Weather

Cool September is a rare 2012 treat.
A. If temperatures are average from Sept.-Dec., 2012 will be have the highest average temperature in recorded weather history.
   - Source: Pat Guinan, state climatologist
B. 10 months straight of above average temperatures in Missouri.
   - Source: Pat Guinan, state climatologist

September temperatures and accompanying rainfall from Isaac have been a blessing. Temperatures are forecasted to remain nice and cool over the next 10 days, and fall seems to be settling in. Unless this fall and early winter stays particularly cool, 2012 is on track to be the warmest year in recorded weather history for Missouri. 2012 had the 3rd warmest winter, 1st warmest march, 1st warmest spring, and the 1st warmest Jan-August ever. If not for a last day save from tropical depression Isaac, Missouri also would have suffered the driest May – Aug period ever (instead with 2.21” on 8/31 it ended up 5th).

Although too late for many crops and some trees and shrubs in the region, turfgrass has bounced back quite nicely in many areas throughout the state, displaying the true resiliency of most turf species to drought conditions. The storm dropped 1.5-5+” of rain across the region and eased drought levels from extreme and exceptional back down to severe for much of the state. The rain caused a spike of turf disease activity into the diagnostic clinic in the last 7 days, including a clash of some old summer friends on cool season turf and new fall ones on warm season. Although it is recovering, creeping bentgrass putting greens are obviously tired and more susceptible to disease outbreaks. Similarly, zoysiagrass is growing sleepy with the temperature decline, and defenses are being breached by early large patch outbreaks.
Quick Hits

- Sports turf managers that have bermudagrass fields with a history of spring dead spot should think about applying a preventive fungicide application now to catch the infection window of the pathogen. With the current dip in temperatures, the spring dead spot pathogen (*Ophiosphaerella* spp.) are presumably actively infecting bermudagrass roots. Rubigan, the industry standard, will be removed from the market in December of 2012. Preventive fungicide applications should be watered-in with 1/4" of irrigation to drive the fungicide into the soil target zone. WE are currently investigating fertilizer applications and cultural practices to increase control of this problematic disease. For more information on spring dead spot, [click here](#).

- With the frequent rains, some minor *Rhizoctonia* diseases (other than brown patch) have been observed impacting creeping bentgrass putting greens in the past week. If causing considerable damage, most of these (i.e. *R. zeae*) will be controlled by similar fungicides. It is best to have the disease accurately diagnosed and if it is a *Rhizoctonia* spp. lean on a strobilurin, flutolanil, polyoxin-D, fludioxinil, or iprodione + chlorothalonil for control.
Anthracnose on Creeping Bentgrass

Anthracnose caused by *Colletotrichum cereale* was observed on a few creeping bentgrass putting greens in mid Missouri late last week. This disease causes the most severe damage on *Poa annua*, which doesn't hurt most superintendent’s feelings in this region any. However, it also can affect a few creeping bentgrass cultivars that are susceptible which include: Penncross, Pennlinks, Providence, SR1020, and Dominant. Stand symptoms can be quite variable, appearing as orange or brown spots or diffuse patches. The key symptom is black, rotted plant crowns and stolons, which can be observed by plucking plants around the spot or patch margin, and peeling back the outer leaves (like a banana peel) to observe the crown/stolon through a 10X hand lens. A foliar blight is often in association with the basal rot, and dark black hairlike setae may be observed on leaves with a 10X hand lens.

Last year, and during my time in Chicago, I noticed basal rot anthracnose symptoms would frequently occur in conjunction with the first night when temperatures crashed into the 50’s after an extended hot spell. I’m not sure why, perhaps this is the pathogen’s signal to dive down into the canopy and overwinter by infecting plant bases. In this case, there also was a nozzle clog on the previous fungicide application, and the break through was occurring right along the line of this skip.
Just Add Water

Anthracnose is a stress induced disease, and these greens were particularly low in nitrogen. Mowing frequently at low mowing heights has been shown to dramatically enhance disease severity, and during stressful periods alternating rolling with mowing and light topdressing has been demonstrated to reduce disease pressure. If fungicides are necessary, the strobilurins (QoIs) and thiophanate-methyl have been shown effective, but fungicide resistance in C. cereale populations can be an issue. Tank-mixing a contact (Daconil, Affirm, Medallion) and a systemic fungicide along with a small shot of nitrogen is often the quickest method for recovering from an anthracnose outbreak.

Take All Patch on Creeping Bentgrass

![Image](image.jpg)

A rare outbreak of take all patch on a 25 year old Penncross bentgrass putting green in St. Louis came into the lab last week. Symptoms of take all patch caused by Gaeumannomyces graminis var. avenae is normally observed on younger, fumigated bentgrass greens, and as the greens age the disease generally fades away. In some cases though, like this one, the disease will unexplicably reappear when greens reach 20-30 years of age.

Symptoms begin to occur in late spring/early summer, will stagnate, and then reignite in the fall. The infection period and temperature for most pathogen growth is when soil temperatures are in the 55-60°F range during these spring and fall periods. The pathogen (like root-infecting Pythium spp.) always seems to be hanging around the roots of stressed bentgrass plants, and is often associated with a discoloration of the root vascular system. In this case, however, the superintendent stated the patches were expanding (which made me take notice) and the crowns as well as roots were covered in pathogen mycelium and simple hyphopodia.

Take all patch is a disease best prevented, particularly in newer greens or areas with a history of damage. Ammonium sulfate in the spring and autumn may be beneficial,
Just Add Water

as well as manganese sulfate applications (5.5 lbs/A) in the spring during the infection period (55-60°F soil temperature range). It is critical to wash ammonium fertilizers off the leaves if temperatures get higher than 80°F to minimize the potential for burn. If fungicides are necessary, application should be initiated when average 2” soil temperatures are 55-60°F in the spring. Some studies also suggest fall fungicide applications when soil temperatures decrease < 60°F are effective in managing the disease, which means that the current outbreak we observed should be treated. Good control has been achieved with several QoIs as well as the DMIs. Applications must be watered-in with 1/8-1/4” of irrigation since the pathogen is soil borne.

Large Patch on Zoysiagrass

Like everything else this year, large patch arrived early and en masse this fall, just waiting for the decrease in temperatures and spike in soil moisture that Isaac provided. If you recall brown patch was observed astounding early in March, and this is the earliest I can recall observing large patch outbreaks. In the worst areas of our turf farm, large patch started early last week, and reports are steadily streaming in from the St. Louis and mid Missouri areas of large patch outbreaks on golf courses and home lawns.

Unlike brown patch, large patch infects primarily at the base of the leaf sheath at the crown level (see above). This causes the orange flagging symptom at patch margins that is characteristic of this disease when it’s most active. The “firing” or flagging symptom is most often observed in the spring, whereas, in the fall, patches may only take on a straw bleached color. With the available moisture of recent rains and early outbreaks, we may also see firing occur along patch margins this fall.
Just Add Water

The best cultural practice defense that can be done now is simply mowing until the zoysia has ceased growing. Do not fertilize zoysia now, and do not aerify now as these practices can encourage large patch infection. Large patch is more severe in areas with poor drainage, so a fall project of installing some drain tile will reduce disease severity considerably.

If you haven't already, NOW is the time to treat with a fungicide in areas that have had a history of large patch. This statement is especially true if you are only giving it one shot in the fall, as some of our research indicates a single September treatment to be more effective than a single application made later in October. A long list of fungicides are available for treatment, including Heritage, Disarm (high rate), ProStar, Torque, Bayleton, Triton, or Trinity. Granular fungicides such as Heritage G, Headway G, and Pillar G are available and have also been found effective. For granular applications, it is necessary to water the fungicide in with 1/10-1/8” of irrigation, and sprayable formulations should be applied in 2.5 gallons water/1000 ft² or lightly watered-in after application. Getting the fungicide into the upper thatch layer somewhat is necessary since the large patch pathogen infects plants so close to the soil surface.

Go Tigers!

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