
Coursewide
Confidence.

The greens were down to .150 when they opened and were slowly lowered to .120 being mowed with solid rollers.

Most of the work was done by the contractor with the exception of the Basamid applications, head levelling and reseeding ares that may have washed out or did not come in.

If he had to do the job over Scott would make the following changes:

- Close the course during fumigation applications mainly for appearance.
- Fumigate out into the surrounds but in this project the temporary greens interfered into the buffer zones,
- Drain the collars and approaches.
- Re-grass the 2 extra greens.
- Remove trees before the project started. Scott could see the greens in the shade were not poa free but and thinner.

Overall Anthes expressed the project was a success and outside of having to hand water the tile lines in the greens during dry spells the greens have required less maintenance than before.

The new greens and drainage was tested on the day of our event as it poured before our event, rained during it and although half the groups finished the other half were chased off the course by a thunderstorm. In result the prizes were given as part of a blind draw.

Despite the rain everyone had a good time and were treated to a great golf course and tasty lunch and hors de ourves after golf.

Thank you to our host Superintendent Scott Anthes, PGA Professional Jim Ostrowski and Restaurant owner Dan Kleinschmidt for your hospitality.

Top Left: 7th Hole - 185 Yard Par 3

Top Right: The group listening to Scott

Middle Right: Our Host Scott Anthes

Bottom Left: 9th Hole - 444 Par 4

SUPERIOR QUALITY-OF-CUT. SURPRISINGLY AFFORDABLE.

NEW LF510™

The new **Jacobsen LF510™** fairway mower offers **affordability from the start, simplified maintenance** and a reliable **Kubota diesel Tier 4 final engine** – making it easy to afford, use and maintain through its entire life. The LF510's clean and consistent quality-of-cut is provided by the new **TrueSet™ cutting units with Classic XP™ reels** that boast an **industry-leading 425-lbs. of holding power**. Mow your fairways without scalping your budget with the new Jacobsen LF510. See your local Jacobsen dealer for more information.

JACOBSEN®

1.888.922.TURF | www.jacobsen.com

Burris EQUIPMENT

Contact your Burris representative.
Gary Huenerberg (608) 751-0074
Joe Baert (847) 417-4238
WWW.burrisequipment.com

When It Comes To Anthracnose, Location Matters

By Dr. Paul Koch, Department of Pathology, University of Wisconsin – Madison

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.

WISCONSIN PATHOLOGY REPORT

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.

"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."

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.


MESA®
Patented Controlled Release Nitrogen
A little bit of blue makes a whole lot of green
Deeper Green Turf
Faster Green-Up
Fewer Clippings
More Nitrogen to the Plant
Brilliant Color Response Even in Cooler Temperatures
Extended Color for up to 10 Weeks
DHD TURF & TREE
More brands.
Better performance.
LebanonTurf
Best of All Worlds™
www.LebanonTurf.com 1-800-233-0628

Is *Poapratensis* An Invasive Species In Upper Midwestern Prairies?

By Sabrina Ruis, Ph.D. Candidate, Department of Soils, University of Wisconsin – Madison

EDITORS NOTE: This submitted student article is eligible for the Monroe Miller Literary Scholarship, awarded each year to the author of a selected article.

Kentucky bluegrass (KBG) (PoapratensisL.) was likely brought by English colonists in the 17th century as animal feed, or as a contaminant of animal feed, though it is possible native species may have existed (Huff, 2003). Descriptions of the area around Jamestown by John Smith noted few grasses, but 20 years after land clearing and grazing domestic animals as part of the settlement process, grasses were noted as plentiful (Carrier and Bort, 1916). Kentucky bluegrass could have arrived in prairies around the Midwest through overseeding for pastures, influx of propagules from nearby seeded areas or deposited through animal manure. Kentucky bluegrass is a highly variable cool season grass and an apomictic species with extensive rhizomes that allows it to spread vegetatively once established (Huff, 2003). These traits and reports of its presence in grasslands and other natural areas (Tyser and Worley, 1992; Larson, 2001; Kraszewski and Waller, 2008) have resulted in it commonly being deemed invasive by various agencies (Center for Invasive Species and Ecosystem Health and The Nature Conservancy, 2011).

Figure 1: Sampling quadrat at Avoca Prairie and Savanna, WI.

The Invasive Species Advisory Committee (ISAC) defines an invasive species as 'non-native to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health' (ISAC, 2006). A species that has been deemed invasive often has regulations put into place that prohibit or restrict its use and transport (WIDNR).

To determine whether or not KBG was indeed an invasive species in remnant prairies in the Upper Midwest, I did a survey of ten Upper Midwestern prairies as part of my Master's research. This allowed me to determine if there were relationships between its presence, prairie size, soil type, and history of management. A total of 148 sampling points or quadrats (3x5 ft.) from the ten sites were used to determine the proportion of the quadrat was occupied by KBG, other flowering plants of various heights, woody plants, other grasses, invasive grasses and other invasive species.

Table 1. Prairie locations and descriptions used for *Poapratensis*(L.) abundance survey of Upper Midwest tallgrass prairies

Site Location	Hectares (surveyed area)†	Primary Soil Type‡	Number of Quadrats
Belmont Prairie Nature Preserve, IL	4.2 (2.4)	Silt loam/silty clay loam	5
Crossman Prairie State Preserve, IA	4	Silty clay loam/loam	7
Doolittle Prairie State Preserve, IA	10.4	Silty clay loam	12
Bluestem Prairie Scientific and Natural Area, MN	1120	Sandy loam/loamy sand/clay loam	28
Kettledrummer Prairie, MN	80	Loamy sand/silt loam	20
Malmberg Prairie Scientific and Natural Area, MN	32	Silty clay loam	15
Avoca Prairie and Savanna State Natural Area, WI	754 (156)	Loamy alluvial	24
Newark Road Prairie State Natural Area, WI	13.2 (11.4)	Silt loam/muck	11
Snapper Prairie State Natural Area, WI	12	Silty clay loam	11
Young Prairie State Natural Area, WI	322.4 (87.2)	Silt loam/Silty clay loam/sandy loam	20

† Indicates hectares used for survey if different from total.

‡Soil types determined from soil maps from Soil Survey Staff (Web Soil Survey).

Cover classes for each plant group were: 0=bare soil/thatch, 1=less than 5% cover, 2=5-25% cover, 3=25-50% cover, 4=50-75% cover, and 5=75-100% cover (Daubenmire, 1959). Other information on slope, any disturbance, distance to edge, distance to nearby golf courses, and land use around the site were recorded. Carbon and nitrogen content of a soil sample collected from each quadrat was also determined.

Data were analyzed through regression tree analysis for determining the parameters that had a relationship to KBG presence/absence and proportion of KBG. Regression tree worked by having the program sift through all 49 parameters, identifying parameters that explained experimental variability in order of descending importance. Both trees received the same input parameters.

Of the 148 quadrats surveyed, 79 (~52%) contained KBG, with each site contributing at least one quadrat containing KBG. Average cover of KBG within a quadrat was less than 5%. Only 3 quadrats contained KBG cover over 50%.

The regression tree sorted the binary data of presence or absence of KBG by sending "no KBG" to the left side of the tree and "yes KBG" to the right (Figure 1). The first split identified by this tree showed KBG tended to be present if cover of sedges and rushes was rated ≤2.5 (5-50% cover). The model continued by including soil carbon ≤1.06% and status as a State Natural Area (SNA) before1980 as indicators of KBG presence. When the year a prairie became an SNA was ≥1980 (newer), meters to edge to the west (m to edge W) from the quadrat became important and tended to not include KBG if the distance was >285 m. The model for presence or absence explained 17.7% of the variability within the data (Figure 1).

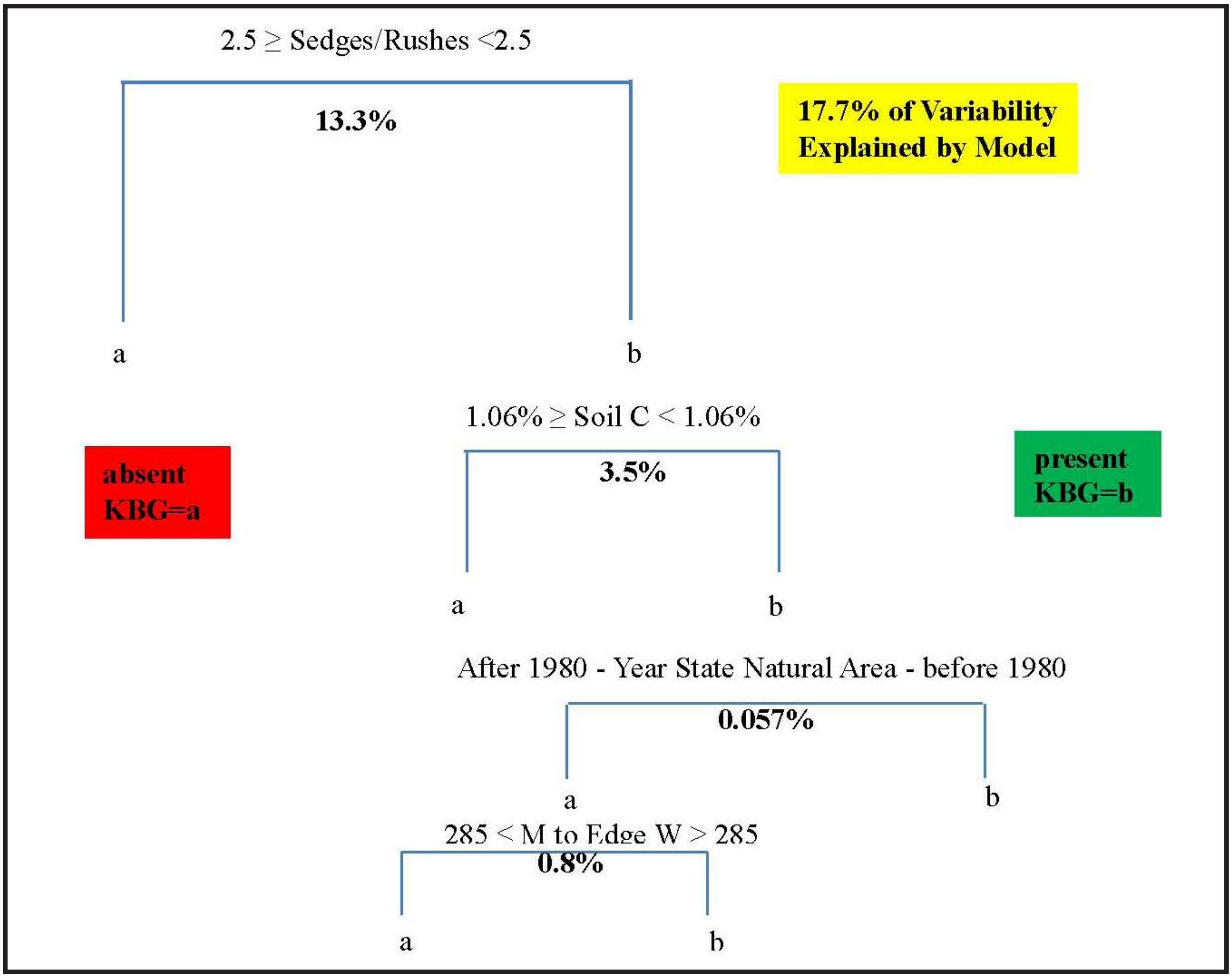

Figure 2: Regression tree model explaining presence/absence of Kentucky bluegrass (KBG) in Upper Midwest tallgrass prairies. Parameter listed sorts to left side of tree. a=KBG absent, b=KBG present, plant types/groups were evaluated based on percent cover ratings on 0-5 scale using the Daubenmire scale. C= is Soil Carbon . Year State Natural Area=Year site became a State Natural Area. Percentages below each parameter are percent of variability explained by the parameter.