



K-State turf: August 14 2008

More cool weather:

Highs in the 70's and 80's? In August? Toto, I don't think we are in Kansas anymore... A weather summary follows at the end.

The weather this week is allowing cool-season grasses to recover. In the lab we are still seeing some Pythium (ryegrass fairways), brown patch (ryegrass, fescue, and bentgrass), and dollar spot (bentgrass and Kentucky bluegrass). A visitor to field day last week mentioned that there is rust active in bluegrass right now in western KS.

Gray Leaf Spot:

Gray leaf spot is a serious disease of perennial ryegrass. It can take out an entire fairway in just a couple of days, and can trigger a decision to switch out to another (non-susceptible) type of turf. I'm attaching a separate document about this disease, a fact sheet with an updated list of fungicides.

Turf Field Day:

We had about 200 visitors to the 2008 field day. On the disease side, there was plenty to talk about as there was a massive brown patch epidemic underway at our Rocky Ford Turf Research Center. High humidity led to a lot of brown patch mycelium.



Brown patch mycelium was crawling around everywhere.



Smoke-ring effect of brown patch was visible in perennial ryegrass

Fescue Cultivars:

The following information is taken from a press release from K-State Research and Extension:

K-State Releases New List of Recommended Tall Fescue Varieties for Lawns

MANHATTAN, Kan. - Tall fescue varieties remain the best-adapted and most planted cool-season grasses for Kansas home lawns. Kentucky bluegrass cultivars are a distant second.

Kansas State University has changed the fescues it's recommending, however, for the 2008 fall planting season.

"We've finished our previous five-year study of 160 different varieties in our Tall Fescue Cultivar Trial near Wichita. We reported the final results of that last year," said Ward Upham, K-State Research and Extension horticulturist. "Now we're able to release the first year's results from a new long-term trial of 113 varieties, seeded in 2006. Naturally, those results are markedly different from last year's, because we've changed cultivars to include what's new or improved."

One tall fescue that's part of every study, however, is K-31 - the old standby variety in Kansas.

"We rate our test varieties at one-month intervals through the growing season for color, green-up, quality and texture," Upham said. "From trial to trial and up to now, K-31 consistently rates at the bottom, because it's best suited for large open areas, such as orchards and pastures.

"Fortunately, we now have identified a myriad of state-tested cultivars that are very close to each other in quality, plus are a real improvement over K-31 in color, density and fine leaf texture. Mixes of several newer varieties could even allow you to take advantage of their differing strengths."

The horticulturist advises homeowners just to use K-State's list of recommended fescues as a guide. Omission from that list does not necessarily mean that a variety won't perform well.

In no particular order, the named cultivars that topped K-State's new

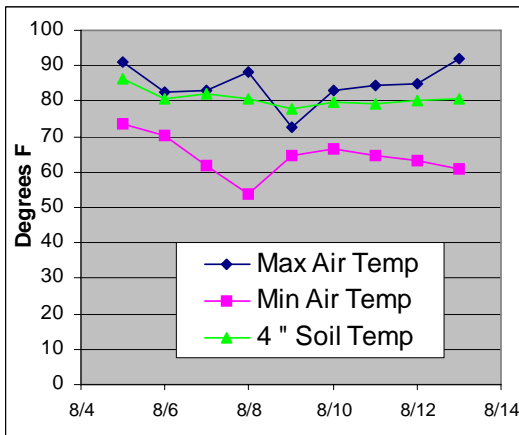
trial in 2007 were Bullseye, Cezanne Rz, Einstein, Falcon IV, Firenze, Hemi, Hunter, Millennium, Monet, Rebel IV, Rhambler, Speedway, Tulsa III, and Van Gogh.

The tall fescue varieties reported last year as the "winners" in Kansas State University's most recent five-year field trial were Apache III, Avenger, Blackwatch, Blade Runner, Cayenne, Cochise III, Constitution, Coyote, Dynasty, Escalade, Falcon IV, Finelawn Elite, Grande II Masterpiece, Justice, Laramie, Lexington, Millennium, Padre, Picasso, Rembrandt, Riverside, Scorpion, 2nd Millennium, Serengeti, Silverado II, Titanium, Turbo, Ultimate, and Wolfpack.

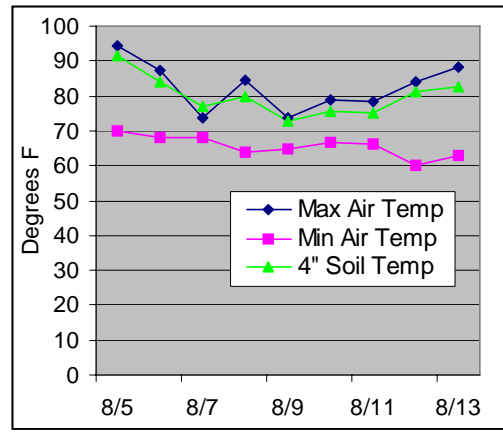
- Source: K-State Research and Extension Horticulture

Weather summary for Aug 5 to August 14, 2008:

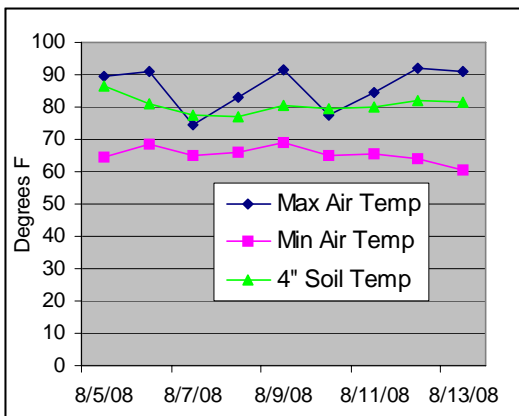
Manhattan Aug 5-13



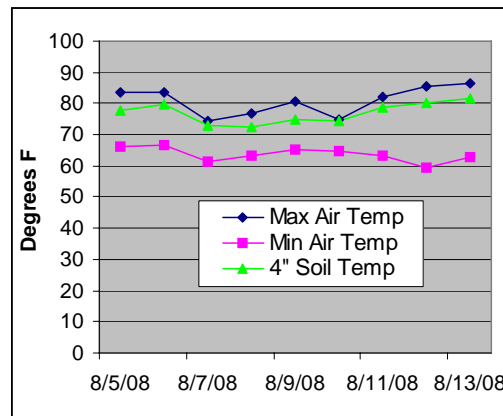
Hesston Aug 5-13



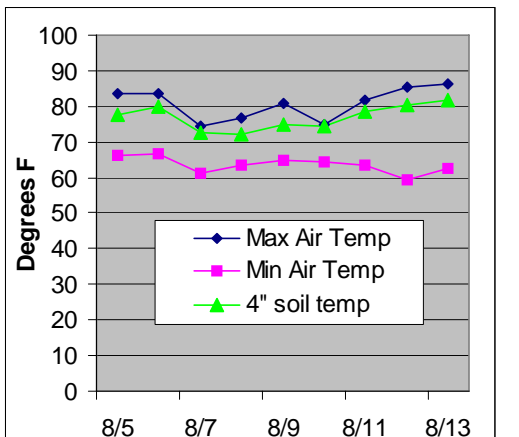
Garden City Aug 5-13



Colby Aug 5-13



Ottawa Aug 5-13



Gray leaf spot of perennial ryegrass

Symptoms

Gray leaf spot (GLS) is a damaging fungal disease of perennial ryegrass. The disease is called ‘blast’ in other grasses such as rice and wheat. GLS was first observed on perennial ryegrass throughout the eastern half of the United States in 1992. The epidemic resulted in extensive damage to golf fairways and athletic fields. The disease now is established in most areas of the country where perennial ryegrass is grown. Disease development in our region is sporadic with little or no disease development in some years. Nevertheless, the potential destructiveness of GLS forces many turfgrass managers to apply preventive fungicide applications every year.

In Kansas, GLS symptoms usually start in early to late August. Small, chocolate brown spots approximately 1/16 inch in diameter develop on leaves. During early disease development these leaf spots may not be numerous and can be easily overlooked. The spots expand slightly with age and develop a gray center surrounded by a yellow halo (Figure 1). Depending on weather, multiple

coalescing leaf spots will girdle and kill both leaf and crown tissue. Dying leaves tend to develop a characteristic twist (“fish hook”) at the leaf tip that helps differentiate this disease from brown patch or Pythium blight. In warm, humid weather, the infected areas are sometimes covered with fuzzy, gray spores.



Fig 1: Small, brown lesion on perennial ryegrass.
By D. Settle



Fig. 2: Diseased turf first appears droughty. By N. Tisserat



Fig. 3: Large areas of fairways can be damaged in a short period of time. By N. Tisserat

GLS often develops first in heat or drought prone areas such as the tops of small mounds or on steep slopes. The diseased turf first appears droughty even though soil moisture is sufficient, but soon collapses and turns a dull brown (Figure 2). The fungus may quickly spread from these diseased patches and cause extensive blighting if weather conditions are favorable for infection (Figure 3). In some years the disease never progresses beyond blighting in these 'hot spots'. Other turfgrass species including Kentucky bluegrass, annual

bluegrass, and creeping bentgrass that may be mixed in with the ryegrass are not affected by the disease. Blighting may continue through late summer and into early fall and cause significant damage to young ryegrass seedlings emerging from fall overseeding.



Fig. 4: GLS lesions in tall fescue. By N. Tisserat

GLS may also occur on tall fescue although it is rare in Kansas and Missouri. Symptoms are similar to those on perennial ryegrass but disease progression is slower and damage is much less severe. Leaves initially develop small dark brown spots that eventually expand and develop a gray center (Figure 4). The spots rarely coalesce to kill leaf blades or plants.

Conditions

The fungus is thought to survive the winter locally in infected leaves and debris. Influx of spores from distant sources may also occur in some years. The fungus apparently infects perennial ryegrass plants at non-detectable levels in early summer then builds in intensity later in the growing season. Factors that eventually trigger epidemics are not completely understood, but high temperatures, extended periods of leaf wetness interspersed with intermittent dry periods favor disease development. The optimum conditions for disease development are temperature of 82-90°F. The fungus requires a wet leaf surface in order to infect the plant. In the optimal temperature range, infection can occur with as little as 9 hours of leaf wetness. New leaf symptoms appear within a few days of infection. The fungus sporulates profusely from leaf lesions and vast quantities of spores can be spread by wind, splashing water and equipment to infect new

leaves. The combination of quick symptom development and massive spore production are reasons why GLS epidemics progress rapidly and are so destructive.

Control

Certain cultural practices may help reduce GLS severity. Avoid excessive nitrogen fertilization during the late spring or summer months. Time irrigations to minimize leaf wetness periods, but avoid letting the turfgrass go under drought stress.

Some new cultivars of perennial ryegrass have demonstrated resistance to GLS, though it is not 100% disease control.

Cultural practices alone are unlikely to control GLS. Fungicide applications beginning in early- to mid- August and continuing through September at regular intervals may be required to prevent damage on golf course fairways and athletic fields. Although thiophanate methyl and the QoI fungicides (such as azoxystrobin and trifloxystrobin) provide the best control of GLS, their use should be managed to prevent the selection of fungicide resistant strains. Resistance to azoxystrobin has been documented in many states. While resistance to thiophanate-methyl has not yet been reported, other pathogens have shown resistance to this chemical, and it is considered at risk. Practice rotation or tank mixes with fungicides with different modes of action.

Fungicides labeled for gray leaf spot.

***Always check the label**

* It is the responsibility of the user to read, understand, and follow the label.

*Mention of a product does not imply endorsement, nor does lack of mention of a product imply non-endorsement.

Active ingredient	Fungicide group	Efficacy and notes	Typical application interval (days)	Examples of products
azoxystrobin	QoI (strobilurin)	excellent, at risk for fungicide resistance	14-21	Heritage
chlorothalonil	chloronitrile	good	7-10	Daconil Ultrex, Manicure, Echo, Pegasus L
fluoxastrobin	QoI (strobilurin)	Limited data available	14-28	Disarm
mancozeb	EBDC	good	14	Fore
mancozeb + chlorothalonil	EBDC + chloronitrile	good to excellent	14	Fore Rainshield + Daconil Ultrex

myclobutanil + mancozeb	DMI + EBDC	good to excellent	14	MANhandle
polyoxin D	Polyoxin	fair/inconsistent	7-14	Endorse
propiconazole	DMI	good	14	Banner MAXX, Spectator
propiconazole + chlorothalonil	DMI + chloronitrile	good to excellent	14	Banner MAXX + Daconil
pyraclostrobin	QoI (strobilurin)	excellent, at risk for fungicide resistance	14-28	Insignia
thiophanate-methyl	benzimidazole	excellent, at risk for fungicide resistance	7-14	Cleary's 3336, Fungo
triadimefon	DMI	good	14	Bayleton,
triadimefon + chlorothalonil	DMI + chloronitrile	good to excellent	14	Bayleton + Daconil Ultrex
trifloxystrobin	QoI (strobilurin)	good to excellent, at risk for fungicide resistance	14-21	Compass

* DMI = demethylation inhibitor, EBDC = ethylene bis-dithiocarbamate

Figure 1 courtesy D. Settle
Figure 2-4 by Ned Tisserat

Updated August 2008

References to products are not intended to be an endorsement to the exclusion of other products that may be similar. Any person using pesticides assumes full responsibility for their use in accordance with the label.

Tables modified with permission from Chemical Control of Turfgrass Diseases 2008 by P. Vincelli and A.J. Powell, University of Kentucky

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