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# SportsField

## MANAGEMENT

April 2023

Vol. 39 No. 4

The Official Publication of the Sports Field Management Association

Field Safety **18** | College and University Turfgrass Programs **24**  
Synthetic Turf **28** | Robotics **38**

# Hard Work Pays Off

Jason Brown Complex overcomes challenges to win  
Schools and Parks Football Field of the Year



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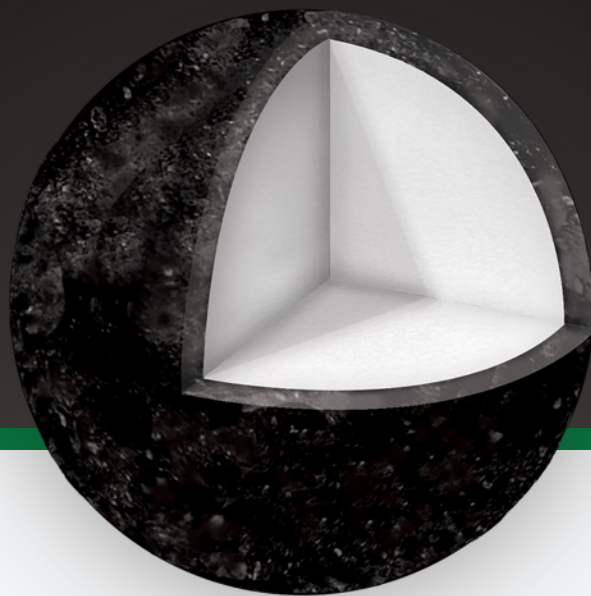
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# Contents

APRIL 2023  
VOL. 39, NO. 4



**10**

**10**  
Field of the Year  
Schools and Parks Football  
Jason Brown Complex:  
Central Regional School District,  
Lynchburg, Va.

**18**  
Safety and Security  
Creating a Safety Audit

**22**  
Spring Checklist  
Putting Your Turf Through  
Spring Training

**24**  
Industry Education  
College and University  
Turfgrass Programs

**28**  
Synthetic Turf  
Synthetic Turf Best  
Management Practices

**34**  
Equipment Safety  
Stay Safe as You Gear Up for the  
Spring Season

**38**  
Technology  
The Future is Now:  
Sports field managers are  
embracing technology and putting  
robots to work



**28**



**38**

## DEPARTMENTS

- 6**  
Editor's Note
- 7**  
From the CEO
- 8**  
SFMA In Action
- 17**  
John Mascaro's Photo Quiz
- 35**  
Innovations
- 40**  
Equipment and Technology Focus
- 43**  
From the Twitterverse
- 46**  
Industry News
- 48**  
Marketplace
- 49**  
SFMA Chapter Contacts
- 50**  
Q&A





## *Superior Performance from* **Field to Field to Field**

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Dan Farnes, *Director of Fields and Grounds*  
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# Editor's Note



**John Kmitta**

Associate Publisher /  
Editorial Brand Director  
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Spring has sprung, and, more importantly, baseball season is back. Although I enjoyed the World Baseball Classic, there is nothing like Opening Day after a long offseason. The excitement, the clean slate, the hope and the nostalgia all rolled into one. Like spring itself, it is a fresh start – a new beginning.

For me, baseball season is about memories. It's coming home from school to watch the Cubs with my grandma. It's walking up to the park with my brothers and friends with our gloves and bats. It's listening to games on the radio while I worked at the local lawn and garden center during high school. It's stats and favorite players and a shared passion for America's Pastime.

It's sitting in the stands at Wrigley or Comiskey...or a Minor League Baseball game...or a high school game...or a Little League game. It's about finally getting back outside after a cold winter and getting some fresh air (despite the uncertain mixed bag of early-season weather). And, of course, it's about the field...the grass...the dirt.

Something Jimmy Simpson, CSFM, once told me continues to resonate with me. He said that the sports field management industry is about making memories for people.

"If it is the person who walks into a stadium for the first time, and they smell that fresh-cut grass and they look at that field, you, as a sports field manager have an impact on that person for the rest of their lives," he said. "You are making a memory that lasts with them forever."

As sports field managers you face many challenges: Labor shortages and finding qualified help, balancing budgets, supply chain issues, scheduling, field traffic/use, dealing with the public, trying to get your voice heard, and, of course, the weather. And you still work long hours to manage beautiful, safe playing surfaces and plant the seed of those memories for players, coaches and fans young and old.

At *SportsField Management*, we continue to strive to help you reach your goals. And that goes beyond just producing the magazine and the website. That is why this spring is also a fresh start for us. After a bit of a hiatus, we are bringing back the *SportsField Management Podcast* (<https://sportsfieldmanagementonline.com/podcast/>). Our goal is to tackle the issues you face, share insightful conversations, and hopefully learn a thing or two along the way. And, ultimately, no matter what types of fields and facilities you manage, we want to help you make memories. **SFM**

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# From the CEO



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If the 2023 SFMA Conference & Exhibition is any indication, we have an exciting future ahead! The exceptional attendance, strong educational program, networking opportunities, exhibition, Seminar on Wheels and the exceptional general session and keynote had the entire sports field management community buzzing with excitement.

My first four months with SFMA have been amazing; everything I had hoped for and more! From taking in my first SFMA Conference & Exhibition, meeting hundreds of people, working with the SFMA Board of Directors, and reinvigorating the strategic plan, I have been filled with enthusiasm for this profession, the association, and the future. I would like to thank everyone who has made me feel welcome, but that would fill the entire magazine. So, I will call out a select few groups: Headquarters staff, SFMA Board of Directors and Executive Committee, Transition Working Group, volunteers who chair and serve on committees, past presidents, SAFE Board of Trustees, Marketing & Events, Inc., Buffalo Agency, *SportsField Management* magazine, and last but certainly not least, the SFMA members!

At its most recent meeting, the SFMA Board of Directors reviewed the strategic plan that was drafted in 2021. It was important after pausing those efforts to evaluate the plan and ensure that the actions within it are still relevant. The three primary



**Laura H. Simmons, MBA, CAE**

SFMA Chief Executive Officer

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goals of growing respect for the profession, growing the organization by focusing on integrating the next generation, and growing the diversity of the organization to attract underrepresented groups remain intact and are the pillars for the future.

Some steps have been completed; for example, the rebranding to Sports Field Management Association and updating the conference education to align with defined competencies of the profession. Other steps had been put on pause, and priorities are being set to activate them to build a strong future for SFMA.

Our committees will lead the charge on these initiatives. They will be called on to support an apprenticeship program, review and develop education and resources, create hands-on workshops for the conference, develop an ambassador program, and create a comfortable environment for discussion on diversity and inclusion.

As Alan Kay said, "The only way you can predict the future is to build it." I look forward to working with all of you and building SFMA's future. **SFM**

*Laura H. Simmons, MBA, CAE*

**Editor's Note:** The President's Message column authored by Sun Roeslein, CSFM, will return in the May issue of *SportsField Management*.



## SFMA welcomes new affiliated chapter

SFMA is proud to announce the formation of the Nebraska Sports Field Management Association (NESFMA). This chapter is led by President Jason Allen, City of Lavista. The NESFMA's purpose is to provide a forum for professionals engaged in the management and maintenance of athletic fields. NESFMA information, upcoming events and full board of directors can be found by visiting <https://nebraskaturfgrass.com/nesfma>.

SFMA believes that all agronomy is local, and its affiliated chapters serve a key role in delivering regional information. Chapters hold many educational events including field days and workshops at which they address relevant, topical issues.

SFMA affiliated its first chapter more than 25 years ago, and it now has 34 chapters throughout the United States that represent more than 6,000 sports turf industry professionals. Visit <https://www.sportsfieldmanagement.org/chapters/> to view all chapter information and find information on how to form your own chapter.

## Customize the SFMA Best Management Practices guide for your facility

As the world becomes increasingly aware of the need for environmental protection, it is essential that every industry plays its part in safeguarding our planet. The sports field management industry is no exception. SFMA recognizes the importance of environmental stewardship in the profession and has released a comprehensive guide

to assist sports field managers in maintaining environmentally friendly practices. SFMA's guide, *Best Management Practices for the Sports Field Manager: A Professional Guide for Sports Field Management* is a crucial tool for any sports field manager seeking to ensure their operations are eco-friendly.



The BMP guide covers a wide range of topics including planning, design and construction; turfgrass establishment; cultural practices such as mowing, nutrient management, irrigation, cultivation and pest management; pesticide management; sustainable landscaping; synthetic turf; maintenance operations; and emergency preparedness. This guide provides a one-stop shop for all sports field managers, whether they are SFMA members or not, to ensure they are following best practices for environmental protection.

One of the key benefits of utilizing this guide is that it enables sports field managers to document their practices and showcase their efforts to legislators, regulators, employers and community constituents. This document serves as a tool to validate the excellent practices already in place and positions sports field managers as strong stewards of the environment.

Additionally, the BMP guide can be customized to meet the specific needs of a region, state or facility. The SFMA provides a customizable template for this purpose that can be accessed by visiting [https://www.sportsfieldmanagement.org/knowledge\\_center/bmps/](https://www.sportsfieldmanagement.org/knowledge_center/bmps/).

## #GroundsWeek

SFMA partnered with the Grounds Management Association (GMA) to support GMA's annual #Groundsweek campaign, which took place from March 20-26. This campaign is designed to celebrate the hard work of grounds teams and their positive impact on sports, and to encourage more people to consider a career in grounds management.

Grounds teams play a vital role in ensuring that sports pitches, courts and other playing surfaces are in top condition, enabling athletes to perform at their best. They also contribute to the safety and enjoyment of sports events by maintaining facilities and ensuring that they are clean and well maintained.

SFMA is looking forward to strengthening its relationship with the GMA during the coming years, collaborating on initiatives that will promote the importance of grounds management in sports and encourage more people to pursue a career in this field. By working together, the SFMA and GMA hope to build a brighter future for grounds management and ensure that athletes and sports fans around the world continue to enjoy the best possible playing conditions.

## SFMA Environmental Facility Certification

SFMA would like to remind its members about the Environmental Facility Certification program, and encourage them to document their environmental





stewardship practices at their facilities. This certification shows that field managers are employing the best environmental management practices at their facilities. As the pressure to adopt environmentally responsible practices increases, certification will show the public that SFMA members

are aware of and utilizing the most up-to-date environmental practices.

The certification program is now in its 3.0 version and includes two new sections for assessment: *Managed Landscape and Open Spaces* and *Synthetic Surfaces*. The certification process involves an electronic assessment, which can be taken from any computer or smart device. Interested members must first fill out their Environmental Facility Certification Report Card Parts I and II electronically and submit it. These forms can be found on the SFMA website.

The program has a \$50 initial fee, which is used to evaluate the answers to determine if the facility qualifies to move to the next step, attesting. If the attester validates that the practices are in place, the facility will be awarded Environmental Facility Certification. The certification is valid for three years. After three years, a simple form needs to be completed that validates the environmental practices are still in place. If the practices are verified, the facility is automatically recertified after the \$50 fee is paid.

To achieve certification, a facility must achieve 80% compliance on each of the 12 sections of the assessment. After the electronic assessment, an attester must be engaged who is a Certified Sports Field Manager (CSFM), an academic or Extension agent. The attester must do a walk-through of the facility with the member to validate

environmental practices. The attester will receive Industry Service Points toward recertification, and the facility will be designated an SFMA Certified Facility for Environmentally Responsible Management if practices are verified.

The Environmental Facility Certification program is an excellent opportunity for SFMA members to show their commitment to the environment. As Zach Holm, CSFM, said, "We felt it was important to show our commitment to the environment." Therefore, interested members should take advantage of this opportunity to showcase their environmental stewardship practices.

To access the assessment tool, go to SFMA's product button at the top of the website, go to page 2 of the shopping cart and at the bottom of the page, you will see Environmental Facility Certification Initial (\$50) and add it to your cart. After payment is received, the member will receive a link to the assessment form. If any questions arise, please contact SFMA headquarters at 800-323-3875. **SFM**

The advertisement for In-Flow Infield Skin Maintenance. It features a large, stylized blue script logo for "Influence" at the top right. Below it, in a smaller blue serif font, is "YOUR INFIELD WITH". The main product name "In-Flow™" is written in a large, bold, blue sans-serif font. Below that, "INFIELD SKIN MAINTENANCE" is written in a smaller, bold, black sans-serif font. To the left of the text is a graphic of a baseball field's infield, showing the green grass and brown dirt. Below the product name, there are three bullet points, each preceded by a blue checkmark: "Optimize playing conditions", "Maintain moisture levels", and "Improve soil profile". At the bottom, there is a logo for "PRECISION LABORATORIES" with a green leaf icon and the tagline "Results. Expect it:". Below the logo is the contact information: "1.800.323.6280 | www.precisionlab.com |" followed by icons for Facebook, Twitter, YouTube, and Instagram.





## JASON BROWN COMPLEX

### CENTRAL REGIONAL SCHOOL DISTRICT, LYNCHBURG, VA.

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





This field should be considered a winner because of how much work it took to get this field to the point it is today. In 2021, the football team practiced late into the fall and the bermudagrass really paid the price. While the ryegrass held up well into the spring soccer season and we thought 2022 would yield a great surface, we instead were met with a great surprise. When we sprayed out the rye in early June, it revealed that we had a winterkill of nearly 30 percent of the bermudagrass on the playing surface. The athletic director of the school even asked if the field would be ready for play in the fall for

football. We told him yes, and I got my head down and went to work. Many hours of hard, dedicated labor were put into this field. Not just to win an award, but just to get it to the point where it would be safe for play. Where the field started and where it is today is a night-and-day difference. I can't thank my boss, Brian Hinkley, and my coworkers enough for the help and encouragement to produce what I believe to be a rather exceptional playing surface this season. I feel like I put my heart and soul into this field this year to make it the best it can be.

– Zachary Horsley, *Sports turf tech III*



**Level and category of submission:** Schools and Parks Football

**Field manager:** Zachary Horsley

**Title:** Sports turf tech III

**Education:** Some college

**Experience:** In 2014, I started at the Liberty University grounds department in campus landscaping. In January 2016, my manager, Brian Hinkley, CSFM, moved me over to the sports turf crew.

I started out in an entry-level role doing various tasks at all of our facilities as needed. In this role I really learned to do nearly all aspects of the job. I found a great passion for sports turf and was sent to the Virginia Turfgrass Short Course in 2017.

In 2018 I was promoted to a lead position over our Division I FBS football program and the football/soccer fields that we manage at Liberty Christian Academy (LCA), adjacent to Liberty University (LU), and that is what I have been doing since.

It has been a great experience being able to manage both NCAA and high school fields. Through learning on my own time, Brian Hinkley, the Sports Field Management Association and my state chapter, the Virginia Turfgrass Short Course with The Virginia Turfgrass Council, the Virginia Certified Fertilizer Applicator program, and getting to learn a lot on my own; I have only worked at one organization but have had a very full career thus far in these seven years. I have been able to work all Division I sports at Liberty and I've definitely found my home in this industry on a natural turf playing surface.

**Original construction:** 2007

**Turfgrass:** The field is comprised of several varieties of bermudagrass that have been brought in over the years for various jobs and purposes based on budget and availability (Latitude 36, Riviera, Patriot and Premier Pro).

**Rootzone:** Clay

**Soil amendments:** Sand/compost

**Drainage:** Perimeter French drain system



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

**Zachary Horsley:** Thank you very much! It was a great exercise and experience. What am I most proud of this win? When I decided that I'd like to enter this field for FOY, I had no idea I was going to lose half my bermudagrass to winterkill. In the middle of growing all that back in, we had an Independence Day event with thousands of people in attendance on the field in the rain that nearly ruined it. I went from trying to win an award to just trying to save the field to offer a safe playing surface on August 1 when football players reported. It was a mad dash to the finish, but thankfully we were able to get it all grown in and provide an exceptional surface for the athletes.

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

**Horsley:** When I first started in the green industry, I was a landscaper. A lifelong Atlanta Braves fan, I knew that Turner Field, back then, didn't just magically appear perfect every day; there were men and women working hard to make that happen. However, the idea of an entire industry specifically designed for working on sports fields never occurred to me. I remember seeing pictures of the Braves grounds crew one day and wishing I could have a job like that.

That's about when my current boss, Brian Hinkley, CSFM, noticed my work on the landscape crew at Liberty University and offered me a position on his sports turf crew. It all kind of clicked at that point, and I was hooked. I started spending every second I could learning about this industry and studying turfgrass. I've never worked in this industry anywhere else. Liberty University has been my only home so far, and a lot of that is a result of the family atmosphere we share on our crew. We spend more time together at work than we do with our own families most of the year, and somehow we've never killed each other, so that's a pretty special bond.





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

**Horsley:** My biggest mentor has been Brian Hinkley. He's always supported my efforts, and has given me autonomy to take the reins (at times even at the expense of failure). So many of the practices in this industry are learned through trial and error, and he's been great about letting me learn that way, then talking me through it later on.

There have also been several people in this industry who have been mentors to me from afar. Through social media, sitting under their teaching in school, a seminar or a quick meeting at a trade show. So many have taught me so much, and I've benefited greatly from it.

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

**Horsley:** The biggest challenges I experienced with the field all stemmed from the events I mentioned earlier; the winterkill and the Independence Day event made it nearly impossible. I think the hardest thing for me was having to change up what I was used to doing agronomically to do what was best for the turf. When I sprayed out the ryegrass in June there was maybe 50-60% bermudagrass coverage...maybe. So instead of "beating up" my bermudagrass last summer, I was out there babying it, trying to encourage any growth I could get without removing any plant material that might grow a shoot of grass. I don't know how many







bermudagrass plugs I put in last summer taken from my practice field, but I can tell you it was a lot. The biggest thing that helped us was the weather. It was a bermudagrass summer here in the Commonwealth, and I was grateful for it.

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

**Horsley:** I've benefited greatly from being an SFMA member. The education from the magazine, the networking and industry updates from the conferences, the people. It's fantastic. SFMA is truly a special organization, and my career is further along because of it. Everyone in this industry is there to help. Very rarely do you find someone who's not willing to help another sports field manager. Like I said earlier about my mentors from afar, they're my heroes in this industry and I've had the opportunity to have relationships with a few of them. How many of your heroes do you typically get to know somewhat personally? In SFMA, it can be quite a few. **SFM**



## JOHN MASCARO'S PHOTO QUIZ



### CAN YOU IDENTIFY THIS TURFGRASS PROBLEM?

**PROBLEM:**

Squares of worn turf

**TURFGRASS AREA:**

High school multipurpose field

**LOCATION:**

New Jersey

**TURFGRASS VARIETY:**

Kentucky bluegrass, perennial rye and tall fescue mix

*Answer on page 33*

*John Mascaro is president of Turf-Tec International*



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# Creating a Safety Audit



*ASBA 2022 Outstanding Sports Facility Award Winner. Photo courtesy of Activitas Inc.*

**By Mary Helen Sprecher**

It is easy to look at a flat field and believe it is safe. Unfortunately, it is not until accidents, injuries and emergencies occur that problems become glaringly evident. That is why it is essential to do a safety audit on your facility on a regular basis, and to remain vigilant.

Safety audits can be performed by you or by your staff. Over time, it may be helpful to create a checklist or other document that is specific to your facility, noting areas that have been examined and problems that have been noted. Get started by using this article, expand upon it and personalizing its points to fit your needs.

An essential part of your contacts when it comes to your safety audit is your specialty sports contractor, the person who built your field and/or your running track. By maintaining an open dialogue with these professionals, it will be possible to correct problems before they become accidents or injuries.

And sometimes, when it comes to fields, it's the most easily overlooked things that can cause problems.

"Something essential is having the proper safety zones and/or runouts, defined as the areas outside the game lines of a particular sport," said Paul Arcella of CSR Heavy & Athletic in Deerfield Beach, Fla. "Oftentimes, fences, bleachers or viewing areas are designed too close to the game lines of a sport, which can cause injuries when athletes run out of bounds and into fencing, videographers, photographers and spectators."

It's not just a youth-level problem. The NFL Players Association (NFLPA) recently voiced concern about the number of non-athlete personnel – including trainers, officials, media, cheer teams and others – on the sidelines of games, and noted that players running out of bounds have collided with all of these individuals.

The fence surrounding a sports facility should also be built so as to minimize the possibility of injury.

"I think one of the most glaring things we find is the





**ASBA 2022 Outstanding Sports Facility Award Winner.**  
Photo courtesy of SCG Fields LLC

fact that the perimeter fence has the fabric on the wrong side of the framework,” said Sam Fisher of Fisher Tracks in Boone, Iowa. “It is almost always hung with the fabric facing the spectators. It should be hung on the track side of the framework. There have been some very severe injuries where a hurdle has hit a fence post and come back at the athlete as well as the athlete that has tripped and tangled up with a fence post. The fabric being on the track side helps mitigate the potential severity of an injury.”

And that, said Arcella, is one of many reasons schools should work with an experienced sports contractor who understands what he calls, “the nuances of sports facility design and construction.”

Something else to consider, added Todd Smith, Ph.D., PE, LEED AP of R&R Engineers-Surveyors, Inc. in Denver, Colo., is the method of grooming baseball and softball fields.

“For the infields, the main mistake is not doing a little maintenance each day or each time the field is used. The second-most often made mistake, in my experience, is always dragging from the center in a spiral to the outside to avoid equipment tracks if they end in the center. This is the number-one cause of what is called the “infield lip,” which is when the infield mix is deposited into the first two to three feet of the outfield edge. This raises the rootzone and the grass grows through it. Then it gets raised again, the grass goes through it again.”

That lip not only creates a dam that impedes drainage, it can cause a ball that has hit the ground and begun to roll to spike back up. (If a player is chasing it, that flying ball can cause injury.)

Also in baseball and softball facilities, netting to contain batted balls is a concern; check with the governing body for the appropriate level of play your facility is hosting and make sure you are in compliance.



**ASBA 2022 Outstanding Sports Facility Award Winner.**  
Photo courtesy of Byrne & Jones Sports Construction

### **FACILITY WALK-THROUGH**

Start your audit by walking your field. This is going to be your chance to get up close and personal with the surface and to see any problems in the making.

John Schedler of Baraka Sport in Fort Worth, Texas, said that early inspections, done regularly, can keep minor problems from worsening. Nothing, he added, improves with inattention.

“I’ve seen many surfaces that were left without any repair, advice or attention for way too long. This typically accelerates the age, and early replacement is more likely. Repairs become more invasive, time consuming and costly if left unattended for too long.”

In order to improve your recordkeeping, bring these three things when doing your facility audit:

- Your phone or tablet to take pictures of any areas of concern (don’t turn the audit into screen time, though, or you stand to miss potential problems in the making).

- A notepad to write down any questions, concerns or problems (or you can use the note app of your phone or tablet for this purpose).

- Something easy to carry that will allow you to temporarily mark problem areas on the field or track until you can address them (or have them addressed by your builder). Some builders advise using small plastic cones or temporary flags that can be collected later.

As you travel the field, look for areas of concern; these might include sections where the field is skinned, worn, dry or rutted. Muddy areas or those with pooling water could indicate a problem with drainage that needs to be addressed.

“If you’re looking at tracks, keep an eye out for delamination, especially in high-wear or stress areas,” said Schedler. “If you’re walking across a synthetic





ASBA 2022 Outstanding Sports Facility Award Winner. Photo courtesy of Verde Design Inc.



ASBA 2022 Outstanding Sports Facility Award Winner. Photo courtesy of Gale Associates Inc.

field, look for visible seams, planarity issues, which will take the form of wavy lines. Other things to look for are slow drainage, contamination (dust, sand, dirt, organics usually from the surrounding landscape) loose fibers, weeds, grasses, discoloration and uneven infill levels.”

If checking a natural field, this is also a good time to check for signs of pests such as moles, voles, groundhogs or gophers whose tunnels or burrows could create instability in the soil, or worse, create a hole an athlete might step into in the midst of a game.

While you are on the field, check goals and/or field events that are there. Everything should be safe, secure and in good working order.

#### **FENCE AND GATE INSPECTION**

Check your fences; look for rails that might be loose, posts that lean or chain link fabric that is broken, bent or rusted and likely to cause an injury. If the tops of posts are padded (many baseball and softball fields have this feature to protect athletes who want to attempt challenging catches), ascertain that all padding





**ASBA 2022 Outstanding Sports Facility Award Winner.** Photo courtesy of GeoSurfaces Inc.

is snug and unlikely to move when an athlete comes into contact with it. Check gates and make sure they swing cleanly and, if applicable, can be closed and locked when the facility is not in use.

#### **CHECK-UP OF ACCESSORIES AND AMENITIES**

Bleachers, whether folding, portable or stationary, should be solid and safe. Check seats and steps, as well as handrails, and make sure nothing is loose. If there are dugouts or team seating areas, examine those as well. Lighting systems should be working, not just on the field but in any pedestrian areas.

#### **SAFETY IS A PROCESS, NOT AN EVENT**

The safety audit is an essential tool when it comes to identifying problems in the facility and correcting them before they result in injuries; however, it does not take the place of ongoing awareness. Sports surfaces and equipment should be evaluated

throughout the competition since conditions can change quickly, depending upon the weather, the sport and the level of play. **SFM**

Mary Helen Sprecher wrote this article on behalf of the American Sports Builders Association (ASBA), 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.

Full information on athletic facility design and construction, as well as other resources, can be accessed by contacting the ASBA. Two publications, *Sports Fields: A Construction and Maintenance Manual*, and *Running Tracks: A Construction and Maintenance Manual*, may be of use in designing and building facilities that can, when maintained correctly, provide years of safe enjoyment. More information is available at [www.sportsbuilders.org](http://www.sportsbuilders.org).



# Putting Your Turf Through Spring Training



**EDITOR'S NOTE:** Article provided by SiteOne Landscape Supply.

Ensure your sports field management is ready for the spring season. Review this seasonal checklist for a comprehensive breakdown of the most important tasks to complete at the right time.

## APRIL

Yearly soil testing should be performed to determine nutrient balance and pH levels of soil. Before adding nutrients to soil, conduct a soil test. You can determine nitrogen, phosphorus, potassium and other nutrient levels. Use the results to see if your soil is balanced or if you need to add any minerals. After correcting any imbalance, then you can begin your turf nutrition maintenance plan. If the soil test reads a pH of 7.5 or above, the soil is alkaline and can be treated with sulfur.

If the test shows a pH below 6.8, the soil is acidic, and you should add a product like limestone to neutralize.

As turf recovers from dormant period, aerate the field thoroughly. After constant use, fields will become compacted. Aerating gives the turf better uptake of nutrients, water and air. You should aerate fields a minimum of three times a year but can aerate as often as every 10-14 days during heavy use. Be sure to use an aerator with hollow tines that remove the soil core. For athletic fields the core should be 3/4" to 1" in diameter. Heavy aeration (six to eight passes) should occur in the spring before overseeding and fertilization. Drag the field after spring aeration with a steel drag mat to break up the cores and redistribute them back into the soil profile.

Apply a preemergent herbicide to control broadleaf weeds before they have a chance to spread. Be careful not to adversely affect the turfgrass.



Reseed bare patches from fall season with appropriate turfgrass seed mixture. Reseeding is particularly helpful on fields that have large bare areas, such as American football fields or soccer and lacrosse fields in front of the goals. Till the area, then fill in low spots with topsoil, and level. Adjust the soil pH as needed. Using soil test findings, apply fertilizer with the nutrients the soil needs most. Re-till and finish-grade the area. Be sure to reseed with turf similar to what's already in place. Seed with a broadcast spreader or by hydroseeding. If a broadcast spreader is used, lightly rake seed into 1/4" of soil and firm with a roller.

## MAY

Begin maintenance fertilization. Choose your fertilizer based on the soil test results and your agronomic conditions. Consider a fertilizer with slow-release technology for controlled feeding of nitrogen over time. Apply herbicide to control broadleaf weeds. Repair low spots. For infields, this can be done with raking or dragging.

## JUNE

Fertilize and irrigate as needed. Use of hydroscopic humectants can help minimize the effects of "summer stress" heat and drought.

Consider using a moisture manager. Few geographies get the proper amount of moisture needed. An effective irrigation system will depend on the field's setup and can range from an in-ground pop-up system to hoses and sprinklers. Strive to deliver 1-1/2" of water over the field every four to five days under drought conditions.

Apply herbicide to control broadleaf weeds as needed. Do initial seeding/sprigging of new fields in southern areas. Sprigging is the process of planting turf stems instead of seeds, which can accelerate the growing process. This can be accomplished when the soil temperature allows growth. Prepare the soil the same way as you would while seeding. Fumigate the soil to eliminate any pests and weeds, then plant the turfgrass sprigs at a rate of three to five bushels per 1,000 sq. ft. Finish by packing them into the soil with a sprig planter or cultipacker. **SFM**



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# College and University Turfgrass Programs

**EDITOR'S NOTE:** The following is next in our series delving into colleges and universities that offer programs devoted to turfgrass management, turfgrass science, and related disciplines. In this series, we profile colleges and universities through conversations with key players at major institutions, as we discuss their programs and provide insight into the industry education that is available to the next generation of sports field managers.

In this issue of SportsField Management, we examine the turfgrass programs at University of Maryland and Penn State University.

## UNIVERSITY OF MARYLAND

The University of Maryland (UMD) offers a four-year bachelor's degree, as well as a two-year program through the Institute of Applied Agriculture (IAA) in the College of Agriculture and Natural Resources.

The four-year Plant Sciences degree with a concentration on Turf and Golf Course Management combines science courses with applied technical classes to prepare students for careers in the field. The goal at UMD is to research and advance integrated pest management strategies that reduce water, fertilizer and pesticide inputs while promoting healthy and environmentally beneficial turfgrass stands.



The two-year IAA program features three tracks – sports turf management, golf course management, and general turfgrass management.

According to Geoffrey Rinehart, lecturer, Turfgrass Management, IAA, University of Maryland, enrollment between the two- and four-year programs is currently in the low teens.

“The majority of our students are from Maryland, but we get a good mix of students who just graduated from high school and students who have been working in the industry for a few years,” said Rinehart.

As for the three tracks in the IAA program, the general turfgrass track isn't as academically rigorous, because there are more electives, said Rinehart.

“I think that was originally established for those who wanted to go into landscape management and build their own business. But I use that for students who maybe went to another college and already have 15 or 20 credits and a lot of those transfer since they have a lot of electives.”

Rinehart added that the sports turf management and golf course management tracks don't have a lot of electives, so a lot of those credits don't transfer. Also, there is not much delineation between the sports turf and golf tracks, as students in those two tracks take many of the same courses.

“Obviously, with sports turf, you're dealing with infield mixes and some other unique things that golf course managers don't have to worry about,” he said.







Otherwise, the freshman and sophomore course schedules in the two-year program are very similar.

The two-year program at University of Maryland is an academic certificate program.

"What we offer is closer to an associate degree," said Rinehart. "But it's the law in Maryland that a four-year institution cannot offer an associate degree. So people go to community colleges in the area and get their associate degree, but you can't get that at the University of Maryland."

According to Rinehart, the University of Maryland Turf Management program is hands on and very lab and field oriented. "We feel like that's a great benefit for our students."

Rinehart added that students go into the field to isolate pathogens and look at them under the microscope.

"We walk around the turf research farm and look at different plant diseases. For my advanced turf management program, we're currently doing sand labs where we do tests and look at physical characteristics for different sands."

Rinehart added that there are also opportunities for students to work with the varsity athletics department. "We have a wonderful relationship with the athletic department," said Rinehart. "I talk to Alex Steinman, the head groundskeeper, every week. I had a golf student work for him just to broaden his horizons. I think that's beneficial for golf students just so they can work with infield mixes since they don't have that in golf."

According to Rinehart, students get to do surveying work, an HDPE lab, build small-zone irrigation, and partake in field trips. The University of Maryland is within a half hour of five professional stadiums.

"We have Camden Yards and M&T Bank Stadium in Baltimore, and FedEx Field, Nationals Park and Audi Field in the D.C. area," said Rinehart. "It's nice when those field managers want to have the students out there. We can make that decision on the fly."

Added Rinehart, "We're pretty proud of our internship program. Most of our students are golf, but we've had students intern at some pretty prominent places. We've had people go to high-level professional stadiums and top-200 clubs. There are wonderful opportunities nationwide. You can pretty much write your own ticket as an intern."

When it comes to attracting high school students to the program, the area near University of Maryland is fairly urban, but Rinehart said the IAA has relationships with rural high schools that have agriculture departments. He pitches high school teachers on the idea of a field trip to the university turfgrass farm to show the high school students how STEM applies to turfgrass management. The field trip has various stations, different grasses, mowers and more, and students are able to collect data and learn about the program and careers in turfgrass management. They also have a chance to visit the athletic fields and facilities on campus.

According to Rinehart, field trips are a great way to show high school students that they can be involved with elite-level sports even if they are not playing.

Rinehart said he is proud of the students in his program. "We've done well with the Student Challenge and the GCSAA Golf Turf Bowl," he said. "We've held our own in these national competitions."

For more information about the UMD Plant Sciences bachelor's degree program, visit <https://psla.umd.edu/undergraduate/plant-sciences>.

For more information about the UMD Institute of Applied Agriculture two-year program, visit <https://iaa.umd.edu/undergraduate/sports-turf-management>.



## PENN STATE UNIVERSITY

Penn State offers turfgrass certificate and degree options both in person and online.

“We have two in-person resident programs,” said Dianne Petrunak, academic adviser, Turfgrass Science, Penn State. “We have the golf course management certificate program, which is the oldest of all the Penn State programs. It is colloquially known as the two-year program. They come here for four eight-week semesters, and then they have six-month internship between the first year and the second year. We also have our four-year resident bachelor’s degree program.”

Petrunak added that the resident four-year program is primarily students coming to Penn State straight out of high school.

Penn State also offers five different online turfgrass certificates and degrees through its World Campus. The online format provides the flexibility to balance work and family responsibilities while pursuing a high-quality education.

According to Petrunak, the online programs are primarily aimed at returning adults.

Said Petrunak, “We have a basic certificate program that is 15 credits; we have an advanced certificate program that is 30 credits; we have an associate degree that is 60 credits; and we have a bachelor’s degree – which is pretty much identical to the resident bachelor’s degree – that is 120 credits. If you get the bachelor’s degree online, the diploma looks the same as the resident program.

“We also have a 30-credit Master of Professional Studies (MPS), which is geared toward people who have a fair amount of experience in the industry and are looking at positions like head of grounds, general manager, etc.,” she added. “It is generally to combine the business and







turf side of things. It is different from a resident Master of Science degree, because with the online MPS there is no research involved and it is a terminal degree that isn't used to go on and get a Ph.D."

According to Petrunak, Penn State's online undergraduate programs are designed to build upon one another. For example, students who complete the advanced certificate can go on to get a degree because the credits from the certificate program can be rolled into the degree program.

"People who have never been to college or for which it has been a long time since they've been in college will often start off in one of the certificate programs," said Petrunak. "For some, that is enough, but other people will decide to go on and get either the associate or bachelor's degree."

Penn State's online undergraduate programs – apart from the basic certificate – requires an internship for credit.

"We allow the students to do the internship for credit at their place of employment if they are employed in the turf industry," said Petrunak. "We know it is unrealistic for people who are working and have a family commitment to be able to leave their job, family and home for three months to go do an internship."

Also, the online courses are taught by the same professors who teach the resident courses. Some professors record their in-person lectures, while others do separate recordings for the online classes. The online courses also feature reading materials, videos and some online/simulated labs. Students can interact with other World Campus students via online bulletin boards.

According to Petrunak, Penn State has 70 to 80 resident students in its bachelor's degree program, but another 350 to 400 students in its online World Campus (across all five online programs).

Another advantage of offering an online degree program is that resident students have the flexibility to complete their degree online.

"If students get a job offer, and it is a job they don't want to turn down, they can take that job and finish the rest of their courses online," said Petrunak. "So they can still get their degree, but also take advantage of a job opportunity. It's nice because they don't need to stay here for another semester or another year, which is really advantageous to our resident students."

Penn State also has a turf club that meets once per week during the semester. The club often hosts guest speakers from the golf and sports turf markets, allowing students to interact with industry experts.

When it comes to attracting students to its four-year resident program, Penn State brings in high school groups, is involved with FFA's turf program, interacts with vocational agriculture teachers to encourage involvement and also hosts rising high school seniors through the Pennsylvania School for Excellence in Agricultural Sciences program. Petrunak also meets with high school students who attend the "spend a day at Penn State" program during the summer.

Said Petrunak, "When I ask students what got them interested in turf, some will say 'I like to play golf.' But a lot of times, one of the first things they say is 'I want to be outside. I don't want to be in an office.' If they have worked at a golf course they will often say, 'I like being able to do different things. It's not the same thing every day.'

"There are so many job opportunities right now," she added. "Of the students we have graduating in May, they all have jobs already. A lot of them have had jobs for months now."

According to Petrunak, the benefit Penn State offers its turfgrass students is the breadth of available programs.

"There is something that is suitable for anybody," she said.

For more information about Penn State's resident program and the Turfgrass Science major, visit <https://agsci.psu.edu/academics/undergraduate/majors/turfgrass-science>.

For information about the online certificate and degree programs available through the Penn State World Campus, visit <https://www.worldcampus.psu.edu/degrees-and-certificates/topics/turfgrass>. **SFM**

*SportsField Management magazine will detail other college and university turfgrass programs in coming issues. If you would like your school profiled, please contact John Kmitta at [jkmitta@epgacceleration.com](mailto:jkmitta@epgacceleration.com) or 763-383-4405.*

# Synthetic Turf Best Management Practices

*The following maintenance operations best management practices are excerpted from SFMA's National BMP guide, Best Management Practices for the Sports Field Manager: A Professional Guide for Sports Field Management. The full guide, as well as a customizable BMP template, is available at [https://www.sportsfieldmanagement.org/knowledge\\_center/bmps/](https://www.sportsfieldmanagement.org/knowledge_center/bmps/)*

Synthetic turf fields can be played on essentially 24 hours a day, seven days a week, in conjunction with an appropriate field maintenance plan. They are beneficial when natural grass fields need time to recuperate after heavy use or are saturated from heavy precipitation events.

Synthetic turf fields require maintenance practices that differ from natural grass management. If a facility has both natural grass and synthetic turf fields, proper maintenance equipment will be needed to meet the needs of each type of field. Sports field managers should be well acquainted with the specifications of the synthetic turf to ensure it performs and is maintained appropriately.

## REGULATORY ISSUES

Stormwater management requirements and drainage issues require consultation with local regulatory authorities. Drainage regulatory requirements for

a synthetic turf field vary from one jurisdiction to another and will depend in part on whether the synthetic turf field is considered a pervious or impervious surface. The ASBA publication *Sports Fields: A Construction and Maintenance Manual* includes the following information on different regulatory scenarios:

- In some parts of the country, permitting authorities consider synthetic turf fields to be impervious, like asphalt. Therefore, perimeter drainage must be designed to collect and handle all water, including anything falling on the field itself.

- In some jurisdictions, synthetic turf will be considered porous, and the base and compacted subgrade will be required to handle a specific amount of precipitation.

- Some jurisdictions require the drainage plan handle a specific amount of stormwater, i.e., the 10-year average precipitation, two years total precipitation or even the precipitation caused by a 100-year storm.

Other issues that may arise during the permitting process include concerns related to the following: exposure to infill materials (e.g., crumb rubber); potential leaching of chemicals to the environment; and disposal of synthetic turf components at the end of their life cycle. Crumb rubber is recycled rubber produced from scrap tires. The rubber contains a range of organic contaminants and heavy metals that can volatilize into the air and/or leach into the ground, posing a potential risk to the environment and human health. A limited number of studies have shown that the concentrations of volatile and semivolatile organic compounds in the air above synthetic turf fields are typically not higher than ambient concentrations, while the concentrations of heavy metals and organic contaminants in the field drainage is generally below regulatory limits (Cheng et al, 2014). Human health risk assessments indicate that athletes playing on synthetic turf fields with crumb rubber infill do not face any health risks (Pronk et al., 2020) and that exposure to the components of crumb rubber do not exceed EPA guidelines (Perkins et al.,



*Synthetic turf installation. Photo by B. Polimer.*



2019). With respect to any disposal limitations, the sports field manager should review any local ordinances and monitor any statewide restrictions.

## PLANNING AND DESIGN

A number of people are involved in the selection process for determining the best installer and manufacturer for a new synthetic turf field. The sports field manager should be part of the team and should be aware of all the data needed to understand the synthetic materials, the warranty, etc. The use of design professionals and certified builders with demonstrated expertise and success in the development of synthetic turf systems is highly recommended and will increase the likelihood of a successful project.

Many of the same planning and design principles for natural grass fields are relevant for the planning and design of a synthetic turf field. In addition, when considering installing a synthetic turf system, several selection criteria should be discussed by the project team, such as:

- Who is the end user of the field (professional, college, high school, parks and recreation) and what are the needs?
- What is the climate where the field will be located (tropical, arid, temperate, etc.)?
- Is the proposed site appropriate for a synthetic turf field (i.e., not a floodplain)?
- Is the installation of a synthetic turf field financially feasible?
- Is the selection of a synthetic field cost effective for the intended use with respect to installation, maintenance, and eventual disposal?
- Are the maintenance requirements described in the warranty understood, and can they be followed?
- Is there a program/budget for replacing the synthetic field at the end of its life?
- Is there an understanding of the life cycle of different components (e.g., pads, drainage, infill) and options for recycling, reusing, or repurposing these components?

## BASE SYSTEM

The stone base of a synthetic turf system is critical to the overall performance, drainage capabilities, long-term surface stability and planarity of a synthetic turf field. The components of a standard base system include the following:

- Native sub-grade soil
- Proper soil stabilization
- Base stone and finish stone
- Stone/soil interface



Installing curb drainage. Photo by B. Polimer.

- Drainage pipes
- Peripheral drainage elements
- Drainage and shock attenuation pads

Designing and building a stone base must balance the maintenance of the base's stability at an optimal level while preserving the whole system's percolation and water transmission properties.

## DRAINAGE

A synthetic turf drainage system encompasses the synthetic turf fibers and infill, base, drainage water evacuation system and, ultimately, the municipality's stormwater/runoff collection points. The ASBA publication *Sports Fields: A Construction and Maintenance Manual* includes the following considerations for evaluating drainage system design:

- Specific use or uses of the field
- Local climate
- Availability and cost of materials
- Quality and characteristics of local stone
- Financial resources and commitment of the owner
- Time constraints for field construction
- Annual amount and intensity of rainfall
- Local codes and regulations regarding stormwater management

The drainage design specifies pipe diameters or the sizes of flat drains, locations and distances of laterals, collection systems, and storm sewer tie-ins for the drainage system.

Once constructed, an infiltration test should be conducted to verify that the entire system meets STC minimum infiltration rate standards of 14" per hour.

[An estimate of the amount of water the field needs to handle can be made using the following formula: Length of the field (in feet) x width of the field (in feet) x 0.623 gallons = gallons of water produced by 1 inch of rainfall (Source: *Sports Fields: A Construction and Maintenance Manual*).]

### **SURFACE DRAINAGE**

Surface grading is critical in the design of a synthetic turf surface. Typically, crowns can be kept at a minimum (not exceeding 1% slope, depending upon site conditions and needs), as drainage relies more on percolation than it does on surface runoff. A crown of 0.5% is found on many, if not most, professional synthetic turf sports fields (Goatley, 2008). It is also preferable to maintain relatively mild crowns so that there is as little lateral displacement as possible of the synthetic turf infill during intense rain events.

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**During clear, sunny conditions, it is suggested that sports field managers, coaches and trainers monitor heat index and surface temperatures and make appropriate adjustments to practice and game schedules.**

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### **SYNTHETIC TURF FIELD INSTALLATION**

When a synthetic turf field is selected, it must be installed by experienced professionals specializing in synthetic turf field construction. It is highly recommended that the contractor be certified through the American Sports Builders Association as a CFB and that they reference the STC technical guidelines for installation and maintenance of synthetic turf athletic fields.

### **SYNTHETIC TURF MAINTENANCE**

The maintenance program for synthetic turf depends on the climate, amount of use, the level and kind of sports played, the type of synthetic turf, and the quality of construction. The Synthetic Turf Council (STC) publishes *Guidelines for Maintenance of Infilled Synthetic Turf Sports Fields*, which augment, but do not replace, the maintenance requirements and procedures provided in the warranty for the field and installation. Manufacturers' specific recommendations for maintenance should always be followed to avoid invalidating the warranty. However, typical maintenance activities could include:

- Checking and replenishing the infill level, especially in high-use areas.
- Sweeping and dragging to keep the carpet fibers in an upright position.

- Troubleshooting for common problems and minor repairs, such as seam repair.
- Grooming to loosen and redistribute infill as needed.
- Walking the field and noting any loose fibers, seam issues, divots, and uniformity in the carpet.
- Removing debris.
- Cleaning with solvents and cleansers for difficult to remove items.

### **WEED CONTROL**

Weeds can occur on synthetic turf, as windblown dust can foster their growth. Organic infills have more issues with weed control than does rubber. When weeds occur on synthetic turf, sports field managers should refer to the manufacturer of the synthetic turf system for appropriate methods of weed control.

### **WINTER MAINTENANCE**

Like natural grass fields, synthetic turf systems can freeze during the winter. When the surface is frozen, play should be delayed until it thaws. For synthetic turf fields, snow can be removed in accordance with the manufacturer's warranty.

### **FIELD SAFETY**

#### **FIELD SURFACE TEMPERATURES**

High field-surface temperatures may be experienced by athletes using synthetic turf fields on clear, sunny, and hot days. One study published by Penn State has shown maximum surface temperatures during hot, sunny conditions averaging from 140°F to 170°F (Serensits et al., 2011). In comparison, natural grass fields rarely exhibit surface temperatures above 85°F, regardless of air temperature.

Dangerous temperatures occur at the surface, which can increase the chances for heat related stress in athletes. Synthetic turf fibers radiate heat, which can be transferred through an athlete's foot and must be dissipated by the body. While watering the field cools the synthetic turf surface, temperatures rebound often as quickly as 20 minutes after water is applied. Therefore, application of water is deemed an ineffective method of cooling. Various alterations in the synthetic system, such as organic infills, have been tried to ameliorate surface temperatures. Most only lower surface temperatures by approximately 10°F to 20°F, and surface temperatures will remain significantly higher than natural grass fields when exposed to direct sunlight. Though synthetic turf fields heat up



quickly under clear, hot, sunny conditions, the fields do not act as a heat sink. While the surface can have very high temperatures, the air temperatures measured two and five feet above the surface are typically only 5°F to 10°F higher than ambient air temperatures. Heat is not stored because synthetic turf fibers reflect solar radiation and the infill acts as insulation limiting transfer of heat into the system. Therefore, at night or under cloud cover, surface temperatures quickly approach the ambient temperature.

During clear, sunny conditions, it is suggested that sports field managers, coaches and trainers monitor heat index and surface temperatures and make appropriate adjustments to practice and game schedules. It is strongly recommended to use an infrared thermometer to easily monitor surface temperatures.

### FIELD HARDNESS

The hardness of a surface has been identified by numerous entities as an important parameter of athletic surfaces. Gmax testing, also known as impact testing,

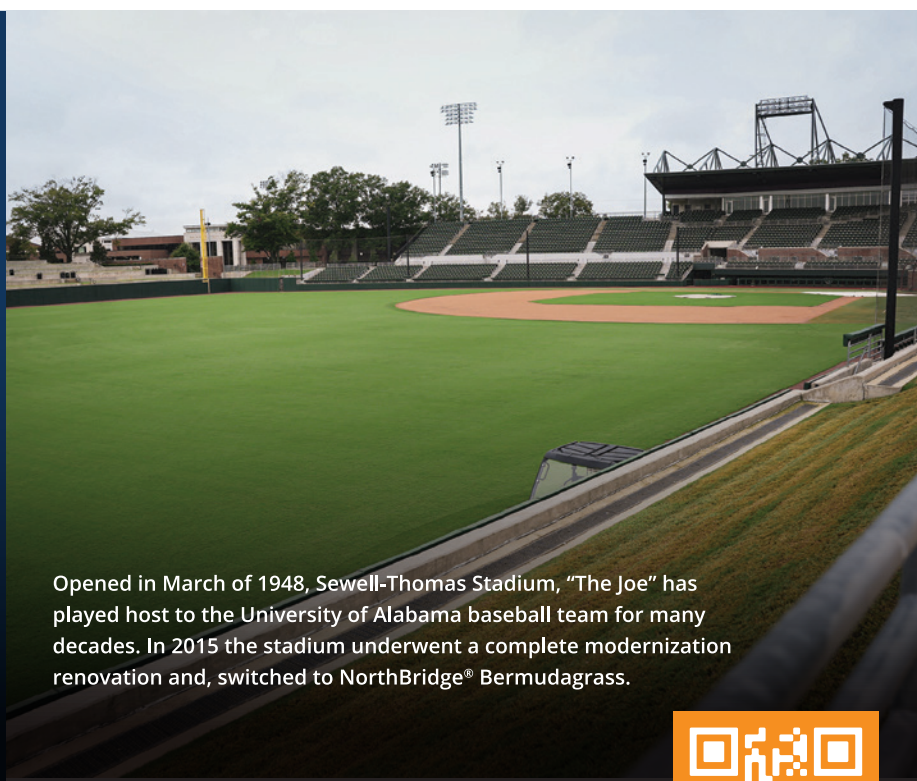
measures the shock attenuation of both synthetic turf and natural turfgrass athletic fields. Surface hardness is measured by dropping a weight (referred to as a missile) from a fixed height onto the playing surface. The missile contains an accelerometer that measures how fast the missile stops once it hits the surface. A numerical value, referred to as Gmax, is then generated. A high Gmax value indicates the missile stopped quickly and the surface is harder than a surface with a lower Gmax. Harder surfaces may influence athlete injury. Gmax should be tested at numerous locations across the field, with special attention being paid to high-use locations, such as mid-field areas and goalmouths. At a minimum, testing should occur yearly, but more frequent testing is desirable as field conditions may vary throughout a season.

Various measuring techniques have been developed to evaluate playing surface hardness. ASTM International has designated the ASTM F355 Missile A device in ASTM F1936-19, Standard Specification for Impact Attenuation of Turf Playing Systems as Measured

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in the Field. ASTM F1936 states that the maximum limit for a playing surface is 200 Gmax using Missile A. According to ASTM, values of 200 Gmax and above are values at which life-threatening head injuries may be expected to occur. STC recommends Gmax not exceed 165 Gmax for the life of the field when using the F355 Missile A device.

The National Football League uses the F355 Missile D device, typically referred to as the Clegg Impact Tester (ASTM F1702). If any location on the field measures above 100 Gmax using the Clegg, steps must be taken to reduce

surface hardness and the field must be re-tested prior to use.

World Rugby uses the F355 Missile E device to measure head injury criterium (HIC) on synthetic turf. To meet World Rugby standards, a synthetic turf field must measure below 1,000 HIC from a 1.3 m drop height.

Typically, the most effective way to mitigate surface hardness issues is the application of additional infill (i.e., crumb rubber) via topdressing and grooming. Infill depth should be regularly monitored to maintain the manufacturer's suggested minimal depth. **SFM**



Larry H. Miller Field at Brigham Young University. Photo by John Kmitta.



# JOHN MASCARO'S PHOTO QUIZ



## ANSWER

*From page 17*

Well, as you might have guessed, these squares are manmade, as grass never dies in a straight line or in square shapes. These squares were a result of the "ladder drill" where players line up and proceed through a conga line to stomp the turf to death while wearing cleats. As with many high school coaches, instead of moving wear around the field to minimize damage, the coach chose to repeat the drill in the same spot for a couple subsequent days to make sure the players got it correct. At least this coach chose an area off the sideline instead of using the playing surface to perform this activity. Perhaps we should add a warning sticker on these ladders asking coaches to use caution, or their heads, when setting up the drill.

**Photo submitted by Bradley Park, sports turf research and education coordinator at Rutgers University, New Brunswick, N.J.**

*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](mailto: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.

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# Stay Safe as You Gear Up for the Spring Season

As the weather grows warmer, remember to instill safe operating practices among your employees.

“Think safety first,” said Kris Kiser, president and CEO of the Outdoor Power Equipment Institute (OPEI). “I can’t stress enough the importance of your employees, seasonal help and H2-B workers understanding and following manufacturer’s guidance for safe operation, especially mowers.”

OPEI offers the following tips to get your crews and their equipment ready for a safe season:

- Identify the differences in your machines. Whether you’re using a zero-turn, ride-on, mid-mount, rear-mount or other type of mower, make sure you and your crewmembers understand their unique design, requirements, weight classification and other differences that impact how to use it safely.
- Review equipment with your crews before the season gets rolling. Make sure all your workers understand the safety features of the equipment they are using, and that they are following manufacturer guidelines and on-product messages for safe operation. Do spot safety checks and incorporate safety checks into your morning roll-out.
- Make sure safety features are operable. Figure out the safety features on all your equipment, and make sure they are operable. Do not disable or modify manufacturer-installed safety equipment. Be sure that you review this with your crew and check equipment.
- Be aware of your surroundings and watch out for bystanders who may be nearby.
- Walk the areas you intend to mow and remind crews to do so. Slopes, wet grass and weather may impact the equipment’s performance, as well as safe handling procedures. Remind everyone to pick up sticks and limbs that may have fallen to the ground and any loose objects that could be hit by a mower. Identify slopes in advance. Follow all manufacturer guidance regarding operating machinery on slopes.
- Manufacturer-supplied owner’s manuals and guidance should be readily available. If you have lost the guidance supplied with the machine, look it up online and save a copy of it on your computer,



print out a copy, in any language needed, for your employees and keep it in an easily accessible location. Do not remove on-product safety messages.

- Look over equipment before use. Check the air filter, oil level and gasoline tank. Watch for loose belts and missing or damaged parts. Replace any parts needed or take your equipment to a qualified service representative. Check to be sure that you have the appropriate, manufacturer-recommended batteries, if needed.
- Protect your power. Use only E10 or less fuel in gasoline-powered outdoor power equipment if it is not designed for higher ethanol blends. Add a fuel stabilizer if you don’t use up all the fuel in the tank right away. Burn off any fuel before storing the mower more than 30 days.
- Also, for battery-powered equipment, only use battery packs specified by the manufacturer. Follow all charging instructions as outlined in the owner’s manual. Be sure to store fuel and batteries safely. Keep batteries away from other metal objects, store them in a climate-controlled area, and never stack batteries.
- Keep your equipment clean. It will run more efficiently and last longer. Always remove dirt, oil or grass before using and storing, and store equipment in a dry place, avoiding damp or wet environments. **SFM**

*Article provided by OPEI. For information on safe fueling, visit [www.LookBeforeYouPump.com](http://www.LookBeforeYouPump.com). For more safety information visit [www.opei.org](http://www.opei.org).*



## Landmaster unveils AMP series of electric UTVs

Landmaster unveiled its new lineup of lithium-ion UTVs, called the AMP.

The AMP delivers more torque, higher towing and hauling capacities, an ultra-quiet motor, and is built on the plush, capable Landmaster proprietary suspension system.

The AMP is available in two- and four-passenger options, in both 2WD and 4WD platforms. For the commercial user, there are several accessories and vehicle options to match your requirements.

"There are so many different applications for the AMP such as property maintenance, municipal use, groundskeeping, universities, sporting venues, residential use, farming and lake/neighborhood communities," said Jeff Bannister, president of Landmaster. "We had to put out a lineup that could accommodate all of these applications and more. The AMP does just that."

### Key features

- Quiet, quick, easy to drive
- 2WD and 4WD options
- High-torque motor (designed for 4x4 applications and hill climbing)
- Automatic 4WD engagement (select models)
- Rear locking differential (all models)
- Integrated LED bumper light
- Full charge time of 6-8 hours (0-100%)
- Max speed up To 30 mph
- Bed capacity up to 600 pounds / 1,000 pounds on pro
- Tow capacity up to 1,500 pounds



link fencing. Each panel has a rear frame that includes retractable 1-1/2-inch-wide x 6-inch-tall solid-rubber wheels for easy transport. Each panel is shipped completely fabricated, some assembly required for rear frame and wheels. Each 6' x 10' fence panel is 6' tall and 10' long, while each 5' x 10' fence panel is 5' tall and 10' long.

SportaFence also offers a standard (non-wheeled) panel. Each fence panel is 5' tall and 10' long. The frame is 1-5/8" galvanized steel pipe with 8-gauge vinyl-coated (green or black) chain link fencing. Each panel has triangular brace supports. Each panel is shipped completely fabricated, some assembly required.

SportaFence provides portable fencing solutions for not only athletic fields, but for many activities. Use it for crowd control and temporary security barriers at:

- Runs
- Parades
- Festivals
- Beer gardens
- Concerts
- Fireworks shows
- Special events
- Graduations
- Dog parks
- Construction sites
- Camping areas

SportaFence's mobility and multiple use gives you the flexibility you need. Shape your field for every game and shape your facilities for every event.



## SportaFence portable fencing system

Setting up your fields is easy with SportaFence. With SportaFence, a baseball or softball field can be ready for play in about one hour. This high-quality portable fencing system enhances both player and spectator safety.

Both the SportaFence 6' x 10' Premium Wheeled Panel and the SportaFence 5' x 10' Premium Wheeled Panel both have retractable wheels, vinyl-coated chain link fabric and yellow plastic fence topper. The frame is 1-5/8" galvanized steel pipe with 8-gauge vinyl-coated (green or black) chain

## Mean Green launches new compact electric mower

Mean Green announced the Fury, a compact stand-on mower designed to allow access to areas that most other commercial mowers are too wide to enter. With a 32- or 36-inch mowing width, the Fury is designed to easily move through gates and navigate tight spaces for quick and efficient mowing.

"We're excited to expand our line of commercial-grade mowing solutions," said Matt Bieber, president of chore products for Generac. "Small gateways, tight spaces and

narrow pathways are quick and easy to navigate thanks to the compact Fury, one of the narrowest battery-powered stand-on mowers available in the market.”

The Fury joins Mean Green's full-sized Vanquish (52- or 60-inch mowing width) to complete the line of commercial, electric-powered, stand-on mowers that can run all day on a single charge. The Fury is available with either a side- or rear-discharge mulching deck and uses the same patented zero-turn technologies found in all Mean Green mowers.

The Fury features an 11kWh fixed battery (24-hp. equivalent) that runs for up to 7 hours on a single charge at speeds up to 9 mph, and recharges in as little as five hours. A 5-year or 1,500-hour commercial battery warranty is standard with purchase.

## Next-generation of Greenzie autonomous mowing software

Greenzie, a developer of autonomous software for commercial lawnmowers and industrial equipment, reported the launch of its 2.0 software, boosting its customers' autonomous mowing capabilities and enabling users to work more effectively, efficiently and safely.



The software update, sent over the air and automatically installed for all subscribers on March 6, includes:

- Job saving and reloading: Map an area once and mow all season with the press of a button on an easy-to-use interface with no app download required.
- Job continuation: Mower or job interrupted? Easily pick up where you left off.
- Advanced perception updates: A Machine Learning model with traffic cone detection in addition to the Greenzie existing redundant, rugged obstacle detection sensor stack.
- Improved turns: Using a Model Predictive Controller – a state-of-the-art robotic guidance system that accounts for wet grass and dusty conditions.
- Enhanced safety: GPS jump detection, compensation and advanced sensor health checks.
- Improved dynamic local planner: For more efficient Y-turns and vehicle behaviors when the mower encounters unexpected obstacles.

“Our team of roboticists, software engineers and landscaping professionals have been working hard on continuous improvements. This update is simply a line in the sand to celebrate the features that our customers have asked for, helped us refine, and developed together to make their crews more productive,” said Charles Brian Quinn, Greenzie CEO and co-founder.

“All mowers across the nation get these updates and every day our technology gets better and better,” he added. “I’m especially proud of the job reloading, it’s a feature that everyone asks for, and our team developed based on exactly what our best customers told us to build, in the field with them together, not off in a lab.”

Updates later in the 2023 season will also add:

- Dynamic handling of slopes in real-time: Will replan and retry, as a skilled operator might tackle the job on bigger slopes.
- Enhanced Job reloading features: Tweak starting point, change stripe angle, modify default speed – from the user’s phone without an app download.
- Multi-mower coordination: Send out two or more Greenzie-equipped mowers to seamlessly break up the big jobs and tackle it as a team.
- Record and repeat: Show the Greenzie-equipped mower exactly how a job is to be done, and it will cut the same time, every time.
- Live mowing progress: Real-time coverage stats, and plans, directly on the field when and where needed to see how the job gets done.

Greenzie is in production, on crews and in the field on the Wright Autonomous Stander ZK, the first Greenzie-equipped mower based on the Wright Stander ZK. Additionally, Greenzie-powered versions and upfits on commercial zero-turn mowers from Bobcat, Scag and Mean Green Mowers will be available and in production by 2024.

## Hunter Rain-Click Sensor now offers freeze shutdown capabilities

For many years, Hunter has offered two similar styles of Wireless Rain-Click Sensors: the WR-CLIK (rain sensor only) and the WRF-CLIK (rain and freeze sensor). While both options remain popular in many markets, Hunter has decided to consolidate them into one high-performing solution.

WR-CLIK and WR-CLIK-TR models with manufacturing date codes of NOV 22 and newer have the rain and





freeze sensors included. The addition of the freeze sensor was only implemented in Wireless Rain-Cliks. Wired Rain-Clik models have not been updated, and Hunter continues to offer the wired rain/freeze sensor (model: RFC).

## Barenbrug launches two-brand strategy to streamline product offerings



Barenbrug USA launched a new, two-brand strategy to streamline its product offerings and better serve its customers. Barenbrug now offers its products under two separate brands – Barenbrug and Jacklin.

“In the two years since we have acquired the Jacklin brand, we have taken time to assess the market, germplasm, and brand positioning to make sure we deliver both value and innovation to our customers,” said James Schneider, president and CEO. “As a result, we have added bluegrass cleaning facilities, started a bluegrass breeding program as well as refreshed and revitalized the Jacklin brand, it’s truly exciting to launch the culmination of these efforts in this two-brand strategy. All with the simple goal of making focused investments that help you be more profitable.”

According to Barenbrug, the Barenbrug brand will continue to be solutions driven with new offerings specifically formulated to solve the needs of everyone who uses

Barenbrug products. Barenbrug will continue to promote its Yellow Bag at the end-user level to further increase demand for its products from its nationwide distribution network. Barenbrug stated that it is dedicated to providing innovative technologies and solutions to meet the needs of end users and will continue to work toward that goal.

The Jacklin brand, on the other hand, will be focused primarily on selling best-in-class varieties and top NTEP performers to enhance Barenbrug’s wide network of distributor-owned brands across North America. The Jacklin brand will offer a comprehensive range of species, including, but not limited to, Kentucky bluegrass, perennial ryegrass, tall fescue, fine fescue, and bermudagrass.

“Our new two-brand strategy is a response to changing customer needs and market trends,” said Andrew Crawford, director of marketing and brand management. “By separating our products into two distinct brands, we can better serve our customers and ensure that our products are reaching their intended markets.”

This new strategy has been welcomed by leaders in the industry, who see it as a way to improve the efficiency and effectiveness of Barenbrug’s operations.

“By focusing on end-users and distributors separately, Barenbrug can better understand and meet the needs of these two distinct customer groups,” said Bo Lacy, VP of operations. “At the end of the day, this is a move that will greatly benefit both our distributors and those who use our grass seed.” **SFM**

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# The Future is Now

*Sports field managers are embracing technology and putting robots to work*

By Robert Augsdorfer

With some sports field management crews running with just a few people or requiring crewmembers to perform other tasks around the grounds, someone, or something, needs to take care of field painting/line marking — or even mowing. As a result, robotic equipment has risen in popularity during the last few years, and sports field managers are increasingly deploying automated help in the form of robotic field painters/line markers and robotic mowers.

According to Jason Connor, director of commercial robotics at Husqvarna, robotics offer flexibility for field managers with skeleton crews.

“With limited labor supply, robots offer flexibility in labor allocation,” said Connor. “Sports field managers can use their labor for tasks that are often overlooked or de-prioritized. With robots, sports field managers will also notice reduced wear and tear on the turf from heavy equipment and a quality of cut that is excellent and equal to, or better than, what they’ve experienced with traditional mowing. Additionally, sports field managers can customize the cut direction and cut pattern easily with robotic mowers.”

Drew Carl, director of marketing for TinyMobileRobots, a developer of robotic field painters/line markers, said that sports field managers are turning to robotic equipment to save time and resources.

“Robots usually can paint a field — either for the first time or restriping it — in about 50 percent of the

time it would take an individual to do it,” said Carl. “For example, a soccer field can be painted in about 30 minutes with a robot. It also saves a lot in paint. The robot typically saves 50 percent or more in paint just because it paints the field more evenly and consistently.”

TinyMobileRobots started out with surveying in Europe and found a niche in the sports field market. The company recently started production in North America with two models.

“We have two different models with the Sport, which is our smaller base model, and the Pro X, which is a little more robust,” said Carl. “We can paint all kinds of fields, ranging from soccer to American football, Gaelic sports and field events for track meets. Baseball and softball will be big for us with the spring and summer coming up.”

According to Carl, the robotics market has only just begun to scratch the surface in the sports field management industry. In addition to line marking, robotic field painters can perform more advanced work such as painting logos onto the field.

“We’ve had quite a few private sport clubs use our products as a revenue generator,” said Carl. “They’ll go out and get sponsorships from local businesses and paint their logos on their field. But people can use the robots to paint their midfield logos or paint ‘Home’ and ‘Away’ next to the team benches and different things like that. It’s pretty easy once the template is loaded into the unit, and the robot knows where to put it using the tablet that comes with it.”

According to Jesse Pritchard, sports turf and grounds manager at University of Virginia, who utilizes a Turf Tank field painter, robotics have helped alleviate staffing and personnel issues.

“Before, it could take a crew of four guys six to eight hours to get these fields painted, pulling strings, pulling



Photo courtesy of Husqvarna



Photo courtesy of TinyMobileRobots.





*Photo courtesy of Turf Tank*

out stencils. Early in the season, when the bermudagrass is growing extremely fast, we're painting the fields twice a week," said Pritchard. "Now, myself or one of my employees can come down here and these two practice football fields can be painted in six hours. Done completely. Perfectly straight lines."

While the robot takes care of the fields, the rest of the crew is free to focus their attention on other tasks around the site and ensure the facility reaches the desired standard.

The Turf Tank One autonomous line-marking robot is controlled with the help of a tablet, and the company recently launched next-generation line-marking software that enhances the robot's usability and efficiency.

The updated software provides sports field managers with greater flexibility and complete control over every aspect of the line-marking process. The Turf Tank robot is also capable of creating texts and logos so sports organizations can enhance their fields. Previously, only large colleges and professional teams could afford this feature, but now small sports clubs and high schools can provide their fans with an exceptional sports experience.

According to Turf Tank, robots not only reduce the time and physical effort spent marking fields, but are now a tool for attracting and retaining employees. As a result, this leads to more sustainable jobs in the sports field management industry.

The adoption and acceptance of robotic field painters by sports field managers also seems to have had a positive impact on the acceptance of robotics and autonomous technologies in general. Husqvarna has high-profile clients for its CEORA robotic mowers with the Louisville Bats (Triple-A affiliate of the Cincinnati Reds) as well as historic Fenway Park.

"As an industry, we're still early in the adoption process to have clear trends emerging with the technology," said Connor. "But momentum and interest are building at a rapid rate. The adoption of line painters

has absolutely helped create additional early adopters for robotic mowers. If we visit a company using robotic line painters, we know they've already got a

robotics mentality. They understand how robots work and interact on their properties, so it's less of a leap for them to envision robotic mowers on their properties too."

According to Brian Manke, product manager at Stihl product, developer of iMow, robotic mowers generate significantly less dust than a traditional mower, return nutrients and moisture back to the soil for healthier turfgrass, and are beneficial for air quality and those with allergies.

"Grass will be greener and healthier due to regular mowing," he added.

Overall, manufacturers are seeing higher adoption on the part of sports field managers as awareness spreads regarding the benefits of using robotics.

"I think the main thing is to get out there and be known in the industry," said Carl. "A lot of times when we pitch our products, they didn't know such a thing existed. So, we're getting awareness and it works out for parks and schools that just have a tough time finding labor to do the work on their fields. We're not saying that we'll be replacing labor, but we can help in that a field manager can program the robot to paint the field and still get other things done."

Added Connor, "Interest in robotics is accelerating, and more conversations around how to adopt these tools are taking place." **SFM**

*Robert Augsdorfer is assistant editor of SportsField Management magazine.*

*For additional content about technological advancements that are impacting the sports field management industry – including technology for data collection – check out the latest installment of the SportsField Management Podcast, in which we speak with Dr. Chase Straw of Texas A&M University (<https://sportsfieldmanagementonline.com/podcast/>).*



*Photo courtesy of Stihl*

# Battery and Robotics

## ECHO eFORCE 56V BATTERY SYSTEM

The Echo eFORCE 56V battery system includes 10 units, two batteries and two chargers. Each of Echo's key categories are included in the new lineup, including Echo's Pro Attachment Series. The Echo eFORCE 56V cordless lineup includes: 12-inch top-handle chain saw; 18-inch rear-handle chain saw; 16-inch string trimmer; 17-inch string trimmer; 21"-inch self-propelled 3-in-1 lawn mower; 550 cfm handheld blower; 22-inch hedge clipper; 7-inch brush cutter; 16-inch Pro Attachment Series (PAS) trimmer; 17-inch Pro Attachment Series (PAS) trimmer; 2.5Ah battery; 5.0Ah battery; standard charger; and rapid charger.



## GROUNDWOW SFX PRO

The GroundWOW SFX PRO is a full-color autonomous stadium ground printer, aimed at enabling stadia and venues to activate and monetize underutilized real estate by connecting brands to land. Simply upload logos, designs or messages and print them directly on the ground. No stencils.



No labor-intensive work. No mistakes. Maximum impact. Unlimited revenue-generating opportunity. Accurate to within a blade of grass. The SFX PRO has exceptional range, endurance, paint capacity and efficiency, enabling it to autonomously print without any need for direct interaction once printing.

## E-NANO SPROUT

E-Nano combines robotics for automation of data acquisition, data analytics for field state reports and AI for real-time evaluation of the sport surfaces in order to optimize maintenance practices. E-Nano's Sprout modular scouting robot enables monitoring of any agronomic and sport-specific parameters with its modular design. This unit has space to add additional sensors to meet all your agronomic and performance requirements. Collect more than 100 data points per hour with only a few minutes of preparation. Visualize each variable in every pitch/field for specific dates or for evolution over time. Evaluate in real-time the quality and density of turf by using AI.



## HUSQVARNA CEORA

Husqvarna CEORA is an autonomous mowing solution for sports field managers and green space professionals. With the low-noise, emission-free CEORA robotic mower, grounds teams can define work areas, set schedules, and adjust mowing heights from handheld mobile devices. Frequent, systematic high-precision mowing ensures the field is always game ready. Satellite-based EPOS technology provides unparalleled flexibility and eliminates the need for physical boundary wires impacted by ground-penetrating activities. Its lightweight design significantly improves issues related to compaction and wear tolerance. CEORA's systematic straight-line mowing



delivers extraordinary and efficient results even in the toughest weather conditions, so there is no rain delay. CEORA provides a cost-efficient and sustainable solution with excellent performance and reliability.



### KRESS COMMERCIAL-GRADE OPE

The Kress CyberSystem battery platform features both 4Ah and 11Ah battery packs with the ability to recharge each 60v battery to 100% in only eight minutes. Additionally, each 60v CyberPack battery is capable of producing up to twice the power output and lasting up to 10 times longer than standard lithium-ion batteries. The new lineup of Kress commercial OPE — all of which is fully compatible with the 8-minute CyberSystem — includes: 60V 876cfm commercial backpack blower; 60V 21" commercial self-propelled mower; 60V 16.5" commercial cordless grass trimmer; 60V 16" commercial brushless chain saw; and a family of RTK robotic mowers with no boundary wire or local antenna.



### MAKITA CORDLESS OPE SYSTEM

Makita's professional cordless outdoor power equipment system (powered by 18V lithium-ion slide-style batteries) features more than 60 OPE



products within the 18V | 36V LXT System. In sum, the LXT System offers more than 300 compatible cordless tools and OPE, as well as lighting, radios, job site apparel, and more. Makita also expanded battery-powered OPE products in the 40V | 80V XGT System of equipment and tools. And for all-day professional use Makita offers ConnectX, a line of outdoor power equipment that utilizes an external battery connection for extended runtime with ConnectX products, as well as select LXT and XGT products with the use of an adapter.

### MILWAUKEE M12 BATTERY-POWERED HANDHELD SPRAYER

Milwaukee's M12 handheld sprayer requires no manual pumping; provides instant, constant and adjustable pressure; and delivers increased performance, allowing users ultimate control and faster application speed. By eliminating the time and energy consumed by pumping requirements, this sprayer delivers 60% faster application speed compared to manual sprayers, significantly increasing user productivity. In addition, this handheld sprayer features a 3-mode pressure adjustment knob that



adjusts the pressure between 20 and 80 psi and delivers a 17-foot vertical spray distance. The M12 Redlithium CP2.0 battery delivers up to 80 gallons of spraying per charge increasing productivity and allowing users to complete multiple jobs on a single charge. The M12 handheld sprayer powerhead is compatible with both the 1-gallon and 2-gallon handheld sprayer tank.

### STIHL iMOW

Stihl iMow robotic lawn mowers allow users to track progress and customize mowing schedules from the convenience of their smartphone. Stihl iMow automatically mows up to 1.24 acres and returns to its docking station when finished or when the battery needs recharging. Available with LTE connectivity, users can remotely adjust mowing schedules, receive notifications and manage their iMow experience – all with the free Stihl iMow app on their smartphone. Additional include: Anti-theft system, mulching mower functionality, quiet operation, Stihl iMow dealer support, Automatic mowing speed variation, hood sensor to work around built-in

features, durable double-sided blade, cutting heights ranging from .8 inches to 2.4 inches, built-in rain sensor, auto-adjust capability, and automatic charging.



### TINYMOBILEROBOTS

TinyMobileRobots can autonomously mark lines for virtually every type of sports field, including soccer, American football, baseball, lacrosse, softball and more. The TinyMobileRobots solution is used by amateur and



professional sports teams, leagues, youth programs, universities, schools and more to mark playing fields and reduce time and energy requirements by as much as 90 percent. For example, the robots can mark an entire soccer field in 20 minutes or an entire football field in less than two hours. TinyMobileRobots are accurate down to 1-2 cm or 0.4-0.8 inches, and can be managed on a simple app on any smartphone or tablet. No technical experience or training are required. Each robot has access to more than 50-plus predesigned field configurations that can be modified in less than a minute.

### TURF TANK ONE

Turf Tank One is an autonomous line marking robot for sports fields. Turf Tank One uses GPS technology, eliminating the need for manual measurements and ensuring reliable positioning for maximum precision with every marking. It memorizes all of the locations and route plans from the initial marking, making overmarking 100% accurate. The robot drives at consistent speed and maintains a consistent spraying pressure, ensuring that all lines on the entire field receive the same amount of paint. Not only does this enhance the appearance of the field, creating a more uniform look, but it also reduces paint consumption by up to 50%. The Turf Tank robot allows turf managers to be more efficient in their line marking processes. With the Turf Tank robot, the process can be completed in just 25 minutes, significantly reducing the time and effort required. **SFM**





The following are some industry Tweets from the past month. Follow us @SportsField\_Mag.



**@zachvanvoorhees**

Less than ideal boys. #frostitips



**@sambray\_sb**

Game time!



**@TIMMAY8**

This right here is major mound goals...Super appreciative that @miamiturf305 blessed me with the opportunity to come down to the WBC and learn from the best in baseball.



**@miamiturf305**

Waking up our infield for another day of wbc baseball



**@JThompsonFB**

First Day of Spring Ball! Couldn't do it without @GatorTurfStaff. Your hard work is appreciated. Thank you!





**@CUBuffsTurf**

Outstanding effort from the crew getting Franklin tarps up, mowed, cleaned up, and painted for @CUBuffsFootball spring ball before tomorrow's forecasted snow. #GoBuffs @DeionSanders #CoachPrime #Team1stClass #DominateDetails #AttitudeAndEffort #5Ps @wc\_paints



**@Jakob\_Scales**

Had some great conversations with Arizona Diamondbacks Head Groundskeeper, Grant Trenbeath tonight after the WBC game. Really appreciate him taking time out of his day to talk shop with me!



**@cookmurray**

#WBC2023 Passing along a huge THANKS to this awesome field crew at the Intercontinental Stadium in Taichung Taiwan. Congrats to team Cuba and Italy as they advance from Pool A to the next round.





@TannerCoffman2

In honor of CONCACAF's pups on the pitch night.... #turfdog  
#gooseintimidator #rapids96



@C\_Buck10

Replying to @mronTurf and @TannerCoffman2: Agreed  
#DOOP #DogsOfTurf



@mronTurf

Replying to @TannerCoffman2: This would be a great trend for  
the timeline!



@Mike\_Kerns\_

12 hours later after an SDSU women's lacrosse victory to  
the first ever outdoor box lacrosse game for the San Diego  
Seals. Loadout begins immediately after box lacrosse for  
two more lacrosse games Sunday.



## Advanced Turf Solutions adds James Bergdoll to sales team

Advanced Turf Solutions welcomed James Bergdoll, CSFM, to its sales team. Bergdoll has a wide range of industry experience, including leadership as board member and past president of the Sports Field Management Association (SFMA). For the past seven and a half years, Bergdoll served as the director of park maintenance for the City of Chattanooga (Tenn.).

Bergdoll grew up in Madison, Ind., where he gained his first industry experience on the athletic fields at Hanover College. Bergdoll attended Purdue University, working on the athletic fields and golf courses there while earning his bachelor's degree in Turfgrass Science. He went on to earn his Master in Sports and Recreation Administration from Western Kentucky University.

One of Bergdoll's proudest accomplishments is overseeing the construction of the Elizabethtown Sports Park in Kentucky. His other notable experiences include working for the Indianapolis Indians, Baltimore Orioles Spring Training and National Polo Center in Florida.

"We're honored to welcome James to the ATS family," said Brian Winka, vice president of sports turf at Advanced Turf Solutions. "He's someone many of us have gotten to know through our industry involvement over the years, so we're excited to work with him more closely now."



Bergdoll is based in Tennessee, where he will serve customers out of the ATS facility in Nashville. With vast experience in athletic fields and parks management, Bergdoll will be a valuable addition to the growing ATS network in the south.

## Hutchens receives Musser Award of Excellence

Wendell Hutchens, Ph.D., assistant professor in University of Arkansas' Department of Horticulture, has been named winner of the 2023 Award of Excellence by the Musser International Turfgrass Foundation.

The award is given to outstanding Ph.D. candidates who, in the final phase of their graduate studies, demonstrated overall excellence throughout their doctoral program in turfgrass research.

"It is an unbelievable honor to receive the Musser Award of Excellence," said Hutchens. "I could not have

accomplished such a feat without my foundational Christian faith; unwavering support from my wife, Anica; my family and friends; and the exceptional leadership of my mentors."



Hutchens is in his first year as a faculty member in the University of Arkansas Dale Bumpers College of Agricultural, Food and Life Sciences, where he primarily focuses on turfgrass pathology. Turfgrass diseases cause massive damage and losses to sod farms, golf courses, athletic fields, parks and home lawns. His research centers around how to maintain healthy turfgrass and combat turfgrass diseases with traditional cultural and chemical practices, as well as with cutting-edge technology such as drones and GPS-guided sprayers.

He received his B.S. degree in turfgrass science from North Carolina State University and went on to complete his M.S. in turfgrass pathology from NCSU. His research there focused on the influence of post-application irrigation and soil surfactant applications on fungicide movement and efficacy against root diseases. He earned his Ph.D. in turfgrass pathology at Virginia Tech where his dissertation focused on biology, epidemiology and management of spring dead spots of bermudagrass.

Hutchens has already published seven research papers for his M.S. and Ph.D. projects and has seven more awaiting publication on topics related to turfgrass pathology, turfgrass physiology and native grass implementation in the transition zone of the United States. He has already given more than 50 presentations on his research nationally and internationally.

"I am beyond grateful for the opportunity to be a faculty member at the University of Arkansas, and I hope to expand the research, extension and teaching programs during my tenure," he said. "My mentors — including Drs. David McCall, Jim Kerns, Travis Gannon, Mike Goatley, David Shew, Mizuho Nita and Mike Richardson — have been incredible to work with and learn from. Their mentorship has taught me to be a better scientist, professional and, most importantly, person."

He hopes to focus his career on providing applied, cutting-edge research results in turfgrass pathology, precision turfgrass management and turfgrass agronomy, as well as training the next generation of turfgrass scientists.



“There are many outstanding students in the University of Arkansas turfgrass science program, and I hope to help them reach their greatest potential,” Hutchens said. “Training tomorrow’s generation to be the best they can be is my ultimate career goal.”

The criteria for selecting award recipients include graduate work, academic record, dissertation, publications, leadership and extracurricular activities. The Musser International Turfgrass Foundation is a nonprofit organization dedicated to fostering turfgrass as a learned profession to enhancing the lives of people all over the world through turfgrass and to supporting education and research in turfgrass development and management.

## Folck named Extension educator for turfgrass management at University of Nebraska-Lincoln

Amanda Folck has been named Extension educator for turfgrass management at the University of Nebraska-Lincoln.

Folck’s role includes contributing to the Extension program for management in turfgrass agronomy; teaching the turfgrass capstone course for the turfgrass science and management undergraduate students; and providing education and applied research to help turfgrass stakeholders and industry partners in sports fields, golf courses, parks and professional lawn care management in Nebraska.

Prior to joining the University of Nebraska-Lincoln, Folck was an assistant athletics field manager for the Purdue Athletics Department at Purdue University from June 2019 to December 2022. She was also the second assistant athletics field manager for the Texas A&M Athletics Department at Texas A&M University from May 2017 to June 2019. Folck earned her Master of Science degree in Horticulture from Purdue University in December 2022. She also holds a Bachelor of Science from The Ohio State University in sustainable plant systems: turfgrass science and an Associate of Science



in general science from Clark State Community College in Springfield, Ohio. Folck is also a past recipient of the Gary Vanden Burg Internship Grant in 2016 from the Sports Turf Managers Association (now SFMA) for her internship at Arsenal Football Club in London Colney, United Kingdom.

## ASBA publishes new track construction manual

The American Sports Builders Association (ASBA) – the national organization for builders, designers and suppliers of materials for athletic facilities – announced the publication of its 11th edition of *Running Tracks: A Construction and Maintenance Manual*.

The book is the latest in ASBA’s popular Construction and Maintenance Manual series, and promotes quality design, construction, maintenance and repair of track facilities by providing information to facility owners, administrators, coaches, athletic directors, builders, architects, engineers and others in the industry.

This new edition provides useful guidance to those who want to install a track, explaining the options for surfacing and construction currently available in the marketplace. A streamlined layout with detailed section synopses allows readers to more easily find and reference specific guidance or information. In addition, the book contains updated references and links to ASBA’s position papers. More images and diagrams have been included throughout the book, and the chapter on surface installation has been updated to better reflect the methods track installers are using.

“ASBA has long been considered a leader in providing information about quality sports facility design and construction, and with the publication of the new track manual, we have continued that tradition,” said David Clapp, CTB, CTCB, chairman of ASBA. “This book will be an invaluable resource to all sectors of the industry.”

Information on ordering the book can be found on ASBA’s website, [www.sportsbuilders.org](http://www.sportsbuilders.org), under the Publications tab at the top of the home page. The cost is \$44.95, and the book can be purchased in either hard copy or pdf format. **SFM**





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**Colorado Sports Turf Managers Association:** [www.cstma.org](http://www.cstma.org)

**Florida #1 Chapter (South):**  
305-235-5101 (Bruce Bates) or  
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**Florida #2 Chapter (North):**  
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**Florida #3 Chapter (Central):**  
407-518-2347, Dale Croft,  
[dale.croft@ocps.net](mailto:dale.croft@ocps.net)

**Gateway Chapter Sports Turf Managers Association:**  
[www.gatewaystma.org](http://www.gatewaystma.org)

**Georgia Sports Turf Managers Association:** [www.gstma.org](http://www.gstma.org)

**Greater L.A. Basin Chapter of the Sports Turf Managers Association:**  
[www.stmalabasin.com](http://www.stmalabasin.com)

**Illinois Chapter STMA:** [www.ILSTMA.org](http://www.ILSTMA.org)

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

**Indiana:** Contact Clayton Dame,  
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Brian Bornino, [bornino@purdue.edu](mailto:bornino@purdue.edu)  
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[jstevenson@indyindians.com](mailto:jstevenson@indyindians.com)

**Iowa Sports Turf Managers Association:**  
[www.iowaturfgrass.org](http://www.iowaturfgrass.org)

**Keystone Athletic Field Managers Org. (KAFMO/STMA):** [www.kafmo.org](http://www.kafmo.org)

**Mid-Atlantic STMA:** [www.mastma.org](http://www.mastma.org)

**Michigan Sports Turf Managers Association (MiSTMA):** [www.mistma.org](http://www.mistma.org)

**Minnesota Parks and Sports Field Management Association:** [www.mpsfma.org](http://www.mpsfma.org)

**MO-KAN Sports Turf Managers Association:** [www.mokanstma.com](http://www.mokanstma.com)

**Nebraska SFMA**  
<https://nebraskaturfgrass.com/nesfma>

**New England STMA (NESTMA):**  
[www.nestma.org](http://www.nestma.org)

**Sports Field Managers Association of New Jersey:** [www.sfmanj.org](http://www.sfmanj.org)

**North Carolina Chapter of STMA:**  
[www.ncsportsturf.org](http://www.ncsportsturf.org)

**Northern California STMA:**  
[www.norcalstma.org](http://www.norcalstma.org)

**Ohio Sports Turf Managers Association (OSTMA):** [www.ostma.org](http://www.ostma.org)

**Oklahoma Chapter STMA:**  
405-744-5729; Contact:  
Dr. Justin Moss [okstma@gmail.com](mailto:okstma@gmail.com)

**Oregon STMA Chapter:**  
[www.oregonsportsturfmanagers.org](http://www.oregonsportsturfmanagers.org)  
[oregonstma@gmail.com](mailto:oregonstma@gmail.com)

**Ozarks STMA:** [www.ozarksstma.org](http://www.ozarksstma.org)

**Pacific Northwest Sports Turf Managers Association:** [www.pnwstma.org](http://www.pnwstma.org)

**Southern California SFMA:**  
[www.socalsfma.com](http://www.socalsfma.com)

**South Carolina Chapter of STMA:**  
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**Tennessee Valley Sports Field Management Association (TVSFMA):**  
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**Texas Sports Turf Managers Association:**  
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## JOHN DEERE

# Crabgrass Control Strategies

**Note:** This article was co-authored by Dr. David Gardner, professor of turfgrass science at The Ohio State University.

**Q:** Can you recommend a crabgrass control program for athletic fields? We are wary of using herbicides as we overseed regularly.

**A:** Crabgrass and other weeds can interfere with playability and look unsightly. Warm-season annuals such as crabgrass also die at the end of the growing season, leaving behind large patches of bare dirt. Those bare patches are infested with weeds the following spring, and so the cycle continues.

Ultimately, a crabgrass management program should be constructed based on your answer to the following question: Is my stand of turfgrass adequate, or will I require spring overseeding? If your turfgrass stand is adequate and you do not plan to overseed this spring, then a good plan is to apply a preemergence herbicide containing pendimethalin, prodiamine or dithiopyr. However, timing is important. To optimize control of crabgrass, pendimethalin and prodiamine should be applied around April 15 in the Midwest, or when the shrub Forsythia is in bloom. Dithiopyr when sprayed has some post activity so long as the crabgrass is no more than 1-2 leaf, so it can be applied in early May. Applying later increases the chance that you won't have late-season weed breakthrough. On the other hand, if you are also trying to control knotweed preemergence, then remember that knotweed germinates very early and so a preemergence herbicide would need to go out sometime in mid-March, and you may need some postemergence control for late-germinating weeds.

Most herbicides labelled for turfgrass use should not be used during seeding or overseeding. This is because the postemergence broadleaf herbicides may injure seedlings until they are mature enough to have been mowed three times and the preemergence herbicides may prevent germination for up to 16 weeks after application. On areas that you plan to seed or overseed, the recommendation is to use mesotrione for weed control. To maximize your chance of success with springtime seeding, apply the seed then make an application of mesotrione according to label directions, then apply a mulch and begin irrigation.

Timing of this seeding operation can have a large impact on success. Even with mesotrione, turfgrass can sometimes have difficulty competing with germinating annual weeds. If your play schedule allows for it, and if you have irrigation, then your chances of getting good weed-free establishment increase significantly if you wait to seed until after June 1. Of course, you must be able to irrigate many times per day if attempting to establish in the summer months. But the weed competition is far lower compared to when seeding is done in the spring.

Crabgrass can be controlled postemergence with fenoxaprop, quinclorac, mesotrione or topramezone. The issue of when to apply the herbicide for postemergence control is complicated and somewhat dependent on product used. The conventional wisdom is that fenoxaprop is most effective on leaf-stage or early tillering crabgrass. Quinclorac is effective on leaf-stage crabgrass and late-stage (>5 tiller) crabgrass, but can be inconsistent when crabgrass is between 2 and 5 tillers. Topramezone seems the most flexible when it comes to the stage of crabgrass at application. Our research has found that a mix of ½ label rate of either mesotrione or topramezone combined with ½ label rate of quinclorac is very effective. That said – and this applies to whichever herbicide you use – if you make a postemergence application before crabgrass seed has stopped germinating (typically late June or early July), in most cases you will get a few weeks of suppression followed by a new population of crabgrass from seed. For this reason, lasting control of crabgrass tends to occur with applications made after July 1. **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](mailto: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](mailto:grady_miller@ncsu.edu)





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