

IN THIS ISSUE: Natural Grass and Synthetic Turf Injury Research

THE OFFICIAL PUBLICATION OF THE **SPORTS TURF MANAGERS ASSOCIATION**

JANUARY 2020

SportsTurf

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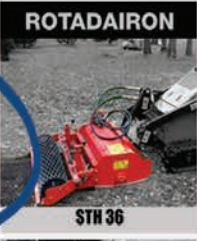
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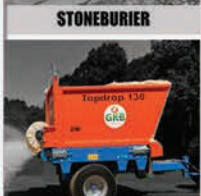
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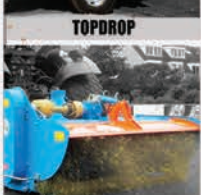
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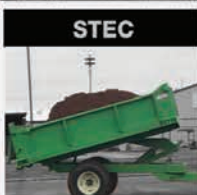
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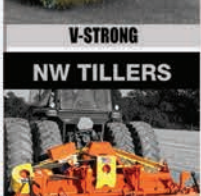
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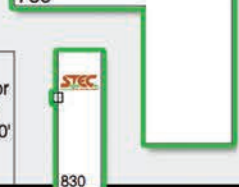
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2 : a new idea, method, or device : INNOVATION
3 : to send, make available, or bring to : DELIVERED





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On the cover: Clint Belau, head groundskeeper at Isotopes Park, home of the Albuquerque Isotopes Triple-A baseball team, transitions the field to soccer for the USL's New Mexico United soccer team...and back.

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EDITOR'S NOTE

Allow Me to Introduce Myself



John Kmitta / Associate Publisher/Editorial Brand Director / jkmita@epgmediallc.com / 763-383-4405

HAPPY NEW YEAR – and new decade. As you can see, things truly are “new” here, as this is my first issue leading the editorial direction of *SportsTurf*.

But before I introduce myself, please allow me a moment to thank Eric Schroder for his contributions to the magazine. Eric was editor of *SportsTurf* for nearly two decades, which is amazing when you consider that he was at the helm of the publication for more than half of its entire existence. I worked with Eric for most of the 20 years I have been with our company, and he was extremely helpful in my transition to this new role.

It has been a whirlwind month getting up to speed on *SportsTurf*, but everyone in the industry with whom I have dealt thus far has been extremely kind, generous, welcoming and helpful. I especially want to thank Kim Heck and the entire STMA team for all their help and insight to make this transition as smooth as possible and bring you the best possible editorial content.

I am excited to be leading the charge on *SportsTurf* editorial content. As I already alluded to, I have been with our publishing company for 20 years, most of which I have spent covering various areas of the green industry. During the past two decades I have – at various points along the way – served as the editor in chief on our publications for professional arborists, golf course managers, professional landscape and irrigation contractors, and outdoor power equipment dealers. As you can see, I have covered just about every area of the green industry. And, although I need to get up to speed on the topics and issues that are most important to sports field managers, I'm hoping that my background will help me bring a wide-range of knowledge and sources to *SportsTurf*.

As for me personally, beyond my journalism background, I am an avid sports fan. I am a lifelong Chicago-area resident, and I root for the hometown Bears, Cubs, Bulls and Blackhawks. I also follow Chelsea in the English Premier League. When it comes to collegiate sports, I watch as much as possible, but I am a graduate of Southern Illinois University, so I don't have a strong rooting interest for any particular program (at least among those that are regularly competitive).

My wife and I have two children, and live in the northwest suburbs of Chicago. My daughter is a high school freshman who plays on the school basketball team and plans to compete in track and field in the spring. My son is in the sixth grade, is a percussionist in the school band, and plays soccer from fall through spring. When we find time in between everyone's busy schedules, we enjoy the outdoors, exploring new places together, and game nights with family and friends.

But enough about me. This publication is about you – the sports field manager. I plan to keep you, and the editorial content to help you, at the forefront. With that in mind, please reach out to me with any feedback, editorial ideas, news or events, insight, or suggestions. Your support of STMA and *SportsTurf* is much appreciated.

Also, please be sure to send me your photos for possible inclusion in the magazine (JPG format). Beauty shots of your fields are great – and welcome – but we would also love to receive photos of you and your crew at work. You – the sports field manager – are the face of the industry, and this publication, and we want to showcase that in the issues to come. I want *SportsTurf* to reflect the industry it serves, and you are vital to that effort.

As we embark on this new decade, I look forward to leading *SportsTurf* into the future, and I look forward to meeting many of you at the STMA Conference and Exhibition this month.

Best of luck for a wonderful New Year.

/ST/

Sincerely,

John Kmitta

SportsTurf

// January 2020

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PRESIDENT'S MESSAGE

Moving Our Industry Higher



Jody Gill / CSFM / jgill@bluevalleyk12.org / @JodyGillTurf

SOME OF YOU KNOW that I love to fly my airplane. The multitasking required to fly forces me to focus and forget about the details of the day. This is relaxing to me in some strange way.

My recent flights have been at night with the city lights in the distance. This tends to take me away even further from the stresses of the day. Once cruising altitude and speed is reached, the aircraft is trimmed, stable flight on desired flight path is achieved and autopilot is engaged, there is a little time to reflect (while constantly scanning instruments of course...in case the FAA reads this).

On one recent flight in particular, it hit me that my year as president of the STMA is rapidly coming to an end. I assume this revelation at altitude was because I have been flying high all year as I filled this role for STMA.

This has been the role of a lifetime – one I never imagined I would have the opportunity to play. I was able to meet with and encourage both high school and college turfgrass students, attend many chapter events throughout the country, give awards to many deserving sports field managers, and meet with leaders of our peer organizations.

I am so thankful for the opportunity to work with such a talented and dedicated board of directors. Sarah Martin, Jimmy Simpson, Boyd Montgomery, Nick McKenna, Jason Kruse, Sun Roesslein, Jeremy Bohonko, Clark Cox, Joshua Koss, James Bergdoll, Stephen Lord and Jeremy Driscoll accomplished more than I could ever have imagined was possible in one year. From the development of the Field Management Institute, significant changes to our official publication, initial development of a National Sports Field BMP template, and some surprises at another successful STMA National Conference, this group knows how to tackle a task or two.

I am also thankful for so many volunteers who served on committees, for those who serve chapters, and for our headquarters staff! All of you make our industry great. In the big picture, we are a small organization, but we have an immeasurable impact on sports at all levels.

I am thrilled to be able to continue to serve STMA as immediate past president for another year under the direction of my friend Jimmy Simpson. In the boardroom, we have a nickname for Jimmy that I cannot share here, but let's just say he knows how to stir things up for positive change! Our future is quite bright, and I expect we will all be flying higher in the near future.

Moving forward, I ask all of you to be more assertive not only in moving our industry higher, but also in fighting for the future of our industry. Let the overwhelming passion you have for managing sports fields shine not only in how well you do your job, but also how well you live your professional life. Be consistently professional, positive, caring and supportive. Thank you for allowing me to fly high with you this year as president. **/ST/**

Jody Gill, CSFM



@ANDYOMMEN1

Nov. 8, 2019

Time for a little grading. 250+ games a year takes it's toll. Thankful for @DuraEdge base which holds up so well.



@MARKOFTHEKING25

Nov. 9, 2019

First 2 weeks have been crazy. I've learned a lot already and seen a whole new side of this industry #cheerstothefuture



@CYCLONETURF

Nov. 11, 2019

Wouldn't want a game week to be easy....3-4" of snow should keep it that way. #wegotthis



@TCUFIELDCREW

Nov. 8, 2019

Game 5 on tap. Finally got a couple hours of sun for the first time this week.



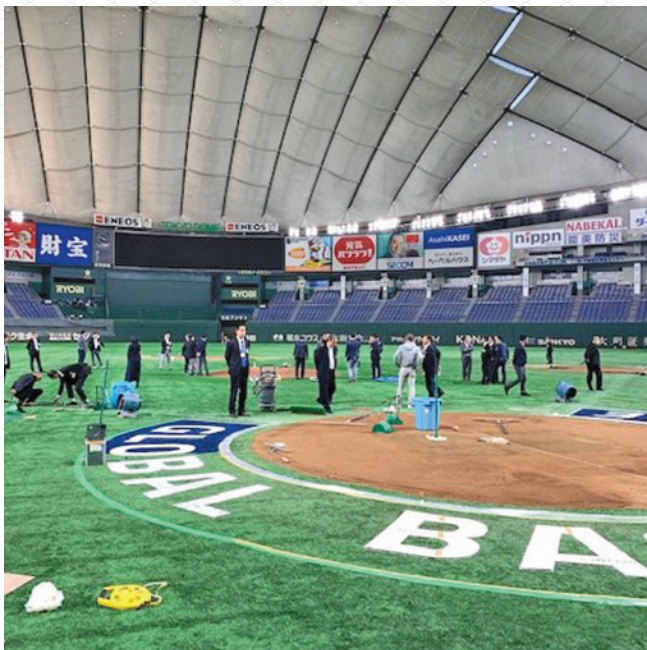
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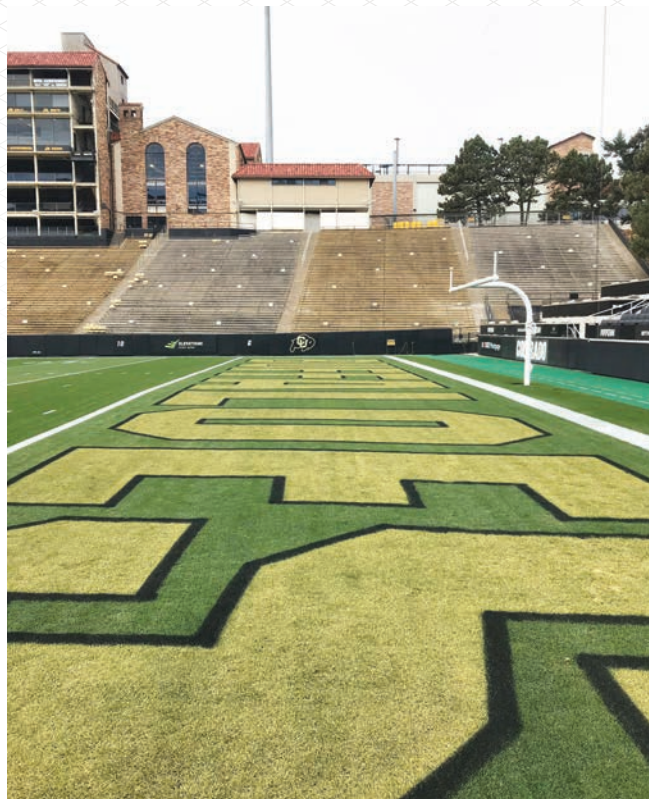


@LUKE_YODER

November 14, 2019

Back in the USA following this educational visit to Japan w/@grantcmcknight

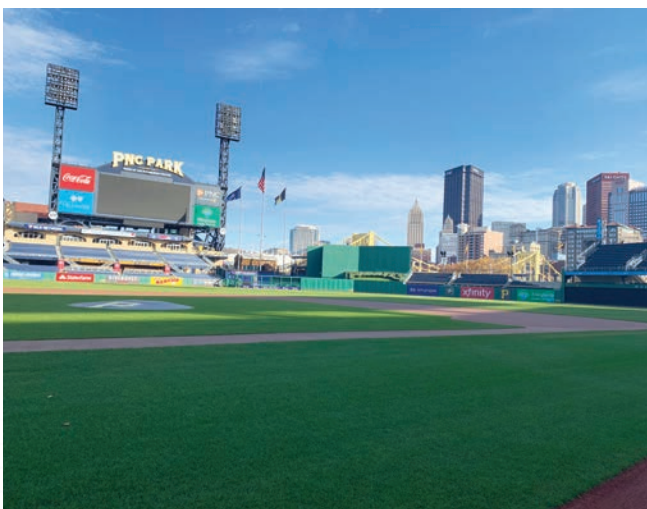
We appreciate the invitation to speak at their field seminar and were able to see @DuraEdge BlackStick install for the @Premier12 games.



@CUBUFFSTURF

Nov. 20, 2019

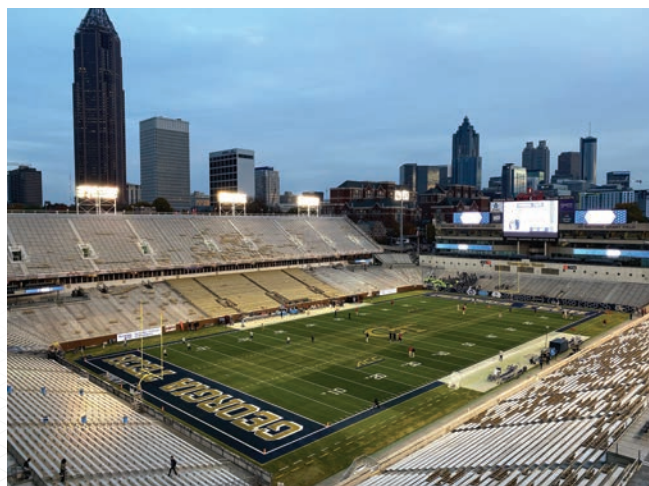
Got a mow on Folsom today to clean it up before the snow flies this afternoon. #GoBuffs #Team1stClass #DominateDetails #RELENTLESS @CUBuffsFootball @CUBuffs @FieldExperts @wc_paints



@TAR_HEELS_TURF

November 15, 2019

Got the chance to check out a few places up in Pittsburgh yesterday. Appreciate the hospitality guys.



@CHRISMAY117

Nov. 21, 2019

Thursday night football.
@GT_GroundsCrew



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We had several people who were very skeptical that the dogs really worked. Convincing was easy...just hang around and watch. A group of geese would fly over in low formation, bend their necks down to look at the dogs, perhaps take another pass or two repeating the inspection for danger, and then fly off. Seemed like there was always a group flying over to give a demonstration.

The volunteers who had to rake and shovel goose poop are very happy. We'd easily fill a 32 gallon garbage can or two. Thanks again for a wonderful time saving product!"

- Paul Heit

*Maintenance/Concessions, Appleton Legion Baseball
Greenville, WI*

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STMA Conference News and Notes

Take advantage of on-site STMA Conference registration

You can still attend STMA's annual conference, Jan. 13-16, 2020 in West Palm Beach, Fla. Although online registration closed Jan. 3, walk-up registrations are welcome.

Come to the Palm Beach Convention Center, 650 Okeechobee Blvd., and you can register to attend the conference. Full registration is \$525, or select specific days for \$150 per day – your choice.

Choose from more than 45 educational sessions including demonstrations, hands-on participation, sports facility tours, classroom-style presentations and interactive panels. In addition, there are general sessions and eight hours of exhibition specific to sports field management without competing events or education.

What you will learn:

- Innovative techniques to save time and money
- Up-to-date research and how you can apply it
- Best Management Practices (BMPs) for sports fields
- Features and benefits of new industry products/equipment
- Communication strategies to help you succeed with your user groups
- Professional development and career advice

In a recent survey, 92 percent of STMA members consider the annual conference to be important to very important to them and their career, while 78 percent cite that providing continuing education should be STMA's highest priority. More than 40 percent of members desire learning about BMPs for sports fields.

If you are unable to attend the 2020 conference, STMA will have a full recording of the educational sessions available for purchase post-conference at STMA.org.

Next year, STMA heads to Palm Springs, Calif., and in 2022 the site will be Savannah, Ga.



RODNEY SMITH, JR., TO PRESENT KEYNOTE ADDRESS AT 2020 STMA CONFERENCE

Rodney Smith, Jr., founder of Raising Men Lawn Care Service and 50-Yard Challenge, will be the keynote speaker at the 2020 STMA Conference. The keynote address will take place, Wednesday, Jan. 15, 2020, from 11 a.m.-1:15 p.m.

In 2015, Smith observed an elderly man struggling to cut his yard in Hunts-

ville, Ala., and was inspired to begin cutting lawns for people who needed help. From this beginning, he founded Raising Men Lawn Care Service (RMLS) with the goal of helping people and enlisting girls and boys whose parents want them to learn about volunteerism. RMLS provides free lawn care to elders, those who are disabled, single mothers and veterans who do not have the time, resources and/or money to take care of their yards. Hear his inspirational message, enjoy lunch and meet the 2020 STMA Board of Directors.

The Keynote is sponsored by World Class Athletic Surfaces.

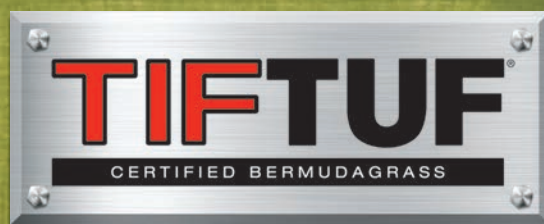


Rodney Smith, Jr.

SPEAKER SPOTLIGHT: OVERCOMING CHALLENGES IN YOUR CAREER

One of the themes of this issue of *SportsTurf* is overcoming career challenges. At the 2020 STMA Conference and Exhibition, Abby McNeal, CSFM, CPRP, CABI, Denver Parks and Recreation, will present an educational session on that very topic. In anticipation of the Conference, McNeal provided *SportsTurf* with some insight into her presentation:

"Suppose one day you might have to adjust to become a caretaker when your life



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role wasn't that before, how would you address it? How would this affect your work? How could this affect your career? At some point in everyone's career you are faced with a challenge, how you address the challenge is what builds you into the person you are today," said McNeal. "These challenges can be fueled by biases from the company, bosses, coworkers, age, gender, life changes (death, birth, divorce), as examples. When it comes to establishing your career, various factors weigh into to take the risk to change from a current position to a new one either becoming a leader or taking on a new position with a new company. Depending on where you are at in your career path and with your life, you might have different answers for the options posed to you. Depending on the challenge, the options might be the best thing for you. All these present risks in one shape or another. The STMA session will have open discussion and some story telling on working through the career challenges that have shaped my career path.

We will discuss creating a career vision or mission for yourself and where you want to go when faced with this type of adversity. How to work through it with your 'team' and redefine you – not have the challenge define your career path."

McNeal's session will be held Tuesday, January 14 from 9:45-10:45 a.m.

For more information on this and other educational sessions at the 2020 STMA Conference and Exhibition, visit www.stma.org/conference

FITTEAM BALLPARK OF THE PALM BEACHES TO HOST OUTDOOR EDUCATION FOR STMA CONFERENCE

On January 13, FITTEAM Ballpark of the Palm Beaches, Spring Training home to the Houston Astros and Washington Nationals, will host the Sports Turf Managers Association (STMA) outdoor educational demonstration.

This pre-conference education is included in the full conference registration

package and will offer attendees the opportunity to experience various sports field management practices in action. Attendees will rotate through five stations where they can interact with their peers and learn how to improve field operations.

Station 1: The Toro Company will demonstrate basic sprayer calibration based on pressure and speed. The math, determining boom width, and performing a catch test will be outlined. In addition, machine sprayer calibration will be explained. Spray uniformity and correct nozzle selection will also be covered.

Station 2: Hunter Industries will present why irrigation system audits are important and how they can help justify ROI for renovation.

Station 3: Carolina Green Corp. will demonstrate the typical tools and methods used for field testing and evaluation. A brief description and demonstration will be provided about the tools, proper usage, improper usage, and purpose and benefit of the information each can provide. Attendees will then have the opportunity to try out the tools. Emphasis will be on tools and methods available to sports field managers that they can use regularly at their facilities.

Station 4: Redexim will conduct a laser leveling demonstration.

Station 5: John Deere will be demonstrating various thatch management practices. They will discuss the aeration benefits that core aeration, solid tine, and deep tine provide along with frequency recommendations. Benefits of verticutting with information about depth, thatch removal, material removal and frequency will be discussed. Additionally, clean up practices and topdressing benefits and frequency will be covered.

For more information about STMA's Annual Conference and Exhibition, Jan. 13-16, 2020 in West Palm Beach, Fla., visit www.stma.org/conference/

TRADE SHOW HOURS

Wednesday, January 15, 1:30 – 6:30 p.m.

Thursday, January 16, 10 a.m. – 1 p.m.

/ST/

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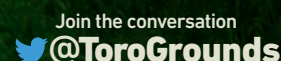
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Protecting Your Emotional Health

// By LISA GOATLEY, M.S., L.P.C.

The numbers are staggering. More than 16 million adults in the United States are affected by depression in a given year, and more than 40 million adults are affected by anxiety disorders every year (Anxiety and Depression Association of America). The impact on the individual and society in general by mental and emotional health issues is significant. And yet, we have difficulty talking openly about emotional health and what so many of us are experiencing.

Our physical health and our emotional health are significantly intertwined. Remember, the brain is an organ like any other organ in the body; and our thoughts, feelings, and emotions are controlled by the brain. Stress, overwork, and burnout impact our emotional health, frequently leading to symptoms of depression and anxiety. In fact, the symptoms of burnout are essentially the symptoms of clinical depression. Worry and anxiety negatively impact our quality of life. While there is growing awareness of the value in talking about mental and emotional health, stigma remains.

The increased awareness of the benefits of work/life balance for our emotional health as individuals is a good start. However, workplace culture in the sports field management industry, like many professions, can be slow to address the changing needs of the individual. Delivering top-notch playing surfaces certainly requires time, effort and sacrifice. Workweeks of 60-plus hours may not be uncommon during certain seasons. The expectation to always be on call may be present. Real pressures exist to produce perfect fields and playing surfaces. The consequences can be very real. And yet, sports field managers take pride in their profession and remain committed to their industry.

Institutional change related to work/life balance may take years for us to achieve as a society. If you're feeling stressed, anxious, and unhappy, there are some things that you can do to better protect your emotional health.

Set good boundaries around work

Leave work on time; leave work at work. Be mindful about your work schedule. There is always one last thing that you could do, but should you? Some things can be left for tomorrow in favor of leaving work and moving on to life. And remember, you don't have to do everything. Delegating to your staff when appropriate can be a sign of confidence in their abilities and nurture the professional development of the next generation.

Let go of perfectionism

Sometimes "good enough" is fine. Be conscious of the tradeoff between pushing more and the outcome from the effort. There may be times that striving for perfection is needed. However, perfectionism in itself can control your life if you let it. Know when to let go and move on, rather than continue to push yourself or others just for the sake of perfectionism.

Use your vacation days

On average, U.S. workers use only 51 percent of their vacation days. Having a stockpile of unused leave is not a badge of honor – it is a recipe for burnout. We need time away from work to rest, recharge and rejuvenate. Using our vacation days is a mechanism for avoiding burnout and remaining engaged in our work for the long-term. Too many people continue to work while they're on vacation. Delegate an appropriate person and let work know whom to contact while you're out. Don't give in to the temptation to respond to work demands unless absolutely necessary (and be mindful about what you consider "absolutely necessary").

Manage your use of electronics

It is easy to be constantly "plugged in" with modern technology. Cell phones make it possible for us to be contacted at all hours and in all places. Although

there are advantages to this, there are also disadvantages. We can be constantly responding to work at all hours of the day and night, through text message, e-mail, or phone call.

Even when we're doing something else, the alerts on our cell phones constantly pull our attention away. Be mindful about electronics that you manage rather than allowing them to manage you. Turn off alerts. Take a daily break from technology. Put your cell phone in a drawer when you go home so you're not tempted.

Set aside relaxation time

Too many of us live overcommitted, hectic lives. Relaxing or doing something enjoyable seems impossible or simply indulgent. In fact, making time for relaxation contributes to our mental and emotional health. We need time to stop, rest, nurture our creative side, and make space for our bodies and brains to recover. Time for relaxation is a necessity. Even when we customarily take time for ourselves, it can be one of the first things we drop when we get busy. It is precisely during these times when relaxation plays an even more important role.

If you find that you continue to struggle with managing emotional or mental health symptoms, it may be time to speak with your doctor or a therapist. Mental health issues remain the most treatable category of symptoms with appropriate care. **/ST/**



Lisa Goatley is a Licensed Professional Counselor in private practice in Blacksburg, Va., and has been a psychotherapist for 30 years. She is married to Dr. Mike Goatley, professor and extension turfgrass specialist at Virginia Tech.



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ANSWER
ON
PAGE 33

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Natural Grass and Synthetic Turf Injury Research

Market research explores considerations among decision-makers in choosing playing surfaces

// By CASEY REYNOLDS, PH.D.

The college and professional football seasons are winding down, and sports fans can feel the excitement in the air. As always, national championship predictions and other team chatter is in the news, but also making headlines this year are several recent retirements of prominent football players citing, in part, concerns over their long-term safety and health. The safety and health of athletes is and should be a top priority for leagues,

coaches, parents and others. However, what other factors are considered when installing new athletic fields? Is it maintenance, costs, environment, or other factors? Is it all of the above, and, if so, which factors play most heavily in these decisions? This was the topic of market research conducted in 2018 in the United States and Canada.

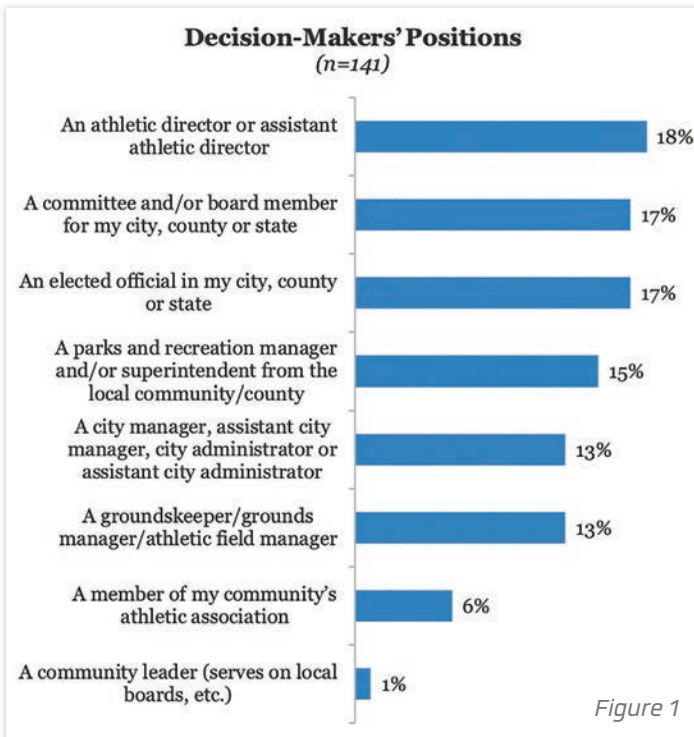
Six companies submitted proposals for this market research and Fleish-

manHillard, a global PR firm and digital marketing agency based in St. Louis, was selected as the winning proposal. FleishmanHillard has more than 80 offices in 30 countries, and, as such, is able to reach domestic and international audiences.

First, FleishmanHillard analyzed the current state of affairs in print and social media with regard to natural grass and synthetic turf. Natural grass proponents and synthetic turf companies tout many of the

same benefits including cost, environmental impact, durability and safety – many of consumers' major concerns. They also analyzed the share of each group's voice in digital media, as well as the positive, neutral and negative perceptions by subject for natural grass and artificial turf. One of the key items that jumped out was that it appears natural grass fields are taken for granted. There are fewer arguments for natural grass, rather than against artificial turf, because natural grass is in the default position. Artificial turf often gets more coverage and has non-neutral articles, in part simply because it is new and debated.

In addition to an analysis of print and digital media, Fleish-



manHillard surveyed 141 decision-makers (coaches, athletic directors, city employees, etc.) in the United States and Canada (Figure 1) to get an idea of what they determined as motivating factors when selecting new playing surfaces for their communities. These respondents were presented with a series of statements revolving around considerations of various playing surfaces and asked for their feedback. Their knowledge and responses to these statements were then compiled for analysis to determine the many factors that go into deciding between natural grass or synthetic turf athletic fields, mulch or rubber playground surfaces, and more.

As you can imagine, the safety and health of users was

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OFF THE FIELD



a top response. There are many factors that contribute to the safety of various types of playing surfaces, including, but not limited to, construction and management practices, heat, surface hardness, consistency, and even footwear. There are many types of playing surfaces that have a role in communities everywhere. For example, a playground at a child's daycare center in the southern United States may be more concerned about heat loading than a multi-use event complex in the Pacific Northwest. Inversely, a collegiate or professional soccer or football complex may be more concerned about traction/footing than an outdoor concert venue. As you can imagine, each of these types of venues lend themselves to different playing surfaces and management techniques, but a common theme throughout each of them is user safety.

Field safety has long been a research topic among the scientific and medical professions, and there have been many research papers published in academic journals citing varying differences in surface types. Many of these studies use some type of injury surveillance reporting system to seek out and analyze trends in injuries in different playing surfaces. For example, the National Collegiate Athletic Association (NCAA) has collected injury data through its Injury Surveillance System (ISS) since 1982 (Kerr et al 2014). The National Football league (NFL) has recorded and reported injuries using a similar system since 1980 (Hershman et al 2012). These types of injury-recording systems are capable of capturing data on injury type, weather conditions, playing surface, athlete exposures (AE), and more. These report-

ing systems allow medical trainers and researchers to access and analyze vast sets of comprehensive data over extended periods of time.

Two papers that have been recently published in the American Journal of Sports Medicine focus on injury data analysis from the NFL and the NCAA. Previous research has revealed that football cleats interact differently on synthetic and natural turf, which may lead to a different risk of injury. Divots – when a cleat creates a hole in the field – signal that the grass has absorbed force from the cleat and released the cleat back again, rather than capturing the cleat and releasing the force through a players' foot, ankle or knee, which could cause injury. Since cleats can easily create divots on natural grass, less force is placed on the lower body, which may help prevent injury.

Data for the NFL study came from the analysis of all 1,280 NFL regular season games and 213,935 distinct plays from 2012 through 2016 – 555 of which were on synthetic turf and 725 on natural grass. All 32 NFL teams reported injuries through an electronic health record system, and each injury report gives full details of the injury and circumstance, such as the contact, impact, activity, time lost, game-day weather, and surface type and conditions. The researchers then examined all cases of lower body injuries along two outcomes: any time loss, and greater than eight days of time loss. They also examined the rates of contact-related injuries and noncontact-related injuries, since noncontact injuries are more likely to be related to the playing surface.

A total of 4,801 lower body injuries occurred from 2012 to 2016 affecting 2,032 players. Play on synthetic turf

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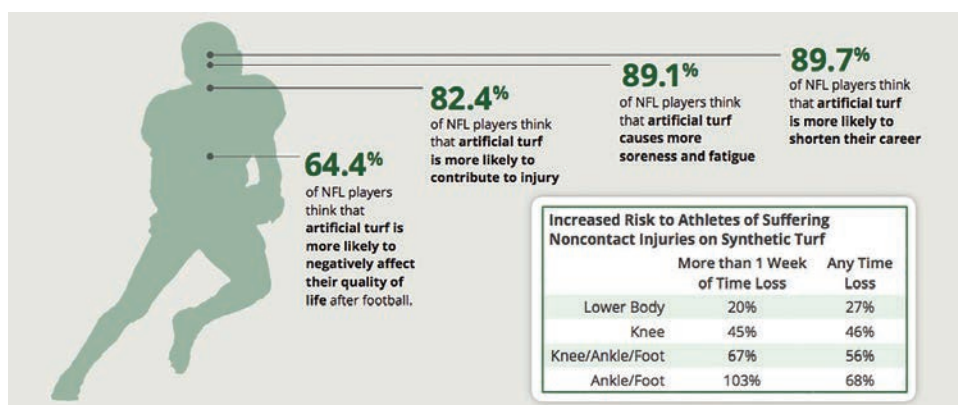
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had a 16 percent higher rate of lower body injuries than on natural grass. This included contact and noncontact that resulted in any time loss. For noncontact injuries, synthetic turf injury rates were 27 percent higher than injury rates on natural grass. However, when examining noncontact knee, ankle and foot injuries play on synthetic turf had a 56 percent higher rate of injuries, resulting in any time loss and a 67 percent higher rate of injuries resulting in more than eight days of time loss. The greatest difference in noncontact injury rates between synthetic and natural turf were to the ankle: synthetic turf resulted in a 68-percent-higher rate of injuries resulting in any time loss and a 103-percent-higher rate of injuries resulting in more than eight days of time loss.

In the NCAA research, there were a total of 3,009,205 athlete exposures and



2,460 knee ligament and meniscal tears reported by the NCAA Injury Surveillance System throughout the 2004-2005 to 2013-2014 NCAA playing seasons. Injury rates for all knee ligament and meniscal tears examined during this period were higher during competitions than in practices. Analysis of this data indicates a significantly increased rate of posterior cruciate ligament (PCL) and anterior

cruciate ligament (ACL) on artificial turf compared to natural grass during competitive events, although there were no differences in the rate of medial collateral ligament (MCL), medial meniscal, or lateral meniscal injuries.

Specifically, athletes in Division I competitions experienced PCL tears at 2.99 times the rate on artificial turf (199-percent increase) as they did on natural grass.

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Division II and III athletes experience ACL tears at 1.63 times the rate of those playing on natural grass and 3.13 times the number of PCL tears as those playing on natural grass. This equates to a 63-percent increase in ACL tears and a 213-percent increase in PCL tears to Division II and III football players on artificial turf. Furthermore, the rate of PCL tears during competition in all divisions on artificial turf was 2.94 times higher (194-percent increase) than on natural grass.

The research and scientific communities will undoubtedly continue to investigate injuries among athletes, causal mechanisms, relationships between cleats and playing surfaces, and more. More information on each of these two studies can be found in the original research manuscripts cited on this page. You can also visit www.TurfgrassSod.org/Resources. **IST/**

Casey Reynolds, Ph.D., is executive director, Turfgrass Producers International.

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Transition: Navigating a New Way of Life

The professional, and personal, challenges of managing multi-use fields

// By CLINT BELAU

Transition. The word on it's own can elicit emotions that cover the entire spectrum. Year one of not only being home to the Albuquerque Isotopes Triple-A baseball team, but also being the "temporary" home to the USL's New Mexico United soccer team certainly did that.

To accommodate soccer, we had to flip the field back and forth eleven times throughout the baseball season. Due to our semi-famous hill in centerfield, our soccer layout was forced to run from the first base line toward left field, which obviously affected home plate, the pitchers mound, our entire infield, the majority of the outfield and portions of the warning track. This is an issue that is seemingly invading baseball stadiums nationwide, and in what will seem like a strange plot twist, I'm going to tell you why we shouldn't be so angry about it. Spoiler alert: it's because being angry about it doesn't do any good.

I realize that all of you who are going through similar processes right now may be dealing with entirely different sets of variables that change things for you considerably. I am admittedly a baseball guy. I got into field management for the purpose of caring for baseball fields. I am extremely fortunate to have a beautiful ballpark in my hands, and I have the strong support of my GM and front office behind me. All that being said, this season of having to deal with the transitioning led me into some dark times, and I fear I'm not the only one. So here's to hoping I can help you get through it as well.

IT'S YOUR FIELD, COMMAND RESPECT

I think it's widely perceived – and probably with good reason – that the soccer team's personnel think we are only here for them. There isn't a respect for what



One field, two sports: home to the Albuquerque Isotopes Triple-A baseball team, and "temporary" home to the USL's New Mexico United soccer team

the field is being put through as a result of having to make this all work. What has worked for me is simply being vocal about it, and commanding respect.

It doesn't matter how someone with no experience in sports field management thinks you should cut your grass, secure some temporary goal anchors, or lay out sideline protection. What matters is what you're comfortable with, what works for you, and what's best for your field. You might be the only advocate your field has, so it's your duty to protect it. Set your guidelines for field use, communicate those guidelines, communicate them again, and again, and don't be reluctant to enforce them. If that occasionally makes you the bad guy, then that's the sacrifice you have to make.

Trust me, I'm not getting any calls from anyone with the soccer team to go have drinks, but I can guarantee you that they respect the dedication I have to my field.

TRUST THE PROCESS/ TRUST THE PEOPLE

This has been a "do as I say, not as I do" situation in the past, but I'm constantly trying to improve upon it. My tendency has always been if I do it myself, I know it's being done right. I've slowly learned to allow myself to trust others more, and this was a big year for that. I was fortunate to be able to select the company we worked with on the soccer transitions. Mountain West Golfscapes, who not only built the field at Isotopes Park, but still handles our yearly laser grades and performs our aerations, was available and willing to work with us on the soccer transitions.

Being familiar with the company and their work certainly helped my stress level. The amount of trust I have in them, and the respect they consistently show for my field is paramount.

The area where I need the most improvement is on our flips back to baseball. I have to allow my assistants to take ownership of things, and trust that it will work out. Whether it's performing granular/spray applications, resurfacing the home plate area, skin work, edge detail, hand watering hot spots, I need to trust that I've hired the right people, and have trained them to our standards. Between March 1 and September 15, 2019, I took one day off. I don't say that to brag about how dedicated I am to



Top: Mound removal begins the switch from baseball to soccer. Above: prepping the field.

the field. I say that as someone who's embarrassed of how untrusting I am of other people, and knowing I have to change that. Physically and mentally, I can't go through another season like that. From the morning of each in-season soccer match, through the evening of the following day, I was here for 38 hours straight. So if this is you, stop it. Let your people work for you, give them the training they need, and allow them to prove you're a good leader.

LIFE ON THE EDGE

For us baseball folk, our edges are our babies. They are the most delicate, awe-inspiring, pride-inducing areas of our fields. The seam-

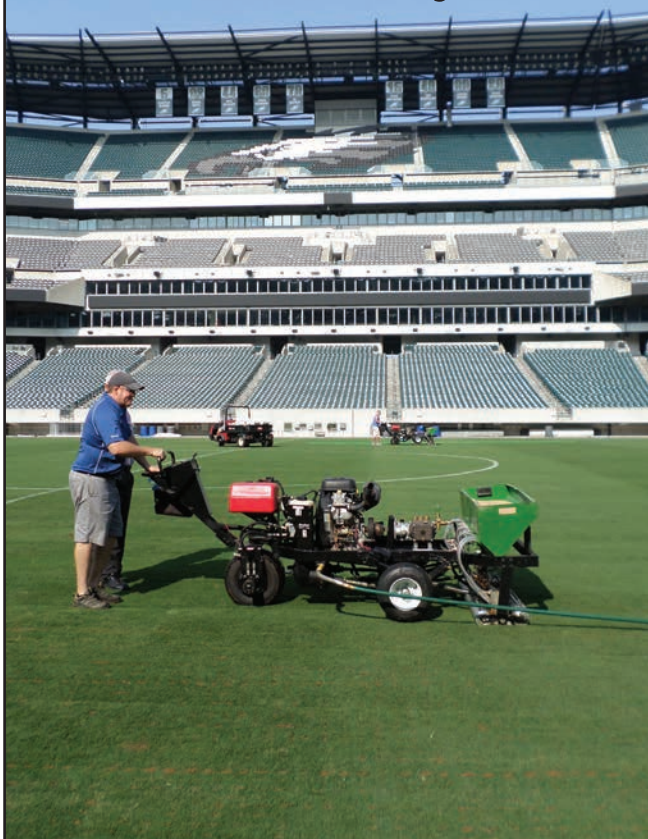
less transition from lush, green grass to a perfectly manicured infield can bring a single streaming tear to the cheek of any deeply invested groundskeeper.

Now, imagine a dozen significantly less invested men, marching their way toward those very edges with pick axes and bull-nosed shovels thrown over their shoulders. Their mission: destroying those edges and removing 3/4-inch of material to make the soccer sod transitions smooth. That is the stuff from which nightmares are born. Something we work every day of the season to maintain with the highest of standards having the tools of destruction thrown at it over and over is not easy on

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ON THE FIELD



Rolling the sod if one of the final steps.

the heart. However, circle back to the part about trusting the process and the people, and you'll have a better understanding of how I got through it.

As a whole, we actually had a lot more success maintaining our edges throughout the season than I anticipated. It feels weird to say, but I think reestablishing those edges during each flip may have been a positive. The obvious area of struggle was the spot on our third base sideline, where we would lay plywood for all of the machinery to cross over to the skin. That is just an area where I had to concede the loss, and just increase the amount of times we removed and re-sodded.

MOUNDS AND MOUNDS OF WORK

We removed/re-built our pitcher's mound eight times this year. In spring, the prospect of that only piled onto the mountain of disdain I had for the entire process.

The morning of a flip back to baseball was reserved for sod removal, which handcuffed us in terms of doing much of anything on the field. I found it best to dedicate all four of us to building the mound that morning. By the time Mountain West was wrapping up its removal process around noon, I would be able to peel off two guys to go start mowing, while my lead assistant and I would continue to work on some shaping/detail. After another hour or so, I would peel off and start working the skin, while he finished final compaction/shaping. I found that rather than having one or two guys struggle with building the mound on their own, having

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all four of us working together for the bulk of it absolutely helped our overall temperament, efficiency, and end result.

By August, the process of re-building the mound was something I looked forward to. There is a decent chance that was because I had already been at the park for 24-plus hours and I was near delirium, but that doesn't make it less true. Whether it was the camaraderie, the sheen of a fresh mound, or the sense of accomplishment, re-building the mound was the area where my outlook on the process drastically changed throughout the season.

POST-SEASON PROBLEMS

Here's where it gets ugly. Following the completion of the Isotopes season, we installed the soccer sod that would stay in place for 59 days. During that time, the roots on the sod obviously grew...and grew...and grew. By the time we were taking off the sod at the end of October, we had root contamination at 1-½-inch-plus depth into our skin and warning track. While I certainly expected to have some contamination, that was a punch in the gut. We just recently (November 14) completed the process of removing – and replacing – 2 inches of our infield and warning track areas that were affected. All of that set our positional back arc re-sods back a few months while we waited to match our final grade of the new infield. That brought us much closer to dormancy season, and brought my frustration level higher and higher. However, since I'm working on being positive, all

of that allowed us to amend another 175 tons of fresh DuraEdge into our infield, which leaves me excited for next year.

CHOOSE YOUR ATTITUDE

My former boss, Ernie Lansford, preached to us daily to choose our attitude. At the time, I was in the pro audio industry, wasn't



TIMELINE OF THE FIELD TRANSITION PROCESS

Night following Isotopes game

11 p.m. – Blow out all edges, hand water all irrigation zones with significant overlap onto the skin, soak the mound

The next morning

Note: These next three days I was solo – my assistants would all be off.

6 a.m. – Mountain West arrives to begin transition

7 a.m. – Remove mound with mini excavator, MW removes ¾" x 6' wedge from all edges

9 a.m. – Lay weed barrier

11 a.m. – Lay first truck of sod

2 p.m. – Lay second truck of sod, start hand watering sod that is down

5 p.m. – Finish laying sod, begin rolling all sod with 1-ton roller

6 p.m. – Hand water all sod again

Day previous to match

6 a.m. – Mow everything

10 a.m. – Line out/paint soccer field

2 p.m. – Dig goal anchors

4 p.m. – Hand water sod

Match day

6 a.m. – Mow everything

9 a.m. – Hand water sod

11 a.m. – Begin moving soccer signs/sideline protection/benches/goals from POD to warning track

1 p.m. – Spot treat areas with top dressing

3 p.m. – Hand water sod

4 p.m. – Set up sideline protection/benches/signs/tables/goals for soccer game

8 p.m. – Walk the field at halftime to assess/repair damage

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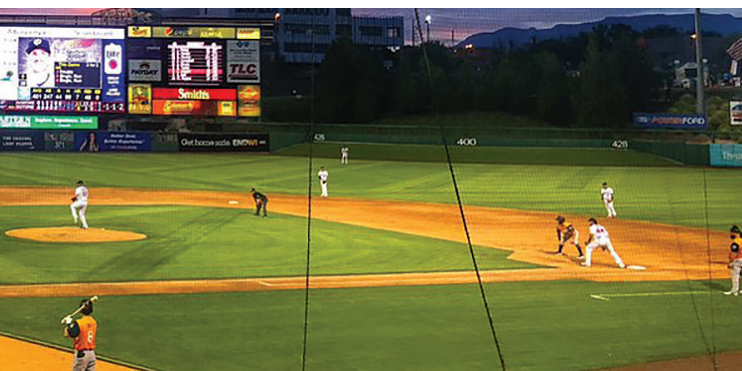
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particularly happy in life, and Ernie seemed to hold the title of the most annoyingly positive person I had ever met. As I worked my way into a career in baseball, I stole that title from him. I had become Ernie. Every day was the best day of my life, and everyone I came in contact with knew it. Nothing could bring me down. Then this soccer thing happened, and I relinquished the



- 10 p.m. – Break down soccer sidelines
- Midnight – Begin washing out soccer lines
- 4 a.m. – Finish washing out lines, begin divot repair on baseball turf
- 6 a.m. – Mountain West arrives to begin sod removal process
- 7 a.m. – Clear sod from mound to begin build
- 8 a.m. – My assistants come in – together we measure out mound and begin construction
- 11 a.m. – Peel off two assistants to begin mowing, continue mound construction
- 1 p.m. – Mountain West completes sod removal and material replacement to warning track and infield
- 2 p.m. – Complete mound construction, begin home plate/baseline resurfacing
- 4 p.m. – Work skin with light nail drag
- 6 p.m. – Roll/lightly flood skin/home plate, baselines
- 8 p.m. – Go home for the first time in 38 hours

Day before baseball is back

- 6 a.m. – Work skin with heavy nail drag
- 8 a.m. – Roll skin, light flood
- 9 a.m. – Begin edging warning track/infield/baselines/home plate/mound/walk ups
- Noon – Peel off one guy to begin mowing
- 2 p.m. – Complete edging/backfill/roll process
- 3 p.m. – Mound/home plate/baseline detail
- 4 p.m. – Light flood home plate, baselines, heavy flood on skin
- 5 p.m. – Work warning track with bunker rake

Day of Isotopes game

- 6 a.m. – Heavy nail drag/roll/light flood on skin
- 8 a.m. – Mow everything
- 9 a.m. – Mound detail, dress everything with conditioner
- 11 a.m. – Hand water hot spots
- 1 p.m. – Have the field ready to go for early work

title back to him. I'm now on the quest to get myself right and take that title back!

Transitioning back and forth from soccer to baseball is challenging, absolutely. It can be frustrating, certainly. It has a negative effect on my field, definitely. It provides no perceived pro to offset all of the cons, true. But it's also seemingly not going away.

So I can sulk about it, hate it every day, and allow it to suck the pride and joy I feel for my baseball field, or I can find a way to deal with it.

Everyone's situation is different, and I am not one to project how I live my life onto you, but I know that when I look at baseball fields around the country at all levels, I see so much good. I see so much pride at work. I see so much dedication to providing the best possible playing surfaces we can for baseball players at all levels. Please don't let this change that.

It's so easy to be negative, to sit in our shops texting people about how angry it all makes us and how burned out we are. Rather than fueling the fire of frustration, we need to remind ourselves why we got into it in the first place, help each other get back up, and help each other stay positive. **/ST/**

Clint Belau is head groundskeeper at Isotopes Park, home of the Triple-A Albuquerque Isotopes (and home of the New Mexico Untied for the foreseeable future). Belau was awarded the Presidential Commendation for excellence in sports turf by the Pacific Coast League in 2018, and again in 2019.

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Nitrogen Fertilizer: Choose Wisely

// By BRYAN G. HOPKINS, PH.D., CPSS

“Get the nitrogen right.” This is good advice. Sitting next to root zone water and oxygen management, there isn’t much else that rises to the importance of nitrogen management for healthy grass.

There are 17 essential nutrients. But nitrogen has, by far, the greatest impact on grass health in most soils. The other nutrients are important too, but mismanaging nitrogen generally has larger downsides than all of the rest.

There are hundreds of nitrogen fertilizer products in the marketplace. How does one choose which products are best? This question is more easily answered once a few basics are understood.

NITROGEN CYCLE

The nitrogen cycle is a fundamental piece of knowledge every field manager needs to understand (Fig. 1). It seems complex, but sports field managers need to understand a few basics of this cycle. The following are among the important keys for nitrogen fertilizer management:

- Hydrolysis converts urea to ammonia gas
- Ammonia gas can be:
 - Volatilized (lost to atmosphere)
 - Converted to ammonium (captured by soil)
- Ammonium is dissolved in soil water and can be:
 - Attached to soil CEC colloids (clay and organic matter)
 - Leached below the root zone (only in very sandy/silty soils with little organic matter)
 - Taken up by plants
 - Converted to nitrate in the nitrification process
- Nitrate is dissolved in soil water and can be:
 - Leached below the root zone (occurs in all soils if excess water moves through)
 - Converted to nitrous oxide gas and lost to the atmosphere (wet/compact soils)
 - Taken up by plants

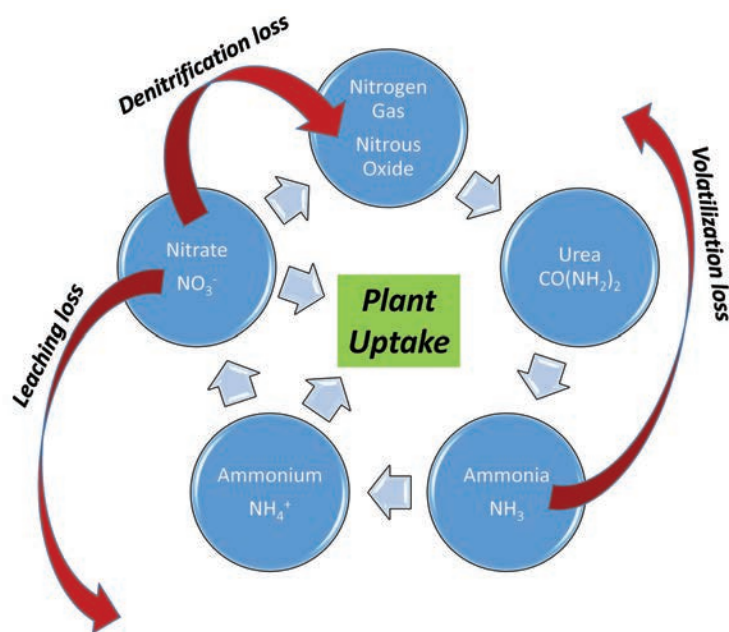


Fig. 1. Simplified nitrogen cycle

In general, nitrogen found in the soil as urea or ammonium is less at risk of loss than nitrate. Thus, it is important to get the urea and ammonium moved into the soil and slow their conversion to nitrate. Doing so results in nitrogen being more likely to be taken up by plants and not lost to the environment.

AVOID LOSSES OF NITROGEN TO THE ENVIRONMENT

In addition to budget concerns from nitrogen loss, field managers should avoid loss because of the following environmental concerns:

- Wasted fertilizer wastes natural resources, such as natural gas;
- High nitrates in drinking water are a human health concern;
- Nitrogen in surface waters causes algal blooms and resultant eutrophication;
- Ammonia gas gets deposited back onto land where it can be destructive to sensitive ecosystems and contribute to eutrophication in surface waters; and
- Nitrous oxide is a potent greenhouse gas.

Some loss of nitrogen is inevitable, but research shows that managers of grass can curb almost all of it. Best management practices to avoid losses to the environment include:

- Knowing which nitrogen forms (urea, ammonium, and/or nitrate or other) are found in the fertilizer and if they are in quick-release or in protected form;
- Avoiding surface application of unprotected, quick-release urea and ammonium based products when temperature, humidity, and/or wind are high;
- Watering urea and ammonium based products into the soil with ¼ inch of irrigation water shortly after application, especially if temperature, humidity, and/or wind are high;
- Avoiding application of excess irrigation water to avoid leaching nitrogen out of the root zone;
- Keeping the soil well aerated;
- Avoiding spikes of nitrogen in the soil by making it steadily available to plants through the entire growing season;
- Making sure plants have ample nitrogen during the fall before they go into dormancy; and

■ Accomplishing the above by using a blend of quick-release and enhanced-efficiency nitrogen fertilizers.

UNDERSTANDING ENHANCED-EFFICIENCY NITROGEN FERTILIZERS

There are many types of enhanced-efficiency fertilizers (Fig. 2). It is important to understand what part of the nitrogen cycle (Fig. 1) is being addressed with those that are inhibitors or slow/control release (Fig. 2). Not all enhanced products are equally effective – as some manufacturers have poor quality control. But these can be very effective if the product is high quality and is used properly.

Control-release fertilizers keep nitrogen from releasing into the soil solution until physical processes facilitate the release. For example, polymer-coated urea (Fig. 3) keeps the nitrogen inside a coating until it eventually diffuses out. The nitrogen release rate increases with increasing temperatures. These are advertised with various release timings, which are relatively accurate when these are buried in soil in agricultural applications. However, when applied to the surface, the release is hastened. This occurs because grass surfaces often have temperatures in excess of 120 degrees Fahrenheit. Nevertheless, these can be very effective if the coatings are not cracked through excessive handling.

Slow-release fertilizers keep the nitrogen bound into molecules that are not taken up by plants nor lost to the environment until they break down via chemical and/or biological processes to become plant available. For example, urea-formaldehyde, methylene urea, and triazone-based fertilizers consist of long chain, nitrogen-containing molecules. Another type is sulfur-coated urea used alone or in conjunction with polymer coatings. The nitrogen becomes available to plants as the sulfur coating oxidizes over time – releasing the nitrogen into the soil. Again, the coating can become cracked and, thus, these fertilizers also need to be handled with care.

Urease inhibitors [e.g., N-butyl-thiophosphoric triamide (NBPT)] inhibit the urease enzyme, which catalyzes the hydrolysis reaction that converts urea to ammonia gas and then, if not lost to the atmosphere, to ammonium. Nitrification inhibitors [e.g., dicyandiamide (DCD), 2-chloro-6-(trichloromethyl)pyridine (nitrapyrin), N-butyl-

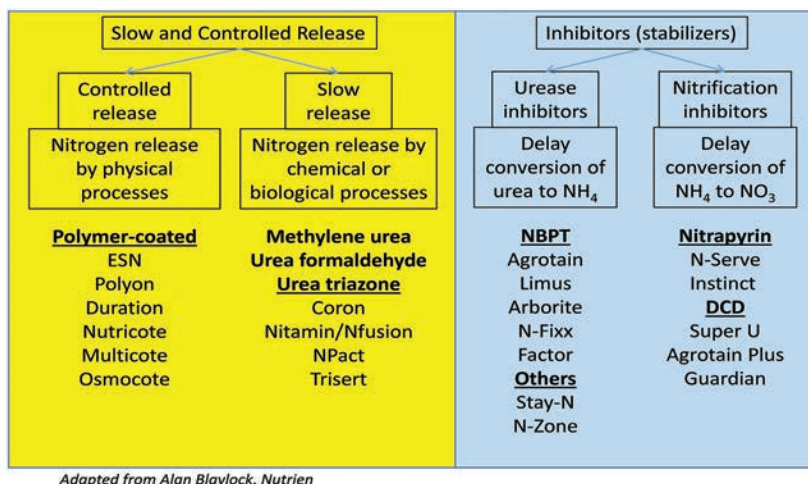


Fig. 2. Enhanced-efficiency nitrogen fertilizer categories



Fig. 3. Polymer-coated urea (tan colored) is an effective source of control release nitrogen that can be used at lower rates because more is taken in by plants and less lost to the environment

thiophosphoric triamide (NBPT), 3,4-dimethylpyrazole phosphate (DMPP), and pronitridine] were developed to slow the conversion of ammonium to nitrate by inhibiting the activity of *Nitrosomonas* spp. bacteria responsible for this conversion.

Normally, urea hydrolysis to ammonium is complete within two to four days. A urease inhibitor slows it to seven to 14 days. Conversion of ammonium to nitrate normally is complete within seven to 21 days. A nitrification inhibitor slows that to 25 to 50 days. Using both inhibitors extends the range to about 50 days. Slow-release products vary widely in their release timing, but generally are released within about 14 to 50 days. Polymer-coated products vary widely, depending on quality and thickness of the coating. Products are sold with release tim-

ings ranging from 45 to 360 days. Unlike most agricultural applications that are tilled into the soil, most nitrogen applied to grass is surface applied. The hot temperatures at the surface can shorten the times of all of these ranges listed above. For example, research on polymer-coated urea showed that most of the nitrogen was released within 45 days – regardless of coating thickness. Thus, contrary to some claims, these do not last the entire season, especially in warmer climates with long growing seasons.

Each of these enhanced-efficiency fertilizers can minimize volatilization, denitrification, and leaching losses, because there is no large flush of nitrogen-containing chemicals at any one time. Thus, plants can take up the nitrogen, and less is lost to the environment. Their use is highly recommended.

TWO SUGGESTED APPROACHES TO NITROGEN MANAGEMENT

Liquid nitrogen fertilizer applied as a foliar spray or injected into the irrigation system provides excellent coverage with each plant receiving nitrogen. Foliar sprays have the potential to be extremely uniform. In contrast, no irrigation system is perfectly uniform –

with some areas receiving two times more nitrogen, even with well-designed/maintained irrigation systems. Nevertheless, these applications can be highly effective. Application of 0.25 to 0.5 lb N/1,000 ft² needs to be made at least every month of active growth, with slightly higher rates prior to winter dormancy and less during summer months. Combining

a slow-release nitrogen source and/or an inhibitor can reduce the number of applications needed to two to four times per year. Divide the amount of nitrogen desired by the percent of nitrogen in the fertilizer to obtain the amount of actual fertilizer needed (eg. 0.5 lb N /1,000 ft² divided by 0.2 for a 20-0-0 fertilizer = 2.5 lb fertilizer /1,000 ft²).

Solid nitrogen fertilizer is often less costly and requires less sophisticated equipment than a liquid program. For grass surfaces, it is essential to use products with a high size guide number (SGN), which means that the granules are relatively small. A high SGN nitrogen fertilizer results in improved uniformity. However, even high-SGN fertilizers don't result in as good of uniformity as a liquid foliar spray – with some plants not receiving any nitrogen in the short term and others receiving a relatively high rate. This lack of uniformity tends to equalize over many applications, but a spotty appearance can occur – especially on newly seeded/sodded surfaces. Application of 1.0-1.5 lb N/1,000 ft² with a blend of ammonium sulfate (if sulfur is needed) or urea and polymer-coated urea (or similar) should be made early spring at greenup. At least 2/3 of the mix should be the polymer-coated urea. Then, twice this amount should be applied in the early fall. This can be split into a third application if desired, but research shows no advantage for three vs. two applications.

In general, higher rates of nitrogen are needed if clippings are not recycled in place. Relatively higher rates are also needed on sandy soils and in other scenarios when leaching losses below the root zone are more likely.

However, it is vital to avoid excess nitrogen, which causes excess shoot growth at the expense of root growth. This results in increased water and fertilizer costs, disease, and mowing costs.

It is also important to avoid getting trapped into thinking that blended fertilizers are essential. Soil testing should be used and be based on legitimate scientific studies for interpretation for phosphorus, potassium, and micronutrients.

One of the most important things we do in managing grass and other plants is to get the nitrogen right. Doing this pays big benefits. **/ST/**

Bryan G. Hopkins, Ph.D., CPSS, is a professor at Brigham Young University, Provo, Utah.

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JOHN MASCARO'S PHOTO QUIZ

JOHN MASCARO
IS PRESIDENT OF
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ANSWER
FROM
PAGE 17

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This photo was taken from the outfield at the CenturyLink Sports Complex in Fort Myers, Fla. The damage occurred to this Tifway 419 Bermudagrass after a baseball game at the facility. After the game was over, the facility held an overnight campout for the Boy Scouts of America. Being that this stadium is in southwest Florida, protection from mosquitos at night is a must! The green areas are where the campers were standing when they applied insect repellent, and the brown areas are from the overspray. I also believe that the long mark in the foreground might be from the scouts kneeling down to make sure they got good coverage on the back of their legs. As we see more and more of this type of damage to turf from insect repellent, it appears to be the carrier in the insect repellants is actually causing the turf harm, not the active ingredients. The damaged area grew out on its own after a little time and no other damage was noticed or recorded.



Photo submitted by Robert Tice, heavy equipment supervisor at Lee County Parks & Recreation in Fort Myers Fla. Tice was turf management coordinator at the time the photo was taken. Keith Blasingim is head groundskeeper at the facility.

If you would like to submit a photograph for John Mascaro's Photo Quiz please send it to John Mascaro, 1471 Capital Circle NW, Ste #13, Tallahassee, FL 32303 call (850) 580-4026 or email to john@turf-tec.com. If your photograph is selected, you will receive full credit. All photos submitted will become property of *SportsTurf* magazine and the Sports Turf Managers Association.



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Vegetation Management

Expanding your sights beyond the field

It may be winter right now, but the first peek of warm weather in 2020 isn't all that far away; and with that warm weather comes invasive vegetation and weeds. That makes the winter months the perfect time to be thinking about your athletic facilities, fields, and turf and the areas that surround them. Do you have a plan and a budget for vegetation management?

For athletic facilities, sports and recreational fields, even those with synthetic turf, vegetation problems can start appearing in the early spring, especially if the winter serves up conditions conducive to vegetation growth. The National Oceanic and Atmospheric Administration's recent winter outlook is calling for a warmer-than-usual winter throughout much of the United States, and increased precipitation across a large northern swath of the country.

A warmer winter may lead to vegetation emerging earlier than usual in some areas.

Combined with increased precipitation, a warmer winter could mean a vegetation explosion ahead of the spring sports season, depending on a field's geographic locale.

When it comes to vegetation management, think beyond field care and take a holistic approach to your plan. What areas are part of your player and visitor experience? Does the presence of excess vegetation in these areas impact guests, pose hazards, or increase your labor costs?

What problems can excess vegetation cause?

Weeds and unwanted vegetation are often thought of as a mere aesthetic issue. Although aesthetics are certainly important to many sports organizations, there are other problems that come hand-in-hand with vegetation growth.

For many athletic facilities, the presence of weeds creates a continual need for man-



ual care and treatment of fields. Crabgrass, thistle, and clover growing in areas adjacent to athletic fields can become a seed source and re-invade fields throughout the season.

Vegetation creates a harborage and sometimes a food source for a variety of

EDITOR'S NOTE: This material was provided by Rentokil Steritech, and was written by Dwayne Hess, a product manager with Rentokil Steritech, and a veteran professional with more than 30 years of experience in vegetation management and turf and ornamental landscape care.

pests, among them mice, rats, mosquitoes and stinging pests. The presence of any of these pests can pose potential health risks. Rodents will utilize vegetation to hide and shelter, and can cause structural and equipment damage, as well as contaminate food and surfaces. Mosquitoes, which rest on vegetation during the day or breed in stagnant water where vegetation blocks drainage, can carry and spread diseases such as West Nile virus and Eastern Equine Encephalitis, putting your visitors and players at risk. Stinging pests such as bees can hover near clover or other flowering plants, bringing with them a sting risk. In some situations, stings can be extremely dangerous, resulting in anaphylactic shock.

Some vegetation, such as ragweed, can create an unpleasant experience for both sports participants and observers, serving as a source of allergens.

Excess vegetation in some areas could potentially pose trip and fall hazards, especially when walking trails to fields are overgrown.

In areas where drought or lack of precipitation is an issue, dead or dry vegetation can create an increased fire hazard. This hazard risk can increase when the vegetation is in close proximity to electrical or heat sources.

Common areas where vegetation management is needed

Vegetation management should extend beyond field care to all areas that impact the experience of visitors to your facility. This might include secondary areas that may be “out of sight, out of mind.” Common areas where vegetation management programs can be useful include:

- Parking lots (whether paved, gravel, or dirt)
- Walking trails or paths to fields
- Concession stand areas
- Areas under bleachers or seating
- Fence lines
- Areas around pools
- Drainage ditches

How to budget for vegetation management

Most sports field professionals are thinking about budgeting for field maintenance and potentially landscaping, but vegetation management extends beyond these critical elements.

Vegetation management involves surveying an area and the conditions around it, removing any existing overgrowth, applying pre-emergent products to control the vegetation that is already there and prevent new vegetation from growing. Most importantly, a professional vegetation management plan will typically come with a warranty to ensure that excess vegetation remains at bay during the entire growing season.

Budgeting for vegetation management requires taking a 360-degree view of your facility. In determining pricing for a vegetation management program, a professional will typically ask the following questions:

- What vegetation are we trying to control?
- Does the vegetation need to be controlled year-round or seasonally?

■ What areas of your facility are associated with additional manual maintenance?

■ Is the area adjacent to wooded areas that could promote additional vegetation growth?

■ What areas does the public see/what areas are critical to aesthetics?

■ Does the vegetation create any potential safety or health risks?

■ Does vegetation impede traffic, create pedestrian hazards, or occlude access roads?

Vegetation management plans should be customized to address a facility's unique concerns, but are typically priced by acre or square footage, depending on the type of treatment being performed. Vegetation that is dense or has grown in height may add additional expense to a program by increasing the cost of initial treatment.

Start thinking about vegetation management now

It's never too early to start thinking about putting a vegetation management plan in place. In fact, winter is the perfect time to get started.

If you know the areas of your facility that are subject to excess vegetation and weeds throughout the warm weather season, a vegetation management professional can likely come out and determine the best program and treatment measures for you now, before growing season even begins. With the right program in place, vegetation will be a non-issue for your facility in 2020. /ST/



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When Disaster Strikes

// By JOHN KMITTA

In the fall of 2018, The City of Parkville, Mo., completed improvements to Grigsby Field, one of the city's baseball fields, thanks to support from Engaged Companies, a local business sponsor and supporter of youth baseball that invested nearly \$20,000 in new infield material, a new pitcher's mound, laser grading and removing the lip buildup between the infield/outfield edge with new sod.

"Sadly no one had a chance to take advantage of the hard work and the new and improved field," said Tom Barnard, superintendent of parks, City of Parkville.

Nobody had a chance to play on the new field because, prior to the start of the 2019 season, disaster struck.

According to Barnard, large amounts of snow fell in mid-March in the northern states along the Missouri River. This was followed by a string of warm-weather days.

"With the ground being frozen, large amounts of runoff were going into the tributaries and into the Missouri, causing major flooding along the flood plains," said Barnard.

In Parkville, the flooding carried heavy debris (predominantly corn stalks from neighboring farmland), toppling and even ripping out fence lines at their ball fields and dog park, washing out trails, and wiping out a large amount of electrical infrastructure, Barnard added.

"An extensive amount of river silt was deposited during this flood," he said. "With the lack of public activity with the park being closed, beavers began taking over, damaging or destroying many trees."

When the waters receded, cleanup efforts began, but the river came back with a vengeance, and Parkville was flooded again beginning in mid-June.

Luckily, Barnard and his staff had enough advance warning to get their equipment to higher ground.



Grigsby Field before the flooding. All photos provided by The City of Parkville, Mo., Public Works Department, Parks Division





Recovering... and rebuilding

Barnard said the biggest challenge so far has been the large amounts of silt deposited throughout the park.

"Trucking it off premises is a large monetary expense and a time-consuming commitment," said Barnard. "Silt was transported to low-lying areas that were close and within the park system, primarily where future ball field development will occur. Dozers, excavators, track loaders and dump trucks were needed to remove the silt. Weed eradication, debris removal, re-grading and disking the silt into topsoil – throughout the 200-acre park system – were necessary details that allowed us to begin seeding while the window of opportunity existed for fall reestablishment to complement the opening of the park in the spring."

Thankfully, Parkville's efforts to rebuild are being aided by a generous donation from Royals Charities. As part of the Royalty Fields Program, Royals Charities and

Price Chopper donated \$25,000 for ball field improvements.

Barnard was excited about the donation, as it allowed the City of Parkville to address improvements that were beyond preexisting conditions prior to the flooding. Improvements include an updated interface and LED lighting that will be added to the existing scoreboard, dugouts for the T-ball field where there were none, and a totally revamped bullpen for Grigsby Field.

"When we build or add amenities to the park, we discuss at great length what we can do to minimize impact when the next flood does occur – not if – but when," said Barnard. "Can we build something a foot or two higher? Getting electrical components/breakers out of boxes, removing electrical RV pedestals that are needed for events, and putting GFCI outlets as high as possible are areas that we addressed."

Project completion is slated for early 2020, with a grand opening event planned for spring to unveil the improvements. **/ST/**



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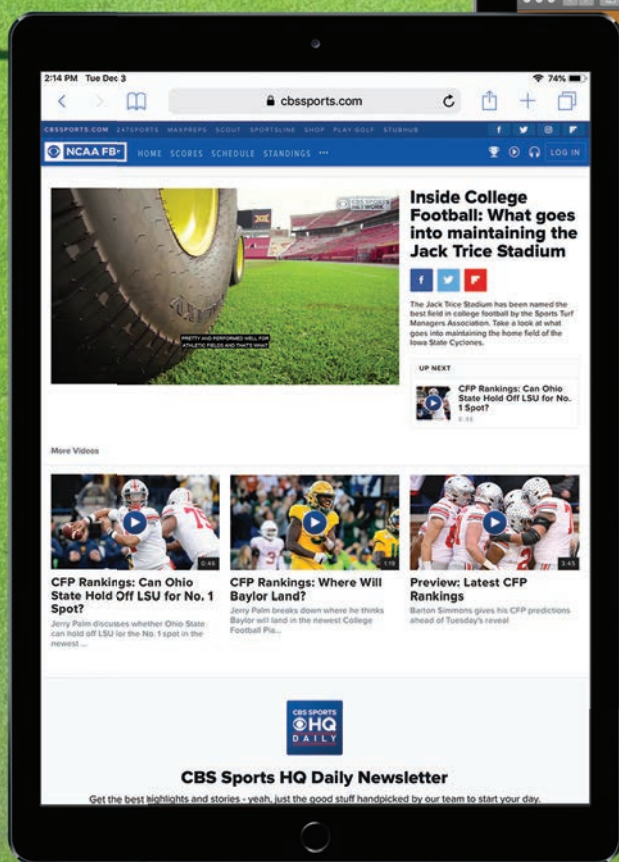


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The STMA 2020 Conference and Exhibition will be held January 13-16 in West Palm Beach, Fla. In addition to educational seminars, workshops, tours and networking, attendees can expect to see the latest equipment and technology on the trade show floor. The following special advertising section provides a sneak peak at some of the companies that will be exhibiting at the show, and the products they will be showcasing.

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1 HURRICANE.
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9 TACKLE COMPACTION AND WEAR.

“The Aftermath.” The full fury of Hurricane Matthew did not really impact the turf at the University of Central Florida in Orlando until November 2016. With three home games rescheduled in cool weather and at least 12 quarters of football to play, the turf team had to come off the ball fast.

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STMA names 2020 Innovative Award winners

STMA named innovations from FieldTurf and Pioneer Athletics as its Innovative Award winners. The Innovative Awards program recognizes STMA commercial company members who have developed a product, service, equipment or technology that substantially enhances the efficiency and effectiveness of the sports turf manager and/or makes the playing surfaces safer and/or more playable for athletes.

Chosen by STMA's Innovative Awards Task Group, entries are evaluated on a wide range of qualities including whether or not they fill a need; are creative; save time and resources; are cutting-edge; make a task easier or more productive; improve quality; protect the environment and improve efficiency.

"Sports field managers must account for countless variables on a daily basis," said Kim Heck, CAE, CEO of STMA. "Pioneer Athletics and FieldTurf have each delivered breakthroughs that streamline efficiencies in ways our industry has not seen before."

FieldTurf won for its FieldTurf Genius, which features technology that allows sports field managers to monitor the number of athletes on a playing surface and the hours of use. This data is used to deliver in-depth reports on executed maintenance and usage along with sending maintenance alerts when needed.

This allows sports field managers to track and monitor service via a live dashboard from their desk.

"FieldTurf Genius is more than advanced technology, it is a major breakthrough for field owners," said Eric Daliere, president of FieldTurf. "This truly reinvents field management and maintenance, and we are proud to continue to develop new and innovative solutions for facilities."

Pioneer's ready-to-use product was built as a variation of its premium Game Day paint, specifically designed to cure faster, without rewetting the surface. After years of research, the innovation was developed as an alternative for locations with regular high humidity or seasonal cool temperatures and moisture. Noted for generating better grass health, the paint is available in standard and custom Game Day colors.

"Customers, new technologies, and environmental awareness all fuel our commitment to innovation," said Doug Schattinger, president of Pioneer Athletics. "We are devoted to delivering new products that advance the sports field industry."

First presented in 2011, recent Innovative Award winners include New Ground Technology (2017), The Perfect Mound (2018) and Echo Robotics (2019).

STMA announces Mowing Patterns Contest winner

STMA named Andrew Miller, program advisor for the Brentsville High School (Nokesville, Va.) turfgrass management program, its seventh annual Mowing Patterns Contest winner.

Miller was selected via a Facebook voting contest for his intricate design at Donald Lambert Field, home to the Brentsville High School Tigers. Earlier in the year, Miller also won STMA's annual Stars and Stripes contest with his "Friday Nights in Small Town USA" field design.

"Andrew and his students had an extraordinary 2019 winning Stars and Stripes and now the Mowing Patterns Contest," said Kim Heck, CAE, CEO of STMA. "As the program advisor, he continues to increase awareness within the



community and the sports field industry with his profound designs. His creativity sets a tremendous example for the young up-and-coming sports field managers in the Brentsville program."

A graduate of Virginia Tech, Miller has amassed an impressive resume. After graduating with his bachelor's degree in turfgrass management, he worked on

the Virginia Tech grounds crew before moving on to the New York Mets. Following his stint in New York, Miller spent time in Pittsburgh at PNC Park with the Pirates before transitioning to Heinz Field to work for the Steelers. He then earned his Masters in Agricultural Education from Virginia Tech and has been shaping leading students in the Brentsville program since.

Miller will be included in a future issue of *SportsTurf*. His design will also have a custom poster featured at the 2020 STMA Conference & Exhibition (January 13-16) in West Palm Beach, Fla.

Last year's winner was Kyle Calhoon, head groundskeeper for the Hartford Yard Goats at Dunkin' Donuts Park (Hartford, Conn.).

STMA Annual Meeting and 2020 slate of candidates set

The STMA Annual Meeting, which is required by the bylaws, is officially set for Wed., Jan. 15, 11 a.m. to 1:15 p.m. (includes lunch and keynote address). At the meeting, association business will be discussed and the 2020 board of directors will be presented to the membership.

Up for election are the following candidates:

Commercial Vice President:

Jeremy Bohonko, regional manager-Piedmont region, Charlotte, N.C.

Secretary Treasurer:

James Bergdoll, CSFM, director of parks maintenance, City of Chattanooga Public Works, Chattanooga, Tenn.

OR

Sun Roesslein, CSFM, north area athletic complex stadium manager, Jeffco Schools Athletics, Golden, Colo.

Director Higher Education:

Clark Cox, CSFM, asst. AD/sports turf & landscape services, University of South Carolina, Columbia, S.C.

OR

Joshua Koss, CSFM, landscape services manager, San Diego State University, San Diego, Calif.

Director Academic:

Jason Kruse, Ph.D., associate professor and assistant chair, Environmental Horticulture Dept., University of Florida, Gainesville, Fla.

OR

Adam Thoms, Ph.D., assistant professor of commercial turfgrass, Department of Horticulture, Iowa State University, Ames, Iowa

Director Parks & Rec:

Ron Hostick, CSFM, manager-landscape services, City of San Francisco, San Francisco, Calif.

OR

Brad Thedens, CSFM, park caretaker, City of Sioux Falls, Sioux Falls, S.D.

Director At-Large Elected:

Billy Pipp, CSFM, regional grounds manager, ABM, Midlothian, Va.

OR

Scott Thompson, CSFM, superintendent of sports fields & grounds, Duke University, Durham, N.C.

The slate will also contain these candidates who automatically ascend to their position on the board, per the bylaws:

Immediate Past President – Jody Gill, CSFM, grounds coordinator, Blue Valley School District, Overland Park, Kan.

President – Jimmy Simpson, CSFM, facilities coordinator, Town of Cary, Cary, N.C.

President Elect – Nick McKenna, CSFM, assistant athletic field maintenance manager, Texas A&M Athletics, College Station, Texas

The president will make two appointments: one to fill the At-Large Appointed Director and the other to fill the Commercial Director, which was left vacant when Jeremy Bohonko was slated Commercial VP. He had one year left in his term. Current board members Stephen Lord, CSFM, Cincinnati Reds., Cincinnati, Ohio, and Jeremy Driscoll, St. Marks High School, Wilmington, Del., are not up for election.

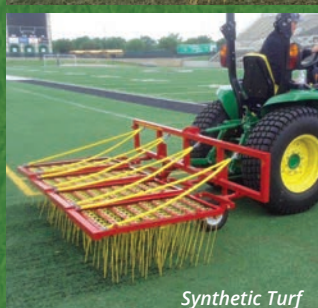
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STMA Affiliated Chapters Contact Information

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

Kentucky Sports Turf Managers Association: www.kystma.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

Sports Turf Managers of New York:
www.stmony.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.com

Texas Sports Turf Managers Association:
www.txstma.org

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Q&A with DR. GRADY MILLER

Professor,
North Carolina
State University

Questions?

Send them to Grady Miller at North Carolina State University, Box 7620, Raleigh, NC 27695-7620, or email grady_miller@ncsu.edu

Or, send your question to Pamela Sherratt at 202 Kottman Hall, 2001 Coffey Road, Columbus, OH 43210 or sherratt.1@osu.edu



How Good Are the New Grasses?

Q: I have been hearing about sports fields going in with some of the new bermudagrasses. How much better are these new grasses?

A: This is a great question, as the last few years there has been a great deal of research and development targeting specific traits or characteristics of turfgrasses. I believe that turfgrass breeders traditionally selected new turfgrasses based primarily on visual turfgrass quality during the growing season. Turfgrass quality was often narrowly defined by turfgrass color and density, so the selection was largely a “beauty contest.”

Turfgrass evaluation has really changed during the last 10 to 15 years. There are new scientific techniques and greater numbers of grasses being critically evaluated. Turfgrass breeders have begun looking at specific traits that can provide desirable performance attributes beyond color and density; traits such as leaf extension rates, leaf width, leaf orientation, fall color, spring green-up, water use, rooting density, disease tolerance, salt tolerance, etc.

Not only do turfgrass breeders select grasses for particular traits evaluated from the field, but now they are also working on specific gene identification for drought tolerance and other traits so they can select germplasm in the lab that will later display desirable characteristics when grown in the field. This allows for rapid screening of germplasm to narrow down the grasses that need to be further evaluated in field trials. In addition, new digital and electronic techniques for evaluation are being used in the field evaluations to collect significant amounts of data.

A great example of this evaluation process being used can be found with the multi-million-dollar, USDA-funded project that has been going on for the last 10 years at North Carolina State University, Oklahoma State University, Texas A&M AgriLife, University of Georgia, and University of Florida. This five-university collaboration among breeders and extension specialists has resulted in the recent releases of TifTuf and Tahoma 31 bermudagrasses, and likely more will follow (other turfgrass species tested in this project have also been released). In a short time, these two bermudagrasses have become very popular with sports field managers based on specific enhanced traits.

So new grasses may not have the same color or leaf architecture as the grass you are currently managing, but for some key characteristics the research suggests they should perform much better. For example, if we compare the industry-standard Tifway to TifTuf, research has shown that TifTuf can stay greener longer in the fall than Tifway. It also can green up faster in the spring compared to Tifway. With more upright leaves and increased density, TifTuf tolerates wear better than Tifway.

But, most impressively, under drought conditions, TifTuf uses 38 percent less water than Tifway.

It was TifTuf's response to drought that first separated it from other bermudagrasses in the University of Georgia turfgrass breeding program. The same was true for Tahoma 31, which followed the successful releases of Latitude 36 and NorthBridge from Oklahoma State nearly 10 years ago. Those two grasses were known for outstanding turfgrass texture and superior cold tolerance, but not for drought tolerance. Research data suggests that Tahoma 31 has the cold tolerance of its predecessors with a drought tolerance and spring green-up profile more similar to TifTuf.

You may be wondering if increased drought tolerance is worth any added costs of going with a new grass. For example, if you have a great irrigation system, do you really need a more drought-tolerant turfgrass? A good analogy may be if you want to pay extra for four-wheel-drive when purchasing your next new pickup truck if it is never expected to be taken off-road. If you commonly have a need for the trait, then you probably will not question its value.

I know sports field managers in the Deep South questioned whether Latitude 36 or NorthBridge were appropriate for their situation since the primary selling point was “enhanced cold tolerance.” These grasses also were proven to have really high shoot density and fine texture at really low mowing heights – two other very positive traits for sport surfaces. So improvement gained in one trait does not necessarily mean there are sacrifices to make in other desirable traits. For example, if you look at turfgrass research data (e.g. NTEP.org website), you will notice that TifTuf and Tahoma 31 are in the top-performing group at most locations for most of the traits evaluated. In many cases, standards such as Tifway are in the second or third group with significantly lower performance. That does not mean that Tifway is not a functional turfgrass, just that genetic improvements have been introduced since the 1960 release of Tifway.

So, whether to try a new turfgrass is largely up to you. New grasses may only be incremental improvements compared to older grasses, but often turfgrasses are maintained with a small margin for error. And if you are managing a sports field without irrigation, a new turfgrass that is substantially more drought tolerant can be momentous. I only provided examples from a hybrid bermudagrass program, but there are similar efforts toward improvement of seeded bermudagrasses, as well as the cool-season grass species. I think it is a great time to be looking at new grasses. **/ST/**

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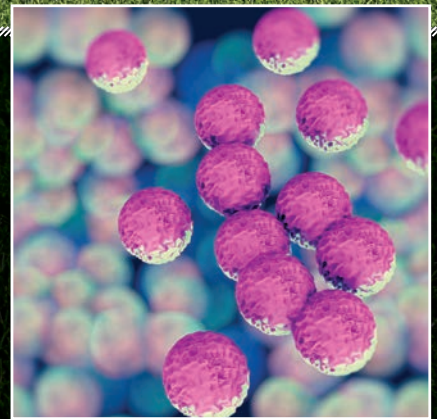
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