Yellow Tuft…More Like Yellow Tough!

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Introduction

Zoysiagrass is happy this time of year. The weather is warm, the days are still fairly long, and we've had some recent rains. Life is good for zoysiagrass. However, the good times will come to an end before long for zoysiagrass as the weather cools, days become shorter, and many zoysiagrass pathogens become active again. Many of us are familiar with the common disease large patch, caused by the fungus *Rhizoctonia solani*, but many of us are not aware of an emerging disease issue on zoysiagrass—yellow tuft (Figure 1).

Figure 1. *Yellow tuft stand symptoms on zoysiagrass.*

Disease Description

Yellow tuft (aka downy mildew) is caused by an oomycete called *Sclerophthora macrospora*. This pathogen is an obligate parasite, meaning it needs a host plant to complete its life cycle. Yellow tuft is not always a lethal disease, but the pathogen can infect and weaken the plant, making it more susceptible to other biotic stressors (diseases, insect damage, weed

encroachment, etc.) and abiotic stressors (winterkill, drought, traffic, etc.). This combination of yellow tuft + stress is where the line of lethality can easily be crossed.

The stand symptoms appear as irregular yellowing that often follow the pattern of water movement (Figure 2). This makes sense as the pathogen requires water for the movement of zoospores and oospores. The pathogen also causes shortened roots and excessive tillering (aka witches' broom symptoms) in the host plant, which makes the plant appear tufted (Figure 3). The chlorosis/**yellow**ing + the excessive tillering/**tuft**ing is why the disease gets its name "yellow tuft."

Figure 2. *Yellow tuft symptoms following water movement.*

What's Next?

We know very little about the disease cycle for yellow tuft in zoysiagrass. Our current understanding is that the disease is most active during the shoulder seasons. Symptoms tend to first appear at spring green-up and continue until late spring and then reappear in the fall and continue until winter dormancy. We also know that the disease seems to flare up after wet periods and mildly warm temperatures. However, more work is needed to fully understand the yellow tuft disease cycle.

Because we do not fully understand the disease cycle yet, treatment for the disease is challenging. Later this year we plan to test various cultural practices for yellow tuft control in zoysiagrass, particularly cultural practices focused on water management and cultivation. We are also currently testing chemical management strategies for yellow tuft. Namely, product selection and application timing. Oomycetes are similar to fungi in many ways, but the fungicides used to treat oomycetes are typically different than those used for fungal pathogens. Additionally, *S. macrospora* affects the gibberellic acid balance of the host plant, so certain treatments, such as plant growth regulators, that regulate gibberellic acid production may also help with managing this disease.

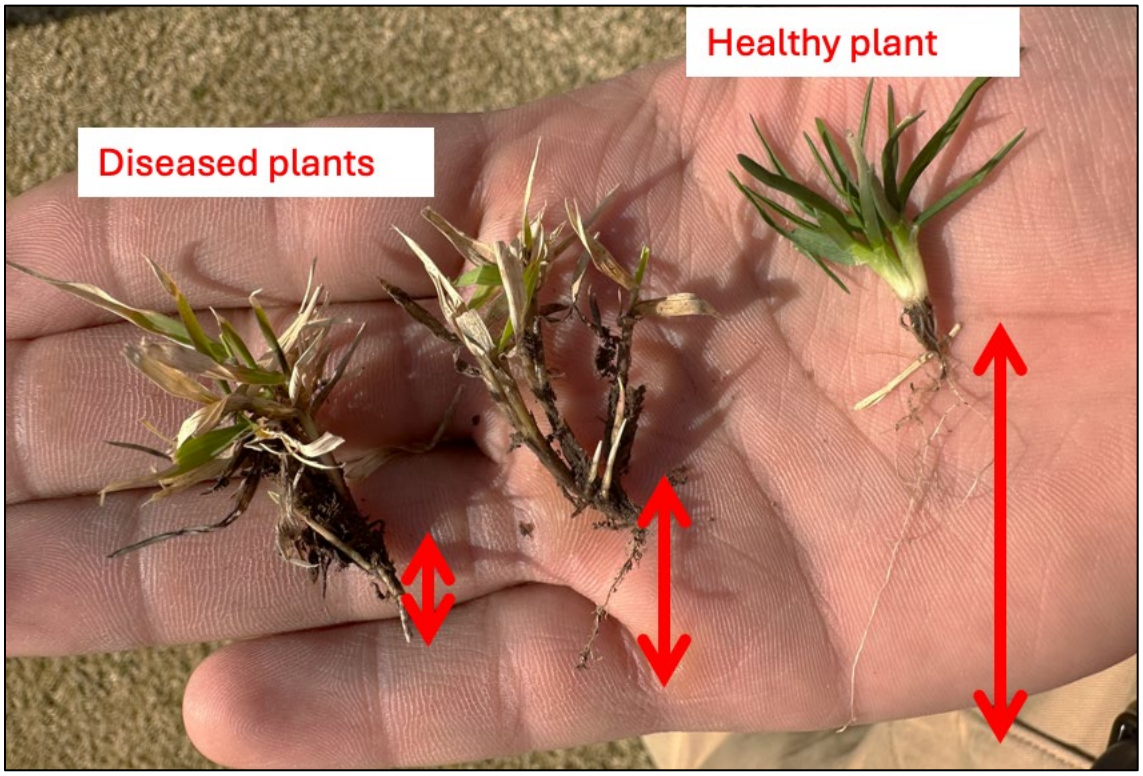

Figure 3. *Excessive tillering/witches' broom caused by yellow tuft.*

Stay tuned for future research updates from our turf pathology lab on the biology, epidemiology, and management of yellow tuft in zoysiagrass. We hope this article was helpful, and if you have any questions, you can always reach us via email (wendellh@uark.edu AND schahal@uark.edu) or direct message on Twitter (@HutchensWendell AND @FarmerChahal).