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SportsField MANAGEMENT

August 2022 | Vol. 38 No. 8 | The Official Publication of the Sports Field Management Association

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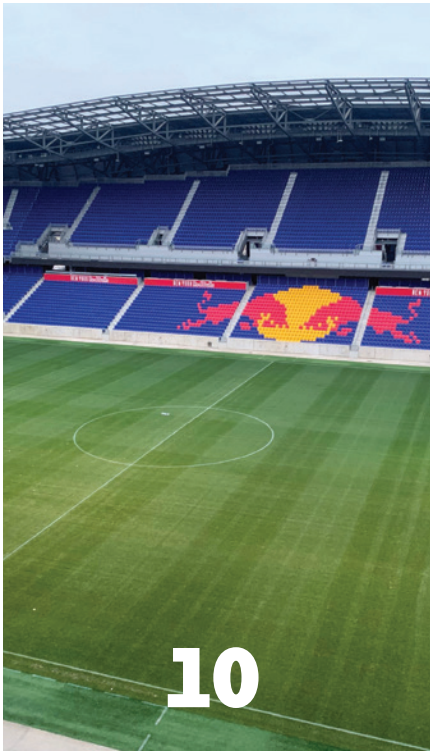

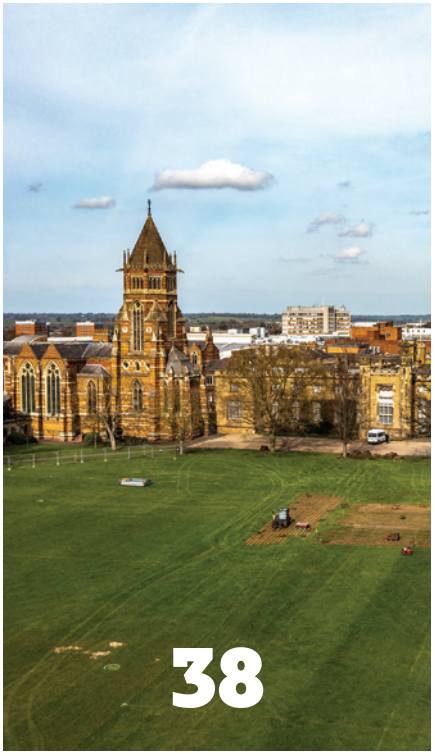

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Editor's Note

John Kmitta
Associate Publisher /
Editorial Brand Director
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763-383-4405

As the father of two high school students, I know it is stressful for students their age to not only plan out their potential options beyond high school, but also how their class selection as early as freshman year of high school can impact their career path.

They have a limited number of electives each year, so they have to choose wisely the courses that may ultimately lead into their future career path. For example, if you are interested in computer science, you had better get on the computer science track freshman year in order to fit in all your related classes by the time you graduate. Or, if you think you might want a career in business, you want to be on that track early… and so on. Then there is always the unexpected stress of getting to your junior year and realizing you might not be interested in computer science or business, but would like to try your hand at automotive, art, cooking, engineering, etc. At that point, you are playing catch up and sitting in classes filled with freshmen.

My point is that getting students interested in a potential career – or even aware that a career is an option – starts early.

I have had multiple conversations with SFMA Board and committee members in recent months, and I think we can all agree that a key to the growth of the sports field management industry is reaching the next generation of potential sports field managers.

That effort will involve crafting a message that resonates with young minds. Such efforts may include materials distributed to high school guidance counselors, SFMA member participation at career days, social media outreach, or, most likely, all of the above and more.

Those initiatives will need effort and input from not only SFMA members and chapter members, but the sports field management industry as a whole.

Showcasing the next generation of sports field managers also involves promoting college and university programs that offer turfgrass degrees or related programs, and everything they have to offer.

For example, starting on page 34, we highlight some young people who are beginning their journey in the industry. Two students who are doing their industry internships this summer were kind enough to share their stories and the impact of their experiences. We hope these stories resonate with other young people. And we also hope to have stories from more interns in upcoming issues. If you have interns at your facility this summer who are interested in sharing their stories, please have them contact me at *jkmitta@epgacceleration.com*. **SFM**

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EPG BRAND ACCELERATION

President's Message

James Bergdoll, CSFM, CPRP
SFMA President
jbergdoll@chattanooga.gov

In an email exchange I recently had with a local school principal, we both joked about the lack of downtime as he was responding to me while out of town for work. After telling someone what you do for a living, how many of us have been asked "What do you do in the winter?" A lot actually. There is no downtime – only some times are slower than others. For some of us, summer is slower for events and programmed activities but not so much for maintaining grass fields, especially us warm-season folks!

Whenever your "slower" time of the year might be, take advantage of attending field days and events held by your local chapters and affiliated groups. Even if it is not your slower time, checking out local chapter events is worthwhile.

I recently had the chance to attend a chapter event here in Tennessee. Not only was it a chance to check out some great facilities I have never seen, but I also got to catch up with some old colleagues and even met some new folks. I learned something new about a few commercial products, and got an update on research being done with Virginia Tech's Turfgrass program. I also finally got to see the extra-large bases they are now using in some Minor League Baseball stadiums – they look very much like a pizza box. A few hours out of my busy schedule, and worthwhile too for the continuing education credits for pesticide certification.

Many chapters, turfgrass programs, and affiliated groups have summer field days, and the great thing about them is they are usually inexpensive or have no cost to attend. Although we cannot compare the SFMA annual conference and exhibition to local events, we all know the cost implications of attending, so very few people from agencies can attend. However, local events can be a great opportunity to take the whole team to learn, see and meet. It is always great to tour other maintenance shops, see their equipment and homemade specialty tools, what products they use, and more. At these local events, you can discuss issues that might just be a regional challenge, such as weather or an insect infestation like the fall armyworm. Supplier representatives will sometimes have products and equipment to check out and maybe even take for a test drive.

Most of these events are day-long within typical work schedules, so make it worth your team's time to attend. Not only are you supporting the local chapter, but also the sponsors who make it all happen, as well as the host facilities. Please support your local chapter; their meetings and field days are the lifeblood of these smaller organizations. **SFM**

James Bergdoll, CSFM, CPRP

Member Spotlight: 2022 Little League Softball World Series

This year's Little League Softball World Series will have an all-female volunteer grounds crew in charge of the final 4 days of the tournament, including the championship game, which will be aired on ESPN on August 15.

The grounds crew is led by SFMA member Chris Ball, CSFM, of Ewing Irrigation, who volunteers to be the grounds crew leader for this tournament. It is entirely held on one field, Stallings Stadium at Elm Street Park in Greenville, N.C. The crew will be responsible for all the field maintenance before during and after the games. This is the inaugural year for this all-female crew to come together, but with Little League hosting the tournament in Greenville for at least they next five years, we hope it becomes tradition.

SFMA volunteer members include Nina Oldenkamp (Odey's Field Experts), Amy Fouty, CSFM (Motz Group), Maritza Martinez (St. Louis CITY Soccer Club), Morgan Hunter (Columbia Fireflies), Leah Withrow (Reno Aces), Sarah Martin, CSFM (City of Phoenix), Cheryl Miller (Little League Southeastern Region), Kelly Lynch (PureSeed), Julie Kessler (Virginia Tech Turfgrass student) Brynn South (recent high school graduate, only female in her high school turfgrass program), Meg Kruger (Pioneer Athletics), Holly Robinette (Charlotte Knights) and Sun Roesslein, CSFM (North Area Athletic Complex-Jeffco Schools Athletics).

Survey to identify industry proficiencies

SFMA is working closely with iCEV to develop a national turfgrass science curriculum and industry certification for high school students. SFMA needs member feedback about the job skills that are most important for a young person to possess when entering the industry. Responses to the survey will guide development of proficiencies for the curriculum and certification test. Take the survey at *https://forms.gle/sKWzbqwgdU1CPvDi9*.

SFMA Conference hotel now open for reservations

The Hilton Hotel is now open for the 2023 SFMA Conference with a rate of $196 a night. The conference will be taking place Jan. 16-19, 2023, in Salt Lake City, Utah. Be sure to make your reservations well ahead of time

Hilton Salt Lake City Center
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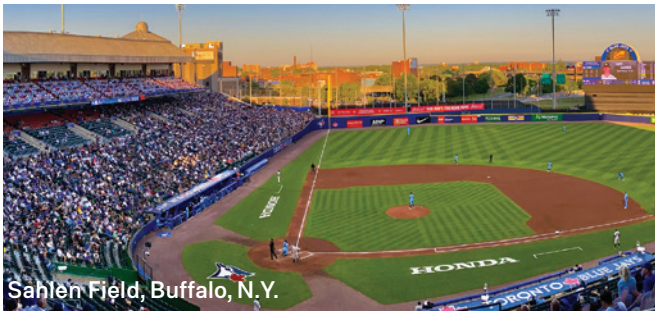
To make your reservation, visit *https://book.passkey.com/event/50330906/owner/1422/home* or call 801-328-2000 and ask for the SFMA Conference Rate.

Submit for Field of the Year

The application to submit to SFMA's premier program, Field of the Year, is open! Visit *https://www.sportsfield-management.org/foy-awards/* for the application link and additional information.

Awards are given in three levels: Schools and Parks, Colleges and Universities, and Facilities used by Professional Athletes. In addition, five sports are eligible: baseball, football, softball, soccer, and sporting grounds (which is a broad category for non-mainstream sports, such as lacrosse and rugby).

The application deadline is Oct. 15, and winners will be notified in November. Each winner receives three nights of hotel at the upcoming conference, which is in Salt Lake City, Utah, Jan. 16-19; signature clothing; and an award that is presented during the annual awards banquet on Jan. 19. **SFM**



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RED BULL ARENA

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The Field of the Year Awards program is made possible by the support of sponsors Carolina Green Corp., Precision Laboratories, and John Deere.

This year is the ninth year for the surface at Red Bull Arena. It has gone through a lot during that time, but 2021 would prove to be one of the biggest challenges. Going into this season, we knew we would have a full schedule with two other teams calling Red Bull Arena home, as well as plenty of unknowns due to the pandemic. So, our story for the 2021 season really started from the end of 2020, recovering and repairing from the heavy fall use. Having the field healthy and dense going into winter would ensure it would withstand the early spring schedule. However, the first deviation to our plan came before the season started, as the MLS season ended up starting seven weeks later than scheduled due to the pandemic. We would have the same number of games but in a much narrower window and during the stressful summer months. We had 28 weeks to fit in three teams' home games plus some added games sprinkled throughout. The maintenance schedule between games had to be dialed in, sometimes down to the hour, to ensure tasks were fit in.

The field held up without any issues through the spring as was expected. The surface recovered well from any damage, and rooting was strong going into the summer stress period. Games were coming along quickly and steadily, and we were checking them off the list. On top of everything we were dealing with, the weather decided to kick another hard shot at us. We had a very hot June followed by a hot, wet July and August, and we had to postpone a game in July due to lightning. In August, Hurricane Henri came up the coast and spun off a wave of severe weather six hours before forecasted. This delayed us for our biggest game of the season, against NYCFC, and brought one of the heaviest rainfalls ever recorded in the area right before we were going to kick off. The field could not drain the amount of rain per hour fast enough even with the SubAir vacuum being on. The rain started ponding on the surface and didn't stop. The game had to be postponed. This was one of the worst situations I have been a part of – the field ended up being the reason for the postponement (although most of the metro area had flooding issues that night, with some areas recording seven inches of rain). We let the field drain the next day, but then deep tined it to open up the rootzone. This proved to be crucial, because 10 days after Henri came through, Hurricane Ida dropped another six inches of rain. As fall approached, we kept pushing through the event schedule, were able to get the grow lights out, aerate, seed and fertilize to keep the surface dense and healthy through the heavy-use period.

With all the known and unknown variables through 2021, maintaining the field to the standards we and the teams expect was a challenge. Through teamwork and dedication by the crew, we made it through the year much stronger than we expected. Also, this year we learned about doing things more efficiently, thinking outside the box, and how to come together when needed most.

– Neal Sitzman, arena grounds manager

Level and category of submission: Professional Soccer

Field manager: Neal Sitzman

Title: Arena grounds manager

Education: : Bachelor's degree, Purdue University

Field of Study: Turfgrass Science

Experience: I attended Purdue University to attain my bachelor's degree in Turfgrass Science. I was fortunate to work for various organizations during school and summers, which included Purdue Sports Turf, Toledo Mudhens, Sylvania Parks, and Indianapolis Indians. After graduating from Purdue University in 2008, I did a graduate internship with the Philadelphia Eagles for the season. I then went to gain more experience by working at the Carmel Dads' Club maintaining field and facilities for all sports. In 2010, I went back east to work for the New York Red Bulls as assistant groundskeeper and started as Red Bull Arena was finishing construction. In 2017, I was promoted to my current role as arena grounds manager.

Full-time staff: Dan Shemesh, Dylan Martin, Derek Kerr, Chris Scheneck and Zack Holm

Students, interns, part-time and seasonal staff: JJ Mueller, Andrew Allen, Pat Ferrara, Andrew Sperber, Stefan Hoffman and Eric Ingram

Volunteers: Huw Greatorex, event operations

Original construction: 2009

Turfgrass: Kentucky bluegrass and perennial ryegrass

Rootzone: Sand

Drainage: SubAir - 10' spacing

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Judge's Comments

Red Bull Arena had its full share of setbacks in 2020 and 2021, yet, through the entire season, the field appeared to perform well for the athletes and the multiple teams playing on the field. The goal should be a safe and playable surface, and I felt like Red Bull Arena provided that for the athletes. That is a compliment to the entire staff. Congratulations to Red Bull Arena for winning Field of the Year for Professional Soccer.

– Glenn Lucas, regional sales manager, Turface Athletics

Editor's Note: *A panel of judges independently scored Field of the Year entries based on playability, appearance of surfaces, utilization of innovative solutions, effective use of budget and implementation of a comprehensive agronomic program.*

SportsField Management (SFM): Congratulations on the winning field. What are you most proud of with this win, and/or what do you think stands out most about the winning field?

Neal Sitzman: A game at Red Bull Arena is an experience: the seats are close to the action, a partial roof covers all the seats, the facilities are pristine. The venue is a cathedral for soccer. With that said, it is a difficult environment for growing grass. We have experienced this challenge since the arena's construction. It's something we have grown accustomed to over the years, but this year we encountered a few more obstacles. We had the most usage hours in the arena's history with three teams calling it home, it was the ninth year for the playing surface, and the availability of labor and the match schedules fluctuated weekly. Record-breaking rainfall events in the summer also added to the challenges. Throughout all of these challenges, our crew was resilient, pivoting when needed, dedicating time and effort, and adding the "and then some" to make sure things went as smoothly as possible. Looking back, that is what made the difference.

SFM: What attracted you to a career in sports field management, and what has been your career path through the industry?

Sitzman: Working with the land is in my genes, so to speak. I have one grandfather who was a farmer and one who was in excavation/construction. I had always enjoyed working and being outside, but wasn't sure what I wanted in my career until my internships in Toledo, Ohio, and Philadelphia, Pa. I really enjoyed working in sports and seeing people enjoy the facilities I helped maintain. After my internships, I worked a year in Carmel, Ind., at the Carmel Dads' Club, which helped me grow and develop further. I then started with the New York Red Bulls in 2010, and have been here since.

SFM: Who would say are your mentors in the industry, and/or what is the best piece of advice you have received?

Sitzman: There have been many people I have looked to for advice and guidance through the years. I am grateful to each individual who has helped me to grow. My internship experiences had a big influence on me in regard to what is expected of me and how to deal with situations. I live by the principle that if you give your all to the job every day, that is all you can ask of yourself. I also believe it's important to, "Trust the process."

SFM: What are the biggest challenges you have faced with the winning field, and how have you approached those challenges?

Sitzman: The stadium environment is harsh in the summer, and we had heavy usage during that period, which was our biggest challenge. Schedule changes throughout the year kept us on our toes and required adjusting our maintenance plans as a result. Our cultural practices, which we have tweaked and changed over the years, have helped us get through the tough months in late summer. Our equipment and tools have also helped keep surface hygiene clean and healthy. Planning out a month in advance and being flexible was crucial in making sure we had labor and equipment lined up.

SFM: What's the greatest pleasure you derive from your job?

Sitzman: Seeing a plan and everyone involved in it come together for a shared goal is what drives me. This collaboration happens bit by bit – in the daily tasks, in the month leading up to a big event, or even in creating the season-long maintenance plan.

SFM: How has your career benefited from being a member of SFMA?

Sitzman: SFMA has helped me network with others in the industry. Talking with people in similar situations and working through those challenges has been very important in my career. It is always enjoyable to catch up with peers during the conferences as well. SFMA's conferences, magazine and website have all been essential to me through the years. **SFM**

CAN YOU IDENTIFY THIS TURFGRASS PROBLEM?

PROBLEM:
Off-color and brown turf

TURFGRASS AREA:
Softball field

LOCATION:
Central United States

TURFGRASS VARIETY:
Bermudagrass

Answer on page 33

John Mascaro is president of Turf-Tec International

Aeration: A Foundational Practice for Sports Fields

Photo by John C. Fech. All other photos by Brad Jakubowski.

By John C. Fech and Brad Jakubowski

If there's one thing that all sports field managers utilize on a regular basis, it's aeration. Of course, there are a lot of considerations, techniques and timing issues to contemplate for each field. It could be said that everyone does it – it's just a matter of how and when, and which other practices might be involved.

With any procedure that is done to or for sports turf, it's always wise to ask why. After all, doing something just to be doing it is akin to recreational tillage for row crop farmers or planting radishes in the family veggie garden. If the soil is already in good shape for soybeans and if no one in the family likes the taste of radishes, then it's a waste of time and money. However, if there are good reasons, then these activities make good sense; it's much the same with aeration.

So, why aerate? The common-sense answer is, "for many reasons." The most prominent reason is to reduce compaction, defined as the reduction of air spaces in the soil as a result of mechanical force(s). Heavily trafficked, highly compacted fields greatly benefit from regular efforts that rearrange and open soil particles that have been pressed together.

In addition to compaction reduction, aerification processes enhance root growth. When cut through coring, slicing or spiking, roots are severed. If they are healthy when this occurs, the common response is a corresponding expansion of root volume – a root pruning of sorts that resembles the result of pruning a hedge or topping a tree. While tree topping is a poor arboricultural practice, root pruning normally results in greater capacity to absorb nutrients and water and resist wear.

Once soil voids are enlarged, oxygen penetration into

the soil increases, as does the potential for infiltration of applied fertilizer, insecticides, fungicides and turf seed. Aeration is a great first step in the control of pests, as well as increasing turf plant density. A lesser, but still valuable, benefit from core cultivation aeration is the slowing of thatch accumulation as the result of soil microorganisms being introduced once cores are brought to the surface and shattered, allowing small particles to filter downward into the thatch.

PITFALLS/DRAWBACKS

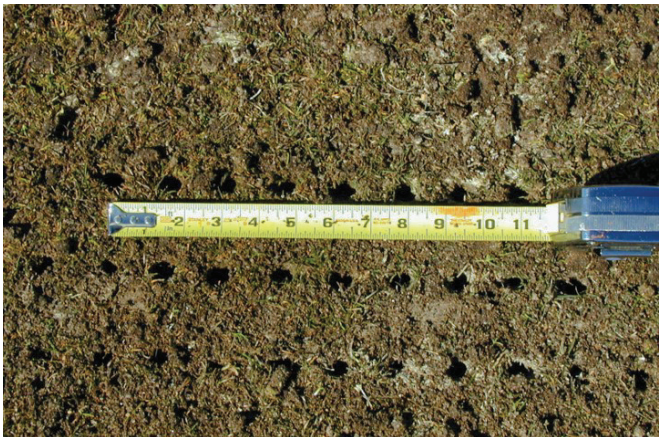
Nothing comes for free. Unfortunately, there are certain negative consequences with aeration practices. By managing how and when aeration is performed, these can be kept to a minimum. What are they? First, the disruption in play. If you've ever had a coach or player complain that their uniform or shoes were muddy after practice or a game, it's probably due to the consequences of aeration. To the greatest extent possible, sports play should be delayed until a field has adequate time to recover following aeration.

Next, aeration causes damage to existing turf plants, particularly roots and crowns. As noted, roots generally regrow; however, crowns are usually removed permanently, and must be replaced through reseeding or rhizome/stolon regrowth. Depending on the field location, perhaps the biggest cost is the price of the equipment itself and the amount necessary to hire and retain qualified employees to run it properly. Considering today's labor market, these are drawbacks indeed.

GENERAL AERATION PRINCIPLES

Given that aeration is a foundational sports field management practice, it's helpful to consider some general principles, especially when fine-tuning implementation on a specific field. Some important dynamics to think through are as follows:

- Soils with high clay and silt content are most prone to compaction, especially when exposed to traffic following irrigation or rainfall events. Fields built on clay may be good candidates for long-term soil amendment with compost.
- Soil compaction reduces turf quality, growth and vigor by decreasing the size of the air spaces between soil particles, which results in reduced water infiltration and root growth. Though it may be difficult for administrators to understand, the benefits of other essential practices such as fertilization, pest control, striping, seeding and mowing will be greatly reduced if compaction is not managed well.
- Compaction is greatest in the upper 1 to 2 inches of the soil profile. Frequent efforts to relieve compaction in this zone pay dividends. Occasional deep tine cultivation may also be necessary, depending on soil type and field traffic.
- Sites prone to compaction should be aerified frequently. Although each part of a field is important, not all are equal in terms of traffic and other influences of compaction. Each field should be examined for site-specific levels of compaction (i.e., end zones, between hashmarks, goal mouth, etc.). It's likely that some areas will need aerification more frequently than others.
- Aerification should be done when the turf is actively growing and has the potential for recovery and to maximize the root expansion/root growth response. After all, a small amount of damage is done by disturbing the soil/thatch/plant crown interface. Grass species and field use greatly affect timing. For example, early to mid-spring and early fall are ideal for cool-season species such as Kentucky bluegrass, while early summer is good timing for bermudagrass.



- When soils are moist from rainfall events, timing is greatly influenced; aerification operations in overly wet soils sometimes result in increased, not decreased compaction. Similarly, when soils are on the dry side, aerification practices are hard to implement. The sweet spot comes with experience, but, suffice it to say, the end result is probably the best answer. If the cores that are pulled out of a field are 3 inches long and full of roots, then the soil moisture is ideal.
- The number of holes per square foot is a debatable topic. A standard goal of most aeration procedures is 36 holes per sq. ft. (or a 2-inch-by-2-inch spacing), but may or may not be feasible due to the type of equipment that is available to you or the time it takes to run the machine over the field and the time available for recovery. If one keeps in mind that even at 36 holes per sq. ft.,

less than 5 percent of the field is being affected by the aerification process, the more holes you can "punch," the better. Normally, to get the higher hole count, an aerifier that mechanically drives the tines is required.

Aerifiers that utilize the weight of the machine and gravity (often referred to as drum-type) normally have spoon-type tines and provide a much wider tine spacing than a mechanically driven aerifier.

The differences are noticeable when comparing the two as in the side-by-side image. For a drum-type aerifier (right) to equal the hole count of a mechanically driven aerifier, aerification needs to be repeated 4 to 8 times.

Another popular question is, "Which type of tines do we

use, hollow or solid?" Rules of thumb for each are as follows.

Use Hollow Tines

- During periods of healthy growth
- 30 days prior to high-stress periods of cold or heat
- When soils are moist
- Use as large of tines as you can tolerate

Use Solid Tines

- During periods of more stressful conditions
- Bayonet or slicer tines during the most stressful periods
- When soils are drier

- As often as you or your turfgrass can tolerate

To minimize disruption of fields during critical use or stress periods, slicing or spinking tines can be used. Some refer to this operation as venting. The drawback of slicing or spiking is that compaction relief is minimal, but it does aid in vertical air and water movement into the rootzone. This process can be used on native or sand-based rootzones.

If you are suffering from extremely dry and hard playing surfaces, deep-tine aerifiers (using solid tines) insert tines into the soil vertically then have a lateral, kick-back action that helps fracture the soil and will alleviate surface and deeper compaction problems and help improve water movement into previously relatively impervious soils.

Vibratory aerifiers can provide a combination of compaction relief and venting near the surface without a lot of playing surface disruption. Seeders are often combined with these machines to provide an effective turfgrass establishment tool.

There are many alternative technologies available as well. Many of these processes create aerification holes and then immediately fill the holes with various rootzone materials including sand and calcined clay products. Some technologies also use pressurized air or water to help fracture the rootzone. Air injection is normally more effective in native soils because the rootzone soils will more likely be fractured. With sand-based root zones, the materials may only be redistributed and the effect more temporary. Water injection is particularly beneficial when some kind of aerification in needed but the fields require minimum disruption, as during a multi-game homestand. Plus, it provides some water directly to the rootzone.

In addition to aerification, there are several other methods to reduce compaction and therefore reduce the need to aerify. Traffic control (rotating fields, restricting practice sessions, etc.) is very impactful and should be negotiated as part of the overall field management plan. Topdressing following aerification may reduce the total number of aerification passes over a field in a given year. In any of these situations, the denser the turfgrass cover, the better your surface will be able to tolerate or resist compaction and other degrading effects.

To provide better overall establishment of overseeded grasses, consider multilevel cultivation while applying seed. This strategy provides grasses the opportunity to establish and grow from multiple starting points, hence improving its chance of surviving and providing a sustainable playing surface.

Regardless of the methods or technologies you employ to aerify your playing surfaces, anything that you do will help you to better succeed in providing safe and playable surfaces. The key is to keep showing up and to be as consistent with your cultivation practices as possible. Increasing what you do by a mere 10 to 20 percent could make a huge difference throughout the year. Good luck, and keep plugging away! **SFM**

John C. Fech is a horticulturist with the University of Nebraska-Lincoln and certified arborist with the International Society of Arboriculture. The author of two books and more than 400 popular and trade journal articles, he focuses his time on teaching effective landscape maintenance techniques, water conservation, diagnosing turf and ornamental problems, and encouraging effective bilingual communication in the green industry.

Brad Jakubowski is a turfgrass and irrigation instructor with Penn State University. He is a certified irrigation technician with the Irrigation Association and is an author and presenter covering multiple management areas within the turfgrass industry. He focuses his time on teaching best irrigation practices and troubleshooting, weather-based management decisions, soils and plant nutrition.

Field Use

Have clear guidelines and consistent communication for best results

Photo courtesy of Stantec Sports Group

By Mary Helen Sprecher

If there is one thing guaranteed to make field managers cringe, it's someone coming in with the idea of opening up the painstakingly cared-for field for community (i.e., unsupervised) use.

Often, such requests are based on the misconception that because the field is not getting active use at the time (the sports field of a school that has let out for the summer, for example), it needs to become community property during that period.

Unfortunately, that's how problems begin. In addition to opening up the field both to incorrect use and to overuse, keeping your field's doors open can make it vulnerable to littering, loitering and vandalism. It can also mean users begin viewing it as a makeshift dog park – something nobody wants to deal with. And it can mean that people who want to do a quick workout on the field bring along their children who think the sand pits are sandboxes, or that gates are for swinging on.

So how do you deal with these requests? First, check to make sure the fields will remain unprogrammed during the summer. In some cases, travel tournaments, local camps or others may have access to the fields. Should that be the case, it is likely you won't need to worry about requests for unpaid field use for very long, as it will become obvious the fields are far from unused.

But even if your field won't host sports action over the summer, it's likely something will be happening. A natural grass field, for example, may well need time to recover after seeing heavy use from spring sports, and, for that reason, may have to be closed during at least part of the summer.

The field may be being worked on – not just mowing, adjustment of irrigation and fertilization, but sodding, seeding, eradication of pests, aeration and for adding amendments to the soil. You may find it is sufficient to post information about the ongoing work, and the potential danger to those who trespass.

If the field is synthetic, summer may be the time you're doing maintenance on either the turf or the irrigation or drainage systems, or on the perimeter of the area – also good reasons to keep foot traffic off the field at the time.

But reasons are just that – reasons. They don't always stand up to the claims about taxpayers' money going toward the field; to cries about the rising inactivity and obesity levels of the public; to a local community group claiming they "only" want to use the field during certain hours for their adult soccer group; or to a parent's claim that because their child attends the school, they should be able to enjoy the field after hours, or when school is out. Pretty soon, you find yourself faced with a bevy of requests and even outright demands for time on the field.

Communication is your best tool and your best line of defense. This is something that can come into play, for example, when a new facility goes in and local community associations start asking about using the surrounding track for morning workouts, or about letting their children run around on the field while their parents have a workout of their own. Although some requests are innocuous and perfectly harmless, the problem is trying not to let them become an avalanche that overwhelms your field.

Photo courtesy of BSC Group.

Photo courtesy of GeoSurfaces

Meet with those who are making requests. Let them know how much a new facility costs, how easily it can be damaged, and how much professional maintenance is, since these are things that most people don't understand.

If you can't meet directly, write something for the community's e-newsletter or meet with the community association president on Zoom or by phone. Give them the specifics on what will be happening to the field (or track too, if that is the case) when it is not in use – whether that is repair, irrigation, grooming, fertilization, spraying of pesticides, etc. Explain the fact that the facility is going to need extensive maintenance in the offseason and that it simply cannot be used during that time.

Be able to provide information on the alternatives available. For example, for those who want to run, cycle, skate or anything else, provide information on local trails that can be used instead. Provide a list of playgrounds and tot lots in the area for those who want their kids to have access to sandboxes or other child-friendly amenities. If neighbors want ideas for keeping their children active during the summer, have information on day camps and other affordable programs offered by the local recreation and parks department. If people want to work out, find out about the local fitness courses often built along with greenway trails.

One phenomenon that field managers are reporting: During the pandemic, it became commonplace for personal trainers to host private or small-group sessions, and to look for outdoor venues where they could conduct workouts. Many still use this method; however, it is unfair for professionals to use your field or track without payment, and too much of this kind of traffic will contribute to wear of your facilities.

Granted, it's a message nobody wants to give, and it may be that the administration of the school is not ready to be perceived in a negative light. In that case, it may be useful to offer an olive branch to those who want to use the field – as long as this is something approved by the owner of the field. Find out if it is possible to have a field open only during certain hours, and to have the community association pay to have someone (of your choosing) who can be present to unlock and supervise the use of the facility. In other words, it would be that person's job to keep out people with dogs, dirt bikes or anything else that could harm the field. If there is a running track around the field, it would be the supervisor's job to make sure people understand the need for proper footwear, and for them not to allow children to ride bicycles, scooters or trikes on the track surface.

Above all, make sure all rules are posted. Some suggestions are as follows; they can be adapted for use in fields, or in track & field facilities:

- Shoes: Running shoes, cross-trainers, tennis shoes, and 1/8" pyramid spikes are the only footwear allowed; no baseball shoes or any shoes with sharp spikes
- Vehicles: No skateboards, scooters, tricycles, bikes, (including recumbents, elliptical bikes, e-bikes, dirt bikes or other variants) or rollerblades/skates allowed
- Adults are responsible for supervising children at all times
- No pets (including therapy animals) at any time

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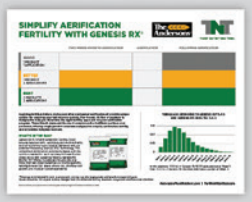

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Photo courtesy of Rettler Corp.

■ Please clean up all litter, including wrappers, water bottles and other debris

■ Personal Trainers: Facilities are not open for private or group workouts; please work with local parks to secure space to use for workout groups.

■ Please use caution at all times and do not work out alone

Positive communication with the community can go a long way toward creating a better relationship and allowing the school to be viewed in a favorable light. Provide your e-mail address (or some form of communication) so that residents can get in touch regarding any questions or concerns. If a community wants to have a special task force or committee about the field, welcome this.

If rules continue to be broken, if vandalism occurs, or if there is damage to the facilities, and gates need to be locked permanently, make sure that is communicated to the community. Note that while users will be unhappy about it, it will be impossible to deny that you made every effort to accommodate them. **SFM**

Mary Helen Sprecher wrote this article on behalf of the American Sports Builders Association (www.sportsbuilders.org), the national organization for builders, design professionals and suppliers of materials for sports fields, running tracks, tennis courts and indoor and outdoor courts and recreational facilities.

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Relating Weed Control to Sports Field Playability and Player Safety

By Erick Begitschke

It is impossible to completely alleviate non-contact athlete injuries during sporting events. However, research that evaluates the different aspects of field creation and playing surface maintenance may play a critical role in the reduction of athlete injuries.

Historically, research has predominantly focused on advances in safety equipment, with minimal attention to field playability and performance. Natural turfgrass sports fields can exhibit within-field variations due to climatic and agronomic conditions, field construction, field management, foot traffic patterns from field usage, and other contributing factors (Straw et al., 2020). Variations within a field influence the predictability of playing surfaces and require athletes to make abrupt and frequent adjustments that may lead to an increase in ground-derived non-contact injuries.

The variability of weed presence within sports fields can ultimately impact field longevity and player safety. Weeds lower the aesthetic quality of the field surface, and may outcompete desired turfgrass species for water, nutrients and light. Additionally, differences in morphology and growth rates between species may impact ball roll and player-surface interactions. Reduced stress tolerance of common turfgrass weeds to wear and traffic may ultimately reduce the number of games played, and often requires additional management inputs or more frequent renovation.

Controlling weeds and maintaining a dense, healthy stand of turfgrass provides the best playing surface; however, constantly changing environments, the presence of microclimates, and strained budgets make this a tough reality to achieve. In addition, increased EPA regulations, societal concerns about pesticides, documented herbicide resistance, labor shortages, and overused fields have made weeds more difficult to control. Therefore, many sports field managers are implementing site-specific management strategies and adopting a threshold approach to weed management. However, one question still remains, what is the appropriate threshold for weed control in order to maintain a safe and functional playing surface?

Research at the University of Georgia aims to gain a better understanding of the direct impact of weeds on player safety and field longevity with the goal of providing weed control recommendations to sports field managers that address player safety. The first step of this research is to develop a method that accurately describes the interaction between athletes and various turfgrass systems. Turfgrass researchers at the University of Georgia recently introduced a new diagnostic methodology aimed at evaluating relationships between within-field variations of sports field properties and ground-derived athlete injuries by simultaneously recording agronomic field data (soil moisture, soil compaction, surface hardness, etc.) and injury frequency and location within monitored fields (Straw et al., 2018). Although results from this work highlighted potential relationships between field properties and ground-derived injuries, agronomic conditions at the exact moment of injury were not known. Therefore, it is difficult to determine the accuracy of athlete responses to the specific field conditions presented in the aforementioned study.

Past research comparing objectively measured ground conditions to athlete performance and physiology, as well as injury occurrence, has primarily been conducted in situ, while comparisons to athlete biomechanics has primarily been laboratory based. Consequently, there have been minimal associations made between laboratory findings and field research. The creation of a portable modular system that can be manipulated to reflect a variety of sports field scenarios (turfgrass species, weed presence, canopy heights, soil profiles, agronomic conditions, etc.) while utilized in a laboratory setting could provide valuable and more accurate athlete response data to help identify the exact field condi-

Figure 1. A novel ground reaction platform designed at the University of Georgia utilizes a mobile force plate to evaluate the interaction of athletes with various field playing surfaces.

tions that lead to an increase in injury occurrence.

A force plate is a device used in biomechanical research and sports medicine to measure the forces exerted on the ground by a body. These forces (ground reaction forces) are measured by a series of sensors on the plate. However, it is very difficult to relate these interactions to field conditions without having a surface or material profile between the athlete and the force plate. Biomechanical researchers are often concerned that the addition of a surface on the force plate may negate the validity of the data acquired. Recently, Ismail et al. (2018) examined the influence of an additional surface (synthetic material) on force plate data during walking and running exercises. Researchers determined that the additional surface placed on the force plate had no significant impact on the magnitude of the vertical ground reaction force data, but there were some changes that occurred on the heel/forefoot strike force ratio during the walking task.

Researchers at the University of Georgia are currently developing a novel ground reaction platform device that utilizes a portable force plate underneath a simulated natural turfgrass system in order to provide reproducible and valid ground reaction force data (see Figure 1). Once properly calibrated, this device will be used to isolate specific sources of within-field variation, such as weed presence, to determine the effects those sources of variation have on the actual forces entering an athlete's body during physical maneuvers.

A preliminary study was conducted at the Athens Turfgrass Research and Education Center to test the functionality of the novel ground reaction platform device in the fall of 2021. The primary objective of the test was to determine whether the force plate was capable of providing reproducible data when placed beneath various playing surfaces. The test involved four participants at the University of Georgia who performed basic athletic maneuvers on the platform containing four different surfaces. The maneuvers included a standing maneuver, a walking maneuver, a jump landing maneuver, and a step landing maneuver. The four surfaces included the force plate by itself within the ground reaction platform, a piece of artificial turf directly on top of the force plate, a piece of natural sod ('Ironcutter' hybrid bermudagrass, cut to a height of 1 inch), and a 3-inch layer of USGA spec sand. Each participant performed four replications of each maneuver on each of the four surfaces. The force plate was used to measure the peak vertical force in Newtons (N) exerted on the force plate, which in turn provides the amount of force being absorbed back onto the body of the participant (see Figure 2). Additionally, the peak vertical force data were normalized based on the body weight of each participant determined during the standing maneuver.

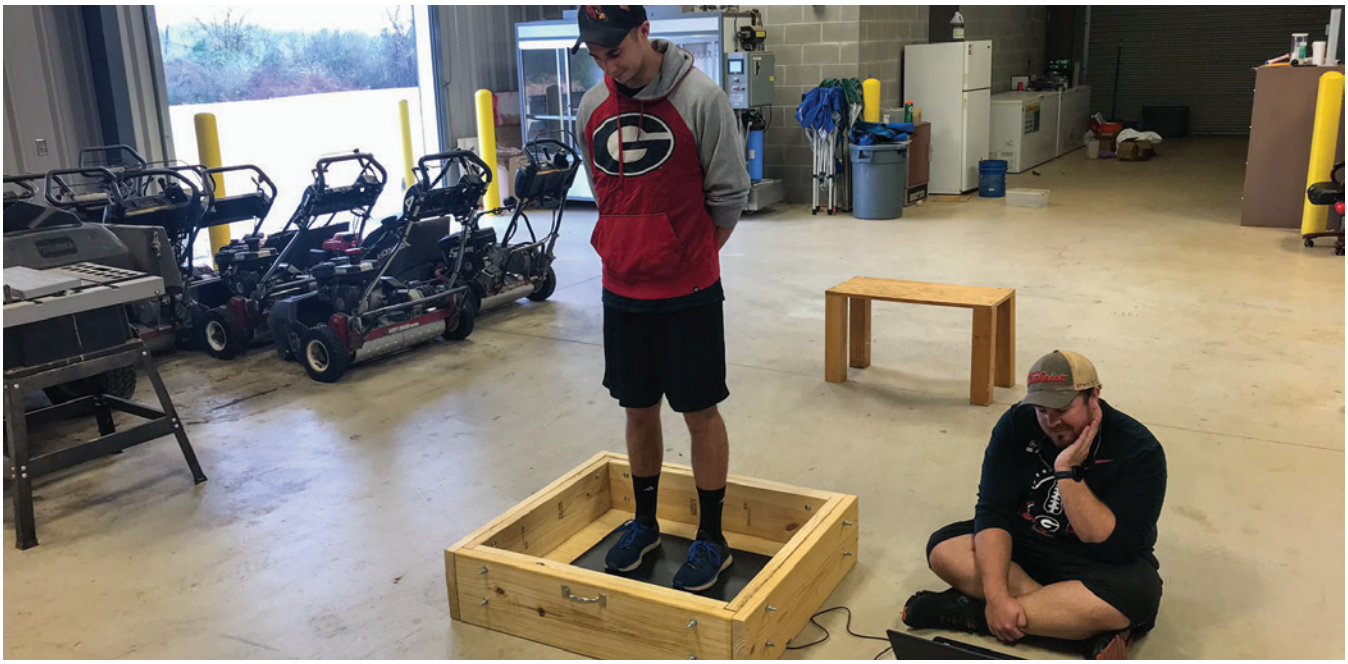

Figure 2. Peak vertical force data were normalized using body weight measurements obtained from the force plate placed beneath each of the four surfaces to generate force data in terms of the number of bodyweights exerted onto each participant.

Only walking and standing maneuvers were performed on the sod surface due to the presence of high soil moisture within the sod during trial conductance. However, significant differences were detected between the other surfaces when each of the maneuvers were evaluated separately (see Figure 3). For the jump landing maneuver, the sand surface produced the largest peak force exerted on the bodies of the participants when compared to the plate by itself and the artificial turf surface. Similar trends were observed with the step landing maneuver. Although the sand surface provided the largest peak force values, the artificial turf surface provided a significantly lower peak force when compared to the force plate by itself and the sand surface. No significant differences were detected during the walking maneuver.

As mentioned, the primary objective of this project was to evaluate the ability of the force plate to provide reproducible data when placed beneath various materials and surfaces. Although preliminary, the lack of significant variation observed

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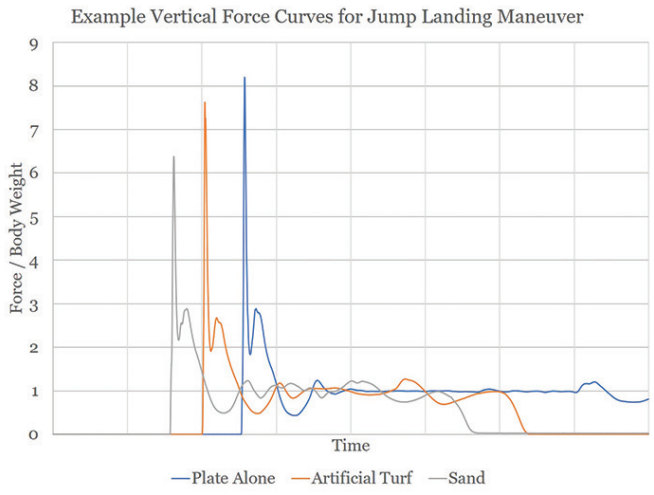

Figure 3. Example of vertical force curves generated by the force plate within the prototype ground reaction platform in response to the different surfaces. All images provided by Erick Begitschke.

between replications of the same surface provides promising results for the implementation of the ground reaction platforms within future research projects. However, the differences in data observed with respect to surface type were not expected. In the case of the sand surface, differences may be attributed to the lack of playing surface material, whereas the lack of complete soil/subsurface profiles may have affected the artificial turf and sod. Therefore, further research is needed to confirm results found during this preliminary study. Research involving collegiate-level club sport athletes is scheduled to be completed during the fall of 2022 in order to evaluate more replicates of similar maneuvers on the ground reaction platforms using complete soil profiles and a hybrid bermudagrass surface.

In addition to the research being conducted in the biomechanics lab, researchers at the University of Georgia will simultaneously conduct related studies evaluating the effects of weeds on athlete safety and playing surface longevity in a field setting. Recently, Brosnan et al. (2014) evaluated the playing surface quality of 100% stands of hybrid bermudagrass, large crabgrass, and white clover subjected to different traffic regimes. The surfaces of the large crabgrass and white clover stands lost green cover nearly 12 times faster than hybrid bermudagrass while also exhibiting increases in surface hardness. Additionally, hybrid bermudagrass retained higher rotational resistance values compared to large crabgrass and white clover, suggesting that athletes have increased traction to make cutting and turning motions on hybrid bermudagrass versus weeds. While this research provides valuable insight into weed response to traffic and subsequent impact on playability, further research is needed to evaluate the safety and longevity of hybrid bermudagrass and weed mixtures typically found on community sports fields when subjected to different traffic regimes.

Running lanes of hybrid bermudagrass are currently being established at the Athens Turfgrass Research and Education Center in Athens, Ga., to simulate natural turfgrass sports fields with various amounts of weed pressure. Weeds will be transplanted into mature stands of bermudagrass in order to create various amounts of weed pressure. Research plots will be subjected to four incremental amounts of traffic throughout the growing season. Green cover, surface hardness, and rotational resistance will be measured similar to Brosnan et al. (2014) following treatment implementation. In addition to these standard response variables, athletes will be recruited to perform athletic maneuvers on each of the plots, similar to the lab experiments conducted with the ground reaction platforms, and data will be collected using wearable technologies placed on the lower extremities of each athlete. These devices can not only measure the ground reaction force exerted on each athlete, but they can also measure slippage and traction when athletes make cutting movements. The combination of these data can provide recommendations for an acceptable threshold of weed control to maintain safe and functional sports fields. **SFM**

Erick Begitschke is a graduate research assistant at the University of Georgia, Athens, Ga.

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ANSWER

From page 17

The off-color and brown turf on this softball field was caused by an application of ALS inhibitor herbicide. Some years ago, weeds started to germinate and grow in the skinned area of this softball field, so it was decided to apply a weed killer to the invasive weeds and grasses on the clay. Care was taken not to get any of the chemical on the surrounding turf. Unfortunately, that evening an unexpected heavy rainstorm moved through the area, causing a torrential rainfall. This overabundance of water caused the chemical to float off the skinned area and gently run downhill. As you can see, the effect was quite obvious.

Photograph submitted by John Wesley Boyd, Ph.D., visiting assistant professor at the University of Arkansas Extension Service.

John Mascaro is president of Turf-Tec International

If you would like to submit a photograph for John Mascaro's Photo Quiz, please send a high-resolution digital photo to John Mascaro via email at *john@turf-tec.com*. If your photograph is selected, you will receive full credit. All photos submitted will become property of *SportsField Management* magazine and the Sports Field Management Association.

Southeast Tech's Spring 2022 Sports Turf Management and Horticulture Technology students.

Sports Turf Management Internship Lands STC Student with Atlanta Falcons

By Carmen Landhuis

As a kid growing up in Edgerton, Minn., Jesse Tschetter mowed lawns. After graduating, he was accepted into Southeast Technical College's Sports Turf Management program.

"What really made this program stand out was the many different career path opportunities it would provide," said Tschetter.

After learning more about the program, cost, and realizing he could obtain a degree in two years, Tschetter's decision was easy. Within his first year attending Southeast Tech, he gained hands-on experience on grasses, pests, various equipment used in the industry, and the knowledge needed to maintain fields at a professional level.

As the semester came to an end, his instructor, Cory Borgen, shared a handful of websites that offered field-related jobs and internships.

"The career opportunities in our industry have always been excellent," said Borgen. "In fact, our interns and graduates could go just about anywhere they want; the demand is so high."

Southeast Tech's Sports Turf Management program boasted a 100% job placement rate among its 2021 graduates.

One posting in particular caught Tschetter's eye — an internship for the Atlanta Falcons. Feeling nervous about the application process, Tschetter applied knowing this would be an opportunity of a lifetime, even as a Dallas Cowboys fan.

"Am I really doing this?" Tschetter recalls feeling anxious, yet excited after receiving the call that changed everything.

Jesse Tschetter

When the semester ended, he made his journey to the Atlanta Falcons Training Camp, located in Flowery Branch, Ga., to begin his three-month-long internship. Living in the city was a change of pace from his hometown, but he's thriving!

"Our program has been successful in placing students with internships that align directly with the students' career goals. Students have interned with Major League Baseball teams, such as the Boston Red Sox and the Milwaukee Brewers. They've interned with Minor League teams all over the country and locally in Sioux Falls, including the Sioux Falls Canaries and Parks and Recreation," said Borgen. "However, Jesse is the first student to intern with a National Football League team."

Tschetter is grateful for how Southeast Tech and his instructors prepared him for the skills needed to complete the jobs and tasks required to maintain a facility for an NFL team.

"Without these skills, I wouldn't know how to use the equipment needed to provide maintenance to the fields, schedule waterings, perform proper mowing, landscaping or painting the fields each day for practice." said Tschetter.

Tschetter is returning to Southeast Tech this fall to complete his program, and plans to graduate in May 2023.

"After graduation, I'm hoping to further my experience in another sports facility," said Tschetter. "Working with parks and recreation or becoming a grounds crew member on a college campus with an athletic division."

In the meantime, Tschetter is staying busy on the field, learning as much as he can from this life-changing internship, and casually meeting professional football players. The Cowboys will always be his favorite team, but this fall he will be following and cheering for the Falcons, too. **SFM**

Agricultural Studies Avenue Offers Sophomore Unique Opportunity

Gunnar Kale loves everything about America's pastime.

"Being around the game – whether I'm playing it, watching it or working with it – is always something I strive for," the Merced, Calif., native admitted.

As time has passed on Morningside University's campus for Kale, an option has opened his eyes to a future in the Grand Old Game.

"The agricultural studies department is giving me the chance to sort of develop my own study path," the agronomy major and ag business minor said. "Turf management is something I've been a part of since I was working the fields as a member of my high school team. It's a great fit for me.

"When I was thinking about what I wanted to concentrate on in college, I just wasn't sure," Kale added. "Fortunately, my high school is one of two in the United States that offers a sort of a turf management path, so I had that going for me. My high school coach was always telling us 'If you have time and want to work on the field, you can.'"

Kale's study path has him basking in the sunny climate of Myrtle Beach, S.C., this summer. He is working through an internship with the Pelicans, a Class A affiliate of the Chicago Cubs. While he knows the work comes first, he also is a sponge for knowledge from the future big leaguers.

"This so much fun," he admitted. "I'm 100 percent around baseball. The weather

> "Being around the game – whether I'm **playing** it, **watching** it or **working** with it – is always something I strive for."
>
> — GUNNAR KALE

doesn't hurt, either. I miss that from my youth and high school days.

"For me, it goes beyond the games," Kale added. "I like watching batting practice and pre-game – where the players put the work in. It blows my mind at how they good they are at it. I'm working on picking up some little habits, whether it's something I see while fielding or hitting or just sitting in the dugout hearing conversations about what they want to do. It's a different perspective."

A typical day sees Kale and the crew on site around 9 a.m. They work through any big issues with the field and complex first. From there, it's dirt and clay work. On game days, they add in prepping the mounds and infield, watering the surface and dragging it. They also paint the baselines, set up for batting practice and tear that down.

"Yeah, it's the Cubs and on the beach, but there is still a lot of work to do," said Kale. "It's opened my eyes to different career options, with head groundskeeper of a professional team at the top."

Kale isn't stopping with this summer's work. He is talking with the Philadelphia Phillies about an externship that would have him on site for five and a half months.

"That would be amazing," he said. "There are chances for interactions with the players, as I've seen in Myrtle Beach. To be at that level fulfills a dream opportunity – my ultimate career goal." **SFM**

Article provided by Morningside University sports information.

Rugby School: The Preservation of Sporting Legacy

Editor's Note: The following article was provided by Bernhard and Company

After almost 200 years of sporting legacy, one of England's most famous independent schools, Rugby School, has come to the decision that now is the right time to re-lay the historic turf of The Close – the school's main sports pitch. The project will see the original soil-based turf lifted to make way for a sand-based alternative that will deliver the highest levels of performance in the years to come.

The Close at Rugby School is one of the most iconic sporting sites in the world. When William Webb Ellis decided to pick up the ball during a game of soccer at the school back in 1823, the distinct handling game of rugby football was invented. The field on which this historic moment occurred stood strong until this year, when the school made the decision to re-turf the pitch.

Rugby was first introduced to the United States in the late 1800s by Americans who had been educated in English schools. Following its introduction into American universities, the momentum of rugby began to seriously grow in the United States in the late 1950s, into the '60s and '70s, as many colleges formed structured teams. The next 20 years saw the introduction of a college national championship tournament, and a U.S. national team that would compete in the inaugural Rugby World Cup.

In the 1990s, rugby union became officially professional on a global level. However, it wasn't until 2015 that the USA had a professional rugby organization. In 2017, Major League Rugby was officially born. With a large CBS television agreement, the first season got underway in 2018, with the league continuing to grow in size and stature each year. Today, rugby is one of the fastest-growing sports in the United States.

Back in England, James Mead, head groundsman at Rugby School, has been heading up this historic project, and cited increased pressure on the pitches and changes in extremes of weather in the United Kingdom as the foremost causes of the need for change.

"Mr. Ellis picked up the ball and ran with it in 1823, and from there on every pupil and teacher that has been to, and left, the school has carried the game around the world with them. We are proud to say that the incredible world rugby family that exists today all started from this very ground," said Mead.

"From that day almost 200 years ago until 2022, The Close remained a soil-based pitch. Over those years we have maintained the fields to the highest possible level with the equipment we have at our disposal," Mead added. "However,

we are now at a point, with the extremes of weather and changes to nature we are experiencing, that we have to look at the performance of the pitch for the next 200 years. So, we will be installing an entirely sand-based pitch with a brand-new drainage and irrigation system that will deliver the very highest levels of performance all 12 months of the year."

Said Mead, "This is a huge project for us. It has been in the planning for about five years now, since we really started to notice a couple of changes in the way the British weather was affecting the pitch. Through no fault of our own, the performance of The Close wasn't quite at the level we wanted or needed it to be. So, we started to think about how we could combat the changes in precipitation and temperature to take things forward, and what the best methods to accomplish that might be. We were always very conscious that we wanted to keep the look of the pitch natural, so the overall appearance of The Close won't change much, but will be far more refined with the sand base to deliver all-weather performance. Most importantly, with a sand base, the new pitch will be much more efficient from a management perspective, and the new drainage system will have a huge impact in the wetter months.

"We are always looking to host more and more prestigious sporting events, so the ground has to undergo a lot of stress throughout a year," Mead added. "The level of those tournaments and the expression that we must portray of the school and its facilities is extremely high, so the pitch must resemble that on any given day."

Involved with the project is Bernhard and Company, a supplier of grinding machines and turf care solutions, which

has helped ensure that the playing surfaces at Rugby School are some of the best in the country, and will also play a part in maintaining the new turf once it starts to grow through. Bernhard and Company has a 20-plus-year business relationship with Rugby School, but the link between the two organizations dates back even further, with the Bernhard and Company based just a stone's throw from the school.

With a brand-new sand-based pitch being laid, blade sharpening will be more important than ever. Mowers will be consistently subjected to sand damage, so the blades will need to be ground on a regular basis in order to ensure the new grass plant is not ripped or damaged when cut.

Steven Nixon, managing director of Bernhard and Company, said, "Anybody who's involved in sports turf at any level wants the best possible surfaces, for many reasons. We want the pitch to look good, it has to play well, and it also has to be safe for the athletes and players that are going to be performing on it. So, having a pitch that is maintained to the highest possible standard, with a healthy grass plant and rootzone, is absolutely crucial. Having the grinding machines on site will be hugely beneficial when the time comes to start cutting the grass again.

"For Rugby School, having world-class sports fields is a huge part of their program," Nixon added. "When people are looking at the school as an option, they want to look at the facilities and understand what kind of surfaces they're going to be playing sport on and how good they are. The surfaces here should be as good as any in the country. We're excited to continue working with Rugby School as it takes on this massive project to completely overhaul the base of the pitch at The Close."

The team at Rugby School did not simply remove and discard the turf from The Close. With such a decorated history, it seemed only appropriate that rugby fans in the United Kingdom were offered the chance to purchase their very own piece of sporting legacy.

"The home of any sport is very important, and to have it in its virtual natural state for almost 200 years is an incredible thing," said Mead. "This was a truly one-off project; there will never again be an opportunity to preserve a piece of the original rugby turf. We decided that to not give rugby fans the opportunity to purchase an original piece of The Close to plant at their home would almost be criminal! And it turns out we were right, as every strip sold out in a matter of days – it's a nice feeling knowing that this historical turf will live on in various forms around the country with people who possess a genuine passion for the game that was created here." **SFM**

Aerators

BILLY GOAT AET60 TOWABLE AERATOR

At up to four acres an hour, the AET60 provides a 6-inch-by-7-inch aeration pattern up to 4 inches deep. The unit offers flexible aeration widths at 36-, 48- or 60-inch aerations with a simple flip up or down of the aerator's wings. Weighing in at 440 pounds, for deep, hard soil aeration, the unit will also accept sandbags for extra weight. Swiveling tine assemblies offer smooth maneuverability when used with a 3-point hitch. Mounts to a standard tow bar or category 1, 3-point hitch.

DRYJECT FRANCHISE-BASED AERATION SERVICES

DryJect is a premier injection service that aerates, top-dresses, and amends in one pass. High-pressure water penetrates the turf root zone, and dry or wet amendments including sand/peat mixtures, inorganic soil amendments and more are injected into the aeration holes. Key benefits are speed, labor savings, and decreased field downtime. Aerate, amend, and backfill the holes completely on a 70,000 sports field in less half a day. Fields are playable shortly after completion. Using the DryJect service will loosen the soils and guarantee that the aeration holes are fully filled with the desired amendment.

JOHN DEERE AERCORE 2000 AERATOR

The John Deere Aercore 2000 aerator improves operator efficiency, complete with a 77.5-inch coring swath and fiberglass-reinforced belts that can pull up to 30 cores per square foot. Despite its powerful mechanics, the Aercore 2000 provides a quiet, smooth operation that requires minimal maintenance and zero lubrication. This model boasts compatibility with six different tine options, offering increased versatility, while the removable park stand makes for easy storage and improved convenience. With serviceability top of mind, the drive assembly is readily accessed for daily checks and routine maintenance, providing the best service access in the industry. Changing tines and belts, and altering hole spacing can also be accomplished in minutes, leaving you with more time and less stress.

REDEXIM VERTI-CORE III

The Verti-Core III from Redexim is one of the fastest, smoothest, and most well-built core aerifiers on the market. Over-built construction, combined with simple adjustments, makes the Redexim Verti-Core reliable and easy to use. It features a working depth up to 5 inches and operating speeds up to 3.5 mph. A number of tine options are available for the Verti-Core, and it comes in two different sizes; the 1600 (63") and the 2100 (83"). Fewer moving parts ensures simple service and less maintenance. These things all contribute to its unmatched speed and smooth operation.

RYAN LAWNAIRE ZTS STAND-ON AERATOR

The Ryan Lawnaire ZTS stand-on aerator brings an extra level of comfort and productivity to large aeration jobs such as sports fields and parks. The ZTS maneuvers easily thanks to its low center of gravity, zero-turn drive, and a top speed of seven miles per hour. The Lawnaire ZTS also achieves high-quality aeration with an automatic chain tensioning system. The user is always in charge, with intuitive controls, precise aeration depth control and a fast hydraulic tine lift. Aeration can traditionally require a lot of physical effort, but the Lawnaire ZTS makes it easier than ever. It features a sturdy, shock-absorbing operator platform and zero-turn maneuverability, helping sports field managers get the job done efficiently and with the best results.

SITEONE LESCO PRO-AER 30 AND PRO-AER 36 AERATORS

SiteOne Landscape Supply's exclusive LESCO renovation products include the Pro-Aer 30 and Pro-Aer 36 stand-on aerators. The lineup adds oxygen to soil, fills in bare spots, improves density of turf, improves grass variety and color, and more. The Pro-Aer 30 and Pro-Aer 36 models are highly productive commercial stand-on aerators, available with or without a seed box, featuring a chain-free design to eliminate the cost and hassle of expensive breakdowns. Powered by a robust Vanguard V-twin engine, the LESCO renovation units are supported by a 3-year commercial limited warranty. The integrated seed box model eliminates the need for post-aeration seed application to complete projects in one easy pass, reducing the need to return and reapply seed.

STEC EQUIPMENT DEEP TINE AERATOR BY GKB

STEC Equipment has found yet another quality product to add to its turf maintenance line with the introduction of the Deep Tine Aerator (DTA) by GKB. Deep tine aeration is key to relieving compaction, healthier root growth and opening your turf to receive the amendments you are using. The DTA line of products is of the quality you have come to know and expect from STEC Equipment and GKB. The DTA and its 3-drive gearbox, sealed bearings, front and rear roller, and easy-to-change tines make this the high-quality piece of equipment a great addition to your fleet of turf maintenance equipment. The DTA can be found in widths of 4 to 7 feet wide and a working depth from 10 to 15 inches. The variety of widths and depth make one of these machines the ideal solution for your field.

TORO PROCORE 648S

The latest iteration of Toro's ProCore 648 aerator builds on an industry-standard. The new ProCore 648s features Delayed Mode, which reduces disruption of the turf surface and allows operators to mark the spot where they want the coring head to drop/raise using the leading edge of the front tire as an indicator. Electronic drive control maintains more consistent hole spacing when aerifying sloping terrain and provides a tighter turning radius. In addition, proven InfoCenter technology enables precise "set and save" increments for tine depth and hole spacing. As the latest iteration in a line designed and built on customer feedback, Toro incorporated some of its customers' most requested features in the new ProCore 648s. That includes a 95-cubic-inch storage box that comes standard, and an optional LED light kit that includes three forward-facing lights and one rearward-facing light.

TURFCO TURNAER XT10

The Turfco TurnAer XT10 stand-on aerator offers more of what turf pros need: longevity, productivity, reliability, and decreased downtime. The high-powered, zero-turn XT10 aerator uses a 27-hp. engine and cyclone air cleaner to maximize productive uptime. Power over ditches and navigate hills without bogging down or damaging turf. The foot-operated control makes for fast and nimble operation in all terrain conditions. Pull plugs of all soil types consistently without stopping thanks to the patent-pending Auto Depth Control that adapts automatically to changing ground conditions. Set the desired depth once, and get that same depth all day long regardless of turf conditions. The XT10 is designed to keep downtime down, with a unique drive system that keeps chains protected and outside the aeration area so they remain clog-free.

TURF PRIDE DEEP TINE AERATORS

Turf Pride Deep Tine Aerators are manufactured in the USA with more than 20 years' experience in designing deep tine machines. Turf Pride DSA models 7000 (70") and 5400 (54") are perfect for sports turf and manicured turf facilities. A variety of tine sizes, coring and solid, diameter and length are available for Turf Pride Deep Tine machines. Productivity up to 48,000 sq. ft / hr. The main frame is one piece of solid steel for excellent durability. Front and rear rollers are standard features. Optional Core Collector box for greens. The spring-loaded tine alignment assembly arm and the patented parallel linkage arms perfectly position the tines. Compare this movement to other deep tine aerators that use an arc motion, and you will see the difference in hole quality.

TERRA SPIKE DEEP AERIFIERS BY WIEDENMANN

The Terra Spike deep aerifiers by Wiedenmann have set new standards with regard to speed, productivity, depth, and hole quality. The Terra Spike XF (eXtra Fast) can aerify at a depth of 8-1/2 inches at the speed of a shallow aerifier. The twin drive transmission can produce square hole spacing of 2-1/2 inches and 5 inches with a forward travel speed of 1.2 and 2.4 mph, respectively. The quickset feature of the central depth adjustment and the central angle adjustment allows depth and angle adjustments to be performed on the fly, thus obtaining optimal aerification results. The unique shock-absorbing systems, VibraStop and PowerPack, remove any vibrations resulting from the high aerification speed. The XF offers an optional hydraulic depth adjustment, windrow, and a variety of needle tine holders.

Z AERATE 40 STAND-ON AERATOR

Capable of aerating more than 100,000 square feet each hour, the Z-Aerate 40 from Z Turf Equipment features a 40-inch floating tine head with down pressure, which allows the operator to maneuver around obstacles during aeration. The thumb-controlled hydraulic lift system enables quick turnarounds, lifting the tine head in less than three seconds. Patented locking front caster wheels increase hillside stability, and the dual-pump hydraulic wheel motor transmission delivers 8 mph maximum ground speed. The Z-Aerate 40 accepts accessory add-ons (available separately), including a 30-gallon spray system, 46-inch dethatching rake, or 36-inch slicer seeder. This multi-function versatility enables one operator to do more work, more quickly.**SFM**

American Landmaster 2022 EV 4x4 lithium-ion utility vehicle

American Landmaster announced the release of its 2022 EV 4x4 lithium-ion utility vehicle. Authorized American Landmaster dealers will have the new EV 4X4 machines available in their showroom starting September 2022.

The all new Landmaster EV 4x4 is built on the same chassis as the original, first-of-its-kind EV lithium side x side, launched in 2021, including fully independent L-ROSS suspension, automotive-grade ball joints and bushings, and weather-sealed electrical connectors.

The 2022 Landmaster EV 4X4 features a best-in-class 160 amp-hour power plant, super duty 4WD transaxle, and on-demand 4WD coupled with a rear locking differential. The vehicle is capable of up to 65 miles on a single charge, opportunity charging for 10 minutes, 20 minutes or an hour, and can be fully recharged in less than 6 hours. An on-board charger, low-maintenance battery and on-dash battery storage switch are all standard features designed to create a best-in-class ride experience, whether hunting, trail riding or while working with a commercial landscape crew.

The standard suspension system will provide 500-pound bed capacity, while the HD suspension system will provide up to 700-pound bed capacity. The EV 4X4 is capable of towing up to 1,500 pounds, with a total vehicle capacity up to 1,100 pounds. Optional accessories will include a 3,000-pound electric winch, HD oversized steel cargo bed, steel-framed weather enclosure, hunting/cruising/commercial packages, and a rear cargo bed/flip seat to provide seating for up to four people.

Turf Tank next-gen robotic line marking software

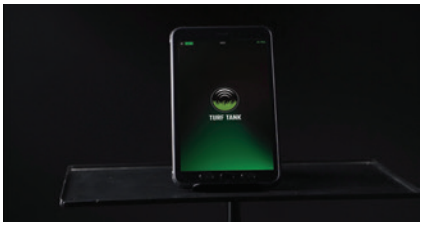
Turf Tank launched the next-generation line marking software for its robot, improving its usability, and increasing the efficiency of the line marking process.

"The platform embodies all the experience we have accumulated throughout the years," said Stefan Thilemann, chief technology engineer. "We have built it based on all the customer feedback we've gotten and tried to rethink how this system could be used in a way that saves turf managers even more time."

The new system brings a set of new features that improve the user experience. On one hand, it gives the users a fast and easy solution of painting their fields, with just a few taps on the screen, while it also gives more freedom to the user, who now has full control in customizing every little aspect of the line marking process.

The new design features a user-friendly interface which resembles familiar apps, making the software easier to understand and operate. The tablet is loaded with predefined sports layouts, which are designed to follow the regulations of the governing bodies for the specific sports. The user can simply select the desired layout, drag it onto the map and the robot will then paint by itself the lines in the correct location with the correct width and length, according to the rulebooks.

Every facility is unique, and



some have very specific needs regarding the way the fields are painted. With the new custom layouts feature the user has total freedom in designing every line on the field according to the organization's needs.

Once the fields are created, all the settings are saved through cloud synchronization, so field managers can easily find what they need the next time they repaint and be at ease of mind that they will never lose their settings.

Further updates with new features will be brought regularly, which will give users even more room for customization.

Milwaukee expands M18 Fuel blower lineup

Milwaukee Tool's new M18 Fuel dual battery blower reaches full throttle in less than one second.

Leveraging Milwaukee's Powerstate brushless motor, the M18 Fuel dual battery blower delivers an output of 17.7 Newtons and maintains that power level throughout the full discharge of the battery without drop off. Additionally, the advanced electronic package allows the blower to reach full throttle in less than one second, increasing the operator's control and productivity.

The M18 Fuel dual battery blower is designed with an ambidextrous variable-speed lock-on lever, allowing users to easily lock the desired power level with either hand. This speed control, paired with the optimized tool balance that allows

for the blower nozzle to naturally point toward the ground, and provides reduced fatigue and better clearing control.

The M18 Fuel dual battery blower has a noise rating of 64 dB(A) and eliminates emissions so users can stay compliant with any restrictions without sacrificing power. To meet performance expectations in certain high-demand applications while maintaining system compatibility, this blower requires the simultaneous use of two M18 Redlithium batteries. Delivering a maximum air volume of 600 cfm and reaching air speeds of 145 mph, users can tackle demanding applications.

New Rain Bird ESP-LXME2 and ESP-LXME2 PRO

Contractors can now help commercial sites, such as schools, parks and shopping centers, create more customized irrigation schedules, meet their water-efficiency goals and enjoy simpler remote access with Rain Bird's new ESP-LXME2 and ESP-LXME2 PRO controllers.

"The ESP-LXME2 and ESP-LXME2 PRO are feature-rich, next-generation, modular commercial controllers," said Doug Closter, product manager at Rain Bird. "They incorporate an improved user interface developed through multiple rounds of customer research sessions and field testing. We feel that these controllers truly elevate our commercial control product line by offering everything contractors and their customers told us they need, including an extra-large backlit display and more available programs."

Contractors can install the LXME2 or LXME2 PRO as new controllers or as easy retrofits to existing LXME and LXMEF models in the field. Thanks to an intuitive user interface with simple dial positions, new soft buttons – like the dedicated "Back" and "Language" buttons – and a backlit screen, they're easy for contractors and end users to program. The controllers can be expanded from 12 to 48 stations using 12-station modules, and both models support Simulstation capability, enabling them to run up to five stations at once for maximum efficiency in tight water windows.

The LXME2 and LXME2 PRO offer 40 programs and up to 10 start times per program, so users can tailor their irrigation schedules to meet the needs of any site. Both controllers have capacity for one weather station and one master valve, and the LXME2 PRO features a flow-sensor input and second pump start output programmable by station. Improved diagnostic features like detailed event/failure logs and contextual help make it easier to discover problems before they become serious issues.

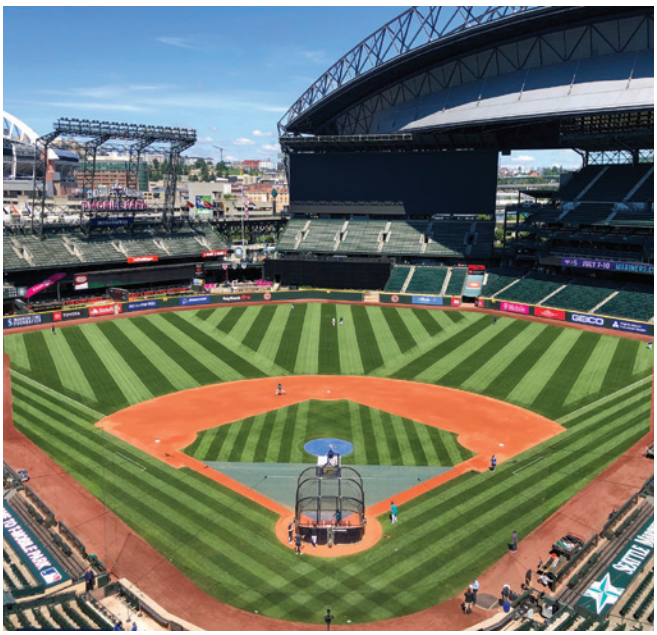
The more advanced LXME2 PRO offers a "Pro Smart Module" that supports flow sensor input, which enables additional features such as an automatic "Learned Flow," as well as Rain Bird's FloWatch and FloManager features that optimize water usage, guard against high- and low-flow conditions and shorten total watering times. The module also provides a secondary pump output that makes it possible to program the controller to only engage the booster pump when running stations or programs that really need it, saving valuable energy.

Remote access to the LXME2 and LXME2 PRO is available via Rain Bird's IQ4 Central Control with an NCC Network Communication Cartridge that uses a cellular connection, as well as other connection methods. Having multiple connectivity options available makes it possible for end users to select the one that best suits their sites' needs and configurations. **SFM**

The following are some industry Tweets from the past month.

@ChengsTweets
New Pattern. Who dis?
JULY 10

@haymarketgcrew
Pregame festivities! I try my best to turn a blind eye as they drive over every corner and park on the edges!
JULY 10



@TampChamp
JUNE 30

@INDYINDIANSTURF
Are we there yet...
JUNE 24

@msudawg2004

We were blessed to be able to host our annual SEC Turfgrass Managers meeting this week. This meeting is often imitated but never duplicated and goes to show just how special it is. Man it was good to get everyone back together after a two year gap.

JUNE 23

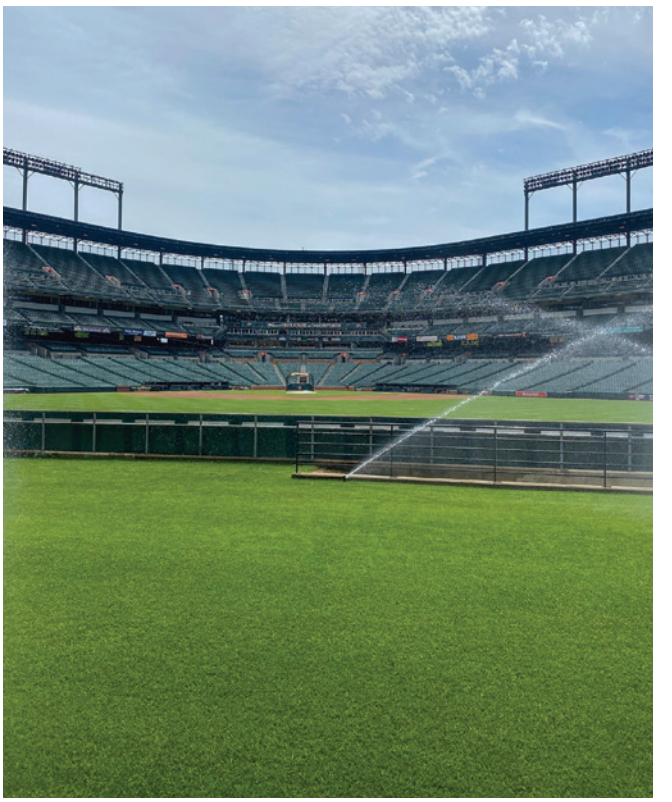
@DanThomas_CSFM

5 weeks until it all starts right here. Look Good. Feel Good. Play Good. How ya feelin over there @UMDGroundsCrew @Iowaturfguy @PUSportsTurf @HuskersTurf @michigangrounds @B1Gfootball @ESPNCFB @BarstoolILL @ProfOutdoorSol @ATSSportsTurf @FoliarPak @Aquaritin_Turf

JUNE 23

@T_LenzTurf

JUNE 22



@nsherry2

Getting ready for the beltway series

JUNE 21

STMA Affiliated Chapters Contact Information

Sports Turf Managers Association of Arizona: www.azstma.org

Colorado Sports Turf Managers Association: www.cstma.org

Florida #1 Chapter (South): 305-235-5101 (Bruce Bates) or Tom Curran, CTomSell@aol.com

Florida #2 Chapter (North): 850-580-4026, John Mascaro, john@turf-tec.com

Florida #3 Chapter (Central): 407-518-2347, Dale Croft, dale.croft@ocps.net

Gateway Chapter Sports Turf Managers Association: www.gatewaystma.org

Georgia Sports Turf Managers Association: www.gstma.org

Greater L.A. Basin Chapter of the Sports Turf Managers Association: www.stmalabasin.com

Illinois Chapter STMA: www.ILSTMA.org

Intermountain Chapter of the Sports Turf Managers Association: http://imstma.blogspot.com

Indiana: Contact Clayton Dame, Claytondame@hotmail.com or Brian Bornino, bornino@purdue.edu or Contact Joey Stevenson, jstevenson@indyindians.com

Iowa Sports Turf Managers Association: www.iowaturfgrass.org

Keystone Athletic Field Managers Org. (KAFMO/STMA): www.kafmo.org

Mid-Atlantic STMA: www.mastma.org

Michigan Sports Turf Managers Association (MiSTMA): www.mistma.org

Minnesota Park and Sports Turf Managers Association: www.mpstma.org

MO-KAN Sports Turf Managers Association: www.mokanstma.com

New England STMA (NESTMA): www.nestma.org

Sports Field Managers Association of New Jersey: www.sfmanj.org

North Carolina Chapter of STMA: www.ncsportsturf.org

Northern California STMA: www.norcalstma.org

Ohio Sports Turf Managers Association (OSTMA): www.ostma.org

Oklahoma Chapter STMA: 405-744-5729; Contact: Dr. Justin Moss okstma@gmail.com

Oregon STMA Chapter: www.oregonsportsturfmanagers.org oregonstma@gmail.com

Ozarks STMA: www.ozarksstma.org

Pacific Northwest Sports Turf Managers Association: www.pnwstma.org

Southern California Chapter: www.socalstma.com

South Carolina Chapter of STMA: www.scstma.org

Tennessee Valley Sports Turf Managers Association (TVSTMA): www.tvstma.org

Texas Sports Turf Managers Association: www.txstma.org

Virginia Sports Turf Managers Association: www.vstma.org

Wisconsin Sports Turf Managers Association: www.wstma.org

Wetting Agents

Since my last article on heat stress, I have received questions from sports field managers about what role wetting agents might play in soil moisture management during the summer months when cool-season grasses are heat and drought stressed.

Wetting agents are chemical substances that increase the spreading and penetrating properties of water by lowering its surface tension. Water is a polar molecule, so it has a positive end and a negative end, much like magnets do. Water molecules are attracted to each other, and these forces cause water droplets to form (hence the term "surface tension"). Surfactants are a class of compounds that reduces this surface tension, which can either be between two liquids or between a liquid and a solid. There are different kinds of surfactants, including detergents, wetting agents, and emulsifiers. So, a wetting agent is a surfactant, but not all surfactants are wetting agents. Wetting agents used in turfgrass management are a class of surfactants that reduce the surface tension of liquids, helping them to disperse, penetrate and percolate into soil.

There are many different types of wetting agents available. Unlike pesticides, they are not regulated by the EPA, so manufacturers don't necessarily have to divulge the ingredients. Many of the products are also mixed with other ingredients. Anionic (negatively charged) wetting agents are used to move water uniformly through the soil, but they can be phytotoxic to turf plants, and could also disperse clay particles, affecting the soil structure in a rootzone containing fine soils. Nonionic (no net charge) wetting agents are more common. Some of the older chemistries could also cause some phytotoxicity to turfgrass, but the newer formulations typically do not.

Application rates and timing will depend upon the purpose of the application, time of year, and severity of soil repellency issues. Some wetting agents can be applied as little as once per year, and some are applied every two to four weeks. A rule of thumb with localized dry spot (LDS) is to apply a wetting agent preemptively before it becomes a problem. Many of the wetting agents can also be tank mixed with other products, such as fertilizer, pesticides and plant growth regulators, to maximize return on investment. Work with your local rep to determine what wetting agent works best. Your local turfgrass Extension program can also be helpful.

Wetting agents are typically applied to the turf surface as a liquid or granular product, then watered in. The efficacy of any particular product depends upon many factors, such as levels of organic matter. If thatch is greater than ½" or soil organic matter is greater than 3.5%, it's a good idea to core aerate to make sure the wetting agent does not bind to the organic material, preventing its infiltration into the rootzone.

According to the Golf Course Superintendents Association of America, 98% of golf course superintendents use wetting agents. I do not know what percentage of sports field managers use them, but I suspect it's much lower. Their use in golf is predominantly linked to issues such as LDS, which is a phenomenon that affects low-cut (i.e., less than 1") turf on sand rootzones where the top inch of soil becomes hydrophobic and extends deeper into the soil profile. The substances that cause development of hydrophobic dry spots (water-repelling root exudates, fungi, decomposing organic matter) are non-polar. When water comes in contact with a non-polar hydrophobic substance, it tends to bead rather than penetrating into the substance, making it very difficult to get water down into the soil profile. Wetting agents are used to break the surface tension between the water and the hydrophobic soil particles. While all soils have a certain level of water repellency, LDS occurs mainly on low-cut sand-based sports surfaces, such as those used for tennis, cricket, soccer, and field hockey. LDS is not common on native soils or high-cut turf.

Other sports field uses include providing consistent soil moisture and irrigation efficacy across the entire field; high-traffic areas under water stress; on baseball/softball skins to reduce dust and maintain a firm, moist surface; new sod installations during post-harvest; and new artificial turf installations if the surface is hydrophobic. Wetting agent granules can also be added to divot mixes.

If blanket applications are too much for the budget, consider using them for situations that require a little extra help. **SFM**

Pamela Sherratt
Sports turf extension specialist
The Ohio State University

Questions?
Send them to Pamela Sherratt at 202D Kottman Hall, 2001 Coffey Road, Columbus, OH 43210 or sherratt.1@osu.edu

Or send your question to Dr. Grady Miller, North Carolina State University, Box 7620, Raleigh, NC 27695-7620, or grady_miller@ncsu.edu

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