Cornell TURFGRASS Short CUTT

YOUR WEEKLY LINK TO TURFGRASS INFORMATION!

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Gazing in the Grass

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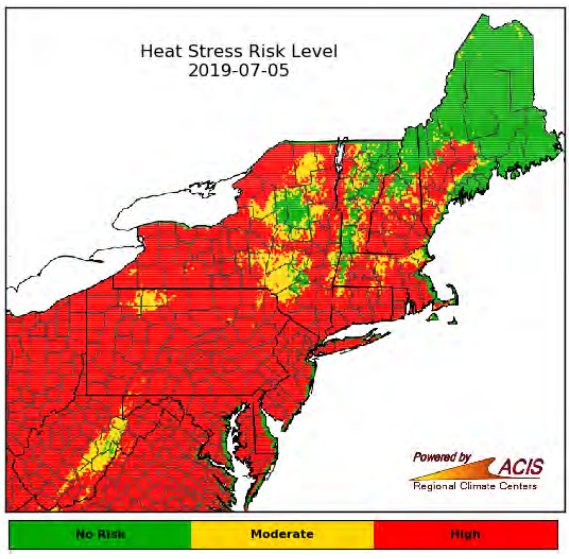
The summer stress period is upon most of the Northeast with temperature and humidity levels summing to over 150. This is a measurable method to gauge chronic stress that will challenge the stress tolerance of cool season turf stands from VA to ME. (See FORECAST Map Image available at http://turf.eas.cornell.edu/app/maps/threats/hstress) Soil temperatures also warming rapidly at two inch depth from mid 60's to upper 70's. As drying persists in some areas expect soil temperature to rise quickly. Of course this is preferable to wet soils that when they heat up hold heat and stress longer!



Rainfall has been more sporadic across the region with some distinct drier areas in the last few weeks. This has lead to a rapid emergence of drought stressed turf. It seems after almost 12 months of record rainfall, the brief drying period with high solar radiation levels driving ET loss is exposing poor soil conditions, poor rooting depth, and creating stress that worsens summer patch, take-all patch and annual bluegrass weevil feeding damage.

It should be no surprise that in simple terms, plants in native soils that have moderate to poor drainage have adapted to persistent wet conditions. Over time these conditions promote shallow rooting that will not sustain top growth and as soil warm not likely create new roots. Intensely managed sand-based golf and sports systems have been performing nicely under very wet conditions if surface organic matter is properly managed. In fact, good drainage has allowed roots to follow water as nutrients and other compounds are drawn down in the soil profile, promoting deeper rooting, even among historically shallow annual bluegrass surfaces.

Climate models that predict pest pressure and risk of damage are emerging as important tools. Turfgrass managers that have embraced the use of these models admit they don't rely solely on models such as the Smith-Kerns Dollar Spot model when deciding on making an pesticide application but rather use as a part of decision-making. Regardless of the model used, including models for Brown Patch and Pythium (also available on FORECAST website) it is clear that the conditions are conducive to widespread **high risk of foliar pathogen pressure**.


Red Thread causing turf loss

Interestingly besides the aforementioned pathogens, there has been an epidemic of Red Thread (*Laetisaria fuciformis*) this Spring, early Summer causing many turfgrass managers to make pesticide application to stop significant turf loss. Red thread occurs during humid periods when the air temperatures are between 16°C and 24°C (60°F and 75°F). The disease is especially severe on ALL types slow-growing turf. Fine-leaf fescues and some ryegrasses are particularly susceptible. **Again it is being observed on turf that has been regularly fertilized but maybe not actively growing enough** and since temperatures to date have been cooler conditions have remained conducive for many weeks. This persistent conducive environment has allowed an otherwise minor nuisance pathogen to become a a source of significant turf damage. Good curative recovery, not control, has been observed with chlorothalonil, flutolanil, iprodione, mancozeb and pyraclostrobin. In one test, a formulation of myclobutanil caused foliar discoloration and stand thinning to creeping red fescue when applied for red thread control.

Laetisaria fuciformis may produce spores for dispersal, however, the primary means of dispersal is the spread of infected tissue and bits of the "red thread" (sclerotia) to healthy areas of grass. This type of spread depends upon mowing, foot traffic, and other activities which occur on the diseased turf. Invasion by the fungus is quick, and leaves may begin to die two days after becoming infected. Fungal hyphae and dried pieces of the fragmented "red thread" enable the fungus to survive when conditions are not favorable for disease development (winter, mid-summer, etc.). **During dry conditions, the "threads" may be viable for up to 2 years.**

The increasing incidence of Red Thread over the last several years has enabled the fungal population to build, resulting in the epidemic levels of this pathogen. This is a harbinger of further foliar pathogen challenges that lie ahead with the amount of moisture in the system.

Long periods of wet leaves and wet soils creates ideal environments for fungal pathogens. Rich Buckley, the Director fo Diagnostic Services at Rutgers University often quotes the late Professor Noel Jackson when he says, "***Moisture is the fuel for disease, temperature is the throttle***". There is plenty of fuel in the tank so to speak, and now with increasing temperatures expect the pending high risk for warmer season diseases to *put the throttle down*; first dollar spot, then as temperatures rise Brown Patch and when temps rise further Pythium blight. Therefore, any ability to promote drying on high value turf will help suppress pathogens. It is wise to maintain active but not excessive growth as warmer pathogens are worsened with higher growth rates.