CORNELL Turfgrass ShortCUTT
Your Weekly Link to Turfgrass Information!

Gazing in the Grass

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Crabgrass infestation in previously drought-stressed turf now recovering following rain.

The proverbial “dog days of summer” are coming to a close this week. The term "dog days” is actually based on ancient Roman and Greek astronomical observations. Roughly from July 3 to August 11 the Dog Star (Sirius) in the Canis Major constellation is visible in the Northern Hemisphere. Hence “dog days” when the Dog Star is visible . When considering astronomy, consider the role the Earth’s astronomical position relative to the sun influences our decision-making. There are some “old-school” golf course superintendents I know that always mention “August 15th” as when “their approach to water management changes”. By the numbers, ET levels are persistently in the 0.75 to 1.25” per week, and a few weeks ET values were as high as 1.75”, that’s 0.25” water loss per day! Solar angle on August 15th will be about 10 degrees shallower then when at peak height in late June. On the water management side, many areas have received plentiful rainfall that has filled the soil profile, slowly breaking summer dormancy and encouraging active growth. Areas along the Northeast Coast and along the Great Lakes are actively drying as the widespread storms have not “spread” far enough into these areas.

The seventh consecutive week of heat stress to cool-season turfgrass is past and by all measure the eighth week of heat stress is underway, especially along the I-95 corridor. The typical barometers of this abiotic (not from living organism) stress level are all indicating cool season plants are struggling, i.e., uptick in samples per day in labs with basal rot anthracnose, summer patch, widespread crabgrass infestations, and injury from second instar ABW! These biotic stresses are exacerbated by the abiotic stress. This is simply related to plant chemical energy management. Cool-season (C3) grasses rely on cooler temperatures (67-72F) for maximum energy production via photosynthesis. Outside this temperature range inefficiencies in the process limit productivity. Its been hot for eight weeks. Due to the lack of energy produced via photosynthesis (C3) grass plants are currently converting long-chain insoluble chemical energy (primarily fructan and starch) ***stored in roots*** to short-chain soluble chemical energy (sucrose and glucose) the plant needs ***to replace leaves*** and leads to natural ***root decline***.

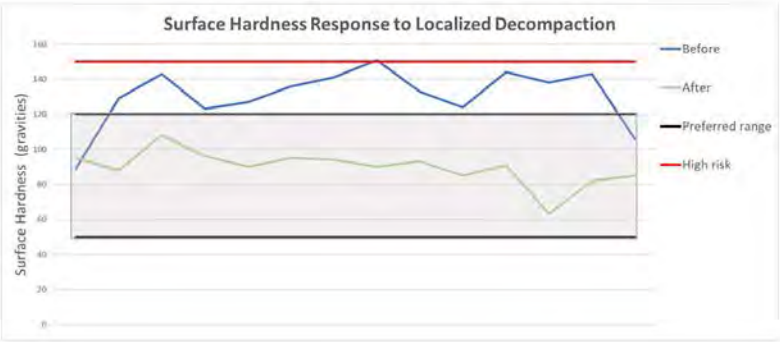
Crabgrass is at peak performance where it has become established in weakened turf. The best pre-emergence products have 10-12, sometimes 14 weeks of control. Several reports of pre-emergence herbicide “failure” seems to suggest that early applications in March/April have begun to show breakthrough. Our resident ShortCUTT "Weed Guy” Randy Prostak, UMass Extension Specialist has an old saying, “early on-early gone”

Frequently Asked Questions (FAQ):

I have a few areas of localized compaction where our players stand. It feels harder in these areas and the turf is thinning. Can you suggest some assistance?

Great and very timely question. The process of targeted decompaction is one for all turfgrass managers to consider wherever focused traffic patterns exist, but most important where player safety can be involved. Our Cornell Sports Turf Research Intern, Rhys Moeller just completed a short project and blog post on this particular issue. You can read his report here. http://turf.cals.cornell.edu/2018/08/02/surface-hardness-response-to-localized-decompaction/.

Surface hardness of the Cornell University Division 1 Soccer Field was measured weekly during the 2018 Spring/Summer playing seasons. Measurements indicated a localized area of surface hardness where readings exceeded head-injury threshold levels. Therefore, a localized decompaction system was implemented using a Toro 648 Procore fitted with ¾" solid tines followed by topdressing sand that filled open channels using a Dakota 310 Turf Tender. High quality topdressing material is important and should reflect the surface modification goals. Measurements were taken before, during and after the decompaction process. Before decompaction, 10 of 12 measurements collected from localized areas totaling 7500 sq ft had surface hardness readings above head-injury thresholds of 120 gravities. Following decompaction all 12 measurements were reduced on average by 30 percent and fell within the preferred range for safe play. Furthermore, the standard deviation (differences among initial measures) dropped by 40%, indicating a more consistent playing surface following decompaction.



Are Your Fields UP to Standards?

Designation: F 2060 – 00 (Reapproved 2005)

Standard Guide for
Maintaining Cool Season Turfgrasses on Athletic Fields[1]

1. Scope

1.1 This guide covers the minimum requirements for maintaining cool season turfgrasses used for natural surface athletic fields. Practices covered include mowing, fertilization, irrigation, core cultivation, overseeding, and pest management.

1.2 The decisions involved in maintaining a quality natural playing surface should consider soil types, local climate and other factors; therefore, it is recommended that you contact your local cooperative extension service for more specific information on soils, and grass species and cultivars adapted to your area.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

providing firm footing for the athletes and by cushioning their impact from falls or tackles. These standards are the minimum inputs required to provide such a surface. Various published guides have been used in the development of this guide (1-5).[2]

3.2 Field conditions may directly influence the frequency and type of athletic injuries occurring as a result of using the fields. While these standards do not guarantee that such injuries will be prevented, a well-maintained turf on a natural playing surface should minimize field-related injuries.

4. Apparatus

4.1 *General*—Experience and good judgment are important to match the proper type of equipment to the nature of the task to be performed.

4.1.1 *Mowing Equipment*—Mower types include reel, rotary, and flail; although, the latter type is not recommended for fine playing surfaces. A reel mower should be used for playing

Current sports turf injury surveillance programs suggest 10-30% of non-contact injuries during outdoor sporting activities are related to field hardness and traction. When this occurs, questions regarding "Duty of Care" are raised in legal settings to determine liability. Duty of care standards are legal requirements for making a liability claim based on reasonable care and due diligence. In practical terms, at the very least, this means its best to have documentation regarding field conditions and maintenance beyond fertilizer and pesticide applications, eg. weedy, bare ground, cultivation programs, over seeding, irrigation, etc.. Furthermore, aligning maintenance programs to ASTM Standard for Maintaining Cool-Season Turfgrasses on Athletic Fields in the documentation. The "gold standard" right now for duty of care, that will be common place soon, is regular surface hardness and basic traction testing and records of this data are actively maintained. To review the ASTM standard see https://www.astm.org/Standards/F2060.htm more information about safe sports fields can be found at http://safesportsfields.cals.cornell.edu/.