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Gazing in the Grass

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This is the longest interval I have experienced from writing this newsletter in the last 19 years. Our last issue was September 3rd. Much of the interval is due to my increasing role teaching undergraduate horticulture and food system courses and the rest is I grew tired of writing about the persistent challenging weather, the relentless pest pressure, and the unforgiving eye of our athletes, golfers and landscape clients. Little solutions were available once problems occurred as often recovery was limited. The 2018 growing season continues to persist as temperatures well above normal for most of September and now either heavy rainfall or the localized very dry conditions are present. Temperatures are expected to be above normal lows and with normal high temperatures over the next few weeks with "normal" rainfall for most, and predicted below normal along the Great Lakes. Soils have finally started to cool in the upper 60's low 70's where active root growth can occur. Cooler night temperatures will also spur growth and recovery, assuming maintenance practices do not create more problems (see inset image), or are well-timed to take advantage of the precious little workable hours available so far this late summer for turf rehabilitation.

Merriam-Webster defines rehabilitation as "*restoration to an improved condition of physical function*". This is worth noting as much of the turf lost this season lacked the stress tolerance-both biotic and abiotic-to persist from mid-July through mid-September. IMPROVED physical function (turf stress tolerance) may require some changes to infrastructure and pest management programs. Infrastructure issues such as accumulation of surface organic matter on sand based surfaces, poor drainage in loamy soils under lawns, sports fields and fairways, and during dry periods the poor irrigation systems were obvious. Pest management issues such as persistent summer patch pressure from July through September challenged the best preventative fungicide programs, persistent high humidity and temperatures increased incidence and severity of Pythium and Brown Patch. Annual bluegrass weevil damage noticeable from a straggling 2nd generation well into September and oddly enough on creeping bent grass fairway turf. Finally, crabgrass infestations have been widespread and severe challenging the best preemergence herbicide programs, and now with persistent good growing conditions perennial broadleaf weeds are thriving and winter annuals beginning to germinate. Ugh.

The Rise of Soil Insect Issues with Cornell University Soil Insect Ecologist Conversation with Professor Kyle Wickings:

Annual bluegrass weevil damage has persisted late into the season AND on bent grass! Any ideas for what has occurred this season and what this might mean for 2019?

(FSR)Annual bluegrass weevil control programs have been very effective over the last few years in limiting the damage often associated with larval feeding of the first generation. Timing of adult and larval sprays through regional monitoring and local scouting have helped where significant adult pyrethroid resistance exists and for expanded use of targeted larvacide. What is lacking are the control programs and timings for "straggler" generations, i.e., meaning the later 2nd generation emergence. Also the persistent abiotic stress also contributes to the damage. If overwintering losses are low then there could be a significant increase in the abundance of ABW adults in 2019. Regarding feeding on bentgrass vs. annual bluegrass, there are many reports of the ABW feeding on bentgrass in the scientific literature but the idea that it is odd to the practitioner persists. What also has been reported is that the ABW does not reproduce as effectively when feeding on bentgrass.

Are there practices I can implement to reduce overwintering?

Interestingly we have been studying this issue through manipulation of high grass areas on golf courses. After a few years we have found that mowing AND removing the debris does not allow the ABW population to survive as well however there are still plenty of survivors, so removing the debris prevents the population from expanding and the creation of real HOT spots of pressure on the course.

It seems there are still adult beetles flying around and I have heard and seen widespread reports of healthy grub populations in the soil. It seems a wide range of stages?

There are in fact a wide range of growth stages of many white grub species and especially the most damaging Japanese Beetle larvae in upstate NY are well into 2nd instar and you can still find some eggs yet to hatch. There also seems to be very high populations of May/June Beetle larvae that can be quite large. Expecting that animal damage is a primary concern for grub populations then these large May/June Beetle grubs in high populations offer an excellent source of nutrition. If the variety of grubs that feed on grass roots are able to survive at multiple stages through the winter, much like ABW then we could expect persistent grub feeding into Spring with grubs in the 1-2 instar stage and still susceptible to some rescue controls, including Entomopathogenic Nematodes (EPNs).

With the concern for insecticide use and pollinators can you suggest alternatives to traditional insecticides, particularly EPNs?

Three biological control agents are commercially available for management of white grubs in turf: entomopathogenic nematodes (EPN) , entomopathogenic fungi, and the bacteria that cause milky spore disease. Nevertheless, all alternatives have relatively poor or inconsistent results in the field. Therefore, while turfgrass managers might experiment with these products, they should not rely on them for grub management in high priority areas. They may also be better than nothing in areas where cultural management is insufficient and chemical treatments are either not desired or not allowed. Entomopathogenic nematodes can be effective parasites of white grubs. Although they are sometimes as effective as chemical insecticides in laboratory trials, field results are inconsistent and failures are common. Reasons for poor field results include insufficient water at time of application, improper selection of nematode species, improper storage and handling of the nematodes, and unsuitable environmental conditions such as high soil compaction. Consult our Cornell Guidelines for more information.