A Shift in Disease Focus

Weather

Incredible. Breaktaking. Perfect. Some of the adjectives I’ve heard over the last 5 days to describe the weather. After a hot start we are significantly below normal in temperatures thus far in September. We get a little temperature spike today (highs near or slightly above 90F), but according to history (and the forecast) this may be our last venture into that digit range. Later in the week the forecast is for a significant cool down, and lest my eyes deceive me late week the highs may not make it out of the 60F’s. This cool down should be accompanied by some rain, which hopefully will come at a relief to the extreme NE and SE portions of the state, which are in a mild drought.

If you have the need to seed cool-season grasses, now is the time to do it. Germination should be greatly aided by mild temperatures and late week rains. Next spring can be a crap-shoot, particularly if conditions are too wet or become too hot to allow seedlings to develop a substantial root system before summer stress ensues. Give the fescues, bluegrasses, and bentgrasses a head start now, and they'll thank you for it later.

Quick Hits:

Calls have significantly died down in the lab, as turf managers (and us at the farm) are squarely in cool-season recovery mode. There are a few notes of disease activity on bentgrass putting greens, fairways, and tees that still warrant attention.
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- **Dollar Spot**: The fall dollar spot drum will continue to beat for at least another month or two. Now is a good time to utilize dollar spot specific fungicides like Emerald, or DMI fungicides (that may be too “hot” for routine summer use) for longer residual preventive dollar spot control. Since other higher temperature diseases are on the decline, a little money may be saved with 28-day spray intervals. That being said:
  1) Make sure dollar spot is clean going into the winter months. The turf will not recover, and dollar spot will jump on you earlier next spring in infection centers left in late fall.
  2) If you have fungicide resistant populations of dollar spot, now is the time they will show up. Over the course of the season, repeated fungicide exposure could select for these insensitive populations, which would result in control problems now. Currently, strains resistant to the benzimidazoles (i.e. 3336), dicroboximides (i.e. Curalan, 26GT) and the DMIs (i.e. Banner, Bayleton, Eagle, Torque, etc. etc.) have been observed.

- **Anthracnose**: Last week, I did observe ‘Penncross’ putting greens in KC that had basal rot anthracnose infection. Although mostly a problem in Poa annua, certain creeping bentgrass cultivars such as ‘Penncross’, ‘Pennlinks’, and ‘Providence’ are particularly susceptible. As I have observed in the past, basal rot anthracnose seems to hit when nighttime temperatures dip into the lower 60’s in late August or early September after a long stressful summer. Anthracnose is also a low N disease, and a nitrogen spoon-feeding application was skipped on these greens. For curative applications, a systemic fungicide mixed with chlorothalonil is recommended.

Warm Season Turf Disease Prevention

As the temperature has turned, so too should our focus on turf diseases. Cool-season turf growth is ramping up, so pathogen infection is more easily combated and disease development is restricted. The opposite is true for warm-season grasses. Metabolic processes slow in these species as temperatures reduce, as they prepare for winter and begin to store carbohydrates and sugars instead of using them for growth. Consequently, these grasses become susceptible to pathogen infection in the fall and disease symptoms can become severe now or later next spring.

In this two part series, the focus will be on the two most important diseases of warm season turf in the region: large patch of zoysia and spring dead spot of bermudagrass.
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Control of Large Patch of Zoysia

Large patch of zoysia is caused by a “version” of *Rhizoctonia solani*, which also causes brown patch on cool season turfgrasses. For this reason, many of the chemical and cultural controls that are effective for reducing brown patch are also applicable to large patch. The main difference is timing of pathogen activity, and therefore timing of control practices.

Cultural Practices

**Drainage:** Increasing surface and subsurface drainage may be one of the most effective cultural practices that can be done to minimize large patch infection. As with most foliar diseases, large patch requires ample moisture around turf sheaths and crowns for infection. Therefore, areas that have standing water after fall and spring rains (as in the picture above) have severe large patch. Installing french drains or regrading pocketed areas can greatly reduce damage from large patch.

**Fertilization:** Nitrogen fertilization should only occur when the turf is actively growing in late May, June, July or early August. Nitrogen fertilization of zoysia during current cooler periods will greatly promote large patch of zoysia not only this fall, but again next spring. The only exception to restricting warm season turf fertilization now is if you have a soil test that is low in potassium levels. If this is the case, potash applied in September can greatly increase the winter hardiness of warm season turf.

**Aerification:** Aerifying or any other form of cultivation in the fall and spring can enhance large patch severity. Zoysia is “weak” and growing slowly during cooler temperatures, and major cultivation at this time will injure the plant and predispose
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it to infection, and help spread the pathogen. Restrict aerification and dethatching practices to the summer when the turf is actively growing. Verticutting, or other thatch control methods in the summer will help promote a healthier turf stand and reduce the amount of organic material pathogens can subsist on.

Chemical Control

In areas that historically have large patch infection, preventive fungicide applications in the fall are often necessary for maintaining zoysia. In particularly wet springs (like this last one), a curative spring application may also be necessary. As I noted in a spring update, large patch is often so large that it can be viewed with satellite imagery. Programs like Google Earth can be utilized to scout a site, and fungicides can be spot applied to areas that have history of a problem.

Effective Fungicides: Qols: azoxystrobin (Heritage), fluoxastrobin (Disarm)
DMIs: triadimefon (Bayleton), triticonazole (Triton FLO), tebuconazole (Torque), propiconazole (Banner)
Carboximides: flutolanil (ProStar)
Fungicide notes: Combination products such as Headway (azoxystrobin + propiconazole), Tartan (triadimefon + trifloxystrobin), and Systar (flutolanil + thiophanate-methyl) are also effective. Some products should be applied at the highest rate for satisfactory control.

Frequency & Timing: One well-timed application in the fall may provide season long control of the disease, but in extremely wet spring and fall seasons two may be necessary. If one application is targeted, it may be best to apply in late September, a few weeks ahead of the historical first frost date (for most of Missouri around mid October). More research needs to be conducted in this area.

Application Method: One potential issue with fungicide efficacy may be the method in which they are applied. Fairway applications are often made in relatively low volumes of ¾ - 1 gallon/1000 sq ft or less. This disease infects at the sheath and upward mobile systemic fungicides are being used. I recommend applying at 2 gal/1000 sq ft if possible. If low water volumes are used, one spin of the irrigation heads may help deliver the fungicide lower in the turf canopy and increase fungicide control.

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