Fall Starts w/ Summer Turf Diseases

Weather

![Columbia, MO August Daily Max/Min Temperature Normal vs 2013](chart)(A)
![Columbia, MO September Daily Max/Min Temperature Normal vs 2013](chart)(B)
![2013 August/September Temperature Chart](chart)(C)

**Summer Spiking into Fall**

A. A last blast of summer heat brought August right back to normal.
B. The forecast is not kind for September, but at least history shows decreasing temperatures.
C. The last 30 days have been a dry period for I-70 and north, resulting in late season drought conditions. Source: Pat Guinan & Missouri Climate Center

If September has arrived, why does it feel more like June or July? Summer is showing its teeth in a last flashy grin of heat and drought, as the end of August and now beginning of September has had well above normal temperatures. The trend looks to continue over the next 5-7 day span, as highs are anticipated to stay near 90 (about 8-10 degrees above the average) with lows in the mid to high 60’s for much of the region.

The typically above normal rainfall of this 2013 season has not returned, and I-70 and northern MO are starting to fall into the grip of a moderate drought. For some of the rain ravaged areas of southern MO, some of this may come as a relief as over the last month some localized areas received 5”+ over average rainfall. For the majority of us though, the lack of rainfall has pushed non-irrigated turf (particularly cool-season) into dormancy. For drought tolerant turf like tall fescue, this may not be a bad thing as long as a few main tenets are observed. Don’t fertilize dormant turf, don’t mow drought/heat stressed turf (aka not growing turf), and try to minimize traffic. Considering the 10 day forecast doesn’t show any major rain events, these principles normally reserved for summer turf management will be important in early fall.

So when to renovate/fertilize/seed cool-season turf? As you can see in the September weather chart above, the news historically for September is very good as average temperatures steadily decline into the “good growing zone”. Photoperiod is also on a steady decline, with average daylength nearer to 12-13 rather than 15 hours during June and July (click here to find your city). This means even though temperatures may reach the 90s, the overall duration and corresponding intensity of the heat event will be less. Our seeding/fertilizing recommendations hinge
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around a mid-September date for these two reasons, along with the fact that the summer disease & stress season is behind us. The mild temperatures leading up to the current summer-like weather pattern provided fools gold for over eager turf managers who have already seeded and/or fertilized. These areas are struggling with young, stressed out turf seedlings, and over-fertilized, still disease-prone turf. As a note, all of the above statements refer to cool season turf, not zoysia or bermudagrass, which should be enjoying the warmth (although still looking for some rain).

Quick Hits

Brown Patch on Perennial Rye & Tall Fescue

A. Brown patch was affecting both droughthy perennial ryegrass and tall fescue at the MU turf farm.
B. Spots of brown patch dotting through a tall fescue sward at the MU turf farm.

- Brown patch on tall fescue & perennial ryegrass - Late season brown patch is impacting tall fescue and perennial ryegrass throughout the area. The relatively cool summer caused lighter than normal incidence of this disease for most in Missouri, but the recent heat wave along with some mistimed fertilizer applications has resulted in recent observations in Columbia and St. Louis. At the MU turf farm, brown patch is showing up not only in shaded areas, but also in full sun. Due to a longer leaf wetness period and reduced plant defenses from lower photosynthetic potential, shaded areas are much more prone to brown patch. The fact that we are seeing it so prevalently in full sun indicates how high the disease potential is now. If the disease is causing severe damage, and particularly if you already fertilized, a curative fungicide application may be necessary. If planning to overseed and renovate the area, however, (wait a few weeks!), you may be able to simply take advantage of normal, more conducive turf growing weather.
Rust on tall fescue & perennial ryegrass – Several instances of rust have been observed on tall fescue and perennial ryegrass in the Columbia area (including the MU turf farm and my lawn). This characteristic disease is noted by the orange, rusty urediniospores that explode by the thousands from pustules on the leaves and coat shoes, pants, mowers, etc. The two major species that affect turfgrasses in this area are *Puccinia graminis* and *Puccinia coronata*. In early June of last year, (click here to see the report), stem rust caused by *P. graminis* was prevalent on Kentucky bluegrass in the region, particularly on younger plants and sod farms. We are not seeing the disease on Kentucky bluegrass now, but instead on tall fescue and perennial ryegrass, which along with spore shape makes me think this outbreak may mostly be crown rust (*P. coronata*). Either way, both rust diseases prefer under-fertilized and drought stricken plants, so in my mind if the lawn has this disease it hasn’t been necessarily been mismanaged. If concerned, irrigation will help now, but the kicker will be a well-timed fertilizer application (1 lb N/1000 ft²) applied right around September 15th.
- Insect sightings on putting greens: In news of the weird, some wiggling maggots have been observed sporadically around golf putting greens and other turfgrass areas. These are fungus gnat maggots (which can also be seen in this YouTube video), that hatch in a brood and swarm in mass from one area to another. Fungus gnats are mostly an indoor nuisance, where they infest moist houseplant potting media. They also can feed on plant roots, but are fairly innocuous to turfgrass and actually aid in organic matter decomposition. As the name implies, however, they also eat fungi, which can include pathogens. I know this firsthand, as these darn critters ate my dollar spot inoculum during my M.S. research project, and cost me two months of work. So, view them as a curiosity on turfgrass and a potential biocontrol.

Seedcorn beetles have been burrowing in putting greens for a few months, but it seems their populations have peaked in the last two weeks. Several reports have come in from golf superintendents thinking they were treating for cutworm damage, only to have hundreds of seed corn beetles come to the surface. Despite the name, seedcorn maggots are only occasional corn pests, and the beetles do not feed on plants but instead feed primarily on other insects. However, they are voracious hunters and the sand rootzone of a putting green is a fine place for them to dig around for food, leaving holes and sand piles behind. For the most part, a pyrethroid insecticide targeted towards cutworms will also curatively control seedcorn beetles on greens.
Heat bringing on disease/phytotoxicity on MU disease green: Sights that only make a pathologist’s eyes smile have been made possible by this late summer heatwave. In our control evaluation trials on our bentgrass “disease green” at the farm, several of our untreated plots have shown 3 different diseases at one time. In the above photo, brown patch, copper spot, and dollar spot are all present and multiplying within one plot. So if evidence is needed of why disease management practices are utilized on a golf putting green, the above photo should serve well.

The second photo depicts phytotoxicity caused by routine applications of a DMI fungicide (i.e. Banner, Bayleton, Tourney, Triton, Trinity, Eagle) throughout the summer season on bentgrass. We had not seen any noticeable phytotoxic effects yet this season (applications started 5/23), but this last heat/drought spurt brought on the bronzing after our last application on 8/29. This example shows the caveat of applying most DMI fungicides on creeping bentgrass putting greens throughout the summer, and demonstrates they may be best utilized in the spring and fall months when associated plant growth regulator effects may be more negligible due to cooler temperatures.

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