



TRILO SWEEPER VACUUM



SPECIALIZED TURF EQUIPMENT COMPANY

WWW.STECEQUIPMENT.COM

(888) 325-2532

@STECEQUIP



SportsField

MANAGEMENT

October 2022

Vol. 38 No. 10

The Official Publication of the Sports Field Management Association

Disc Golf **18** | Soil Sensors **22**

Winterization **28** | Best Management Practices **34**

CONTINUED SUCCESS

Walsh Field wins a FOY Award for third year in a row –
this time for Schools and Parks Soccer



SPORTS FIELD
MANAGEMENT ASSOCIATION

Don't let its good looks fool you!

365ssTM
ULTRA DURABLE KENTUCKY BLUEGRASS BLEND



365ssTM Kentucky bluegrass blend is the most durable sports turf product available. It's fast

germination, aggressive growth

and unrivaled wear tolerance make it an ideal choice for any sports field. It's exceptional turf quality, dark green color and fine leaf texture made it the only choice for the Rose Bowl. 365ssTM was developed for the rigors of sports turf use without sacrificing the high turf quality high-end facilities demand.

- ★ *Excellent Turf Quality*
- ★ *Very High Density*
- ★ *Extreme Wear Tolerance*
- ★ *Dark Green Color*
- ★ *Rapid Germination*
- ★ *Aggressive Recovery*
- ★ *Superior Sod Strength*

ALL SEASON SPORTS TURF USE FOR HIGH QUALITY INTERSEEDING



365ss is a key component to the most advanced bermudagrass interseeding program ever developed. Its excellent turf quality and exceptional wear tolerance help it provide sports fields year-round playability while reducing overseeding costs.



www.mtviewseeds.com • 503-588-7333 • info@mtviewseeds.com



TRILO SWEEPER VACUUM



SPECIALIZED TURF EQUIPMENT COMPANY

WWW.STECEQUIPMENT.COM

(888) 325-2532

@STECEQUIP



Contents

OCTOBER 2022
VOL. 38, NO. 10



10

10

Field of the Year
Schools and Parks Soccer
Walsh Field: Pace Academy,
Mableton, Ga.

18

Disc Golf

The Rise of Disc Golf – and How to
Benefit from It

22

Soil Health

Using Soil Sensor Data to Manage
a Field More Efficiently

24

Landscape and Grounds
Maintenance

2022 Equipment Trends

28
Irrigation and Water Management
Winterization

34

Best Management Practices
Sports Field Planning and Design
BMPs

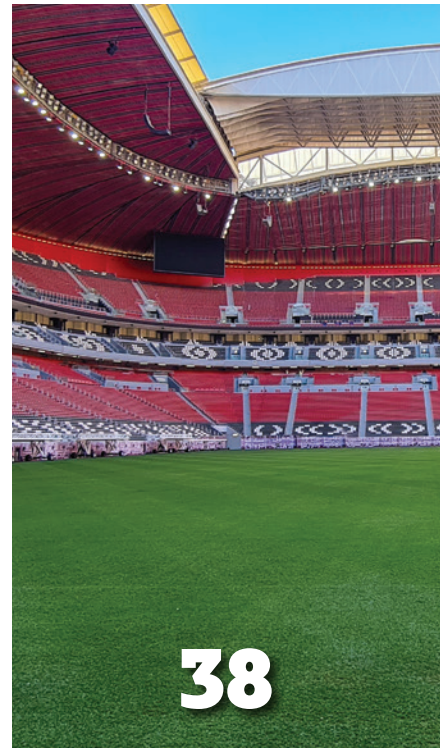
38

Soccer

Preparing for the Most
Challenging World Cup Yet

40

Snow and Ice Management
Getting the Most Out of Your UTV
This Winter



38



18

DEPARTMENTS

6

Editor's Note

7

SFMA President's Message

8

SFMA In Action

17

John Mascaro's Photo Quiz

42

Innovations

44

From the Twitterverse

47

Industry Events

48

Marketplace

49

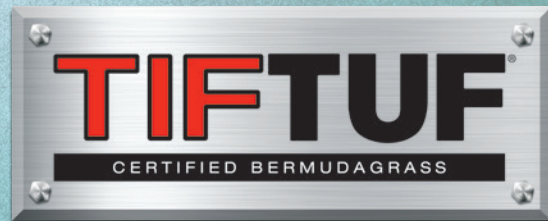
SFMA Chapter Contacts

50

Q&A



Greetings from your
FLORIDA
GROWERS



MasterTurf
masterturfsod.com

JW Turf Farms
jwtruffarms.com

Tater Farms
taterfarms.com

Woerner Farms
woerner.com

Sun Turf
sunturfsod.com

McCall Sod
mccallsodfarm.net

Bethel Farms
bethelfarms.com

Lake Jems Farms
lakejemfarms.com

Editor's Note



John Kmitta

Associate Publisher /
Editorial Brand Director
jkmitta@epgmediallc.com
763-383-4405

Fall is in the air. Football season is in full force. Baseball playoffs are soon underway. October is my favorite month.

That could be because, as a Chicago-area native, October is the epitome of fall weather. By November, we are seeing the end of Daylight Saving and feeling the effects of the early cold of winter creeping in. I appreciate that I get to enjoy a change of seasons, although fall is much too brief for my liking.

So, while it lasts, I will enjoy the Oktoberfest celebrations, harvest festivals, Halloween decorations, haunted houses, Friday Night Lights, and everything else this month has to offer – right up to snagging that extra Reese's Peanut Butter Cup from my kids' candy haul on the 31st. Yes, I love everything about October. Well, everything except the multitude of pumpkin-spice-flavored products that will inundate us this month.

On the professional side, I also look forward to heading to Louisville, Ky., this month for Equip Exposition

(formerly GIE+EXPO). I'm not sure how many of you plan to attend Equip, but, as someone who has covered the green industry for two decades, Louisville has been an annual trek on my calendar.

It is a chance to see what new products and supplies are available on the market – and test drive the latest equipment. It is also an opportunity for me to catch up with many of the great contacts and friends I have made throughout the years.

From an editorial perspective, October is also a good time to plan ahead. As much as I enjoy fall – and despise winter – it is essential to help you prepare for the coming season. In this issue of *SportsField Management*, Brad Jakubowski and John Fech provide their expert insight into preparing your fields for winter. This issue also features a look at snow and ice management.

So, please enjoy the October issue, the month of October, and the best season of the year. Just hold the pumpkin spice latte. **SFM**



SportsField MANAGEMENT

EPG Brand Acceleration
10405 6th Ave. N., Ste 210
Plymouth, MN 55441

Official Publication of the Sports Field Management Association

SALES REPRESENTATIVES

Peggy Tupper | National Sales Manager
Phone: (763) 383-4429 | ptupper@epgmediallc.com
Leslie Palmer | National Sales Manager
Phone: (763) 383-4460 | lpalmer@epgmediallc.com

EDITORIAL

Sr VP Sales/Group Publisher | David Voll
Associate Publisher/Editorial Brand Director | John Kmitta
Technical Editor | Adam Thoms, Ph.D.
Interactive Content Designer | Reba Zatz

AD MATERIALS AND QUESTIONS

ads@epgacceleration.com

SUBSCRIPTION SERVICES

Phone: (763) 383-4492 | customerservice@epgacceleration.com

REPRINTS

Visit <https://epgacceleration.com/marketing-services/>
and contact us today or email us at
info@epgacceleration.com.

DIRECT MAIL LIST SALES

Kris Grauer | NPS Media Group
kgrauer@npsmediagroup.com | (203) 822-7933

Publisher's Notice: We Assume No Responsibility For The Validity Of Claims In Connection With Items Appearing In SportsField Management.

SportsField Management (ISSN PENDING) (USPS 000-292) (Reg. U.S. Pat. & T.M. Off.) is published monthly by EPG Brand Acceleration at PO Box 96, Port Jervis, NY 12771.

Postmaster: Send address changes to *SportsField Management*, PO Box 96, Port Jervis, NY 12771-0096.

For subscription information and requests, call Subscription Services at (763) 383-4492. Subscription rates: 1 year, \$50 US & Poss.; All subscriptions are payable in advance in US funds.

Send payments to *SportsField Management*, PO Box 96, Port Jervis, NY 12771-0096. Phone: (763) 383-4492. Fax: (763) 383-4499. Single copies or back issues, \$10 each US; Canada; \$15; Foreign \$18. Periodicals postage paid at Port Jervis, NY and additional mailing offices. COPYRIGHT 2022, *SportsField Management*. Material may not be reproduced or photocopied in any form without the written permission of the publisher.



BRAND
ACCELERATION

President's Message



SPORTS FIELD MANAGEMENT ASSOCIATION

President:

James Bergdoll, CSFM, CPRP

Immediate Past President:

Nick McKenna, CSFM

President Elect:

Sun Roesslein, CSFM

Secretary-Treasurer:

Dan Bergstrom, CSFM

Commercial Vice President:

Paula Sliefert

Professional Facilities:

Nicole Sherry

Academic:

Adam Thoms, Ph.D.

Higher Education:

Jason DeMink, CSFM

Parks and Recreation:

Jason Bowers, CSFM

Schools K-12:

Jeremy Driscoll, CSFM

At-Large:

Alpha Jones, CSFM

Commercial (Appointed):

Jamie Mehringer

Parks and Rec (Appointed):

Brad Thedens, CSFM

SFMA OFFICE

P.O. Box 1673

Lawrence, KS 66044

Phone: 800-323-3875

Email: STMAinfo@STMA.org

www.sportsfieldmanagement.org

SFMA EDITORIAL COMMITTEE

Chair: Brad Thedens, CSFM

Technical Editor: Adam Thoms, Ph.D.

Rebecca Auchter, CSFM; TJ Brewer, CSFM;
Joe Churchill; Arthur Eddy; Charles Goode;
Eric Harshman; John Kmitta; Cody McKee;
Kelly Rensel, CSFM; Eric Roberts, CSFM;
David Schwandt; Chase Straw, Ph.D.



James Bergdoll, CSFM, CPRP

SFMA President

jbergdoll@chattanooga.gov

As a member of SFMA, have you ever been asked why it is important to be a member? If you are reading this and are not a member of SFMA, do you know why it is important to be a member of SFMA? For many years, we have touted three important reasons to be a member of SFMA:

#1. Job security: When you take advantage of SFMA's programs and services, you proactively enhance your value to your employer. As a supervisor and hiring manager, knowing an employee is a member of a professional organization, such as SFMA, shows me the pride in their work and their willingness to be connected to the profession.

#2. Career success: The knowledge, skills, and abilities you gain by accessing SFMA's education and information can help you prepare to take that next step in your career. Personally, I cannot say enough about how my connection to SFMA has helped me in my career. The opportunities for learning and networking through SFMA have allowed me to continue to build on my education and experience as a sports field manager.

#3. Recognition of your professionalism: Being a member shows your employer that you are willing to take the extra step to enhance your skills and have pride in your work. SFMA also promotes its members as professionals to groups such as athletic directors, parks and recreation directors, coaches, and parents. Our strategic plan goal of creating a marketing plan to better

promote the profession and industry is meant to address this. It also takes us, as individuals, to advocate to our employers and our communities the professionalism in our work, as well as its importance.

In addition to the top three reasons to be a member, the top three benefits you receive as an SFMA member include the following:

1. A network of peers who are willing to share their best practices. You will not find a more open and helpful group of professionals willing to share information and experience.

2. Opportunities for education to help you do your job better. The knowledge I have gained through SFMA has allowed me to perform my job at the highest level and build my career to where it is today.

3. Quick access to information and resources. The Institute of Sports Field Management on the association's website is packed full of great resources, including natural grass benefits, sports field safety, synthetic turf, professional development, and more.

To learn more, visit <https://www.sportsfieldmanagement.org/why-join-stma/> or check with a local chapter <https://www.sportsfieldmanagement.org/chapters/>. **SFM**

James Bergdoll, CSFM, CPRP

SFMA Conference General Session to focus on FIFA World Cup

The 2023 SFMA Conference General Session will focus on the hosting and delivery of the 2022 FIFA World Cup and transitioning to the 2026 World Cup. In 2022, Qatar is the single host city. In 2026, various cities throughout the United States, Canada and Mexico will serve as hosting sites. The presentation will discuss the challenges of working in parallel on different events in different stages of the event lifecycle, as well as preparing and planning for consistency and uniformity of fields across different climate zones and stadium types. The integration of science and the latest technology for the development of a quality surface that meets FIFA standards will also be discussed.

SFMA has assembled a panel of diverse experts that represent a combination of international expertise and local knowledge:

- Jose Aldrete is the sub director of operations Akron Stadium and Sports Companies Chivas for Akron Stadium / Chivas

- Alan Ferguson is the senior pitch management manager for FIFA

- Kaj Heyral is the group leader infrastructure management for FIFA

- John Rogers, III, Ph.D. is a professor at Michigan State University

- John Sorochan, Ph.D. is a distinguished professor at University of Tennessee

The General Session will be held Tuesday, January 17, 2023, from 8-9:30 a.m.

SFMA Founders Award nominations due October 15

October 15 is the deadline to nominate a deserving SFMA member who emulates one of SFMA's four founders: Dr. William Daniel, George Toma, Dick Ericson and Harry Gill. These Founders Awards are kept secret and announced during the annual awards banquet, January 19, 2023, at the SFMA conference in Salt Lake City, Utah.

Each award has its own criteria based on the founder's characteristics.

See the criteria for each award and download the PDF form or Word Document to nominate a member who embodies the attributes of one or more of the Founders at <https://www.sportsfieldmanagement.org/founders-awards/>. Submittals due October 15. Once you have completed the form, save it and email it to SFMAInfo@SportsFieldManagement.org.

SFMA'S FOUR FOUNDERS:

- Dick Ericson served as SFMA's first president from 1981-1982. He had, and continues to have, an impact in raising the level of professionalism within the industry. The Ericson Award recognizes a member who effectively manages sports fields and their facility, and exhibits the qualities of a true team leader.

- Dr. William Daniel set the pattern for educator/researcher involvement in SFMA. The partnership between educators and researchers and the sports field managers who incorporate these advances in on-the-field applications is key to the progress of the industry. The Daniel Award recognizes an individual who has made significant contributions to the industry through research, teaching or extension.

- George Toma continues to serve as a mentor for many in the sports field management industry. He always emphasizes the importance of the entire crew in effective sports field management. George's motto is 'if you love what you do and give it your all – and then some' you can achieve your goals. The George Toma Golden Rake Award validates the 'and then some' attitude of a sports field member in "on the job" activities and in community service.

- Harry Gill served as SFMA's second president from 1982-83. His commitment to the sports field management profession and his desire and efforts to lay the groundwork for the fledgling SFMA to succeed are legendary among those who were fortunate to have known him.

Take advantage of CEUs at SFMA Conference

Increase your professionalism by taking advantage of the continuing education units (CEUs) being offered at the 2023 SFMA Conference in Salt Lake City, Utah. Earn up to 1.5 CEUs through SFMA. SFMA is seeking approval from the following professional organizations to provide CEUs for attending education sessions at the conference:

- American Sports Builders Association (ASBA)
 - National Recreation and Park Association (NRPA)
 - Golf Course Superintendents Association of America (GCSAA) – pending
 - Professional Grounds Management Society (PGMS)
 - National Association of Landscape Professionals (NALP)
- Pesticide Recertification Credits have been approved by Utah*

**Pesticide Recertification credits will only be available for Utah. If you are attending from another state and are in need of pesticide recertification credits, you are responsible for contacting your state's Department of Agriculture for approval.*

A detailed listing of education sessions that qualify for CEUs and recertification credits will be provided online. Be sure to sign in using the appropriate form during the education sessions to receive credit.

SAFE scholarships and grants

Applications for SAFE scholarships and grants are open. The deadline to submit is October 15. SFMA's scholarships for those in turfgrass management programs include named scholarships: The Dr. James Watson, sponsored by The Toro Co., and The Fred Grau, funded by The SAFE Foundation. Depending upon funding availability, SAFE may award additional scholarships. The Darian Daily Legacy Scholarship is for members' children and stepchildren (or if the member is a legal guardian) who are not pursuing a career in the green industry.

This year, SAFE is offering a new scholarship, the Paul Zwaska Scholarship, presented by Beacon Athletics. The Paul Zwaska Scholarship, presented by Beacon Athletics, promotes diversity within the profession through an annual scholarship program for students from groups underrepresented in SFMA.

SFMA's grants include the Leo Goertz Membership grant, sponsored by Pioneer Athletics, which provides a complimentary two-year national membership to someone who has not been a member for five years. The Gary Vanden Berg Internship grant provides reimbursement to a deserving SFMA student member who has fulfilled an internship. The Terry Mellor Continuing Education grant is awarded to a chapter member to cover the costs to come to the SFMA national conference.

View more information about all available SAFE scholarships and find the application forms at <https://www.sportsfieldmanagement.org/scholarship-program/>.

View more information about all available SAFE grants and find the application forms at <https://www.sportsfieldmanagement.org/safe-grants/>.

SFMA Student Challenge

Start preparing for the SFMA Student Challenge. The Student Challenge is presented in partnership with the SAFE Foundation, Founding Partner Hunter Industries, and supporting sponsor Ewing. Each year, students from 2- and 4-year colleges and universities throughout the country compete in an exam that challenges knowledge in the sports field management industry. The winning teams receive a cash award, a plaque, and medallions for each team member. The prize money benefits the institution's turfgrass program and creates opportunities for students pursuing a career in sports

field management. The Study Guide for the 2023 SFMA Student Collegiate Challenge is now available online! Please be sure to thoroughly review the Study Guide in preparation for the exam.

The 2023 contest will take place Wednesday, January 18, from 2-4:30 p.m. at the Salt Palace Convention Center in Salt Lake City, Utah. Registration for the Student Challenge opens on October 15, so start thinking about your team now! A maximum of four undergraduates can compete on a team and must declare if they are representing a two-year or four-year institution. Competitors receive complimentary conference registration. You must be an SFMA member to participate. All Student Challenge competitors are REQUIRED to register online before December 15. No paper registration forms will be accepted. Contact Kristen Althouse at kalthouse@sportsfieldmanagement.org with questions about the Student Challenge.

Second SFMA Conference hotel now open

The Salt Lake Marriott Downtown at City Creek is now open for the 2023 SFMA Conference with a rate of \$199 per night.

The 2023 SFMA Conference will take place Jan. 16-19, 2023, in Salt Lake City, Utah. Make your reservations early as the conference hotel blocks will fill up quickly. Like the Hilton, the Marriott is conveniently connected to the Salt Palace Convention Center.

Consider adding a couple of days before or after your trip. Take some time to relax and have some fun. Enjoy all of the exciting winter activities that Salt Lake City has to offer – skiing, tubing, sledding, etc.

**SALT LAKE MARRIOTT DOWNTOWN AT CITY CREEK
75 SOUTH WEST TEMPLE
SALT LAKE CITY, UTAH 84101**

To make your reservations at the Marriott, visit <https://www.marriott.com/event-reservations/reservation-link.mi?id=1656456573698&key=GRP&app=resvlink>. You can also call 801-531-0800 and ask for the SFMA Conference rate. **SFM**



WALSH FIELD

PACE ACADEMY, MABLETON, GA.

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



In Georgia, much like everywhere in the nation, our soccer seasons were cut short in the spring of 2020. That meant that our student-athletes were deprived of a year of high school sports that they would never get back. With this gloomy situation, our crew vowed that we would work extremely hard to provide the absolute best playing surface for these kids whenever they were allowed to continue play next spring. We took on the challenge, as well as many other hurdles, to produce a top-notch pitch.

One such hurdle was Pace Academy's inaugural girl's flag football team, which would play its regular season home games, as well as playoff matches, on Walsh Field during the winter months. This changed up our normal transition period between boy's football in the fall and our spring sports by adding wear and tear deeper in the colder months, as well as adding different paint lines on Walsh. We combated the situation by adding more sand via topdressing, applying supplementary fertilizer applications, and painting the center logo with Pace's lighter alternate blue color.

Once our winter slate of games had finished, we shifted gears to provide the best soccer pitch we possibly could, to try and make up for their lost season. However, this would prove to be much more difficult

than we had originally planned, for, unlike years in the past, Walsh Field would be the practice site for both boys' and girls' varsity soccer and the occasional lacrosse practice and games.

We orchestrated a plan with the coaching staff for all teams to try to avoid repetitive agility drills and goalie work in the same areas each day. The dispersal of traffic we were able to achieve, thanks to the help of all teams, really saved Walsh Field's playability and appearance throughout the spring. This allowed our crew to only have to replace lacrosse goalmouths once, and drastically reduced the amount of divot repair mix we needed for agility training holes. This schoolwide cooperation was beneficial not only for Walsh Field's safety and playability deep into our boys' and girls' playoff runs, but also helped Walsh Field look pristine for our Baccalaureate Ceremony and Graduation that was held over three days in the summer.

We made a promise in 2020 that we would do whatever we could to provide these student-athletes the best soccer pitch we could in 2021. We in turn supplied them a safe, lush surface that we were very proud of, and one that became home to the 2021 GHSA State Champion boys' soccer team

– Daniel Prince, Riverview facilities sports turf manager



Level and category of submission: Schools and Parks Soccer

Field manager: Daniel Prince

Title: Riverview facilities sports turf manager

Education: Bachelor's degree

Field of Study: Turfgrass management

Experience: Student worker at the University of Georgia's Athletic Association in 2010. After graduation was full-time foreman at UGA. After my first year I took a job at Georgia Tech as their softball field manager. I then took over as the baseball field manager for a year, until I was promoted to assistant sports turf manager. I then got the opportunity to be Pace Academy's sports facility manager.

Full-time staff: Larry Fricke

Students/interns, part-time and seasonal staff: Nick Verrilli

Original construction: 2014

Turfgrass: Certified 419 bermudagrass

Rootzone: Sand

Drainage: 4" sand cap with 12" perforated collectors





Judge's Comments

The team at Walsh Field was asked to do more with their playing surface than they had ever experienced in the past. Their strong commitment to the student-athlete experience, combined with sound agronomics and a pride in their work, led them to not only delivering a great playing surface to their community, but winning the FOY award as well.

– Chris Webb, CSFM, associate director of grounds, Christopher Newport University

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

SportsField Management (SFM): Congratulations on the winning field. Walsh field won Field of the Year in the Schools and Parks Football category in 2019 and 2020, and now for 2021 in the Schools and Parks Soccer category.

What sets this win apart from the previous wins, and what are you most proud of with this year's effort?

Daniel Prince: 2021 was a very difficult year for us. Coming off a year without spring sports due to Covid, our facilities, and Walsh Field especially, were the prime location for increased athletic and school events due to our ability to spread people out while mandates were slowly lifted. Because of this, the field was pretty much used year-round and demanded a lot more work to maintain the high standards we put on our playing surfaces for our athletes. But our team accepted the challenge, and I'm extremely proud of the quality of field we were able to produce during Pace's first year back since the pandemic hit.

SFM: I know we have covered your background in the past, but for those readers who are unaware, please tell us a bit about yourself and your career path in sports field management.

Prince: I have been in the sports turf industry for more than 12 years. I began working on sports fields as a student worker while attending the University of Georgia in 2010, helping maintain UGA's Jack Turner women's complex for Division I soccer and softball, as well as helping maintain Sanford Stadium. Upon graduation, I was hired as the ground's foreman over the Jack Turner complex and worked there until mid-2015 when I accepted the softball field manager position at Georgia Tech. While at Georgia Tech, I held the softball field manager position, baseball field manager position, and the assistant sports turf manager position, where I assisted the sports turf director in overseeing Bobby Dodd Stadium, Russ Chandler Stadium, Mewborn Field, Rose Bowl



SportsField

MANAGEMENT

Online • Print • Mobile • E-Newsletter • Facebook • Twitter
sportsfieldmanagementonline.com/subscribe



Practice Facility, and Griffin Track. In 2018 I accepted the Riverview Sports Complex manager position at Pace Academy, taking care of four game fields and two practice fields.

SFM: What challenges did you face with Walsh Field this past year, and how did you approach those challenges?

Prince: I would say the biggest challenge for us was the addition of girls' flag football and the uptick in soccer practices on Walsh Field. Flag football season in Georgia hits right around the time boys' football playoffs start, and ends right before soccer practice starts. So our recovery time from football season going into spring sports was basically nonexistent. We had to amend our typical maintenance schedule and push our recovery efforts from sideline wear and logos into soccer's January practices..

SFM: You continue to produce award-winning fields on an annual basis. What is the key to your success, and what



advice to you have for other sports field managers?

Prince: Nothing can replace hard work and dedication, and our crew has put in the work and the hours over the last three-plus years that it takes to make a field truly special for our athletes. That, alongside having a good support system of fellow turf managers you can bounce ideas and concerns off, definitely puts you in a position of success. **SFM**

JOHN MASCARO'S PHOTO QUIZ



CAN YOU IDENTIFY THIS TURFGRASS PROBLEM?

PROBLEM:

Wet and torn turf

TURFGRASS AREA:

High school practice football field

LOCATION:

Dedham, Mass.

TURFGRASS VARIETY:

Bluegrass / Rye Mix

Answer on page 33

John Mascaro is president of Turf-Tec International

MOST VALUABLE PLAYER
For games that matter.

WORLD CLASS
athleticsurfaces

Ready-to-use Paint Tote System
saves time, money, space,
and reduces waste.

We make the games look better.

WorldClassPaints.com | 1.800.748.9649



Photo by Priscilla Du Preez on Unsplash

The Rise of Disc Golf – and How to Benefit from It

By Mary Helen Sprecher

It might have been fueled by the pandemic – when people rediscovered outdoor exercise in municipal parks and were looking for things to do with their families – but disc golf's growth has continued. The sport was strong before COVID and it remains strong, with new players taking up the game on a regular basis.

The force behind all the growth? According to Brian Graham, director of membership and growth of the Professional Disc Golf Association (PDGA), there are several.

"The pandemic was very good to disc golf and our association because it is an outdoor sport that can be played with self-distancing. In fact, the PDGA doubled in size over the pandemic, going from 53,000 active members in 2019 to 109,000 active members at the end of 2021. We just

passed 112,000 active members this year, and the year isn't over. PDGA members are generally the more competitive type and represent only a small percentage of the millions of people playing disc golf recreationally around the world."

A big part of the sport's ability is its accessibility.

"It's not intimidating," said Graham. "Disc golf is growing so well because it's something everyone believes they can do, and so they do it. Maybe not everyone feels confident going out on a field with a football, for example, but just about everyone, at some point in his or her life, has thrown a Frisbee. What's funny is if you ask people if they think they're good at it, they will almost always say yes."

Another reason for disc golf's growth is its low barrier to entry. Many courses are located in municipal parks, making

it easy for someone to gather a few friends – or even just to go out alone – and start playing. There are no membership fees or greens fees, and, for the most part, players can walk onto a course and begin without any equipment other than their disc. Beginners at disc golf tend to be less self-conscious about their game than they would on a traditional golf course, a tennis court or another venue.

“Disc golf is a great sport for parks and other recreational areas due to its low cost and mass appeal to people of all ages and socio-economic backgrounds,” added Graham. “Courses can easily coexist with other park amenities, and can utilize diverse areas not suitable for other sports facilities.”

Along with the number of players, said Graham, “The number of disc golf courses has really proliferated. Parks love putting in disc golf because, while it’s a minimal investment on their part, it brings in people. In fact, when we first started, we would talk to cities and convince them to put in a disc golf course in a park, and they would designate land they couldn’t use for athletic fields or anything else because it was too wooded, too hilly, too rocky, or maybe it just was in a really troubled area.”

That actually began working in the favor of parks, however. “Something the cities would see was that once they put in a disc golf course, it brought in a lot of people,” said Graham. “That extra foot traffic in the park got rid of a lot of undesirable activity. Plus, disc golfers are actually very environmentally conscious; in fact, it’s common to see disc golfers picking up trash while they’re playing. We keep hearing it time after time after time: when you put in disc golf courses, it actually improves the area.”

Interestingly enough, it’s the landscape that makes courses more successful. What some landowners might consider obstacles or nuisances – trees, rocks



Photo by by Paul Schafer on Unsplash



Photo by Ted Johnsson on Unsplash

or uneven ground – are what disc golf players find challenging and enjoyable.

“It’s a lot more fun to have to throw a disc around trees and bushes in order to advance to the next hole than it is to throw in a flat, open field,” said Graham.

While the PDGA has an online course directory that can be searched by country, state, city, etc., it is constantly being updated because of new courses being installed to keep up with the demand.

“Disc golf is booming,” said Graham. “We are seeing growth of our sport at all levels, including the development of many new courses at public parks, private facilities, and even on traditional golf courses. We currently feature over 10,000 disc golf courses in our course directory.”

Disc golf was recently showcased as a demonstration sport at the World Games, held this past summer in Birmingham, Ala., boosting the sport’s worldwide exposure.

INSTALLING A COURSE?

If your facility has decided to install a disc golf course, what should you do? Apart from being aware that it will be vastly different from a traditional sports field (even from a traditional golf course), there are some points to take into consideration.

While installation of a disc golf course is, in fact, less labor-intensive than putting in a synthetic sports field, it does need to be done well in order to result in a finished facility that players enjoy using.

“An 18-hole course can be built for a relatively small investment, and they are best when designed by



Photo by Priscilla Du Preez on Unsplash

knowledgeable and experienced designers,” said Graham.

Experts say that courses that get less use generally tend to have been designed haphazardly, by those without expertise in the sport. Finding a sport-specific designer should be the first step.

The American Sports Builders Association (ASBA) has members, including design professionals, who specialize in sports facilities. Ascertain that any prospective partner has experience in disc golf course design.

Why use a professional? Because it is the best way to accommodate disc golfers at various skill levels. A well-designed facility might have several different courses; however, there should be at least one beginner-level course that is clearly marked. This allows the novice player to work on his or her game without being frustrated.

Once a prospective facility has been laid out, have it play-tested by a group that regularly plays disc golf, and who will be able to spot problems. (This group can become your strongest supporters if you cultivate a good relationship and take their advice into consideration.)

Other considerations include:

Adequate clearances: Placing a disc golf facility too close to another facility where active play will also be going on during disc golf games (examples might be a tennis court, a lacrosse field or even a picnic area) is trouble in the making. If discs go out of bounds (it’s not unheard of and particularly with so many enthusiastic beginners taking up the sport), it can



Photo by Priscilla Du Preez on Unsplash



Photo by Tuomas Härkönen on Unsplash

substantially disrupt play in those other areas, possibly cause injuries – and definitely be the source of complaints.

Parking and access: People will want to use your disc golf facility, so providing appropriate amounts of parking near it is going to be essential. Having safe pathways that provide a direct route to the start will save your grass or landscaping. And, of course, players should not have to cross busy roads on foot to get between the parking area and the disc golf course.

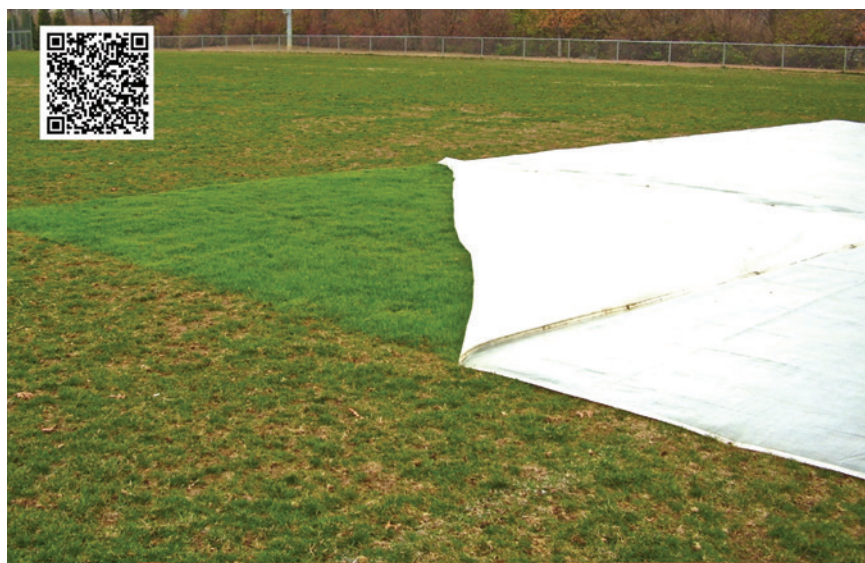
Maintenance: Disc golf courses do not require the same amount of surface maintenance as traditional golf facilities; however, they do need regular upkeep to keep them safe and playable. The amount and type of maintenance will depend not only on the local climate and the amount of use, but also on the landscape of the course. In wooded areas of the course, for example, it is necessary to trim back brush periodically and to spread mulch on trails to keep them smooth and walkable. In disc golf

courses that contain open field areas, of course, regular mowing will be necessary. Note that in many areas, disc golf courses are used through the winter; and some may continue to host tournaments or league play in cold weather and even in the snow.

With a quality facility in place, landowners will discover another market – and a great community amenity. According to Graham, the disc golf industry is not only growing but thriving.

“Years ago, almost nobody had heard of the sport and almost no stores had equipment. Now, PDGA works with about 70 different manufacturers, and we set the specifications for the equipment used in the game.” **SFM**

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



Don't let the winter set you back. Grow and protect your turf through the cold months with CoverSports Growth Covers.

**COVER
SPORTS**
EST. 1874

A DIVISION OF HUMPHRYS

800.445.6680 / sales@coversports.com / coversports.com

Using Soil Sensor Data to Manage a Field More Efficiently

By Casey Carrick, CSFM

Soil sensors? I'm good. I know my soil moisture. I know when soil temperatures are dropping. I know when to apply pre-emergent.

Those are thoughts that came to mind when someone introduced the idea of a soil sensor to me. We've been maintaining great playing surfaces for a long time without them, so why spend the money on them now?

Well, like everything else, the technology in soil sensors has drastically improved during the last 10 years or so. As sports field managers, we're always monitoring pH levels, CEC, nutrient deficiencies, and everything that a simple soil test tells us. Why wouldn't we take it a step further and start looking at moisture, temperature, and salinity in real-time data?

It does start to get a little overwhelming when you look at the options for soil sensors. Let's start with the basics – there are two different types, permanent in-ground sensors, and portable sensors.

Permanent sensors are buried underground and don't have to be moved. They are great for monitoring multiple fields at once, provide real-time data to a phone or computer, and multiple users can see the data. The downside to these is you must dig them up to move or replace, they only monitor the area in which they are installed, and usually multiple sensors are required for each field.

Handheld sensors stay above ground, and they are used daily or as needed to collect data. You can easily check different areas on a field, or multiple fields, with the same type data recording and monitoring as the in-ground sensors. The downside to these is someone must be "on site" to physically take the measurements, and it can be time consuming to do multiple fields.

Whether you choose an in-ground or handheld sensor, you're able to collect the same type of data.

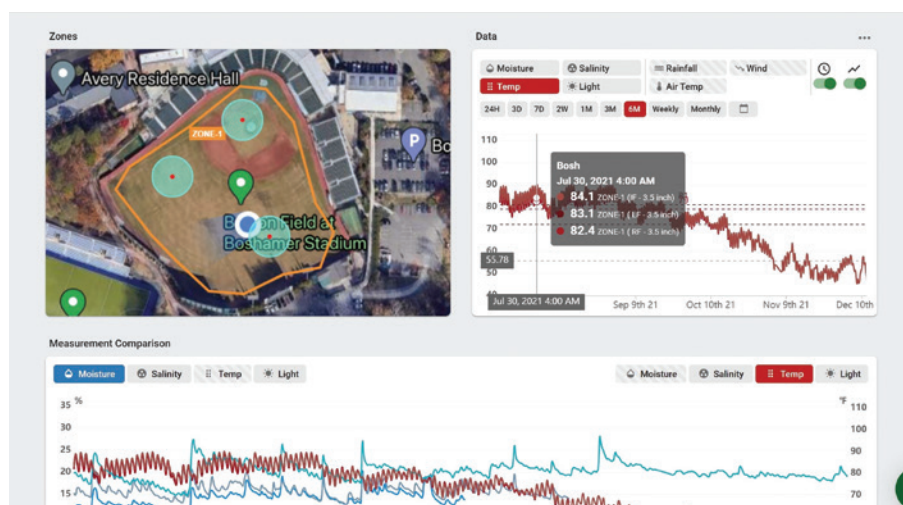


Photo provided by Casey Carrick, CSFM

Most sensors monitor and collect soil temperature, moisture, and electrical conductivity (EC).

Sensors measure moisture in volumetric water content (VWC) or essentially the percentage of water in the soil. Soil sensors can help determine the permanent wilting point and field capacity of a field – thus helping us irrigate with more accuracy and efficiency. Improved irrigation practices will help to provide a more consistent playing surface, save water and money, and increase the overall health of the plant.

Whether you're managing a cool-season grass or a warm-season grass, knowing your soil temperature is key to having a quality playing surface. Soil temperature dictates a lot of the decisions we make as sports field managers as far as overseeding, pre-emergent, and fungicide applications. We're all aware of when it's time to overseed in the fall because it is getting cooler, or when our warm-season grasses are greening up in the spring and it's time to apply pre-emergent. Using a soil sensor to monitor temperatures won't reinvent the wheel when it comes to these things, but it could help us make a more educated decision and time certain applications out at the correct time. **SFM**

Casey Carrick, CSFM, is director of athletic grounds and turf management at the University of North Carolina.

EVERYTHING'S JUST PEACHY *from your*

GEORGIA

GROWERS

PARADISE TURF
paradiseturffarm.com

SUPERIOR TURF
superiorturffarms.com

PIKE CREEK TURF
pikecreekturf.com



SUPER SOD
supersod.com

NG TURF
ngturf.com

BUY SOD
buysod.com



THETURFGRASSGROUP.COM

2022 Equipment Trends

For insight into market trends, *Landscape Business*, sister production to *SportsField Management*, recently asked representatives from equipment manufacturers throughout the industry to share their insights into market trends and what industry professionals need to know. The following comments are excerpted from that editorial coverage.

Q: What trends are you seeing with regard to outdoor power equipment for professional lawn and landscape applications (design, manufacturing, supply, sales trends, etc.)?

We're seeing the trend toward liquid applications to save money and avoid the hassle of cleaning up after granular applications. As a result, equipment is adapting to meet the needs of lawn care operators.

– Matt Smith, sales manager, Steel Green

Latest designs have been revolving around efficiency and helping operators work under the duress of a labor shortage. Equipment that can be used for more than one season of the year is growing in demand.

We are also seeing strong interest in electric equipment technology for mowers and turf renovation in certain applications, such as hospitals, schools, etc., where noise or emissions can be a factor. As many businesses consider more sustainable solutions, products that are more environmentally friendly and offer reduced or zero emissions are becoming more desirable. Also, under the current economic conditions with higher fuel prices, electric fuel injected mowers are in higher demand than in previous years.

– Ron Scheffler, senior product manager Doosan Bobcat, Ryan and Steiner

Customers deciding between buying premium professional products built to last versus less costly consumer products, and – as a result – may last just a season.

Higher horsepower on wheeled products to increase



Photo provided by Ryan.

productivity. There has also been a shift in interest toward professional robotic mowers as labor has been hard to find, margins are thin, and manufacturers are innovating more in this space.

The trend toward battery products – manufacturers of professional-grade equipment are looking to find ways to make these products more powerful – particularly blowers.

– Courtney Beall, senior brand manager for Husqvarna Professional

During the past few years, Honda has adopted the operating mantra “expect the unexpected.” Honda has a positive outlook on the commercial outdoor power equipment market and remains focused on providing customers ease of use, efficiency and improved product performance across its entire product line.

– David Bush, senior marketing strategist, general purpose engines and industrial products, Honda Powersports and Products Group

The largest trend we're seeing and hearing among our dealer partners and customers is an increased emphasis on asset utilization. Driven in part by the lack of carriers on the market, professionals are needing to make their equipment last longer and handle more jobs than usual.

– Matt Nelson, director of development, Diamond Mowers

Across the board, we are seeing a trifecta of more power, more technology and higher prices. As we, as an industry, are adding more power into our units and introducing groundbreaking new technology every year, the result is increased productivity for commercial cutters, but that comes with bigger investments per machine.

– David Dwight, director, product management, Briggs & Stratton

The biggest industry trend is still the growing demand for battery-powered products. Many municipalities and residential areas are starting to require low- to no-exhaust emissions and lower noise levels, so the market is adapting to meet those needs.

– Murray Bishop, director of sales, Stihl

Operator experience is a growing focus when it comes to outdoor power equipment for professional applications. More people are prioritizing comfortable, easy-to-use equipment.

Performance and functionality when it comes to equipment size has not been forgotten. Contractors are focusing more on finding equipment that can go where others can't.

– Buck Storlie, product manager, Yanmar Compact Equipment North America

Progress in the commercial lawn mower space has typically been defined by incremental changes and improvements. However, lawn mower design and manufacturing are quickly being disrupted by two emerging trends — electric and autonomous technologies. While gas-powered mowers continue to dominate the commercial space, market and regulatory forces — notably California's recent AB 1346 law regulating gas-powered tools — are driving manufacturers to concept and develop electric-powered machines to respond to growing demand. The requirements for commercial electric mowers are rigorous compared to consumer residential mowers, pushing the current electric technology to its limits. They must be designed to stand up to the rigors of commercial use.

– Aaron Griffith, national sales manager of professional products at Cub Cadet

While we know that we're moving toward electric power for a lot of commercial landscape equipment, we're hearing growing contractor feedback pondering what the infrastructure to support electric equipment will look like. What's the investment going to be? For contractors who don't own their buildings, it might be too much of an investment to have infrastructure installed, so we'll need to come up with new solutions to meet their needs.

– Lenny Mangnall, product manager, Exmark

When it comes to trends in the professional space, it is all about looking for ways to increase efficiency and productivity, while navigating the ongoing labor

challenges. To that end, battery power continues to make waves in the industry as its applied in new and interesting ways.

Of course, we're continuing to notice an increase in adoption of battery-powered products, especially with emissions regulations getting stricter and gas prices just coming off a record high. To match the increase in demand, battery-powered professional lawn maintenance equipment options are increasing as infrastructure and equipment improves. In the past, electric equipment had challenges matching up to the performance and runtime of gas-powered machines. That's no longer the case, and manufacturers are applying battery power in exciting new ways.

Finally, we've seen a continued interest in stand-on mowers. Many contractors enjoy the increased visibility, ability to get on and off the machine easily, increased traction and improved stability on slopes.

– Jared Nuessen, marketing manager, Toro



Photo provided by Kioti.

We're seeing professionals seek out mowers and other equipment that are reliable, serviceable and easy to use. Professionals want a mower that will withstand long days on the job, allowing them to work efficiently and effectively. Serviceability is a key factor in the purchase decision. As professionals look to expand or replace their inventory, they're going to prioritize mowers that maximize uptime and are highly serviceable. An easy-to-use mower helps professionals spend more time getting work done and having a mower that won't slow them down on the jobsite will be crucial.

– Steven Benedict, turf care product line manager, Kioti Tractor

We are seeing an increase in the number of landscape maintenance companies investing in battery-powered equipment. Not only does battery-powered equipment allow businesses to stay compliant with emerging emissions and noise regulations, but also offer benefits such as ease of use and no routine maintenance.

– Tony Buxton, group product manager, Milwaukee Tool

PLCs are always looking for quality equipment that can last all day long and continue to run for several years with very little downtime. They are also looking for higher-horsepower machines in order to get their jobs done quicker and more efficiently. Lastly, PLCs want a strong relationship with their dealer so they know whenever something does go wrong with a piece of equipment that they can count on the dealer to have their back.

– Chad Carney, go to market manager, B2B PLC segment, John Deere

Q: What advice do you have for industry professionals regarding their equipment decisions during the next 12 to 18 months?

Order equipment now. With availability problems, you don't want to wait to make a purchase decision only to find out that equipment is unavailable when you go to order. Increasing prices are another reason not to wait to make equipment decisions.

– Matt Smith, sales manager, Steel Green

Review products personally to ensure that the equipment will be able to work as hard as you do. With labor shortages affecting business, saved minutes really add up to dollars in the pocket, and a mower that is quick to clean and maintain, as well as to be ready for the next working day is important.

– Ron Scheffler, senior product manager, Doosan Bobcat, Ryan and Steiner

Properly review and understand the battery product differences in units built for professionals versus residential units. While there may be a shift in price points, leaning toward the less expensive model does not guarantee proper performance as you would achieve with a professional-grade product with a premium price tag. These higher-end models are sturdier and built to last job after job.

– Courtney Beall, senior brand manager for Husqvarna Professional



Photo provided by John Deere.

Reliability, efficiency of use, and being easy and inexpensive to maintain continue to be extremely important issues surrounding outdoor power equipment for landscape professionals. It therefore comes as no surprise that outdoor power product owners, especially those who operate commercial mower models, should remain focused both on how to get the most value from their equipment and how to most effectively complete outdoor landscaping maintenance and projects.

In addition, customers remain on the lookout for ways to make their businesses and operations more environmentally friendly. This means that fuel-efficient and lower-emissions products are proving to be attractive, along with battery-powered products.

Noise abatement, both for operators and consumers, is an increasingly important aspect of environmental sustainability. Quieter operation of power equipment, like commercial lawn mowers, helps reduce operator fatigue and increase productivity of crews.

– David Bush, senior marketing strategist, general purpose engines and industrial products, Honda Powersports and Products Group

Maintain your fleet. New equipment will continue to be in short supply this year. Do everything you can to keep your current equipment in top form, and be sure your service professional knows and follows the recommended maintenance routine.

– Matt Nelson, director of development, Diamond Mowers

Keeping up with maintenance and repairs has never been more critical. There is still uncertainty in the supply chain, so contractors need to make sure they're doing all they can to keep their existing units operating and

producing revenue. I tell people that maintenance and repairs of existing machines is a great insurance policy. It enables you to buy a piece of equipment when you want to or plan to, not when you have to.

– David Dwight, director, product management, Briggs & Stratton

For those who are actively making the transition to battery, it's important to find a modular battery platform that drives several professional tools. Look for a broad assortment that extends from trimmers and blowers to multi-attachment tools, and ensure you're getting a professional-grade tool.

– Murray Bishop, director of sales, Stihl



Photo provided by Stihl.

Versatility remains a key benefit when it comes to investing in landscape equipment. Machines with strong speed and the ability to work in all seasons allow contractors to maximize performance for more of the year.

Operator experience should also be top of mind for industry professionals, meaning they should pay attention to comfort and ease-of-use features.

– Buck Storlie, product manager, Yanmar Compact Equipment North America

Partner with your local dealer that you have built a relationship with. Discuss with them your issues, concerns and pain points of your business. There are always new products coming out that could and should make your job easier. If you are considering switching brands or dealer partners, visit all the dealers in your area within reasonable driving distances for your operation and see which dealership fits you best. Talk about the support after the sale for parts and repairs. Any time you can save on your downtime you will be ahead.

– Aaron Griffith, national sales manager of professional products at Cub Cadet

One of the most important things contractors can do is to plan their purchases. We're not in an environment where you can run your mower until it dies on Wednesday and expect to have a new replacement mower from their dealer on Thursday. That's why using the right tools for the job, and planning to purchase the right equipment for your needs, is important. Look for equipment that meets your needs for productivity, but is also reliable, durable, and is backed by a quality dealer that you have a good relationship with.

– Lenny Mangnall, product manager, Exmark

Look for products that check all the boxes: it handles the job quickly, stands up to challenging conditions, keeps your crew comfortable and therefore productive, and is easy and safe to operate. Shop for the long term, not the short term. That means investing in products that will stand up to the test of time, and deliver quality performance again and again. That also means investing in equipment that has a lower total cost of ownership in the long run but may have a higher investment cost upfront.

– Jared Nuessen, marketing manager, Toro

To ensure quality results, consider a variety of factors, including user comfort, ease of use and high machine uptime. With a comfortable mower that won't require frequent repairs, and one that seasoned professionals as well as first-time users can operate with ease, landscaping professionals can focus on completing the task at hand.

– Steven Benedict, turf care product line manager, Kioti Tractor

As businesses look to make equipment purchasing decisions, they should consider adopting battery-powered equipment in order to be prepared for the potential of further regulations.

– Tony Buxton, group product manager, Milwaukee Tool

Each customer needs to make the decision that is best for their fleet, employees, and upcoming jobs. With the supply chain having several constraints over the last couple of years, it's not been an easy decision for PLCs on when to trade in equipment and when they can get new machines. It's important to work with their local dealer to understand those supply concerns and create a plan together on when/how to make those equipment decisions.

– Chad Carney, go to market manager, B2B PLC segment, John Deere **SFM**

Winterization

Important procedures to prepare your fields for the change of seasons



By Bradley R. Jakubowski and John C. Fech

Regardless of the geographic location of the field(s) being managed, as winter approaches there are some important activities to tend to. These include actual on-the-field procedures, as well as “on the drawing board” planning and management sessions. Though the actual dates will need to be adjusted based on the locale, the common thread to all of them is the mindset of recognition of a change in season, weather conditions and in most cases, field usage.

FERTILIZATION

To maximize uptake and utilization of various nutrients, keeping the growth rate in mind as fall transitions to winter is a key consideration for both application rate and formulation. Drawing on information discovered in recently published research studies by Dr. William Kreuser and others, the practice that should be followed is to lightly fertilize actively growing grass with quickly soluble nitrogen. This important technique guides us to apply only the amount that can be absorbed before turf plants enter dormancy for the winter, or, in the case of tropical turf, greatly reduce growth rate.

As well as the amount, the formulation or solubility is influential in the winterization process. Avoiding slow-release products ensures that little to no fertilizer will be carried over to the following spring, which greatly limits

the amount of N moving downward in the soil profile, volatilizing to the atmosphere or moving laterally off site.

Nourishing newly seeded areas is especially important in mid to late fall, in that the goal is for the new stand to develop an extensive root and rhizome system. As with fertilization programs in spring and summer, looking to soil test results for guidance will provide useful information regarding other nutrients such as phosphorous, potassium, iron and magnesium. It's crucial to compare apples to apples in this case; mid-fall soil tests from two years ago will provide the best comparison and baseline information. Because soil temperatures and moisture levels greatly influence existing nutrient release rate and availability, spring and summer test results are much less comparable/applicable.

IRRIGATION SYSTEM BLOWOUT

The phrase “getting caught with you pants down” is perhaps the most descriptive of the need to remove the lion's share of the water from sprinkler lines, valves and mains. All but the newest of sports field managers and crewmembers know that this means connecting an air compressor to the system at the appropriate pressure for the appropriate time, and watching all the spray heads and various other orifices for the eventual moisture removal and pressure release; however, several other related management techniques provide guidance for easier implementation.

There are rules-of-thumb that can be used when blowing out your irrigation system:

1. Whenever possible, use an air compressor with a minimum capacity of 100 cubic feet per minute (cfm) (Figure 1). This allows you to stay close to the 50-psi speed limit (keeping your air pressures between 45 and 55 psi) and minimize potential damage to your piping and sprinkler heads. Our tendency is to increase the air pressure to speed up the blow-out process with a lower-capacity compressor.

Air can exit your sprinkler 10 times faster than water, which, in turn, causes them to ratchet back and forth extremely fast – potentially damaging the internal mechanisms of your sprinkler heads (Figure 2).

Remember, it is NOT required to remove every drop of water from the system or until you have an extremely fine or no mist. Doing so can result in catastrophic failure of the sprinkler (Figure 3).

So, when you first start to see your sprinklers expelling a fine mist instead of larger water droplets or a stream, it is time to move to the next controller station.

2. A high-flow pressure regulator that is independent of the air compressor to prevent damaging sprinkler heads could also be installed. The pressure regulator should be installed between the compressor and the main connection point.

3. Start with the sprinklers closest to the connection



Figure 1: Example of a 49-hp air compressor with a 185-cfm capacity. The capacity is normally labeled on outer framework of the compressor.

point and work away until all heads have been blown out. While blowing out a second time could lead to more water getting out of the system, you run the risk of causing more damage to the sprinklers – especially on high spots, such as hills, where added pressure could build up.

4. Don't forget about quick-coupler connections. Each one needs to be blown out.



Figure 2: Sprinkler head spinning too fast from too high pressure air and/or too little water in lines.



Figure 3. Catastrophic failure of sprinkler head due to too high air pressure and exit velocity.

5. As sprinkler heads nearest the air source sputter and exhaust air, it is helpful to have helpers available who can manually push pop-up nozzles back down into their housings and stand on them (carefully) to direct pressurized air to the downline heads.

6. Make sure water is removed from any backflow

prevention devices and their isolation ball valves are cracked open for the winter.

7. This is a good time to make notes of any broken or poorly functioning sprinkler heads to be repaired or replaced in the future.

Figure 4 shows a zone of three sprinklers being blown out. The two on the left are approaching a point where they have evacuated sufficient water for successful winterization, and someone could carefully press those down to speed up the process for the remaining sprinkler on the right.

As the time for a potential hard freeze draws near, keeping close tabs on the weather forecast is essential daily routine. Thirty-year average frost and freeze dates are a good place to start, but only serve as a reference. Real value can be obtained by installing and utilizing a simple weather station on site, especially if the field(s) are a fair distance from heat-retaining substances such as parking lots and office buildings. These days, weather stations are not expensive, with simple weather stations starting at around \$150, and more sophisticated systems in the \$500 range. Considering the low point of entry, the return on investment is substantial. The bottom line is that these tools provide localized information on soil temperature and a host of other weather conditions such as relative humidity and wind speed, which is essential when it comes to managing foliar turf and ornamental diseases.



Figure 4. Example of sprinklers at different stages of the blow-out process.



Finally, matching field use schedules to blowout procedures is helpful as it takes two to four hours total to blow out the average sports field (football field); and while several air compressors may be available, most managers don't carry one per field. Starting the process with fields that have concluded usage for the year, then moving to fields hosting later games will maximize time and labor inputs.

AERATION

Generally, mid to late fall is a time to avoid aeration, as opening up the turf shoot-root-thatch-mat interface close to the onset of cold weather is dangerous indeed. Cold weather and strong early winter winds can easily result in permanent damage from direct cold temperature injuries and desiccation.

However, if aeration has been performed in the weeks preceding as a step in obtaining seed-to-soil contact, it's important to keep this open profile in mind as any late-fall topdressing operations are performed. Practices such as heavy sand additions and geotextile turf



Influence

YOUR INFIELD WITH

In-Flow™

INFIELD SKIN MAINTENANCE

- ✓ Optimize playing conditions
- ✓ Maintain moisture levels
- ✓ Improve soil profile

PRECISION
LABORATORIES
Results. Expect it.

1.800.323.6280 | www.precisionlab.com |    



Figure 5. Noting the types and locations of weeds can make spring start up easier.

cover installation may need to be modified if aeration was implemented earlier in the season.

PLANNING MAPPING WEED CONTROL FOR 2023

Gathering and identifying specific locations of weed infestations is a key late fall operation that pays big dividends in the winter and spring (Figure 5). After

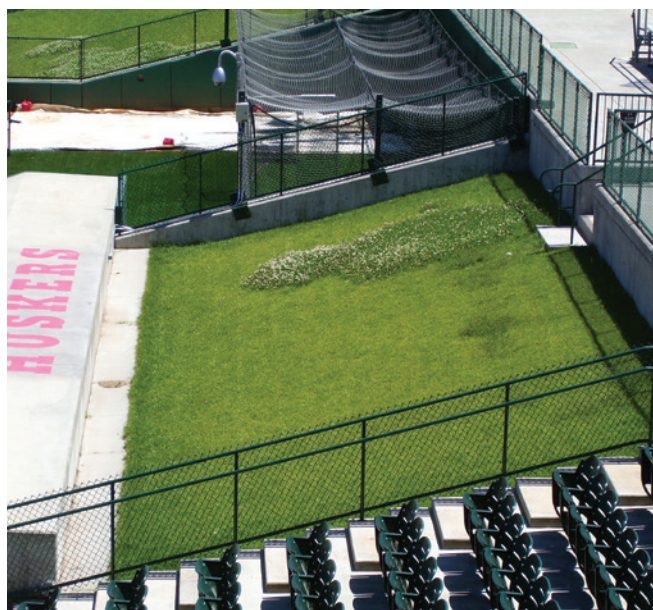


Figure 6. White clover locations, providing future weed management needs and an indicator of low N fertility.

all, if you want to fix or buy something, you have to identify the exact nature of the item you're dealing with. That applies to controlling sycamore tree diseases; it also applies to controlling goosegrass, carpet weed, crabgrass and plantain. In the short term, one of the payoffs is determining which weed control products to buy for the upcoming calendar year.

The point in time where it becomes especially useful is when lots of activities, chores and needed operations are vying for the forefront of your mind, and it is difficult to remember exactly where those patches of white clover are located (Figure 6). A simple weed map with notes, circles and various colors of ink provides invaluable information.

CONTACT ALL SUPPLIERS

Considering supply chain shortfalls, shipping issues and price increases, an honest discussion with your current and future vendors could yield positive results. Even though it may seem like the leverage in the relationship has shifted from buyer to seller, at the end of the day, a sales representative still has to convince the sports field manager to buy from them and not from someone else. Knowing the field's needs in terms of irrigation supplies, fertilizers, pest control products, ornamental maintenance tools, striping equipment, mowers and other repair tools – and having them in mind during the discussion – will provide a foundation. Being open to new products and techniques will pay off as well. **SFM**

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

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

All photos supplied by the authors.

JOHN MASCARO'S PHOTO QUIZ



ANSWER

From page 17

The sports field manager came into work at this private boarding school one Monday this past summer to find these two rough-looking areas in the corner of one of his high school practice football fields. He noted it almost looked like skunks had been tearing up the turf looking for insects. The areas were also still wet with moisture although there were no signs of an irrigation break, deepening the mystery as to the cause of these damaged areas. Since the school's day camp uses this field for recreation, the sports field manager started asking some questions. As it turned out, since it had been a hot summer weekend, with highs in the 90s, the school's day camp set up a large inflatable water slide. These damaged areas were the water slide exits, and lots of water spilled out and feet trampled down the turf, causing this torn and trampled turf.

Photos submitted by Peter Thibeault, CSFM, sports field manager at Noble and Greenough School in Dedham, Mass.

John Mascaro is president of Turf-Tec International

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

SUBSCRIBE TODAY!

Sportsfield
MANAGEMENT

sportsfieldmanagementonline.com/subscribe

Sports Field Planning and Design BMPs

Editor's Note: The following is an excerpt 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/

Any new development requires careful consideration of the health of the ecosystem during planning, design, and construction. The thoughtful use of BMPs during planning, design, and construction results in an environmentally sustainable facility that operates efficiently.

If possible, orient fields to minimize the time that players must look directly into the sun during games. Generally, the long axis of the rectangular field should be in a north-south direction. This also minimizes the field area shaded during the winter months if there are trees along the south side of the field. Rule books for baseball and softball fields recommend orientating the field so that center field from home plate to the outfield fence is in an east-northeast direction. In addition to orientation, a good design provides an adequate irrigation and drainage system, as well as grade plan.

Sports fields should be planned, designed, and constructed specifically for the sport to be played in order to meet the specifications for that sport. Each sports field has standard dimensions, contours, and drainage specifications that aid in the rapid shedding of stormwater.

While many issues must be addressed during the planning and design phases, a number of considerations have significant impacts on the overall sustainability and functionality of the final sports field performance.

PLANNING AND DESIGN

PROJECT TEAM CRITICAL ROLES

The planning and design phase of sports field construction involves numerous personnel, and should include the sports field manager whenever possible. In order to ensure that new sports fields are planned and constructed properly, a sports field architect and a CFB are critical to avoid expensive failures. These critical roles should be filled as soon as possible, and these experts should be involved in all phases of planning, design, and construction.

SITE ASSESSMENT

The team planning any new field installation must consider many factors, including how the proposed site and the project will be impacted by site characteristics, such as:

- Existing soil composition
- Existing drainage patterns
- Existing infrastructure and slope surveys
- Site surroundings/surveys
- Pre-mapped drainage systems, including any existing municipal sewer systems
- Proposed drainage system
- The type of stone used in the base system
- The planarity of subgrade soils
- The planarity of the stone base

As part of the site assessment, any review of natural or historical resources (e.g., wetlands surveys, listed species review, archaeological review) needs to be conducted, as required by state regulations or local ordinances.

SOIL PROFILE SELECTION

One of the first decisions made during the planning process is the selection of the type of soil profile: native soil, modified native soil, or sand-based soil. Each has pros and cons, which must be evaluated before a final decision is made.

MAINTENANCE CONSIDERATIONS

The maintenance of natural grass sports fields must be reviewed prior to construction, as the resources needed to maintain a field are significant. All newly constructed fields must have a detailed maintenance plan that encompasses utilizing a sports field manager to ensure the investment is cared for properly. Care involves ensuring proper agronomic practices are followed and the field is protected from pest damage. Maintenance includes proper mowing, fertilization,

irrigation, cultivation and topdressing, and mitigation of mechanical, environmental, and pest-related turfgrass stress. Field usage also influences turfgrass maintenance. For example, heavily used fields typically require more inputs to maintain turfgrass cover.

Once the planning and design phases are complete, construction must be carried out in a way that minimizes environmental impacts. Maintaining a construction progress report, as well as following regulations and coordinating with regulatory agencies as required, helps to ensure compliance.

DRAINAGE

Within the field, efficiently ensuring that precipitation drains through the surface and subsurface is critical to maintaining playability. Water drains or exits a field through evaporation, surface runoff, internal root zone drainage, and eventually out of the root zone profile, preferably through an underground drainage network.

By ensuring the involvement of the sports field manager in all efforts related to water management, time, effort, and often costs can be saved by incorporating the proper structures and landscape features that assist in drainage and stormwater management.

SURFACE DRAINAGE

Moving water the shortest distance possible over the playing surface is the best strategy for achieving adequate surface drainage. For rectangular fields constructed using fine-textured, native soils, crowning is preferred over a simple slope from one side to another, with the crown constructed with a minimum 1.5% slope. Stakeholders involved in ball roll sports (e.g., soccer, field hockey) may be reluctant to accept aggressively pitched surfaces. Consultation with a certified builder, sports field manager, or university Extension agent can be used to determine the best design for the specific application. If native soil construction is employed and stakeholders are unable to accept crowned surfaces > 1.5% and/or inclusion of sand-slit drainage, expectations for field drainage should be lowered.

Generally, baseball and softball outfields are crowned toward the outfield fence or crowned through center field with runoff toward the sidelines. Infields only have

0.5% slope from the pitcher's plate to the bases. Skinned areas have variable slopes from 0.5% to 1.5%. The baseball pitcher's plate is 10" above home plate while the softball pitcher's plate is level with home plate.

SUBSURFACE DRAINAGE

Because native soil fields retain more water than other field systems, subsurface drain tiles within the playing area may be installed. Properly installed tiles within the playing area maintain their function over time. Proper installation includes appropriate tile depths, spacing, and crowns, as well as the use of appropriate backfill materials. If not installed and maintained correctly, the system will not function properly. Proper function allows water to passively enter the tile and then move to its next collection point by gravity. Once installed, subsurface drainage systems require maintenance, such as cleaning of catch basin structures. A university Extension agent should be consulted for assistance in subsurface drainage issues.

STORMWATER MANAGEMENT

Stormwater management is the control and use of runoff, and includes planning for runoff, maintaining stormwater systems, and regulating the collection, storage, and movement of stormwater. The sports field manager and administration must be aware of the principles of water management, and integrate them into the design and construction that influence surface and subsurface drainage both on and off the field. Additional stormwater control measures can be incorporated throughout the facility to manage stormwater runoff.

Runoff, or the movement of water across the land surface from either precipitation or irrigation that does not infiltrate into the ground, is the conveying force behind nonpoint source pollution. Stormwater management refers to runoff from precipitation, but the principles can also apply to irrigation runoff as well. Off the field, stormwater should be managed to ensure that it does not contribute to nonpoint source pollution of water resources. BMPs should be used to reduce stormwater volume, peak flow, and nonpoint source pollution by promoting infiltration, retention, and filtering. BMPs help achieve such goals by:

- Keeping stormwater close to where it falls
- Slowing down stormwater runoff
- Allowing stormwater to infiltrate into the soil

SOURCE CONTROLS

Source controls help prevent the generation of stormwater runoff or the introduction of pollutants into stormwater runoff. For example, during construction or redesign activities, strict adherence to erosion and sedimentation controls helps to prevent, or at least minimize, the possibility for sediment, nutrients, and chemicals to impact water quality through runoff. After construction, implementation of BMPs can reduce the potential for offsite movement of nutrients and pesticides.

STRUCTURAL CONTROLS

Structural controls are design and engineering features used both in construction and as part of ongoing management practices that help to remove, filter, retain, or reroute potential contaminants (e.g., sediments, nutrients, and chemicals) carried in surface runoff. The controls may also be combined to increase the treatment of stormwater. For example, sediment forebays can be used to pretreat stormwater before it is discharged to a dry extended detention basin, wet basin, constructed stormwater wetland, or infiltration basin. Periodic inspection and maintenance of all structural controls are essential to ensure they function as designed. Maintenance includes periodic cleaning of small basins, ponds, and forebays to remove sediments.

Erosion and sediment controls: Through the process of erosion, particles of sand, silt, and clay can be transported off-site by flowing water and blowing winds. Sedimentation occurs when eroded material settles out of the water column, degrading water quality by increasing turbidity, harming aquatic plants, and impairing habitat for aquatic organisms. In addition, soil contaminants may be transported with eroding soil. During construction, erosion and sediment control measures must be inspected regularly to ensure that they are functioning as designed.

Erosion and sediment control plans are a regulatory requirement at the state level. Additional regional or local regulations may also exist, such as mandated buffer distances.

NON-STRUCTURAL CONTROLS

Non-structural controls often mimic natural hydrology (e.g., constructed wetlands), hold stormwater, and filter stormwater via vegetative practices (e.g., filter strips and grassed swales). Turfgrass areas are extremely effective in reducing soil losses compared with other cropping systems, due to the architecture of the turfgrass canopy, the fibrous root system, and the development of a vast macropore soil

structural system that encourages infiltration rather than runoff. Additionally, turfgrass density, leaf texture, rooting strength, and canopy height physically restrain soil erosion and sediment loss by dissipating impact energy from rain and irrigation water droplets.

Buffers: Buffers around the shore of surface waters, wetlands, or other sensitive areas filter runoff as it passes across the ground. Buffers are the last line of defense to minimize sediment and solute (mostly fertilizer and pesticide) contamination of waterways. These are relatively more important in areas with high precipitation.

Depending upon site-specific conditions, including the amount of available space, a range of buffer widths can be considered. Buffer widths as narrow as 10 feet have been shown to be effective. In most cases, a wide buffer is needed to effectively protect aquatic resources. Smaller buffers still afford some level of protection to the surface waters, and are preferable to no buffer at all. Protection of the biological components of wetlands and streams typically requires significantly greater buffer widths.

For vegetated buffer zones, ornamental grasses, wetland plants, or emergent vegetation around the perimeter and edges of surface waters serve as a buffer and wildlife habitat for many aquatic organisms, and can be aesthetically pleasing. Use native plants for these plantings whenever possible.

Riparian buffers along streams and rivers can be up to three different plant assemblages, progressing from sedges and rushes along the water's edge to upland species. Riparian buffers of sufficient width intercept sediment, nutrients, and chemicals in surface runoff and reduce nutrients and other contaminants in shallow sub-surface water flow. Woody vegetation in buffers provides food and cover for wildlife, stabilizes stream banks, and slows out-of-bank flood flows.

Wetlands and floodplains: Wetlands are transitional areas between aquatic and dry upland habitats. They are flooded or saturated by surface or groundwater at a frequency and duration long enough during the growing season to support plants and other life adapted to saturated soils where oxygen is limited and unique chemical properties form. Riparian habitats include the dense and diverse vegetation growing along streams, rivers, springs, wetlands, ponds, and lakes. They often support plants adapted to highly fluctuating water availability (from spring flooding to summer drought). In addition, wetland and riparian habitats are essential for many fish, wildlife, invertebrate, and plant species. Nearly half of bird species rely on wetland and riparian habitats, as well as numerous

other game, fish, and other wildlife species.

Conserving any wetlands and riparian areas within the facility boundaries protects water quality and biodiversity, while reducing the potential for flooding and soil erosion. To protect these natural resources, wetlands should be identified in the field by qualified wetland specialists during the design phase and before the permitting process is initiated. Facility design should minimize any impact to wetlands and streams tied to activities such as filling, dredging, flooding, or converting areas from one habitat type to another. In addition, natural buffers should be retained around wetlands (as with other waterbodies) to protect water quality.

GREEN INFRASTRUCTURE

In and around the buildings, parking areas, and other structures, opportunities should be identified to slow down the movement of water from impervious surfaces (i.e., paved areas) and allow for infiltration. Green Infrastructure (GI) features can be used as an effective and economical way to improve the safety and quality of life (EPA, 2017) through the intentional use of the ecosystem services provided by plants in the managed landscape. Green roofs, rain gardens, bioswales, cisterns, and permeable pavements are examples of GI landscaping. In using these kinds of stormwater control methods, the natural drainage patterns should be utilized, and runoff should be channeled away from impervious surfaces.

Green Infrastructure conserves, restores, or replicates the natural water cycle by reducing and treating stormwater runoff, thus turning a potential pollutant into an environmental and economic benefit.

Green roofs: A green roof is a building roof partially or completely covered with vegetation and a growing medium, planted over a waterproofing membrane. It may also include additional layers such as a root barrier or drainage and irrigation systems. Green roofs can reduce stormwater runoff, help regulate a building's internal temperature, and mitigate the urban heat island effect. Green roofs can catch 40-60% of stormwater, reducing flow into a city's sewers (EPA, 2008) and can reduce approximately 65% of peak flows and 55% of runoff volumes (Jaffe et al., 2010). Green roofs can also offer significant economic benefits, including a longer roof life and heating and cooling energy savings. Green roofs require special engineering and should be designed and constructed by certified professionals.

Rain gardens: A rain garden is a small, shallow area designed to temporarily capture rainwater that drains from a roof, parking lot, or other open area. A rain garden is not a pond, water garden, or wetland. It is dry most of the time and briefly holds water after a rain. Rain gardens typically are planted with a mixture of deep-rooted perennial flowers, ornamental grasses, and woody shrubs that are adapted to wet and dry conditions. There are a variety of specialists (such as Extension agents and horticultural professionals) who can provide guidance on plant selection appropriate for rain gardens.

Installing rain gardens in locations where they catch and temporarily hold water helps control stormwater runoff, remove contaminants before releasing water into the surrounding soil or aquifer, and conserve water by reducing supplemental irrigation needs. Water collected in the rain garden slowly infiltrates into the soil to support plant growth and to lessen runoff into storm drains and nearby streams or lakes. In a properly sited and constructed rain garden, standing water disappears within 24 to 48 hours.

Bioswales: Bioswales are stormwater conveyance systems that provide an alternative to storm sewers and can absorb low flows or carry runoff from heavy rains to storm sewer inlets. Bioswales concentrate and convey stormwater runoff while removing debris, sediments, nutrients, etc. They improve water quality by infiltrating the first flush of stormwater runoff and filtering the large storm flows they convey. They are typically vegetated, mulched, or xeriscaped.

Cisterns: Cisterns are receptacles for holding precipitation, such as runoff from rooftop downspouts and gutters. They can range in capacity from a few gallons to thousands of cubic yards in storage tanks placed either above or below ground. The stored water can then be used in non-potable manners such as landscape irrigation, rinsing gardening tools or washing equipment. By storing water, cisterns reduce the amount of stormwater runoff to streams and storm sewers, particularly for small storms. A filter is used to remove any debris from the runoff before entering the cistern. A gutter guard can also be used to reduce the leaves, dust and debris that may enter the cistern.

Permeable pavements: Maximizing the use of pervious pavements, such as brick or concrete pavers separated by sand and planted with grass or porous asphalt, allows stormwater to infiltrate into the soil as opposed to running off. Crushed stone and other permeable products are available for walking paths or parking lots. Mowable drives and walks can be used by adding a rigid lattice designed for distributing traffic yet allowing grass to grow through the lattice. **SFM**



Preparing for the Most Challenging World Cup Yet

Editor's Note: Article and photos provided by Bernhard and Company.

The MLS season is beginning to reach its conclusion and, as such, attention is turning to the 2022 FIFA World Cup. After successfully punching their ticket to the World Cup Finals in Qatar on their visit to Costa Rica, the U.S. national soccer team will be looking for redemption following a failed qualification attempt in 2017. While the tournament may not get going until mid-November, sights are now fully set on soccer's flagship event. Quite rightly for a tournament of its magnitude, preparations have been taking place not only over the spring and summer, but for several years.

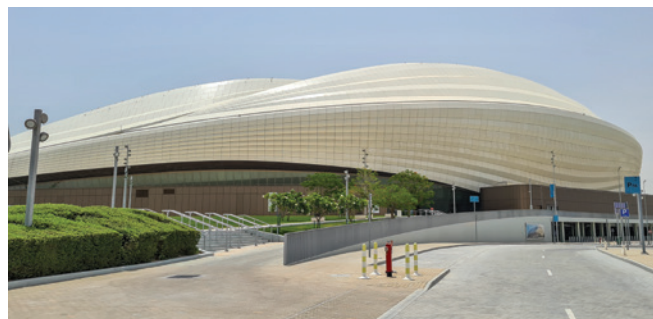
Bernhard and Company – in collaboration with SubAir Systems and Aspire Turf Management – has been responsible for providing turf management solutions for the 2022 FIFA World Cup. The World Cup venues are home to 11 sets of Bernhard and Company grinding machines, as well as SubAir Systems installed at all eight stadiums. These technologies are helping create beautiful playing surfaces that can stand up to the very highest levels of scrutiny on the world stage.

Steve Wilson, global business development manager at Bernhard Turf Technologies, and Trey Crabill, vice

president of SubAir Systems, recently shared details about the planning processes, as well as the challenges that the teams have faced in preparing eight stadiums and 110 practice fields for the arrival of soccer's greatest stars. They also explained why this World Cup may have come with the toughest challenge a maintenance crew has ever faced at a major global tournament.

"This World Cup is particularly unique, in the sense that there will only be eight stadiums used during the tournament," said Wilson. "I believe this might be the fewest ever. For example, when the World Cup visited Russia in 2018, there were 12 stadiums used. So, there is around a 30-percent reduction in the amount of turf, which increases the stress levels on the grass significantly.

"That combination potentially makes it one of the toughest briefs ever received in terms of maintaining stadiums during a tournament. To provide some context, there are five or six stadiums that are hosting six matches over a 10-day period. This means that, on more than one occasion, they will host games on back-to-back days. That is not only extremely demanding from a logistics perspective, but also very demanding on the pitches that the players will perform on. In



comparison, most Premier League stadiums in England, or other globally recognized stadia, might host a game once a week, or even less, on average.”

Added Wilson, “In order to deliver the best possible playing surfaces in each stadium, and on the 100-plus practice pitches, there has been a full turf management package installed, including a range of Bernhard and Company grinding machines, SubAir Systems, TurfBreeze fans, stitching, and supplementary grow lights. I genuinely believe that without the grinders, the team on the ground would not be able to pull this off with so many games in such a short window. With the significant number of matches and limited number of stadiums, it is critical that the grass is cut cleanly so that it becomes more resistant to wear.”

According to Wilson, the biggest wave of traffic over the pitches will be during the group stages of the tournament.

“Those two weeks are just crazy from a maintenance perspective, with games every other day,” he said. “With the grinders in place, we are going to be able to keep the mowers sharp and perfectly set, ensuring we give the grass a clean cut each time.”

SubAir Systems has also played a crucial role in helping to prepare the world-class pitches for the 2022 FIFA World Cup. Having the SubAir systems installed in the stadiums has allowed the maintenance crew to have total control over the rootzone of each pitch, without disrupting the surface. This means they have the ability to control the levels of moisture, oxygen, and gas transfer in the subsoil. In order to manage the rootzone without a system installed, the team would have had to aerate the pitches by punching holes in the surface.

“One of the challenges is ensuring that each pitch plays consistently,” said Crabill. “Even though the stadiums are in relatively close proximity, a variety of factors make each of these eight pitches their own individual organism. Each pitch will be in its own microclimate, which means, without a method by which you can control the pitches, they would each play differently.”

Crabill added that one reason SubAir Systems was chosen for the 2022 World Cup is that the system can be utilized differently at each stadium to ensure they are consistent.

“Our mission is to help provide a world-class experience for FIFA, the organizations involved, the players who take the pitch, and the fans either attending or watching around the globe,” said Crabill. “Organizers will be able to ensure that matches start on time, and athletes will be able to maximize their ability to play and compete on the safest, most consistent surfaces available. The technology suite



(user interface, adaptive control, automatic response, pitch scheduler) of our systems are some of the key factors in accomplishing this mission. What that means is, no matter what changes there are in terms of weather conditions, the system will use live data derived from wireless sensors placed throughout the pitch to automatically maintain ideal pitch conditions.”

According to SubAir, one of the key takeaways from the preparation process has been the application of a counterforce, to gravity pulling water through the soil with the SubAir pressure mode. This enables the maintenance team to hold the correct level of moisture in the roots for much longer. By doing this, they are also able to save water by reducing the amount that is required on the pitch surface.

The extreme environment in Qatar has proven to be a useful test for SubAir. For example, one stadium uses the SubAir System because it's coastal, and therefore suffers from salinity issues. So, the vacuum mode allows the stadium maintenance staff to pull the moisture through the soil, lowering the salt level. Even within stadiums that are just a few kilometers apart, there are a lot of unique requirements that will create fantastic case studies on how to better manage certain growing conditions.

“The pitches are in phenomenal shape, and with the healthiest turf possible, we are all set for a fantastic tournament where the playing surfaces will match the extreme high performance of the players,” said Wilson. **SFM**

Getting the Most Out of Your UTV This Winter

Article provided by Western, a Douglas Dynamics brand.

While work trucks equipped with plows and salt spreaders are common for roads and large parking lots; sidewalks, walking paths and driveways are increasingly being maintained by UTVs equipped with purpose-built plows and salt spreaders. To ensure your UTV is set up for snow and ice control in the winter, keep these things in mind.

ENSURE YOU HAVE THE RIGHT ATTACHMENTS FOR YOUR VEHICLE

UTVs come in a wide variety of engine sizes and vehicle weights. You need to ensure that the plow and spreader you select are right-sized for your UTV. To ensure the best match, you need to account for the weight of the attachment and the weight of the product it can carry (especially for salt/sand spreaders). The available amperage produced by the UTV is also important to ensure what type of attachment your vehicle can power.

There are several different types of UTVs available on the market:

- Mid-duty UTVs (sport-utility) – These vehicles provide up to 500 pounds of cargo capacity and come in 2- or 4-passenger configurations.

- Heavy-duty/full-size UTVs (utility) – These vehicles provide up to 2,000 pounds of towing capacity and come in 2- or 4-passenger configurations

While larger UTVs can handle larger plows and spreaders, smaller UTVs can still do an excellent job with snow and ice removal. You might just have to make several passes and go slower for effective clean up.

EQUIP YOUR UTV WITH SUPPORTIVE OPTIONS

If you plan on using your UTV to clear snow, a windshield is important to block wind and the elements. It provides a layer of protection for the operator. Purchasing a UTV with doors and a heated cab would be a good option if you plan on using the UTV often in the winter.



Determine the type of plow you plan on using. There are manual-angle plows, winch-lift plows, and hydraulic plows. If you plan on moving a lot of snow, a hydraulic lift and angle plow could save time. Your operator can position the plow up, down, left or right without leaving the UTV cab. This is very helpful for applications that require stacking and piling. If you plan on purchasing a winch-lift plow, ensure your UTV is equipped with a winch.

Smaller charging systems, cold temps, and high electric demand make life difficult for a UTV battery. Using a high-quality sealed battery is in your best interest for snow removal. Electronic fuel injection requires sufficient voltage in order to operate. A weak or defective battery can mean more than a plow down, it can shut down the whole operation.

Snow and ice removal often happens at night or early in the morning when it's dark. Having the correct lighting on your UTV is important. Work lights in the front and the rear of the vehicle can help illuminate the area you are clearing. The lights also make you more noticeable to other vehicles and people in the area where you are working.



ACCESSORIZE YOUR PLOW FOR MAXIMUM EFFICIENCY AND PERFORMANCE

Once you have decided on the best plow for your utility vehicle, you'll want to make sure it's set up correctly with the right accessories — including shoe kits, cutting edges, deflectors, and more.

Plow shoe kits allow you to easily adjust the height the blade from the ground. This is helpful if you are removing snow from sensitive surfaces such as gravel or pavers. You can set your shoes to allow the plow blade to float slightly above the surface to reduce damage and avoid a bulldozing effect.

The cutting edge material you use matters as well. A steel cutting edge (usually standard on most plow blades) is durable and provides a clean scrape, but it can damage sensitive surfaces such as gravel, pavers, or packed earth. Poly cutting edges are great for sensitive surfaces since the poly edge is more forgiving than steel. Poly edges might require more passes than a steel cutting edge and possibly some salt to achieve the same level of cleanup.

A rubber deflector is installed at the top of the plow blade. It limits the amount of snow that blows off the top of the blade up onto the windshield, increasing visibility and snow rolling. If you are using your UTV and plow in high-traffic areas or as a part of a sidewalk crew, a rubber deflector could increase the safety of those around the UTV.

Once your accessories are set, you need to ensure the angle of your plow is set correctly. Most plows allow you to angle left or right and lift up or down, depending on where you want your snow piles to reside. UTV plows allow you to set the angle manually, use a winch system, or use hydraulics for easy angling and lift.



KEEP UP WITH PROPER UTV PLOW MAINTENANCE

Snow removal can be demanding, so it's important to keep up with the maintenance on your UTV. Ensure that the coolant you are using is rated to temperatures down to 40 below zero Fahrenheit. This will help keep the engine running smoothly. Know what type of oil your UTV is running. A lot of UTVs in the market today run synthetic oil, which performs well in winter conditions.

Before plowing or spreading salt or sand, ensure that all your plow and spreader connections are in place. Verifying the connections is quick, and will save you from a major issue if the connections dislodge during operation. Before making your first plow pass, coat your plow blade with oil to reduce snow sticking to the blade. Cooking oil works perfectly.

One thing to check after you move snow with your UTV is the air intake. The fine "snow dust" can freeze and make it difficult for the engine to receive the air it needs to run smoothly. Before storing your UTV, make sure you clean off everything as much as possible. This will reduce freezing and/or rusting of any exposed metal on your vehicle and snow removal tools.

When you park your UTV plow, lower the plow so it's resting on the ground. This will alleviate the weight of the plow on your vehicle's suspension or winch when it's not in use. To reduce the chance of salt bridging (the salt freezing into a solid block), empty your spreader of any remaining salt after each use. **SFM**

Photos provided by Western Products.

Exmark electrifies stand-on mower market with Vertex V-Series

Exmark introduced its first stand-on electric mower – the Vertex V-Series. The new machine provides commercial durability and professional cut quality in a HyperCell-powered electric mower.

“We built the Vertex V-Series for contractors, municipalities and schools looking for the next generation of zero engine emission mowers,” said Exmark Director of Marketing, Jamie Briggs. “It is a highly productive solution for anyone that needs to comply with local regulations, ordinances, or preferences for quiet mowing solutions and zero engine exhaust.”

Exmark leverages the HyperCell Power System to power the Vertex V-Series mowers. Designed specifically for commercial mower applications, HyperCell batteries are designed to run cooler to provide more runtime and longer service life. The Vertex V-Series uses eight HyperCell batteries, with patent-pending management software that optimizes performance for the conditions and delivers up to 7 hours of runtime per charge.

The Vertex V-Series uses commercial high-torque wheel motors working with a planetary

transmission to deliver a smooth, responsive feel at the controls and ground speed of up to 10 mph.

The electric powertrain also eliminates service and maintenance typically associated with gasoline engines, including oil and filter changes. The use of electric spindle motors also makes belt maintenance and replacement a thing of the past.

This reduction in maintenance time and cost, when combined with the dramatic savings in fuel costs, makes Vertex V-Series a cost-efficient choice for contractors looking to minimize the total cost of ownership of their machines.

Vertex V-Series mowers feature Horizon360 Connect smart equipment remote software, which provides app-based connection to the machine for real-time equipment data, battery charge status and location information.

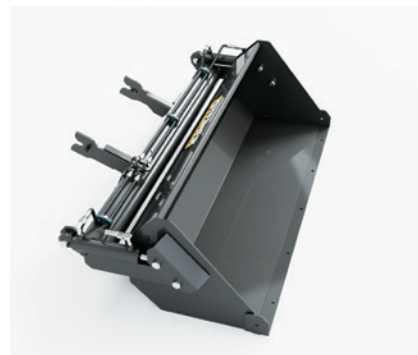
For 2023, Exmark will offer the Vertex V-Series with a 52-inch Electric Series 4 side-discharge cutting deck, which is fabricated and welded from high-strength steel. The high-torque deck motors feature a 9-inch-diameter cast aluminum spindle housings with blade retainers for maximum commercial durability.

Steiner unveils updates to Slip Scoop attachment

Steiner revealed updates to its Slip Scoop attachment, a productive tool designed for hauling gravel, scooping snow, pushing dirt and more.

The new Steiner Slip Scoop now includes:

- Precut holes for the scarifier to reduce setup time
- Boxed-in rear frame increasing structural support
- Updated hitch arm brackets for improved strength and support



■ Updated bulkhead fitting for easier serviceability

■ Added kickstand to make hookup easier

Steiner's Slip Scoop attachment is compact, helping it excel in tight spots, while still providing commercial-grade hydraulic lifting power to support users taking on any landscaping, hardscaping or excavation project.

“The Steiner Slip Scoop is one of our most versatile attachments, perfect for year-round use,” said Ron Scheffler, senior product manager for Doosan Bobcat, parent company of Steiner. “These product upgrades were designed with the user in mind, making it easier to adjust, access, and service the equipment.”

The Slip Scoop attachment is available for purchase now at Steiner dealers throughout the country. Prospective users can see the updated Slip Scoop at the 2022 Equip Exposition trade show in Louisville, Ky.



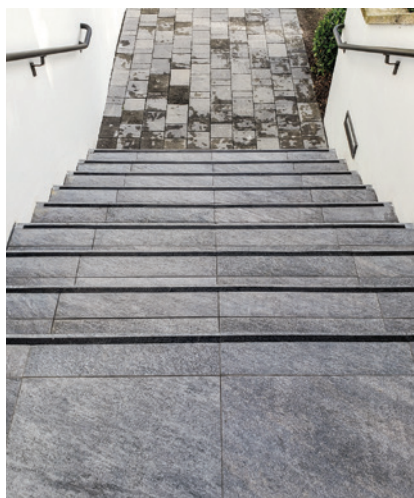
Form-A-Tread for facility stair safety

In commercial facilities across the country, the most common technique for preventing slip and fall accidents on stairs is the application of non-skid adhesive tapes or epoxy coatings embedded with aggregate. The appeal of this approach is that untrained personnel can quickly and easily apply the protection. However, for high-traffic stairways, tapes can peel off (creating a trip hazard) and coatings abrade away quickly, leading to frequent reapplication every few months to maintain safety standards.

Now, a new category of durable high-tech epoxy is available as solution to effectively ensure superior stair tread footing, safety, and visibility for years without re-application. This option dramatically reduces the need for maintenance and replacement even in heavily traveled areas and can be quickly and easily applied on stair treads by facility personnel.

The patented product from Form-A-Tread Company is a durable epoxy paste consisting of 100% solids that, once applied, can last for years in high-traffic areas. It provides an extremely strong bond to a range of stair tread surfaces, with embedded aggregate to increase traction.

The epoxy paste can be used indoors or outdoors, as well as exposed to chemicals, weather, and temperature extremes. The bond



is so strong that a chisel or angle grinder is required to remove the stair tread line, an advantage in high-traffic areas.

The high-strength epoxy paste is designed to be easy to apply to stair treads by even untrained personnel. In a kit supplied by Form-A-Tread, there is a 400 ml cartridge of material that can produce 25 to 40 linear feet of one-inch-wide tread depending on the surface type. A special tool is then used to dispense and mix the material at the time of application in the correct ratio – eliminating the risk of human error.

The kit includes a patent-pending stencil system, so the one-inch-wide tread lines remain clean, neat, and parallel. In addition to straight line treads, instructions such as “Exit Here” or a corporate logo can be applied using the material and a stencil.

For added safety, the 100% epoxy tread line does not shrink and so provides a superior tactile sensation that creates greater awareness of footing when climbing or descending stairs.

The product is available in black and safety yellow to delineate the edge of each stair tread. To increase safety in low-light, indoor facility settings, the company also offers a patented photoluminescent version

of the stair tread safety product which glows in the dark to provide greater visibility.

– Written by Del Williams, a technical writer based in Torrance, Calif.

Earth & Turf Products 415 SP stand-on topdresser

Earth & Turf Products introduced the first-ever stand-on topdresser – the 415 SP. Though there are a variety of uses, this unit targets compost and sand spreading to manage soil health. During recent years, Earth & Turf customers asked for a stand-on version – one that can cover ground faster than walking, doesn't require a towing vehicle, and spreads evenly. For two years, the Earth & Turf engineering team sought out the ideal spreader system and came up with the 415 SP.

This unit is self-propelled, with a stand-on plate on the back. It has a four-wheel hydrostatic drive system, which means you have a motor on each wheel, allowing for four wheels to drive if needed. The spreader boasts a 15-cubic-foot hopper that can be heaped to one yard of light material, and spreads 48 inches wide at a top speed of 7 mph. The expeller brush spins fast enough to propel material into the grass canopy ahead of you, while stiff bristles regulate the spread. **SFM**



The following are some industry Tweets from the past month.



@FOS

The Kansas City Chiefs have painted their field with its original design ahead of Thursday night's game — a tribute to Arrowhead Stadium's 50th anniversary

SEPTEMBER 14



@Twillhog75

This one was fun! We have enjoyed the throwback to 1972! We brought Mr. George P. Toma in to help us knock out the design he was responsible for then. Kudos to my guys...they killed it. They are extremely talented and intelligent. They make me look good!

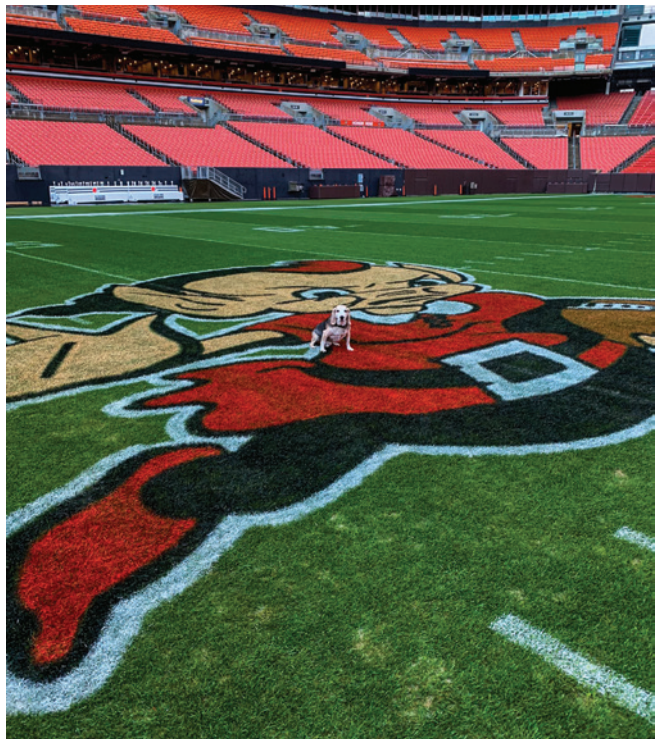
SEPTEMBER 14



@Zona_TURFlete

Nice day to just get after it with the staff. Quick shower dump yesterday left conditions great for an edge on all our dirt surfaces. #EdgeDay #Details @zach_redding

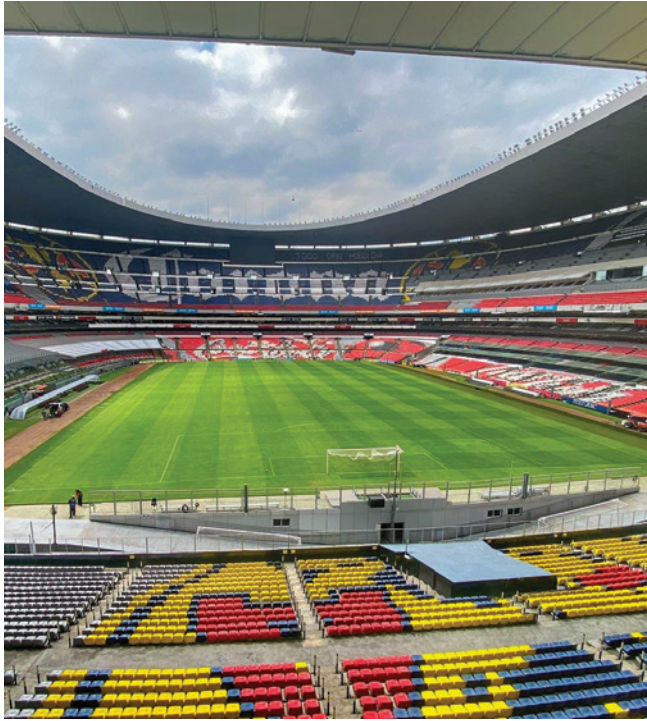
SEPTEMBER 14



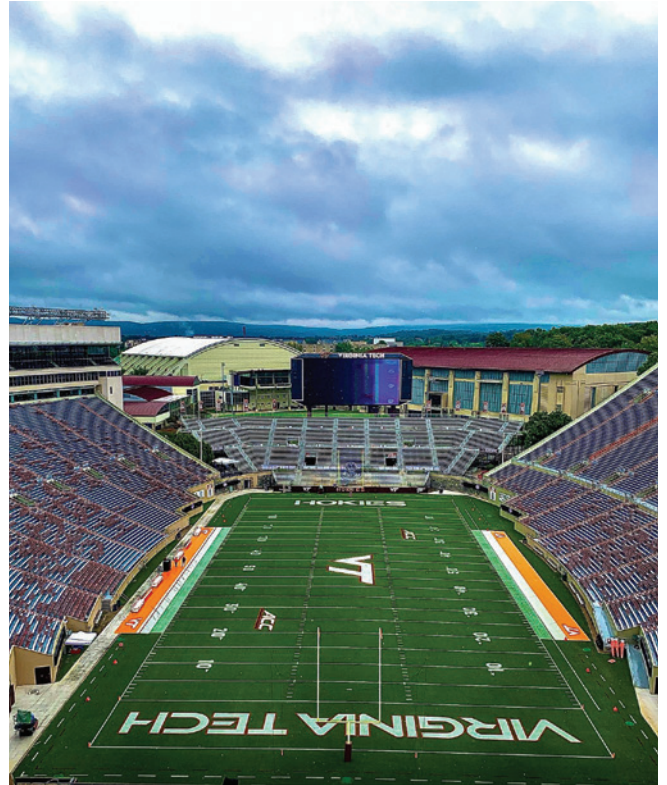
@mizzou94_pate

Rosco debuting "Brownie" as the new mid field logo for this season.

SEPTEMBER 13



@NPappas23
Estadio Azteca, Mexico City
SEPTEMBER 13



@VT_groundscrew
START JUMPING.
SEPTEMBER 10



@_Tim_Wilson_
#NeverForget Thank you to all first responders
SEPTEMBER 11



@Clintsman_STM
Game day!!!
SEPTEMBER 9



@SportsTurfSun

Week 3, game #7 so far- finally brings some Fall weather! Mid 90s yesterday, low 60s today.

SEPTEMBER 9



@CgcChad

Laboring on Labor Day, it's what we do. Happy to be providing #GameOnGrass at Chicago's Soldier Field. First time bermuda installed in this historic venue. #Tahoma @CarolinaGreenCo @pccarlson59 @GreenSource_USA

SEPTEMBER 5



@TampChamp

Another perfect day for baseball! #SeattleSummer

SEPTEMBER 6



@Mike_Kerns_

2 days till game day!

SEPTEMBER 1

Ball Field Prep NESTMA Fall Turf Day

How you prepare your ball fields in the late fall directly affects your success in the spring. Start with the right plan, add the right materials, use the right equipment, and you can ensure quality play right out of the gate next spring.

You and your crew will take away tips to effectively organize your maintenance practices, along with expert recommendations on tools and techniques you can put to work now including grading; mound and plate care; scarifying, float dragging, and drag patterns; edging and lip maintenance; moisture management; and topdressing.

Join NESTMA for top notch, practical training at its best; and remember, preparations for next year begin before this year ends!

For more information, or to register, visit <https://nestma.org/event-4943010>

PGMS School of Grounds Management

Join PGMS in Louisville, Ky., October 18-21 for the 2022 School of Grounds Management annual conference and Equip Expo. The Professional Grounds Management Society (PGMS) School of Grounds Management is designed to provide grounds managers with the opportunity to gain knowledge, ask questions, and connect with their peers.

The event will feature interactive demonstrations, inspiring keynote presentations, education sessions, collaborative panel discussions, three breakfasts and welcoming reception (included with registration), awards dinner and celebration, and access to Equip Exposition.

For more information, visit <https://pgms.org/page/2022AnnualSGM>

2022 Deep South Turf Expo

Turf managers from throughout the Southeast will come together for the 2022 Deep South Turf Expo, October 24 – 27 at the Mississippi Coast Convention Center in Biloxi, Miss.

This is a joint effort among the Alabama Turfgrass Association, the Mississippi Turfgrass Association, and the Alabama, Gulf Coast and Louisiana-Mississippi chapters of the GCSAA. However, every turf manager from near and far is welcome and encouraged to attend. The event will feature educational sessions for all segments of the turfgrass industry, a tradeshow full of turf products and services, and great networking opportunities.

For more information, visit <http://www.deepsouthturfexpo.org/>

ASBA Technical Meeting

The American Sports Builders Association (ASBA) Technical Meeting, to be held in Palm Desert, Calif., December 2-5, 2022, will include opportunities for learning, networking and business development:

The Technical Meeting includes a program packed with 30 concurrent sessions selected by ASBA members across each division (Courts, Tracks and Fields) plus the cutting-edge technical information professionals need in order to stay ahead of the curve in the rapidly evolving sports facility market.

ASBA's Technical Meeting includes an expansive exhibit hall and trade show, filled with the newest and most advanced products and technologies in the industry.

One of the most valuable benefits of attending the ASBA Technical Meeting is the opportunity to meet and learn from others in the industry. The program is designed to facilitate connections in the session rooms and exhibit hall as well as during meals and evening functions. ASBA's Golf, Tennis and Pickleball tournaments offer even further opportunities to connect with others in a casual, enjoyable setting.

The Technical Meeting includes meetings of committees and membership divisions, as well as chances to learn about options like ASBA's voluntary certification program. In addition, the winners of ASBA's Facility Awards Program are announced, as are other association honors.

For more information, visit <https://sportsbuilders.org/>



2022 Irrigation Show and Education Week

Mark your calendars to join the irrigation industry in Las Vegas, December 5-9, for the 2022 Irrigation Show and Education Week. This year's show will offer even more opportunities to explore the latest products and technologies, connect with peers, and learn from industry experts. Housing and registration will open over the next few months. Watch the Irrigation Show website (<https://www.irrigation.org/2022show/>) for more information about new and returning things planned in 2022 and schedule updates as they are available. **SFM**

SUBSCRIBE TODAY!

sportsfieldmanagementonline.com/subscribe

Online | Print | Mobile | E-Newsletter | Facebook | Twitter

SportsField

MANAGEMENT

STMA Affiliated Chapters Contact Information

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

Colorado Sports Turf Managers Association: www.cstma.org

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

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

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

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

Georgia Sports Turf Managers Association: www.gstma.org

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

Illinois Chapter STMA: www.ILSTMA.org

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

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

Iowa Sports Turf Managers Association:
www.iowaturfgrass.org

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

Mid-Atlantic STMA: www.mastma.org

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

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

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

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

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

North Carolina Chapter of STMA:
www.ncsportsturf.org

Northern California STMA:
www.norcalstma.org

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

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

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

Ozarks STMA: www.ozarksstma.org

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

Southern California Chapter:
www.socalstma.com

South Carolina Chapter of STMA:
www.scstma.org

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

Texas Sports Turf Managers Association:
www.txstma.org

Virginia Sports Turf Managers Association: www.vstma.org

Wisconsin Sports Turf Managers Association: www.wstma.org

Chapter Sponsors

Hunter®



JOHN DEERE

How Much is Too Much?

Q: Our community is discussing usage vs. resting ratios for a baseball field with natural grass outfield. For a 5-month season with three teams using the field for practice and play (U18, junior and senior), it usually averages less than 40 hours a week. Is that enough resting time? Could it sustain higher usage? The thought would be to add an additional six hours a week for a competitive youth baseball team.

A: Great question. To my knowledge, there is no usage versus resting ratio, because there are too many variables involved in the condition of a field, such as drainage capabilities, type of sport, age of athlete, budget and manpower, level of maintenance, type of grass, etc. With so many variables, it's impossible to narrow it down to one number or even a narrow range.

What is safe to say, however, is that there is a positive correlation between usage and damage. In other words, as you increase usage, the field will receive more traffic and wear, and will therefore require more maintenance and more money allocated. Rather than looking at a golden number, I think it's helpful for field managers to set thresholds that can be shared with field users and used as a guide for all.

Start by looking at the current usage and level of maintenance. At the current use rate, what do the fields look and perform like? On a scale of 1-10, how would you rate the field at the current use rate? If you are satisfied with the current scenario, and feel like the extra hours would not cause too much damage, you could go ahead and add the extra hours of play and monitor the field closely. The team may need to have an alternate place to play if you feel the damage is too much, especially if there is inclement weather during the extra games. Setting a threshold (i.e., a boundary) is really important in these types of situations. The threshold should be agreed upon ahead of time, by all parties, so that the fields are not ruined for everyone for the rest of the playing season.

There are resources available for evaluating field conditions and setting thresholds. Years ago, I created the Field Evaluation Document (FED) guidelines and rating card. You can download those PDFs from my website and adjust it to suit your needs (u.osu.edu/athleticfieldmanagement). The Sports Field Management Association has a more

comprehensive tool, called the Playing Conditions Index (PCI), that can be accessed via the SFMA website (sportsfieldmanagement.org)

Whether you use the FED or PCI, or make your own version, it's important that the data you collect is mostly quantitative (measured) and not qualitative (subjective). As Dr. Karl Danneberger likes to say: data is power! Data can be used in many ways. You can use it to tell a story to your field users. For example, since the infield was laser graded, there have been zero surface puddles after a rain event. Data can be used to track improvements over time. For example, soil compaction (soil bulk density) and surface hardness (Gmax) have been improved over time by regular aeration and topdressing. Data can also be used to set thresholds. Determine what those thresholds are for each field condition you deem most important for athlete safety and playability. Since safety is the key concern, start with setting thresholds on surface evenness (how many undulations and holes), surface hardness (Gmax) and percent live ground cover. Set thresholds for the infield too – surface grade, uniformity, condition of the mound and grass-to-infield transition (lip), etc.

Other measurable items could include amount and types of weeds, occurrence of disease or insect damage, soil fertility levels, drainage capabilities, thatch depth, mowing quality, etc. Photographs are also a powerful tool to share with field users. I've heard many stories of field managers using pictures to show the positive benefits of using a growth blanket to enhance turf quality, or using an infield tarp to prevent puddling and cancelled games.

In summary, the extra hours should go hand-in-hand with extra maintenance and extra money in the budget. All parties should agree to a predetermined threshold, based on sound data collected on the field. **SFM**



Pamela Sherratt

Sports turf extension specialist
The Ohio State University

Questions?

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

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

High quality, low input turf varieties.



STANDARD VARIETY

A-LIST APPROVED VARIETY

Use 40% less water without sacrificing turf quality with A-LIST approved varieties.

The A-LIST is an independent, non-profit, industry initiative, fostering development of sustainable turfgrass varieties and related products that perform their function with less maintenance inputs, thus benefiting the environment. A-LIST monitors a voluntary evaluation program including metrics like water conservation, reduced fertility and traffic, heat, and drought stress tolerances, all with no fungicide or insecticide applications.

Products that meet the acceptance criteria can utilize the A-LIST Approved symbol in their marketing and receive the A-LIST Approved tag for use in packaging.

To become an A-LIST Approved Variety, a variety must have demonstrated superior performance in A-LIST trials as defined by:

- The top LSD group for drought tolerance as measured by percent green cover for each of two years in at least two locations.
- Acceptable or better turf quality for each of the two years in at least two locations.
- Have been entered into an NTEP trial for the species. For new cultivars that have met the approval standards for performance in A-LIST trials, final approval will be withheld until the cultivar(s) have been entered into an NTEP trial.

SUSTAINABLE VARIETY



REDUCED INPUTS



DECREASED WATER USE



HEAT TOLERANCE



FOR APPROVED VARIETIES VISIT WWW.A-LISTTURF.ORG

Members



The background of the advertisement is a photograph of two soccer players in action on a green field. One player, wearing a white jersey with the number 4, is on the left. The other player, wearing a red jersey, is on the right. A soccer ball is on the ground between them. The text 'NO BULLSHIT' is overlaid in large white letters across the middle of the image.

**NO
BULLSHIT**

Vitality[®] HD Sports 2.0[™]

- Excellent wear and traffic tolerance
- Quick repair and recovery from damage
- Superior genetics over summer patch and other diseases
- Performs well at low heights of cut
- Excellent option for seeding into Bermudagrass
- 2.0 PLUS - Available with Perennial Ryegrass!



[MORE INFO](#)

NO COMPROMISING. NO SUBSTITUTES.