"Rutgers Corner"

Have you Examined your Turf Management Program and Considered Synthetic Inputs Before Making the Jump to an Infill System?

By Brad Park, Rutgers University
park@aesop.rutgers.edu

While boards of education and municipalities are finding resources to install the newest generation of synthetic surfaces, in many cases, little is being accomplished to improve the conditions of existing natural turfgrass fields. The installation (and eventual replacement) of a new synthetic surface does not come at a cheap price. Powell and Andresen (2004) note that the initial cost of constructing a new synthetic infill turf system is approximately $600,000. With an outlay as sizable as this, those considering purchasing a synthetic surface should review their current turfgrass management program and determine if deficiencies exist. An attempt should then be made to remedy those deficiencies prior to spending significant resources on an artificial field. Additionally, the costs associated with the maintenance, replacement, and potential disposal challenges of synthetic infill surfaces should be factored into the decision-making equation.

This installment of Rutgers Corner will highlight several turfgrass management strategies that this author believes should be examined in detail and implemented as part of a basic management plan. Included as well is discussion related to synthetic infill system inputs and costs necessary when considering installing such a field.

Mowing - Much has been written in this newsletter about the importance of proper mowing. Budgeting for and implementing more frequent mowing can help to alleviate the ragged appearance associated with excess clippings and scalped turf that result from either mowing too low or too infrequently. Adjustments in mowing frequency are often needed in spring and fall when cool season turfgrasses are actively growing. Increased inputs in water and nitrogen fertilizer will accelerate the growth rate of turfgrass and thereby increase the need for mowing.

The inability to manage mowing practices on natural turfgrass fields is arguably a poor excuse to justify installing a new synthetic infill system as these artificial surfaces require labor inputs and specialized equipment to perform infill management regimes such as periodic grooming to mix the infill and regular brushing to stand the synthetic fibers upright.

Water - Irrigation provides any number of benefits for turfgrass; most notably it supplements water to fields when weather does not provide enough rainfall. Irrigation is critical to ensure rapid turfgrass establishment. Irrigation should be timed following fertilizer and some pesticide applications in the absence of rainfall to water-in these applications.

Similar to a natural turfgrass field, a synthetic infill system does not come maintenance-free. While natural fields require irrigation for turfgrass growth, a consideration for irrigation should be made for a synthetic surface for the purposes of cooling the field, particularly if intended field use includes daytime hours in the late spring, summer, and early fall. For example, Williams and Pulley (2004) found the surface temperature of an infill field system at Brigham Young University to be 112.4° F on an October day when the air temperature was 80° F. In the extreme, the authors noted a 200° F surface temperature recorded on a 98° F day.

Fertilization - An inadequate nitrogen (N) fertilization program will hinder the ability of turfgrass to recover from damage, which is extremely important when dealing with intensively used fields. It is reasonable to budget for 4-5 lbs. N/1000ft2 on an annual basis for high traffic sports fields consisting of perennial ryegrass and/or Kentucky bluegrass grown on a native soil. In addition to N fertilization, soil pH should be corrected as needed and appropriate phosphorous (P) and potassium (K) levels should be maintained. Lime, P, and K requirements can be determined through soil testing.

While it is obvious that a synthetic infill field does not require fertilization inputs, unlike natural fields, these surfaces may require the application of disinfectants to counteract human saliva, blood, vomit, etc. and the application of fabric softener to manage static that may develop. It has also been suggested that nonselective herbicides such as glyphosate can/should be used to control weed problems that may develop in the infill of a synthetic field.

Core cultivation and overseeding

One approach to solving the problem of turfgrass deterioration in natural fields is the continuous introduction of turfgrass seed to fields. Core cultivation is an ideal process for not only alleviating soil compaction but also bringing soil to the surface and subsequently creating a seedbed. Using a slit-seeder allows for good seed-to-soil contact and uniform seed placement. If core cultivation and slit-seeding is not feasible on a regular basis, broadcast seeding with a rotary spreader prior to a scheduled game and allowing athletes to "cleat-in" the seed is a minimal labor, low-cost approach. Perennial ryegrass is the best species choice for overseeding due to its rapid germination and establishment rate. Although numerous perennial ryegrass varieties have displayed susceptibility to the disease gray leaf spot, Rutgers testing has shown that the following varieties have improved Gray leaf spot resistance: 'Paragon GLR', 'Palmer IV', 'Repell GLS', and 'Protégé'.

The inputs and costs required to introduce turfgrass seed (or sod) to a natural field for the purposes of maintaining turfgrass cover should not necessarily be a means to justify purchasing a synthetic field. Synthetic replacement costs should be considered as part of the decision-making process and as a means to maintain turf "cover" in the long-run. While the longevity of a new outdoor infill system is not known at this point, bear-in-mind that the typical warranty for a new synthetic infill is 8 years. Additionally, the disposal of the crumb rubber infill is one item often overlooked in the decision-making process. Simply sending crumb rubber to a landfill may not be a viable disposal option as car tire (the composition of crumb rubber) disposal is subject to regulatory oversight.

Literature Cited:

Powell, A.J. amd M. Andresen. 2004. Managing rubber infill fields. Sportsturf 20(11): 24, 26-31, 34.

Williams, C.F. and G.E. Pulley. 2004. Synthetic surface heat studies. Sports Turf Mngrs. Conf. 20-25 Jan. 2004 San Diego. ◆

Are Your Goals Secure?

City of Montreal settles with the family of critically injured teenager
Jan 6, 2005, Athletic Turf News

Montreal, Canada — The City of Montreal recently settled with the father of a teenager who died of head injuries in 2001 when an unanchored soccer goalpost he was swinging on collapsed.

The goalpost was in a city park and the city admitted its liability, but a trial was held to determine the amount of the penalty.

In 2002, the city reached a $140,000 Canadian (approximately $114,000 US) settlement with the mother of Shane Diabo. Diabo was 14 when the accident happened. Her estranged husband, Keith Myiouw, recently received an award of $30,000 Canadian (approximately $25,000 US). Myiouw had originally sought damages of nearly $1 million Canadian (approximately $800,000 US).

Georges Bossé, a member of the city's executive committee said it was a "very hard lesson to learn," and that all the city's soccer nets were firmly anchored the day after the teen's death. ◆