Weather

First we're hot, now we are not. The first two weeks of June have been a see-saw ride, starting with extremely high temperatures mixed with the occasional shower. Soil temperatures throughout the state shot well above normal, which led to summer stress conditions for cool season species. Temperatures have moderated to lower and near normal temperatures, and over the next few days no severe temperature spikes are expected.

Last week's weather brought several diseases to the forefront including brown patch on tall fescue and *Pythium* on tall fescue and creeping bentgrass. Luckily, lower temperatures over the weekend were a natural fungicide, halting disease spread and moderating the severity of the symptoms. If the current wet spell continues, however, the next heat wave will probably produce more outbreaks of these two diseases. I will talk about the problem with *Pythium* scheduling in fungicide programs in the next update.

Quick Hits

- Significant foliar *Pythium* outbreaks were noted in the last week on a heavily shaded, wet creeping bentgrass putting green in central Missouri and on several shaded, poorly drained tall fescue lawns. If you didn’t have a *Pythium* preventive out in shady, wet areas of creeping bentgrass, tall fescue, or Kentucky bluegrass before this early heat wave, you may consider doing so before the next. This is particularly true if the next heat blast is like this past one, and is preceded by generous precipitation.
- Brown patch has picked up considerably in our tall fescue plots at the research farm and on several lawns in central MO. All nitrogen fertilization of cool season lawns should cease to prevent or suppress both *Pythium* and brown patch outbreaks.
- These lower temperatures can be a precursor for anthracnose outbreaks during the next warm up. Be on the lookout for anthracnose on putting greens in *Poa annua* (if you need to keep it) and susceptible creeping bentgrass cultivars (Penncross, Pennlinks, Providence, & Dominant in particular).

**Etiolated Tiller Syndrome**

![Etiolated Tiller Syndrome](image)

Etiolated tiller syndrome (a.k.a. ETS, mad tiller, or ghost disease) has been reported on creeping bentgrass in St. Louis and near Jefferson City over the past week. This condition appears as an abnormal, faster growth of the terminal shoot, resulting in an elongated stem and longer turf. Symptoms are easily observed before mowing as yellow, taller individual plants are interspersed among normal growing plants. Individual plants have a clear margin in the stem void of chlorophyll, presumably due to increased gibberellic acid (GA) production. These symptoms were first observed in the 1950’s in the UK (where it is called ghost disease) and in Rhode Island in the 1960’s. It has since been observed throughout the world in New Zealand, Scandinavia, and northern Europe. The syndrome mostly affects perennial ryegrass, but has been often observed on annual bluegrass and creeping bentgrass golf greens, tees, and fairways.
We know very, very little about this condition. You will notice I haven’t called it a disease, which would imply we know the causal agent. It has been reported that extended cloudy weather preceded by heat causes the condition, and symptoms appear similar to plants grown in low light conditions. There wasn’t a significant cloudy period that can be pinpointed when these symptoms were reported in Missouri.

It has also been reported that PGR use, particularly Primo, can cause these symptoms. This makes sense due to the likely involvement of GA production, and the use of Primo as a GA inhibitor. However, ETS symptoms have been reported in turf stands with and without growth regulator use. Several microbes are known to produce gibberellic acid. *Gibberella fujikori* is the most notable of these, causing a disease called bakanae which produces similar elongated tiller symptoms on rice. This fungus has not been proven to cause this disease, however, and interactions of the plant with other fungi, bacteria, or algae may be occurring at the leaf or root interface to cause the excessive tillering. One study showed that DMI fungicide treated plots had less ETS symptoms than untreated plots *(Fidanza, 2008)*. In a creeping bentgrass fairway trial in St. Louis, we also have noticed the lowest amount of ETS in plots treated with Headway (azoxystrobin & propiconazole mixture) as opposed to the untreated control and non-DMI fungicides. Lastly, nutrient deficiency, particularly magnesium, has been implicated, with Epsom salt applied at 2 oz/1000 ft² appearing to reduce symptoms *(Roberts et al.)*.

Opinions differ as to the amount of damage ETS actually does to the plant. Some superintendents feel it is a precursor to summer decline and diminished root growth, whereas others feel it has no affect on plant health. Soil probes of affected vs. unaffected areas show no discernable difference in root length or density, but the jury is still out as we investigate this condition further.

Without knowing what the true cause is, suggestions for control are very limited. Fungicide use is not recommended at this point since we don’t know if we are targeting a fungus, plus DMI use during this higher stress period may cause some undesirable phytotoxic side effects. Personally I have very little experience with Epsom salt use at greens height. If you choose to use this material, make sure to water it off the leaf blade and crown area to reduce the potential for burn.

**Note:** If you are experiencing these symptoms, I’d like to get a sample and investigate the cause. Please send me an email or call to discuss.

**Save the Date: July 26, 2011**

Make plans to join us at the University Missouri Turf & Ornamental Research Farm on July 26th for our annual field day! In addition to the research mentioned above,
we have prepared an agenda that is packed with useful information and demonstrations that can help your turf and ornamental management operation. This agenda is posted, and participant registration is now open – just click here.

For vendors, this is the best deal in the Midwest to capture your audience and display your ‘wares. Not to mention your dollars will go towards funding the very research that makes Field Day and the Missouri Golf Industry Conference successful. It’s a true win-win!! If you are interested in having a display at the event, or being an event sponsor, vendor online registration is now open – just click here.

Looking forward to seeing you there.

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