

Stop 1. Impact of Irrigation Regime and Creeping Bentgrass Cultivar on Dollar Spot

Nancy Dykema and Dr. Joe Vargas, Jr.

Dollar spot (*Sclerotinia homoeocarpa*) is an important disease of turfgrass, consuming a majority of many agrichemical budgets of many golf courses. In an effort to manage this disease, many different strategies are employed, including the use of fungicides, fertility, cultivar selection, dew removal techniques, rolling and other cultural practices. Irrigation is an important aspect of disease management that can have a tremendous impact on how much disease may develop, with mismanagement of water often resulting in higher disease incidence. Questions remain as to how much of an impact irrigation might have on dollar spot since conflicting information can be found in literature.

The careful appraisal of how irrigation is applied to golf course turfs may result in another management technique to help combat dollar spot. Considering water conservation as an important environmental concern, the idea behind this research is to determine whether there is any impact from not the amount of water that is applied, but rather how that water is rationed. Do the frequency and/or time of day that irrigation is applied have an impact on dollar spot when the volume of water applied on average is the same? Can combining techniques such as irrigation rationing and cultivar selection result in less disease? These are some of the questions being addressed by this research.

In this trial, three different irrigation regimes combined with three different creeping bentgrass cultivars with varying levels of susceptibility to dollar spot are being studied to determine whether they have an impact on disease incidence. The irrigation regimes include application of approximately the same volume of water on a weekly basis. However, the time of day and frequency of application varies.

Specifically, irrigation is applied in one of three ways:

1. every day at 5:00 am (daily am),
2. every day at 10:00 pm (daily pm) or
3. twice weekly at 10:00 pm (infrequent pm).

Cultivar selection includes:

1. L-93 (susceptible)
2. Declaration (resistant)
3. 1-WM (resistant)

Each cultivar is replicated 4 times within each irrigation regime. Irrigation regimes are replicated three times. Fertility and other general maintenance practices are consistent among all plots, with fertility being maintained at approximately 0.5 lb nitrogen/1000 sq ft/month.

This is the third year of this research trial. In 2011, trends in the data showed that infrequent nighttime irrigation resulted in the most dollar spot among all of the cultivars. In 2012, very little disease developed in the study site, but what little disease did occur followed the trends observed in 2011. The 2013 season has resulted in tremendous dollar spot pressure to date, with the expectation of an increase in disease incidence through the next month or so. Dollar spot differences among irrigation regimes and cultivars can be seen, providing information regarding irrigation regime, based on time of day and frequency of application, combined with cultivar selection and their impact on dollar spot incidence.

Stop 2. Carl Schwartzkopf Lab at the Hancock Turfgrass Research Center (HTRC)

Vijaya Shukla, Sanalkumar Krishnan, and Dr. Emily Merewitz

At Michigan State University, the HTRC lab has been established with an extremely generous donation from Mr. Carl Schwartzkopf, an MSU alumnus. His generous endowment facilitated the complete renovation of the HTRC laboratory. When complete, the HTRC lab will be fully equipped with new lab benches, growth chambers, a fume hood, gas and water supply on the lab benches, digital balances, incubators, shakers and centrifuges with thermal control, new computers, and advanced microscope equipment.

Thanks to Carl, this lab will allow students and researchers to accomplish turf studies at MSU more efficiently than ever before. These new facilities will be instrumental in the study of various research projects related to environmental stresses, turf pathogens, and best turf management practices. This field day stop will show off the new lab and describe various studies and types of equipment that will be utilized in the lab. As an example of the types of projects we will be conducting in the new lab, we will discuss a growth chamber study that aimed to evaluate the effects of Primo on turf hormones involved in biotic and abiotic stress responses in turfgrasses.

Stop 3. Summer Stress in Creeping Bentgrass and Annual Bluegrass Putting Greens

Dr. Joe Vargas, Jr., Nancy Dykema, Eric Galbraith, and Nick Popiel

Summer Stress Syndrome has been associated with thinning and dying of turf during the warm summer months when turf goes under stress. It is especially problematic on low cut turf growing in poor environments. This includes greens growing in shaded areas or where there is limited air movement. Fungicides applied alone and in combination with other products on a preventive basis have been shown to prevent this decline from occurring. These products not