

July 20, 2020

Volume 21:9

Gazing in the Grass

Frank S. Rossi, Ph.D.

“Summer conditions in the Northeast are growing eerily similar these days to the long hot AND humid days in the Transition zone of the USA. The transition zone that sustains cool-season grasses stretches South from Philadelphia, PA to Northern GA, west to St. Louis, MO into North to Central IN and OH. Turfgrass scientists from these regions brag, “we can’t grow any grass very well”. Persistent above normal temperatures and dew points have combined with previous moisture stress to create a plethora of above and below ground challenges that are leading to widespread turfgrass decline.

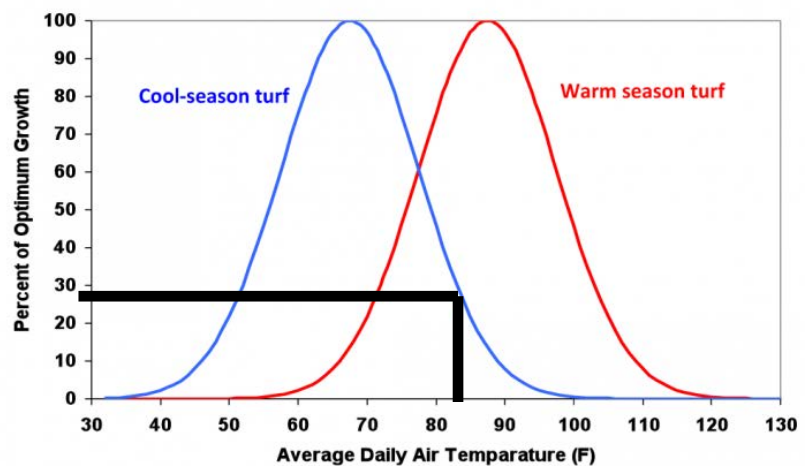
Cool-season grasses make physiological adaptations to warmer and drier than ideal conditions. Keep in mind if grass plants were “born” in Fall of 2017, they have never experienced these types of warm and dry conditions.

Growth potential (see inset graph) of cool season grasses when average daily air temperatures are 85F is about 30 percent of optimum. No matter how much you feed certain cool season grasses, their potential for growth remains low. When moisture is also limiting or sporadically available, unirrigated cool season grasses might enter dormancy. Pop-up

storms are ideal for opportunistic weeds such as birdsfoot trefoil, creeping thyme and plantain, with crabgrass not far behind, but offer little to entice cool season grasses to break dormancy.

These conditions have also created enough moisture stress to reveal widespread root pathogen problems from summer and take-all patch. This is also bad physiologically as new root growth will NOT occur at current soil temperatures reaching into the 80’s. Nursing these weak plants is a big challenge with 30-40 days of stress ahead. Moisture and nutrients are key with fungicides to prevent further root loss.

Cool and Warm Season Turfgrass Growth Rates Relative to Average Daily Air Temperature



Summer Stress Adaptation during a Pandemic.

Above normal temperatures and low soil moisture, followed by intense rainfall events and now persistently high evaporative demand is creating a wide variety of abiotic and biotic stress. Turfgrass breeders have recognized this pressure over the last two decades and have made significant improvements in the genetic material available for planting on lawns, golf courses and sports fields. Having that technology in place at this time provides a wide margin to avoid catastrophic failure.

Species such as Kentucky bluegrass and creeping bentgrass have improved varieties with excellent heat tolerance so they now thrive under conditions that would have led to failure just 10 years ago. Increased use of turf-type tall fescues have also allowed for more successful lawn and sports fields during stressful and dry summer conditions with good traffic, shade and drought tolerance. These improvements have not completely resolved issues such as summer patch, take-all patch and brown patch of TTF, but better genetic material will allow for a more resilient growing system.

The other end of the spectrum are older less adapted species and varieties and of course, annual bluegrass. Turfgrass managers that make a conscious choice to sustain annual bluegrass playing surfaces prepare all year for the next 30 days, when by late August, evaporative demand will be reduced. Moisture and growth management are key to successful annual bluegrass playing surfaces, however, **not** without an effective fungicide program.

Maintaining adequate soil moisture requires precise application of water and assumes ideal infiltration of water AND air. The use of soil moisture meters has enhanced precision, but also allows turfgrass managers to keep the plants closer to failure.

During stressful times the research on annual bluegrass suggests the importance of maintaining adequate N for growth and topdressing. Failure to keep pace with water, nutrient and topdressing needs will ultimately result in failure of the best fungicide programs.

Normally, summer conditions would begin to dampen rounds of golf played. However, due to the Pandemic, it appears that the use of golf courses is at an all time high. With little else to occupy time, many new and returning players are joining the ranks and adding traffic stress to the playing surfaces. Traffic stress combined with environmental pressure that increases pest issues will create unique challenges.

Now **is not** the time to try an untested chemical, practice or program. Now **is the time** to keep things simple. Water and growth management with N and PGR's can be data-driven, topdressing applied lightly to keep pace with growth. Take note of the grasses that are thriving now and consider creating conditions in the future that favor those grasses. Additionally, for those with annual bluegrass surfaces, having fungicides in place for preventative management is key, for those with improved bentgrass, I suggest discipline to avoid adding many inputs beyond water. **△**



Annual bluegrass in decline vs. creeping bentgrass(arrow)actively

