impact of disease / phytotoxicity.

Results: Dollar spot, Brown patch, Visual quality, Poa Seedhead, Cost

- Dollar spot. A majority of treatments suppressed dollar spot. Best control tended to be higher rates of Bayleton Flo, Dupont Exp., and Chipco GT. Dicarboximide resistance has been documented at NSCC yet Chipco GT performed well. Lower rates or single applications were similar to untreated. (Fig 1)

- Brown patch. A majority of treatments suppressed brown patch. Best control tended to be the high rate of Bayleton Flo at 1.5 oz. Emerald, Embark, Proxy + Primo, and Chipco GT were similar to untreated. V-10190 may suppress brown patch but its control varied. (Fig 2)
- Visual quality. Best visual quality early in the season was provided by several fungicides and by Proxy + Primo + Signature. Worst quality was by Embark treatments at 40 oz/A label rate which caused yellowing of *Poa annua* and bronzing of bentgrass. (Fig 3)
- Seedheads. All fungicides tested did not influence seedhead development. Best seedhead suppression was provided by PGRs. Only Proxy + Primo + Signature was not different from untreated, and it tended to have much better quality than the other PGRs. Tank-mixing Signature may nullify the Proxy chemistry and thus indirectly improve quality. (Fig 4)
- Cost. Is it worth the dollars to apply fungicide this early for dollar spot when we have very low disease pressure? This study indicates long lasting effects by fungicides do exist.

Table 1. Early treatments for dollar spot on a fairway at North Shore CC, Glenview, IL in 2010.

Nbr	Treatments	Interval (number apps.)	Rate per 1000 sq ft	14 Apr	4 May	11 May	24 May
1	Untreated				
2	Dupont Exp. 0.3 oz	28 day (2)	0.3 oz	x		x	
3	Dupont Exp. 0.5 oz	28 day (2)	0.5 oz	x		x	
4	Tourney 0.28 oz	28 day (2)	0.28 oz	x		x	
5	Tourney 0.37 oz	28 day (2)	0.37 oz	x		x	
6	Emerald 0.13 oz	28 day (2)	0.13 oz	x		x	
7	Emerald 0.18 oz	28 day (2)	0.18 oz	x		x	
8	V-10190 0.4 oz	28 day (2)	0.4 fl oz	x		x	
9	V-10190 0.5 oz	28 day (2)	0.5 fl oz	x		x	
10	V-10190 0.6 oz	28 day (2)	0.6 fl oz	x		x	
11	1 app. Bayleton Flo 1.0 oz	(once)	1.0 fl oz	x			
12	Bayleton Flo 1.5 oz	28 day (2)	1.5 fl oz	x		x	
13	1 app. Bayleton Flo 1.5 oz	(once)	1.5 fl oz	x			
14	1 app. Interface	(once)	4.0 fl oz	x			
15	Proxy + Primo + Signature	21day (2)	5 fl oz + 0.125 fl oz + 4 oz	x	x		
16	Proxy + Primo	21day (2)	5 fl oz + 0.125 fl oz	x	x		
17	Embark + Primo + Signature	(once)	40 oz/A + 0.125 fl oz + 4 oz	x			
18	Chipco GT 4 oz	21day (2)	4.0 fl oz	x	x		
19	Embark + Primo	40 day (2)	40 oz/A + 0.125 fl oz fb 20 oz/A + 0.125 fl oz	x			x
20	Embark	40 day (2)	40 oz/A then 20 oz/A	x			x

Figure 1. A majority of treatments suppressed dollar spot. Best control tended to be higher rates of Bayleton Flo, Dupont Exp., and Chipco GT. Dicarboximide resistance has been documented at NSCC yet Chipco GT performed well. Low rates or single applications were similar to untreated. North Shore CC, Glenview, IL in 2010.

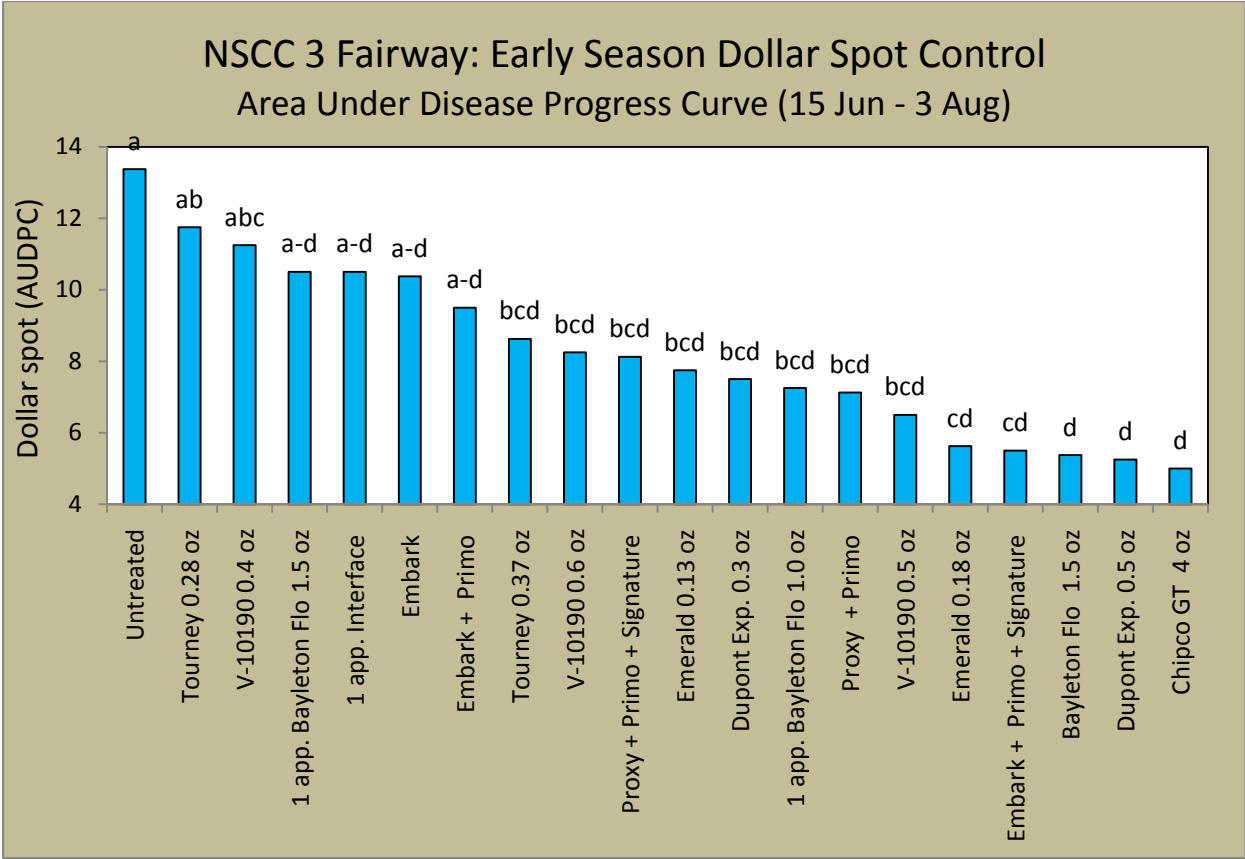


Figure 2. A majority of treatments suppressed brown patch. Best control tended to be higher rates of Bayleton Flo at 1.5 oz at one or two applications. Emerald, Embark, Proxy + Primo, and Chipco GT were similar to untreated. V-10190 likely suppresses brown patch but control varied. North Shore CC, Glenview, IL in 2010.

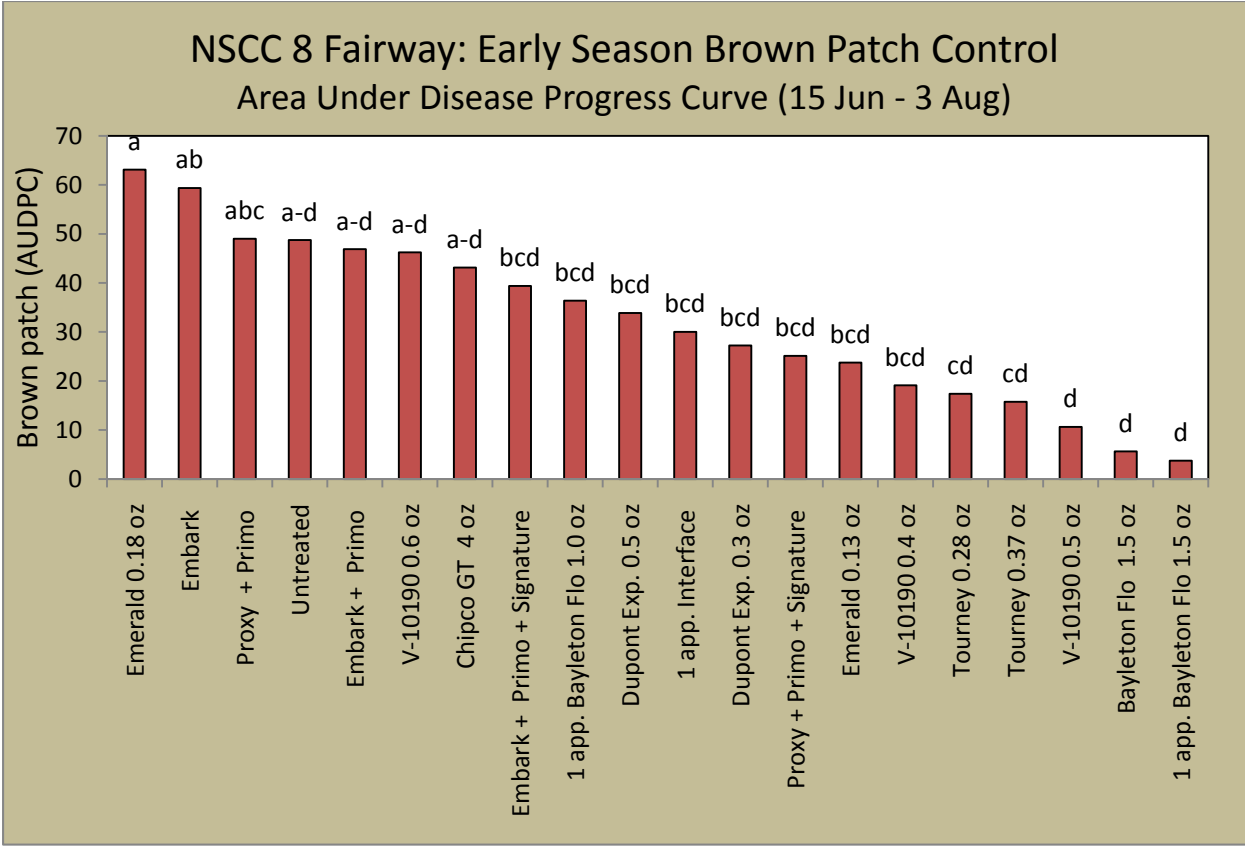


Figure 3. Best visual quality early in the season was provided by several fungicides and by Proxy + Primo + Signature. Worst quality was by Embark treatments at 40 oz/A label rate which caused yellowing of *Poa annua* and bronzing of bentgrass. North Shore CC, Glenview, IL in 2010.

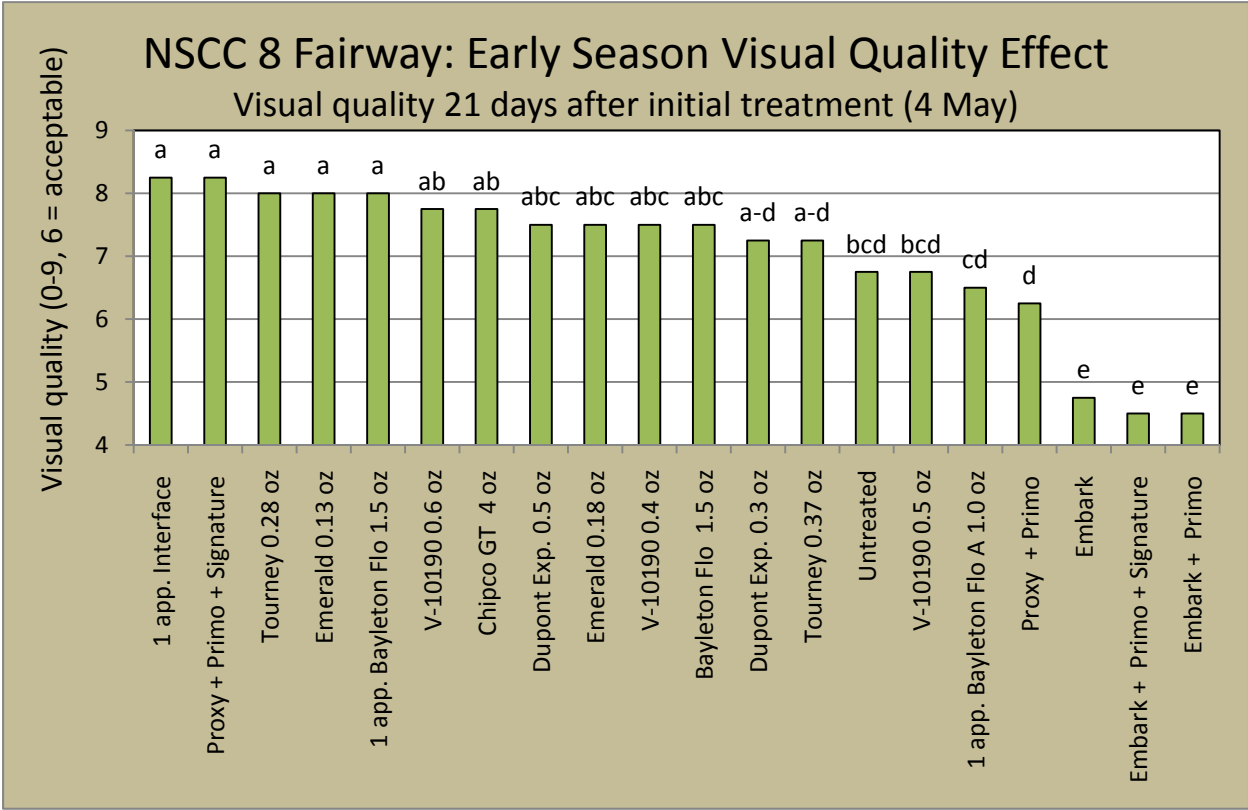


Figure 4. As expected, best seedhead suppression was provided by plant growth regulators. Versus untreated only Proxy + Primo + Signature did not reduce Poa seedheads, and it tended to have much better quality than the other PGRs. Tank-mixing Signature may nullify Proxy effects and indirectly improve quality. North Shore CC, Glenview, IL in 2010.

