Cool September-like temperatures are a welcome change (and natural break from some disease activity) compared to the above normal temperatures of May and June. May didn’t feel it as much for us because of the erratic temperature swings, but on a global scale was the hottest May on record ([http://www.ncdc.noaa.gov/sotc/](http://www.ncdc.noaa.gov/sotc/)). In Missouri, we do have a two-month span of above normal temperatures now (~ +1.5 °F for each), which breaks a year long period of at or below normal temperatures. These first few days of July are giving us a brief respite, until summer digs its heels back in next week.

Although rainfall totals can’t be painted with a broad brush around this diverse state, most areas received above average rainfall totals for June (~ 6” total). Our neighbor to the north Iowa, however, got dumped on last month, with some areas recording 10 or even 15” during the month! This has led to significant flooding concerns along the northern Mississippi and associated tributaries, particularly around Hannibal in MO. ([http://www.crh.noaa.gov/ncrfc/content/water/fop.php](http://www.crh.noaa.gov/ncrfc/content/water/fop.php)). For most of us, though, the frequent rainfall has just meant lush growing lawns, fast developing diseases (until this cold snap), and for the farmers some very good looking crops.
Quick Hits:

**- Zoysiagrass – Billbug Warning:** I’m starting to get some calls about declining zoysiagrass lawns in the St. Louis area. Corresponding samples haven’t been received in the lab yet, but the timing and earlier adult captures this spring lead me to suspect there may be some billbug activity out there. If you are seeing zoysiagrass decline now, take out a knife and commence to digging. Billbug larvae (or grubs) will be present in the upper inch or so of the thatch layer. Larvae (or billbug grubs) are very small, about the size of your pinkie-nail (1/4-3/8” long), and are legless. Stand symptoms will appear spotty in early stages, but in later stages very similar to drought (which we shouldn’t have too much of now). Individual plant symptoms will include hollowed out stems - where the larvae pop out of and enter the thatch/soil matrix to feed on surrounding plants. Remember to control the grubs, and insecticide needs to be watered in with 1/8-1/4” of irrigation.
- **Red Leaf Spot on Creeping Bentgrass**: With all the disease activity reported in the last update, I forgot to mention that we also began noticing a larger flare up of red leaf spot on our ‘Penn A4’ research green at the turf farm that began in late May. This disease is normally covered by other preventive fungicide applications on putting greens, and we usually see it in concert with dollar spot in our untreated plots.

- **Bacteria Associated Etiolation**: A sample near Springfield, MO came in last week with obvious etiolation in a Poa/bentgrass green. Bacterial streaming was evident from cut leaf tissue, and the sample was sent to another lab to have the bacteria speciated. In working with the superintendent last year as well, it’s odd that the timing of the outbreak is almost to the day of last year’s event. Poa seems to be impacted more heavily than bentgrass, which may make this a bit different from the bentgrass etiocation/decline events that were experienced in Missouri during the high stress summers of 2011 and 2012. Daconil Action was applied preventively at this site and doesn’t seem to affecting the condition. For more information related to bacterial decline, see [this previous update on 7/7/13](#). If any significant widespread outbreaks occur this summer, an update will be posted.
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Nematode Populations Rising on Golf Putting Greens

Seems like the root-knot nematodes are doing well this summer, with a few more reports and samples with galled creeping bentgrass roots coming into the lab. In these samples, root-knot populations are in the 100-200 per 100 cc soil range, which is above threshold, but not some of the sky high numbers we’ve noted in previous years (1000s per 100 cc soil). The galled roots are prominent in these samples, however, meaning the females have nestled down and will be producing many more eggs in the near future.

In the sample shown above (from the St. Louis area), ring nematodes were also found at a high level (1700 per 100 cc soil) as well as numerous soilborne pathogens. Nematode feeding provides a great infection court for pathogens, and the collaboration was causing the root and turf decline. Superintendents with these issues have reported good recovery with the use of Avid. Where soilborne pathogen activity is also involved, tank-mixing the application (along with a surfactant) with a strobilurin fungicide like Heritage may also aid in recovery. For more information on Avid use in Missouri, click here to view a previous report with application and use details. Also, remember you need to have a demonstrated population and the special needs Missouri 24c label to make the application.

Field Day, July 22nd – Save the Date.

Registration and the full agenda have been prepared and is now open for the MU Turf & Ornamental Field Day on July 22nd. Vendors/exhibitors - we are already getting pretty full, and most commented it was the best bang for their field day buck during the whole season. We will have a dedicated demonstration time just after lunch (contact me for details on setup/location), when you can show your wares in a turf setting. One demonstration tentatively lined up will involve fraze mowing,
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which will be conducted as part of an MU research project. We also have several sponsorships available to support the event.

Links are below to access registration for both attendees and vendors, and the complete field day agenda. Hope to see you there.

For the full agenda, click here.
For attendee registration, click here.
For exhibitor/vendor registration, click here.

Have a great 4th of July.

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