



Dollar Spot Resistance to DMI Fungicides

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Dollar spot (*Sclerotinia homoeocarpa*) is a common and persistent disease that occurs annually on most golf courses throughout Michigan. More money is spent on fungicides to control dollar spot than any other turfgrass disease. The abundant use of fungicides has resulted in the development of widespread dollar spot resistance to the benzimidazole (i.e. Fungo) fungicides and occasional dollar spot resistance to the dicarboximide (i.e. Chipco 26019) fungicides. The newest class of systemic fungicides to appear on the market are the demethylation inhibitor (DMI) fungicides which include Bayleton, Rubigan, and Banner. The risk of resistance to the DMI's was initially assumed to be relatively low, however, resistance of *S. homoeocarpa* to DMI fungicides was confirmed by reduced (or lack of) control of dollar spot by label recommended rates in a field situation.

Six fungicide field trials were initiated at three different sites to develop effective spray programs to delay or manage resistance of *S. homoeocarpa* to the DMI fungicides. The first site is the Hancock Turfgrass Research Center (HTRC) which has never been exposed to the DMI fungicides. At golf courses on which DMI resistant strains of *S. homoeocarpa* are not present, a program as listed in Table 1 should help delay their development.

Spring-Early Summer	Mid-Summer	Late Summer-Fall
DMI Fungicides (Bayleton) (Rubigan) (Banner)	Contacts	DMI Fungicides (year 1)
	Contacts & Benzimidazoles	Dicarboximides (year 2)
	Benzimidazoles & Dicarboximides	Contacts (year 3)

The Country Club of Jackson in Jackson, MI is the second site. This golf course had reported shortened intervals of control of dollar spot with the use of DMI fungicides. The third site is the Lochmoor Country Club in Grosse Pte., MI which had reported no control of dollar spot with the use of the DMI fungicides. For golf courses that already

have reduced sensitive or resistant strains of *S. homoeocarpa*, the recommendations in Table 2 should be employed.

Table 2. Fungicide Program to Delay Resistance to <i>Sclerotinia homoeocarpa</i> Where DMI Reduced Sensitivity Strains Exist		
Spring-Early Summer	Mid-Summer	Late Summer-Fall
DMI Fungicides (Bayleton) (Rubigan) (Banner)	Contacts	Contacts
	Benzimidazoles	Contacts
	Benzimidazoles	Dicarboximides

The HTRC dollar spot study is being conducted on a mix of annual bluegrass and creeping bentgrass. The study is irrigated daily, moderately fertilized ($\frac{1}{2}$ lb. N/1000 ft²/month), and mowed at $\frac{1}{2}$ " height of cut. Treatments were initiated curatively on 8/5/93 with subsequent applications being made at various time intervals.

This is the initial year of the HTRC field trial. The study will be continued for the next 5 years in the hope of developing an effective fungicide spray program to counter DMI resistance.