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Gazing in the Grass

Frank S. Rossi, Ph.D.

Spring conditions have rapidly become Summer-like with temperatures 8-10 degrees above normal. Soils remain in the upper 50's to mid 60s and widespread reports across the Northeast indicate an excellent year for root growth. Drying conditions are beginning to prevail in many areas, as ET levels are increasing. Dry conditions might assist with slowing the usual Spring surge of top growth, however, to date that does not appear to be the case.

Top growth of grasses is a function of mowing height and frequency, growth potential (temperature at which photosynthesis can produce energy for growth), warm moist soils, and warm moist air. Currently, these conditions are ideal for cool-season and with no limitations on potential for growth, expect to increase mowing frequency to remain close to 30% removal. Excessive clipping production reduces mowing quality, energy consumption and turfgrass injury. Clippings that remain on the turfgrass surface after mowing lead to shading and heat stress. Excess clippings deposited on pavement can lead to nutrient loading of lakes and streams. Increased growth and mowing needs leads to increases in water use, energy use, and labor needs.

Consequently, it is a good time to evaluate fertilizer N fertilizer programs from last Fall and this Spring that might lead to excessive clipping production. Turfgrass areas not receiving traffic will have little need for supplemental N beyond what is needed to keep pace with weed growth and withstand maintenance traffic. Steady, but not excessive growth at this time of year with good uniform color and density suggests fertilizer programs are sufficient. However, N fertilizer programs that produce excessive growth in Spring, often result in grasses with substantially less roots and less drought tolerance.

Get The Right Growth Rate

Cool-season turfgrass species grown in the Northeast experience an annual surge in top growth that challenges every turfgrass operation to keep pace with increasing mowing needs. During these times it is useful to consider how much growth a turfgrass stand actually needs? Often turfgrass stands from lawns and sports fields to cemeteries and golf courses are judged by uniformity and color of a sward, NOT how much it is growing. It is time to establish turfgrass growth rates that match the needs of the turfgrass stand, reduce labor needs, reduce Greenhouse Gas Emissions, and maintain the playability and safety of the turfgrass surfaces.

The recent GCSAA-NY Golf Turf Symposium with Professor Doug Soldat discussed growth rate and the importance of measuring clipping volume to determine mowing, rolling, fertilizer needs, water management, surface firmness, etc. Any turfgrass operation should be capable of measuring an area, harvesting the clippings from that area, depositing the clippings into a container that measures volume and recording that number. Most golf courses that have adopted this strategy started with the standard form of resistance from “it takes too much time”, “no time in the AM”, “not enough labor”, etc. In short order it became clear in the case of putting green management that this simple tactic was a game changer. Ball roll distance, firmness, trueness could all be traced back to growth rate.

Growth rate can be managed by mowing programs, altering nutrients and water in most high value turf systems but ultimately it is GOVERNED by climate and soil organic matter level. Climate creates the conditions conducive for growth and soil moisture and temperature govern nutrient recycling and release. Persistently wet conditions the last several years produced long periods of active growth through summer months when normally growth would decline in unfertilized turfgrass. Only the most careful turfgrass managers have been able to “get a handle” on their growth rate by proper use of plant growth regulators.

Normally confined to use in golf course turf, PGRs have become an essential tool in sports fields and cemeteries that have specific growth requirements for safety, labor, and aesthetics. The cost of a PGR in a 400 acre cemetery that reduces one to two mowings per year easily pays for itself with no loss in turfgrass quality. Sports fields lying idle have little need for persistent growth and should be maintained on a PGR program if possible.

The key to effective PGR use is not unlike any other product use, right product, right rate, and right time. Different types of PGRs influence growth in different ways, but all reduce the production of gibberillic acid, the hormone that stimulates leaf growth. Maintaining proper application rates and intervals based on temperature (Growing Degree Days) will allow for maximum growth management with minimum reduction in turf quality.

Measuring growth has not been a standard practice, yet offers great potential to reduce labor and resource needs. Of course it will assist with automation as price and technology allow. ▲

