When It Comes To Anthracnose, Location Matters

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Outside of a couple significant outbreaks of dollar spot, the summer of 2014 will not be remembered as a particularly troublesome disease year. However, one disease that did show up with somewhat surprising frequency was basal rot anthracnose (Colletotrichum cereale). It's not entirely clear why basal rot anthracnose was prevalent in 2014, but opinions abound. Perhaps the wet spring predisposed the turf to basal infection. Or maybe the cool summer fooled superintendents into skipping fungicide applications, allowing for infection to develop. Or maybe the lack of other diseases has just narrowed our focus on the basal rot that did develop. Regardless of why it happened, now seems an opportune time to discuss the differences between basal rot and foliar anthracnose.

To be clear, the fungus that causes basal rot anthracnose is the same one that causes foliar anthracnose. The only difference lies in the location of infection. Basal rot anthracnose is present only (or predominantly) in the crown region (Figure 1), while foliar anthracnose is present mostly on the leaves (Figure 2). While many anthracnose samples come in with both types of anthracnose present, it is certainly not uncommon for a diseased plant to have only basal rot anthracnose present. This is a strong indication that basal rot anthracnose is not simply the natural progression of foliar anthracnose from the leaves to the crown.

In addition to the point of infection, we oftentimes see differences in the species affected by each type of anthracnose. While foliar anthracnose can be found on any stressed turfgrass plant, especially annual bluegrass, for whatever reason we tend to see basal rot anthracnose more often than not on creeping bentgrass. To my knowledge this has not been reported in other areas of the country, and it is unclear why that appears to be the case in Wisconsin. In fact, I can think of numerous cases in recent years where basal rot infection has been mistaken for take-all patch because the bent was struggling and the annual bluegrass was fine. But after closer inspection, the bentgrass was heavily infected with basal rot anthracnose and the annual bluegrass was free of any significant disease.

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Basal rot anthracnose affecting primarily the crown region of the plant.

Foliar anthracnose present on annual bluegrass leaves.

If location and species preference weren't enough to differentiate the two, the type of stress that precedes each disease is also often distinct. Foliar anthracnose is often associated with low mowing heights, traffic, and low nitrogen fertility. From our experience at the TDL, however, basal rot anthracnose is almost always associated with poor drainage. Whether it's a fairway, putting green, or tee we can usually associate basal rot anthracnose with compromised drainage.

One potential explanation for this is that under conditions of poor drainage the basal region of the plant would be sitting in standing water more often, which could predispose the plants to basal rot infection. This has not been investigated in any depth, however, and still wouldn't explain why bentgrass is more often affected than annual bluegrass.

The last, and most important, differentiation between foliar and basal rot anthracnose is in the methods of control and recovery. Despite the significant damage that foliar anthracnose can cause, if the stresses impacting the plant are removed and a solid curative fungicide program is put in place the plants can often recover in relatively short order.

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With basal rot anthracnose, however, recovery is often achingly slow because of the damage done to the plant's crown. In fact, once a plant has basal rot anthracnose in a given season, it often doesn't perform quite right the entire year even if strict chemical controls are put into place.

If you experienced significant basal rot anthracnose at your facility there are a couple things you can try next year to minimize the damage. First, improve both the surface and subsurface drainage in the affected areas. Second, initiate a preventative fungicide program well in advance of when symptoms would typically occur.

There is evidence that the fungal infection that causes basal rot anthracnose actually occurs several weeks in advance of symptom development, and if you time your preventative program to coincide with symptom development, you could be too late.