



Dollar Spot Management with a Natural Fungicide Produced by Soilborne Bacteria and Organic Fertilizers

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Dollar Spot, caused by the fungus *Sclerotinia homoeocarpa*, is one of the most prevalent diseases of high maintenance turf. Standard management regimes include maintenance of high fertility, removal of dew, and the use of chemical fungicides. Recent research into dollar spot management has focused on examination of alternative disease management strategies. Two of the most promising areas of investigation include the use of biological controls and organic fertilizers.

Research into biological control of dollar spot here at Michigan State University has focused on two strains of soilborne bacteria which have been shown to be inhibitory to the growth of many turfgrass fungal pathogens in laboratory studies. Field studies involving application of these bacteria as spray applications or as amendments to organic carriers did not yield dollar spot disease reductions. Examination into the mode of action against fungal growth by these bacteria in laboratory tests has resulted in the identification of the production of a novel antifungal compound by these bacteria. Preliminary studies conducted in the summer of 1992 and in the greenhouse have shown this compound to be as efficacious as the fungicide Bayleton when applied at the same rate of active ingredient and at 14 day intervals.

Current research involves further examination of the use of this bacterial produced antifungal compound as a chemical treatment. This years field study at the Hancock Turfgrass Research Center evaluates the effectiveness of the bacterial produced antifungal compound in comparison to the commercial fungicides Bayleton and Daconil when applied at equivalent rates of active ingredient and application frequencies.

Although research into the use of live bacteria as biological control agents for dollar spot was unsuccessful, a reduction in disease was observed in last years field study with the application of the bio-organic fertilizer Compost Plus (produced by the Ringer Corp.). When applied to deliver a rate of ½ lb. nitrogen /1000 ft² every 14 days, disease reduction was equal to that of application of the fungicide Bayleton. In addition to a reduction in disease severity, treated turf was greener and grew faster than plots receiving similar rates of inorganic nitrogen. This years study also re-examines the effects of this bio-organic fertilizer on dollar spot at rates to deliver 1 and ½ lb. of nitrogen /1000 ft² per month.