Stop 4. Dollar Spot and Anthracnose Field Trials

Nancy Dykema, Eric Galbraith, and Dr. J.M. Vargas, Jr.

DOLLAR SPOT

Dollar spot, caused by the fungus *Sclerotinia homoeocarpa*, is a very important disease of turfgrass. The fungus attacks the foliage of the plant producing bleached to straw colored lesions which may or may not expand across the width of the blade. The lesions are characterized by possessing a reddish brown perimeter in all susceptible grass species except for annual bluegrass, which lacks the border. As the epidemic progresses, small spots up to 3 inches in diameter are formed. If conditions remain conducive for infection and the disease is left untreated, the spots may coalesce and form larger, irregularly-shaped, blighted areas. The disease can be spread via equipment such as mowers, from clippings, or just from plants growing in close proximity. Dollar spot is typically more severe in drought-stressed areas as well as those under low fertility. When temperatures range from 60-90°F and nighttime temperatures fall into the 50-60°F area, the disease is most active. Under these temperatures, heavy dew formation usually results and often cob-web like mycelia may be observed on the turf.

This year, several dollar spot trials were conducted, including two early season treatment studies on an A4 creeping bentgrass (CB) fairway, a preventive trial on an A4 CB/annual bluegrass (AB) mixed fairway, and a curative trial on a Crenshaw CB putting green. Each trial included four replicates of each treatment. Treatments were applied using a CO_2-powered backpack sprayer with a single TeeJet 8002E flat fan nozzle at approximately 42 psi. Application volume was 48 GPA unless otherwise specified in the tables below. Mowing height for fairway trials was 0.5” and for greens trials was 0.135”. Fertility was applied as needed. Treatment lists and plot maps are provided below. Significant amounts of dollar spot developed in each of the inoculated trials. Differences in amounts of dollar spot among treatments are currently visible.

Early Season Treatment Application for Dollar Spot Control, 2014.

Treatment applications were made on 23 Apr and 20 May 2014. Fertility averaged 0.35 lb N/1000 sq ft/mo. The inoculated study received an application of fungus-infested sand/cornmeal topdressing on 24 Apr 2014. Dollar spot began to develop in the untreated control plots in the inoculated trial in mid to late June. In the non-inoculated trial, dollar spot was first noted in early to mid-July, approximately 1 month later than in the inoculated trial.

Preventive Dollar Spot Fairway Trial, 2014.

Most treatment applications were made initially beginning on 21 Jun 2014. Treatments were applied on a: 14 day schedule (21 Jun, 3, 17, and 31 Jul); 21 day schedule (21 Jun and 15 Jul); or 28 day schedule (21 Jun and 17 Jul); or on a program schedule where various products were applied throughout the season. Fertility applications averaged approximately 0.35 lb N/1000 sq ft/mo. The site was inoculated with fungus-infested sand/cornmeal topdressing on 26 May and 28-May. Disease pressure has been good this season with the untreated control averaging 35%

dollar spot in mid-July. Differences in amount of dollar spot present as well as quality differences are readily observed in this trial.

Curative Dollar Spot Putting Green Trial, 2014.
Treatment applications were made as listed below, with most applications beginning on 25 Jun 2014. Treatments on a 7 day schedule were applied on 25 Jun, 3, 9, 15, 22, and 29 Jul; 14 day schedule on 25 Jun, 9 and 22 Jul; 21 day schedule on 25 Jun and 15 Jul; and 28 day schedule on 25 Jun and 22 Jul or as listed in the table. Fertility applications averaged approximately 0.3 lb N/1000 sq ft/mo. The site was inoculated with fungus-infested sand/cornmeal topdressing on 28 May. Disease pressure has been good this season with the untreated control averaging around 40% dollar spot throughout July. Differences in amount of dollar spot present as well as quality differences are readily observed in this trial.

ANTHRACNOSE
Anthracnose, caused by *Colletotrichum cereale,* is a devastating disease that attacks annual bluegrass, and occasionally bentgrass. It can be a problem on golf course greens, tees, and fairways. Low fertility, low mowing heights, and droughty conditions that lead to stressed turf can be a precursor for this disease. Excess moisture, such as from heavy irrigation or heavy rainfall, followed by a period of hot weather can also contribute to this problem. When infection occurs on fairways, it usually affects the foliage of the plants causing the turf to look brown and wilted. Upon close examination of infected tissue, one might be able to identify tiny, dark fungal structures called acervuli, which can be diagnostic for this disease. The pathogen can also infect the crowns of plants, turning them a charcoal black color, particularly on greens height turf. If there is damage to the crown of the plant, recovery is often quite slow. Foliar infections typically recover more quickly than infections that occur in the crown of the plant.

Anthracnose, 2014.
Treatments were applied preventively beginning on 23 Jun 2014. Subsequent applications for treatments on a 7 day schedule were applied on 1, 9, and 21, and 28 Jul. Treatments on a 14 day schedule were reapplied on 9 and 21 Jul. Fertility levels averaged approximately 0.35 lb N/1000 sq ft/mo. The study was inoculated on 2 Jul with sand/cornmeal topdressing infested with *C. cereale*. Disease pressure has been moderate this year, with untreated control plots averaging up to 28% anthracnose. Several treatments prevented disease development in the study, while others lacked efficacy. Differences in the amount of anthracnose, as well as turfgrass quality differences are readily visible in the trial.