Time to Take Stock

Mizzou Field Day: Tuesday, July 19th – Registration Open

Registration is open for the 2016 Mizzou Turfgrass & Ornamental Field Day, to be held July 19th at our research facility at South Farms. The entire schedule will be available shortly, but a few topics to wet your whistle will be:

- Strategies to control difficult-to-control broadleaf weeds on residential lawns
- Dollar Spot: Got it, now how quickly can I get rid of it?
- Pollinator Protection & Habitat Restoration
- Common diseases of 2016 and others to watch out for

Registration for both attendees and exhibitors can be found at the new site: http://www.mufieldday.org. For more information, feel free to contact me or Kevin Dern at mufieldday@gmail.com.

Weather

Dry and Hot Weather Pattern
A. Slightly above normal temperatures for June are expected to rise rapidly. - Source: Pat Guinan
B. ET estimates are nearly 3/4” above normal since April in mid Missouri. - Source: Pat Guinan

Whoa, here she comes... summer's onslaught is now on our doorstep. For the first time in eight straight months, the monthly temperature in May was below normal in Missouri. Rainfall in May, which is traditionally the wettest month of the year, was above average by about an inch, but was highly variable. Some areas of the state (SE, NE) received 10 – 11 inches during the month, while others (north central and central) got only 2.5 – 3 inches. This variability means turfgrass is entering drought dormancy in some areas of the state, while in others saturated soil conditions may have limited root growth. Quite the yin and the yang within a 284 mile wide (E-W) and 308 mile long (N-S) state.
Time to Take Stock

The past weather conditions, including this fairly mild start to June, may play considerably into the health of turfgrass stands if forecasted conditions pan out. Summer is on its way this weekend with 90 to 95+ degree temperatures set to strike the region, along with a relatively dry period into next week. Obviously from a disease standpoint, this will cause a considerable shift to diseases on cool-season turfgrasses and will ease the impact of large patch on zoysiagrass and spring dead spot on bermudagrass. The yin and yang of the past 5 weeks though may also have an effect if dry conditions pervade. Evapotranspiration estimates for mid Missouri (see above) are well above normal for this time of year, and some non-irrigated areas (i.e. home lawns) are beginning to show signs of drought stress and dormancy. Conversely, for those with previously wet conditions, a compromised root system may result in areas (i.e. golf putting greens) not able to cope with heat and drought stress conditions.

6-10 Day Outlook: Heat & Low Rainfall Expected to Persist
A. Temperatures are expected stay warm well into next week. - Source: NOAA CPS
B. An overall dry pattern is forecasted take over a good portion of the state. - Source: NOAA CPS
Quick Hits:

• **Brown Patch on Tall Fescue Raging:** Tall fescue in the region is beginning to feel the punch of brown patch infection. The example shown above is from a homeowner near Springfield, and along with the weather pattern several conducive conditions are coming together to make for this early outbreak. The tall fescue sod was installed in late February/March, and in most instances, that sod is already juiced with a good bit of nitrogen. The homeowner subsequently added another dose of N after the sod was laid. In addition, the area is obviously prone to a good deal of shade and the additional leaf wetness/turfgrass fitness cost that goes along with it. As mentioned in a previous post, DIY over the counter products homeowners are accustomed to getting at Home Depot or Lowes contain a DMI or benzimidazole, and therefore often don’t work very well, particularly in a curative situation. In shady areas like these with brown patch starting, a homeowner can acquire a QoI (azoxystrobin or similar) online and hopefully apply it correctly, contract a lawn care company to make the application, or bear with the disease and invest in seed to overseed the bare areas in September.
• Kentucky bluegrass woes: I visited a sports field last week that was ravaged with a one-two punch of rust and dollar spot. Both of these diseases are low nitrogen diseases, and the fields were fertilized last in December 2015. Stem rust, caused by Puccinia graminis, can be especially severe on young stands of Kentucky bluegrass in late spring and early summer. The disease is most severe in dry conditions (aka mid Missouri), and this season is a perfect set up for it. Our old friend, dollar spot, has a wide range of conditions that can be conducive for disease development and the malnourished turf along with dew-induced leaf wetness was all it really needed to get going. In this case, a QoI/DMI combination product was recommended along with a slow release nitrogen application. Fast release forms such as urea may bring on unwanted rapid growth and increased susceptibility to Pythium blight and melting out.
In the last update, Pythium root rot was discussed, and with stressful summer conditions upon us, we anticipate the Clinic will be rife with samples of this disease shortly. While we tend to focus on this prominent disease, it’s important, and perhaps often missed, to mention that most of the submitted samples from golf putting greens do not contain a primary pathogen acting alone to cause symptoms. Fifty percent or more of our samples each year are diagnosed as abiotic, or without a primary pathogen, meaning environmental conditions are playing the starring role in turfgrass decline. In most of these cases, I’ve termed these plants as afflicted with SHRS, or soggy hot root syndrome, and the roots appear as a stripped wire with only the vascular cylinder apparent and most cortex cells (the rubber coating) sloughed off.

As mentioned above, the current yin/yang scenario of this Missouri spring may lead to compromised roots and a predisposition to heat and drought stress. If it hasn’t been done already, a superintendent should scout root depth and quality on his putting greens very soon. Not to be depressing, but the roots aren’t getting any longer or healthier in the next three months and knowing what you’re dealing with now as a starting point can be critical to formulating a plan going forward. This isn’t the time to get lulled into false confidence by a green, smooth putting surface.

Using a soil probe is perhaps the fastest and most tried and true method, but also consider taking a morning and going out to cut cups to observe a larger, non-destructive, and perhaps more representative sample of rooting depth and soil profile characteristics. When examining the soil core consider these characters:
**Time to Take Stock**

- **Rooting depth** – Yes, we all want those bragging tales of deep 6-8 inch deep corn-like roots, and by all means take a ruler. Make sure, however, to give the core a good shake and rub it gently through your fingers a bit before declaring your roots the best in the land. More importantly, compare the consistency of rooting depth among greens, particularly your best performing greens vs. your PITA greens that may not drain well.

- **Root color, width and density** – Are roots white to light tan, or more darkly colored (which may indicate a pathogen)? Are the roots wide or spindly? How is the density and appearance towards the bottom of the sample? If taking a soil core, it may be useful to run water over the sample or bring along a bucket of water to rinse away soil and organic matter to really get to the detail of the rooting structure. Also a $5 10X hand lens can go a long way...

- **Soil moisture** – Is the soil wet enough or too wet for the time of day? Is there consistent wetting throughout the soil core or does it get drier towards the bottom. Are my wetting agents working effectively?

- **Profile consistency and organic matter** – Are there layers of alternating sand and organic matter? Any black layer? If the core breaks and rooting stops at a certain point is there a color or soil difference that may indicate why the roots stop here? Cup-cutter sized samples submitted to the diagnostic lab are often 4 inches or deeper. When problems with layering, subsurface moisture, or root diseases are present these samples are often broken into 1 – 2 inch width “hockey pucks”.

To get to all of these aspects obviously takes some experience, but also requires involvement of many of your senses. Sight is an obvious one, but touch and even smell are often overlooked. Soil moisture, texture, and even temperature can be sensed by feeling the core and rubbing it between your fingers. Although I’m not a trained police dog by any means, I smell many, if not all, of the samples to determine if soil conditions are anaerobic or if fairy ring may be a potential pathogen. Weird? Absolutely, but clues aren’t always received by eyes on the surface alone, and require some digging, and sometimes smelling to uncover.

**Lee Miller**
Follow on Twitter! @muturfpath
Like on Facebook! Mizzou Turfgrass
Time to Take Stock

Extension Turfgrass Pathologist - University of Missouri