

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

OCTOBER 2018

SportsTurf

SPORTS FIELD AND FACILITIES MANAGEMENT / www.sportsturfonline.com

Taking the Field In Cowboy Country



See
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ALSO INSIDE

- » What keeps you loving your career?
- » What to do before winter for better fields next spring
- » All about vented turf blankets
- » Winterizing your irrigation system

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ON THE COVER

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On the cover: Field of the Year winner John Wagnon says, "I love the challenge of taking a problem area and making it better and fixing issues, whether it's something simple as a broken irrigation head to more complex like finding a way to get water to that head or move water away from it. There is nothing better than seeing a field change its look for the better after putting some TLC into it and seeing the result."

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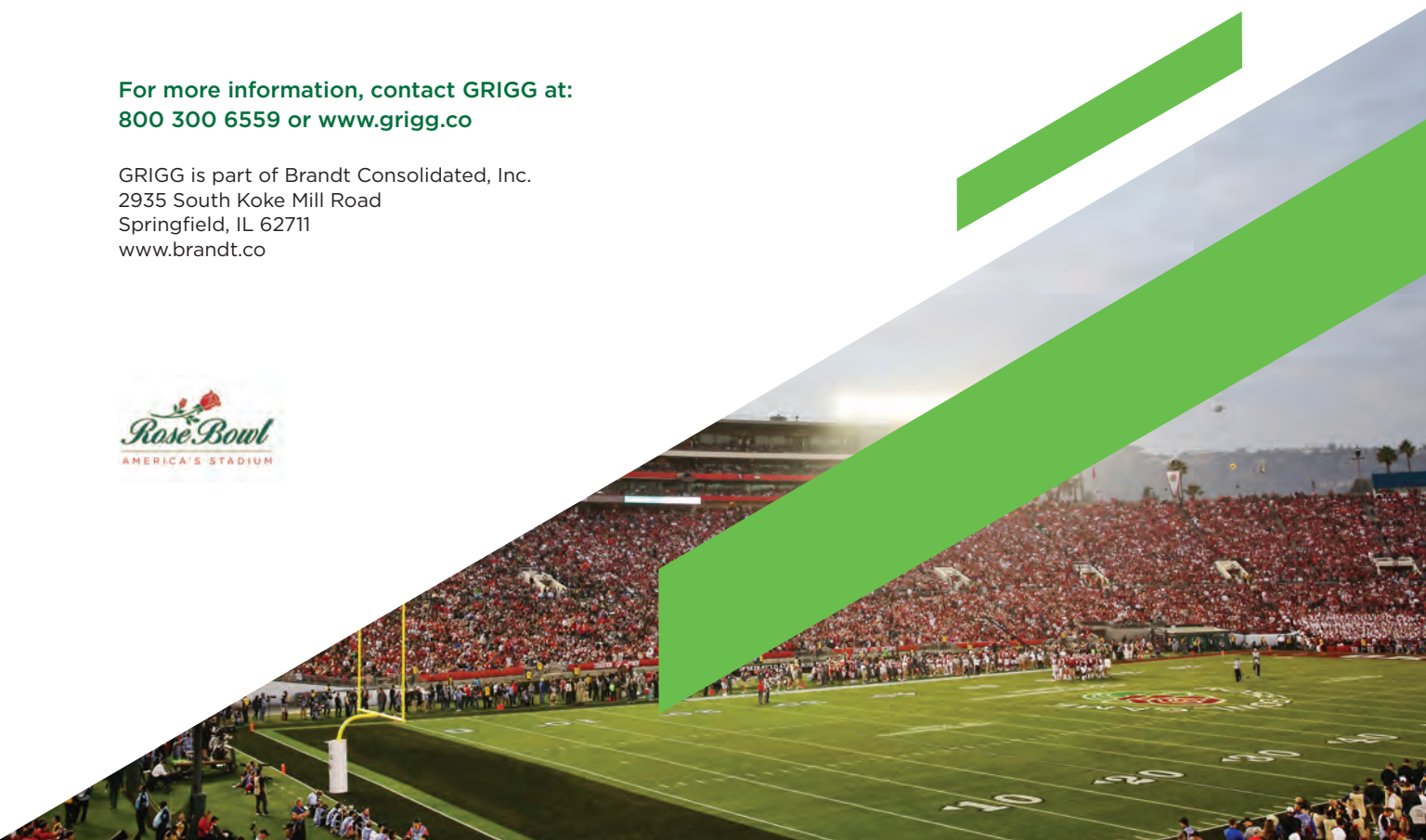
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FROM THE SIDELINES

Record rain



Eric Schroder / Editorial Director / Eschroder@epgmediallc.com / 763-383-4458

HERE IN HARRISBURG, up the Susquehanna River from the Chesapeake Bay, in other parts of Pennsylvania and down through Virginia, we have seen 150 to 300% of our normal rainfall since May. (The *Farmer's Almanac* used to put Harrisburg at the north point of a region named "Mid-Atlantic" but now has us west of its coastal "Atlantic Corridor" and into an "Appalachian" area stretching from Elmira, NY south to Asheville, NC).

As I write this September 10, it's been raining steady here for 4 days, and we await news of Hurricane Florence, currently threatening the Carolinas. It's painful watching football highlights from stadiums drenched in sun, the grass perfect and the air presumably fresh!

How have turf managers coped with all the water?

Evan Mascitti, manager of field operations, Pittsburgh Pirates, emailed: "With this summer's exceptional heat and humidity, our turf suffered some summer patch damage. We apply preventative fungicide treatments throughout the spring months, but several consecutive nighttime temperatures in the 70s allowed breakthrough. Unfortunately this seems to be the 'new normal' as Earth's climate continues to warm. We masked the damage with green sand and pigment, and carefully monitored our water and fertilizer applications. With some rest and overseeding, the turf has recovered well."

Bernard Luongo, Northern Burlington County Regional (NJ) SD, wrote, "Busy as hell here as I am sure every one is! At Northern Burlington we have 200 acres of property to manage. Out of those 200 acres, besides many landscape beds, there is 59 acres of athletic fields – all turf, no plastic. This puts us in a unique situation. Some fields drain better than others so we are able to rotate games where needed. Varsity always gets first choice and then we work on down the food chain. It seems to work well with limited cancellations. Well that's my story and I'm sticking to it. As I write this we are waiting for the remnants of Florence to dump on us. Keep smiling."

John Turnour, director of field operations, Washington Nationals, wrote September 18, "The one constant in our industry is the unique challenge of working around whatever weather-related hurdles Mother Nature throws our way. As we watch the remnants of Hurricane Florence move through our area today, we are once again looking into the rain gauge to check our daily rainfall. Our 2018 season seems to have been challenged by forecasts that include the chance of rain and thunderstorms with temperatures near to above average. In the DC area, we have received roughly 39" of rainfall since April. Given that our yearly average is around 41", it's fair to say that it's been an above average year (season) for rainfall. From a field maintenance perspective, for the most part, the rain has been timely which has allowed us to perform our maintenance practices as scheduled. We approach each year with an open mind and have our preferred plan of maintenance throughout the year. When weather dictates otherwise, we talk through our options and ultimately will choose an alternative plan that will still provide positive results. When working around the challenges of weather, it's more than just getting the field maintenance practices completed or getting the games played as scheduled, it's having a staff that is prepared and understanding of these challenges. I would be remiss if I didn't mention the phenomenal job our staff has done throughout the year. They are an outstanding group of professionals that have displayed an abundance of patience throughout the season and are always willing to do whatever is needed to get the job done." /ST/

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PRESIDENT'S MESSAGE

Job 1: take care of yourself



Sarah K. Martin / CSFM / sarah.martin@phoenix.gov / @neongrapefruit

HAPPY OCTOBER! Hope you all have your costumes and candy ready for the end of the month! I don't tend to do the costumes, but the candy I can definitely get behind! I like to say that I don't have a sweet tooth; ALL of my teeth are sweet! Ha!

We are swiftly approaching the deadline of October 15 for the following awards and scholarships. Get those applications in!

- SAFE Scholarships (2-year, 4-year and graduate): James R. Watson, SAFE, Fred Grau, and the Darian Daily Legacy scholarship.

- SAFE Grants: Leo Goertz Membership Grant, Gary Vanden Berg Internship Grant, and Terry Mellor Continuing Education Grant.

- STMA Awards: Field of the Year, Founders, Innovative Awards.

For information, go to STMA.org, click on programs and select scholarships or grants or awards or see page 46 in this issue.

CONFERENCE IS JUST AROUND THE CORNER (where has this year gone?) and we have a few differences to let you in on. One being that the timing of the Live Auction is being moved from before the banquet dinner to immediately preceding the Welcome Reception! This will allow for more of our commercial members to participate. Be sure to check out the items being auctioned and come ready to bid! SAFE also needs your donations for the live and silent auctions. Bring those items to the registration desk at the conference or ship them in advance to STMA Headquarters.

I'D LIKE TO SWITCH GEARS NOW and talk about something that has been increasingly apparent in our industry lately. Stress. And its effects on the body especially. We are a very dedicated group, and we have extreme passion for our fields and those who use them. I'm not trying to diminish that. But I challenge each and every one of you to look at your personal health. When was the last time you made the time to get a general check-up? Mine was a couple weeks ago, and did I want to go? Nope. But am I glad I did? Sure thing! Please listen to your body. When it is telling you to slow down and rest, take that day off, even though you know you have a million things to do, if you are sick (or worse), none of those million things will get done. A healthy you is a much more productive you.

A GOOD FRIEND OF MINE, Ross Kurcab, CSFM (who got it from Tommy Lasorda, who got it from a can of Carnation milk) once said, "Happy Cows Make Better Milk," and I can't agree more, but would add that HEALTHY cows milk is much more delicious!

As Anne Wilson Schaef so nicely said, "Good health is not something we can buy. However, it can be an extremely valuable savings account." **/ST/**

Sarah K. Martin, CSFM



@KATHERINEDRURY1

Lubbock, TX July 27

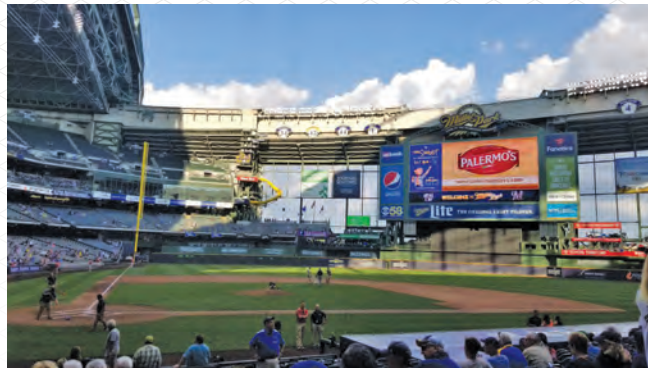
Technically, all of the water we drink was once #rainwater, but this jug is filled with fresh-caught and UV-treated rain. It is delicious.



@UTPLANTDOC

Nashville, TN July 27

Shake and bake works well for chicken but not for turf specimens. Carefully wrap, pack and ship your turf disease specimen to receive an accurate diagnosis.



@JODYGILLTURF

Milwaukee, WI July 25

It's a spectacular evening for baseball in Milwaukee and Michael Boettcher and crew have the field in perfect condition! It's @FieldExperts



@CAROLINAGREENCO

Indian Trail, NC July 26

Sod Harvest Moon



@THE12THMAM

College Station, TX August 15

It's a beautiful day for dirt work – at Olsen Field at Blue Bell Park



@TRFGUY

South Williamsport, PA August 18

And the tarp pull record has been set! 28 between the 2 fields in 5 days! We are only 2 days into tourney!



@COOKMURRAY

South Williamsport, PA August 18

Proud of our awesome sportsturf crew for keeping Bowman Field looking great! A lot of tarp pulls and teamwork. Thank you!
@FieldExperts #LittleLeagueClassic @PennCollege



@PIONEERATHLETIC

Lexington, KY August 20

He was drafted to play center field. Instead, he mows it. 'I'm not sure if I would change anything.'



@BIGTURFTEACHING

West Lafayette, IN August 26

Just another day of Midwest turf research coming to a close... #sunset

What is it about the turf management industry that keeps you loving your career choice?

Brock Phipps, head groundskeeper, Springfield (IL) Cardinals

I feel very fortunate to be able to come to work every day and absolutely love working in the sports turf business. There are only a certain number of us doing what we do and how awesome is it to work at minor league ballpark. Every day is different and has its own challenges, which is why I thrive and



Brock Phipps

challenge myself and my crew daily. Sure, there will be weather issues and long days when you get home and the family are already in bed. That is when I start to second guess my career path and wonder if all the time and effort is really benefitting anyone. Not to mention management squeezing more and more out of the playing surface to generate revenue. But the next morning when I open the gate and overlook the stadium

and field, all those negative thoughts seem to be a thing of the past.

Anthony DeFeo, CSFM, assistant head groundskeeper, Baltimore Orioles, Sarasota, FL

Yes after many years I still love being in the turf management industry. It's hard to pinpoint one reason; it's a bunch of reasons why this is still my career. I have built a great network of turf friends and I love seeing their social media pictures of their fields and hearing tales of getting through a season. Being outdoors has and always been a huge perk of the job and still is. Working, shaping mounds and plates, edging, making our place the best it can be is again still exciting. A new bonus of the job as I get older, I now get to see old interns and assistant thrive personally and professionally. Lastly, I have more good days than bad. So until the bad days outnumber the good, you'll find me on a ball field.



**“UNTIL THE BAD DAYS
OUTNUMBER THE GOOD, YOU’LL
FIND ME ON A BALL FIELD.”**

– Anthony DeFeo



**“SUCCESSFUL PEOPLE FIND
A WAY TO PERSIST AND THE
SAME HOLDS TRUE WITH THE
TURF INDUSTRY.”**

– Josh Bertrand

Joshua Bertrand, director of public works, Glendale, CO

I enjoy the people and their persistence in this industry. Hal Borland said, “Knowing trees, I understand the meaning of patience. Knowing grass, I can appreciate persistence.” It's this persistence aspect of turf industry that keeps me loving my career.

Why? In almost any discussion of the attributes of successful people, persistence is often mentioned as one (if not the most important) factor of success. Abe Lincoln persisted after numerous setbacks in his career, Bill Gates persisted in his family's garage and on and on.



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Successful people find a way to persist and the same holds true with the turf industry. People in this industry believe the results of the efforts they make today may not be seen or realized for a long time, but they believe that everything they do will count toward their desired outcome in the end. It's easy to persist when things are going well, but in the turf industry, the best persist by finding ways to keep going despite major setbacks and a lack of evidence that they are moving closer to their goals. Everyone in the turf industry, at some point, has put down fertilizer then had to wait weeks to see the results. That takes belief in what you are doing!

Another good quote is from entrepreneur Jim Rohn who said, "If you really want something, you'll find a way. If you don't, you'll find an excuse." There are not many people in the turf industry making excuses or looking for a way out. Working in this industry one is surrounded by people who do not stubbornly pursue a course of action when the plan is not working, but rather look for better ways that will increase their chances of success. They are not tied to their ego and are quick to admit when something is not working. Also, most are quick to adapt to the ideas of others that have been shown to work well. Just listen to conversations of people walking out of the educational sessions or on the trade floor at the STMA Conference, they just learned a new idea and want to put it in their program.

Finally while it may seem to those outside the industry that most of the successful people in the turf industry act alone and don't need anyone as they watch them ride on their mower in the early morning. My experience is the opposite; most people in this industry have a carefully chosen group of people they admire and emulate, whether it's a people actually involved in their lives or figures they have read about and emulate. For example, I know successful turf managers can fire off a good George Toma quote when the situation arises.

In my career I truly enjoy the persistence that pervades throughout the

turf industry in the worthy pursuit of safe playing surfaces.

Zach Ricketts, associate head groundskeeper, Oakland Athletics

There are a couple reasons why I love my career choice. The first is being able to work with all types of people, young interns, veteran staff, coaches, players and front office personnel. You are able to meet and help out so many people. The other reason is that I absolutely love working with my hands, outside. I feel like it is what I was born to do. I am truly blessed.

Jeff Haag, turf specialist, Xavier University

I still love my career choice as a sports turf manager for several reasons: 1) Even though weather is always a challenge, especially in the heat of summer, there is never a dull moment putting to use what one has learned over the years from observations, and research to combat summer heat on cool season



**"AS A SPORTS TURF MANAGER
YOU GET TO HAVE PERSONAL
INTERACTIONS WITH COACHES
AND PLAYERS."**

— Jeff Haag

turf; 2) it is an ever-changing industry with new developments in turf health products, equipment, and on going research in turf health care; 3) as a sports turf manager you get to have personal interactions with coaches and players; and 4) it is an industry where other turf managers and researchers are willing to share information and ideas.

David J. Pinsonneault, CSFM, CPRP, DPW Director, Lexington, MA

After 28 years I continue to have a love and passion for the turf management industry. Managing turfgrass brings challenges as well as opportunities and rewards. I know that my management practices have a direct result on whether a field is playable or looks good. I also know that it takes a team (co-workers, vendors, supervisors, etc.) to accomplish the goal of safe, aesthetically pleasing turf. Being part of a team, trying new techniques and technologies and then seeing the results keep the passion going. The reward at the end of the day is seeing the youth and adults of all ages and abilities playing outdoor sports and enjoying their experience because the field played well, looked good and was safe. They can concentrate and enjoy their activity knowing they don't have to worry about the turfgrass they are on. I also feel that what we do as a profession promotes environmental stewardship and being healthy, which are both relevant and important in today's society. I appreciate that the people in this industry work together and network to continually improve what we provide to our user groups. I am proud to be a part of the turf management industry.

Keith Winter, head groundskeeper, Fort Wayne TinCaps

When I transitioned out of television after a 25-year career into the world of professional baseball grounds keeping, people said that I was "living my dream." That was probably true for the honeymoon phase of the first year or so of taking care of a pro field, but the reality of the time and hard work



**“IT IS THAT HARD WORK AND
“GRIND” OF A BASEBALL
SEASON THAT STILL KEEPS ME
MOTIVATED AND STRIVING FOR
EXCELLENCE.”**

– Keith Winter

associated with the job ultimately sets in.

It is that hard work and “grind” of a baseball season that still keeps me motivated and striving for excellence a dozen years later. Because this is a second career, and I am in a different stage of life than many younger sports turf managers, my perspective and view of the bigger picture is vastly different. I have already raised my family and was able to be present for every game and practice my three sons took part in. If someone said I would have had to sacrifice that to be a groundskeeper, I likely would have moved on to something else. But that “something else” led me into this field where God has blessed me to have the time, passion, and perspective to stay engaged and try to mentor and educate others in the reality of what this job is and isn’t.

As an industry, I feel the future challenge is to get the pay scale and



George Toma

work schedule to a level that can attract and retain recent university-educated turf management students who are the future of this profession.

**Brian Scott,
professor of horticulture,
Mt. San Antonio College**

I chose my profession because I love helping others find success. I have students who have ended up finding success throughout the industry (arboriculture, irrigation, nursery, landscape design and construction, soil science, pathology, and



Brian Scott

so on). That said, my passion is the sports turf management industry. Even though there are some challenging aspects to this industry such as a low pay scale compared to jobs with similar requirements, the driving force behind my love of this industry are the people.

Sports turf managers as a whole have a strong desire to teach their employees how to be successful, not worrying about them becoming more successful than they are. In fact, those whom I have spoken with actually desire their apprentices to become more successful. This 'pay it forward' mentality is a unique attribute. Another attribute of many in this industry is their approachability. From Steve Wightman to Luke Yoder, Eric Hansen, Jordan Lorenz and so many others have all been very open and accessible to my students. Many of my students end up getting hired due to face-to-face meetings of these turf managers.

I have now been teaching for 17 years and have seen countless students fulfill their dreams. Giovanni Murillo was just a kid when he showed up and told me he wanted to become the head groundskeeper at Dodger Stadium one day. Recently he became the field manager of Banc of California Stadium, the new stadium for Los Angeles Football Club (LAFC). Blake Bernstein had a degree from Arizona State, but was not content with his career. He wanted to get into sports turf management. He now works at Dodger Stadium, where he was able to work at the World Series this year. He also won the Toro Super Bowl Scholarship (given to one student in the nation) and was able to work on the grounds crew this year. Sean McLaughlin, another one of my students, won the same scholarship last year. These are just a few examples of why I still love doing what I do. There are few joys in life that compare to seeing my students' dreams realized.

Kevin Mercer, CSFM, Denison University

I am one of the lucky ones. I wake up every day and still love what I do after 19 years of being a grounds/sports turf manager in the industry. My



"I STILL GET EXCITED ABOUT THE BEGINNING OF SPRING SPORTS SEASON AND THE CHALLENGE OF GETTING BASEBALL/SOFTBALL FIELDS READY FOLLOWING A LONG WINTER OR A WET EARLY SPRING."

— Dave Anderson

grandfather taught me a lot about farming, gardening and lawn care. I remember how he walked along side of me when I first operated a push mower at the age 9. He would point at all the little areas I missed under the trees, shrubs and fence line. His no nonsense approach about doing a job right and paying attention to the details has helped guided me throughout my career. He died on my birthday back in 1991, so I feel like I'm doing him proud from my work ethics he instilled in me and managing my team the same way he would by appreciating them as individuals that bring their own unique talents to the job each day.

I also had some great mentors, bosses and earned friendships from peers throughout the years. I have worked at

state government and Ivy League schools, but I am lucky to have found Denison University that truly understands the importance of safe athletic fields and professional looking landscapes. I think you really have to spend a little time outside of your comfort zone and even get humble a few times along the way to truly appreciate how far you came and where you need to go.

Dave Anderson, Hempfield (PA) School District

Looking back to near 40 years in the industry, and with retirement coming soon, I still have a passion and an interest in trying to maintain safe, well playable, and aesthetic athletic fields. I still get excited about the beginning of spring sports season and the challenge of getting baseball/softball fields ready following a long winter or a wet early spring. I enjoyed the challenge of trying to get a football field torn up after a game played heavy rainstorm, ready for a soccer game, that evening. It's still fun taking soil tests, monitoring moisture levels, and working through the threat of disease and insect pests. I remember back and chuckle over the "battles" I had with field hockey and baseball coaches over how low to cut their fields. Also it's been a good experience being part of KAFMO and making relationships and sharing knowledge with others in the industry. Sometimes in a school setting it is difficult to find someone to understand or care with the field concerns that we face. It was good to get together with other field managers to commiserate some of the things we all have to deal with.

I must admit though, with the increase in artificial turf fields, my emphasis, in some ways, has gone from agrarian to custodian. I don't care for that, and had there been as many synthetic turf fields when I started as there are now, I can't imagine that I would have been drawn into this industry. Don't get me wrong, I understand the need for synthetic playing surfaces and they have their place. I'm just glad that a majority of my career was spent working with natural playing surfaces. **/ST/**



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Photo courtesy of Ben Polimer.

What to do before winter for better fields next spring

EDITOR'S NOTE: We asked some STMA members, "What are the 3 most important things to do in the fall for your turf to better survive winter and be more ready to green up in spring?"

Ben Polimer, Fields and Grounds Coordinator, Town of Weston, MA

1. Late season Nitrogen application. Applying about a pound of nitrogen per 1000 square feet when the turf is still green but top growth has stopped. Here in New England that's about first or second week in November. I tend to use the old fashioned 46-0-0 Urea. I don't really

have any issues with snow mold with the water-soluble urea nitrogen.

2. Putting to bed your softball and baseball fields ready to play in the fall. We like to edge, add infield material and re-level all our fields in the fall. Get them as about "game ready" as possible. Then in the spring once they have thawed, they should be ready to play. Does this happen every year? NO! Winter comes early sometimes, and we can't get to all our fields.

3. The third is both core aeration and deep tine aeration. Before we winterize our irrigation systems, we core aerate, and also deep tine aerate. The

deep tine is done on our high use fields. We use 2"x2" spacing with ¾" tines and go anywhere from 8"-10" deep. I like keeping the holes open all winter for good air and water movement. Water can go through the freeze/thaw cycle in the aeration holes.

Tim Van Loo, CSFM, Manager of Athletics Turf/Grounds, Iowa State

1. Keep as much cover throughout the fall as possible. Constantly repair and seed wear areas.

2. Keep traffic off once play is done. I usually stop mowing once



JOHN MASCARO'S PHOTO QUIZ

JOHN MASCARO
IS PRESIDENT OF
TURF-TEC
INTERNATIONAL

////////

ANSWER
ON
PAGE 33

CAN YOU IDENTIFY THIS SPORTS TURF PROBLEM?

PROBLEM:

Wet and torn turf

TURFGRASS AREA:

Youth softball field

LOCATION:

Roswell, Georgia

GRASS VARIETY:

419 bermudagrass



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Bermudagrass: keep traffic off, lengthen the height of cut, and if you can't cover then overseed with ryegrass.

- Tom Nielsen, Head Groundskeeper, Louisville Bats

we are done playing. If it gets a little shaggy, I figure that will help protect the crown of the plant.

3. Stop worrying about it. Winter weather will do what it does; the grass has survived hundreds of years before we came along and tried to manipulate it. Typically it is just fine!

John Cogdill, Assistant Operations Manager, Boulder Parks and Rec

1. First and foremost provide adequate fertility for the varying soil types for your fields. We seem to struggle some with potassium levels on our sand-based fields and other micro nutrient levels. Our preference would be to fertilize early in both October and November with a slow release custom blend, at or about ½ to 1 lb. per K based on soil reports.

2. Aerate, mow and cover; we try to aerate on our about every 4-6 weeks throughout the year on our native soil fields. We have had issues in the past several years with snow mold and do have several trees that can add leaf cover in the fall if not mowed down before winter. We keep mowing until turf growth slows to a minimum and the field clear of leaves, etc.

3. Irrigation. Since we often have warm dry falls and early winters, keeping the soil moisture at optimum levels works well for us and ensures healthier turf in the spring.



Noel Brusius, CSFM, Waukegan (IL) Park District

1. Be prepared and don't wait until the last minute. In early fall start prepping for the hardening off process. Have all aeration, overseeding, and fertility (we use SRN + K @ .5/N/M) applications complete before soil temps get too low.

2. Topdress to help protect the crown of the plant.

3. Use antidesiccants, turf covers/blankets, pigments, and fungicides as necessary.

4. Hope and pray.

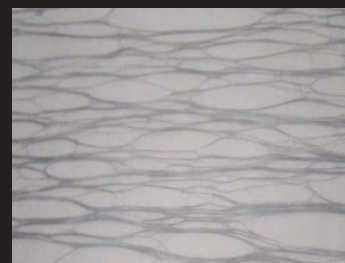
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Cool-season grasses: aerate, overseed and fertilize

- Tab Buckner, Township of Langley, British Columbia



Photo courtesy of Ben Polimer.

Dan Blank, Turf Manager, TD Ameritrade Park, Omaha

- 1.** Aerate – in late September we'll pull and sweep cores
- 2.** Feed – apply a granular fertilizer, something like a 29-0-3 at a rate of 1 lb. N/ft². This gives the turf time to recover from aeration and one more shot in the shoot before shutting down for the season.
- 3.** Cover – somewhere around Thanksgiving, weather dictating, we'll put out a topdressing right before we cover the turf with blankets for the winter. Winters here can be cold and windy but not always snowy. We use the sand and blankets to offer protection from wind and cold.

Keith Winter, Head Groundskeeper, Fort Wayne TinCaps

IN THE COOL-SEASON grass spectrum of professional baseball, fall is the time to get your turf ready for the next season. The 7 months between the last pitch of the just completed schedule, and the first pitch of the upcoming season, sets the stage for how your field will withstand the rigors of the wear and tear of baseball. Effective sports turf management involves a systematic, timed approach in dealing with fall moisture, temperatures, and any scheduled events on the field.

- 1.** First, we sod and seed as early as possible in September to

provide optimum time for the strong establishment of new turf before winter sets in. This includes scheduled autumn doses of granular and foliar products all the way through Thanksgiving. As a proponent of plant growth regulators, we stay with our bi-weekly applications to promote extended root mass.

- 2.** Secondly, our fall aeration and heavy topdressing is vastly important for winter root establishment. Cooler fall days and nights are exactly what turf is looking for as it prepares to “go to sleep” during the dormant winter months. The deeper the roots (below the frost line), the quicker the plant will come to life and re-establish its color in the spring.

3. Lastly, our snow mold foliar applications are timed in sequence with the first forecasted snow cover on the field. Too early and you lose effectiveness. Too late, and it may never happen if the snow stays on the field during the winter months.

I am a firm believer that how you put the field to bed in the fall has a monumental impact on how the field will come alive again in the spring, and then sustain itself through the next growing season.

How you put the field to bed in the fall has a monumental impact on how the field will come alive again in the spring

- Keith Winter, Head Groundskeeper,
Fort Wayne TinCaps


Brett Tanner, CSFM, Turf and Irrigation Supervisor, University of Michigan

1. Eliminate competition (fall weed clean up/winter annual pre-emerge). Fall is a great time to gain a foothold on any weed infestation you might have. This will allow for the turf to recover, fill in, and germinate when over-seeded. Going into winter with a "clean slate" will also help with the efficiencies of a spring pre-emergent application.


2. Overseeding. A good mechanical overseeding across the entire surface, with higher rates in areas of heavy wear will help to get thin spaces re-established before the winter. This will also allow for seed to germinate in early spring as well. It's best to be proactive with overseeding throughout the year and especially in the fall to maintain a dense and healthy stand of turf.

In warmer climates overseeding is also beneficial to help protect warm season turf from winterkill, weed development, and general wear on dormant turf. Even light rates (6 lbs-9 lbs./M perennial rye) of overseeding will provide an inexpensive yet beneficial cover for the crowns of the plant.


3. Balanced fertilizer applications. Instead of a blanket application of readily soluble nutrients, give your field what it needs based on soil/tissue tests and/or seasonal application records. Best results can be found by adjusting final nutrient applications to reflect where the field is at the time of application and where it will be when the product is done releasing the nutrients. In my experiences, fields have responded best to gradually hardening off in the winter, as opposed to a sudden flush of growth before going dormant. **/ST/**




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Light requirements for warm-season turf

// By TRAVIS RUSSELL

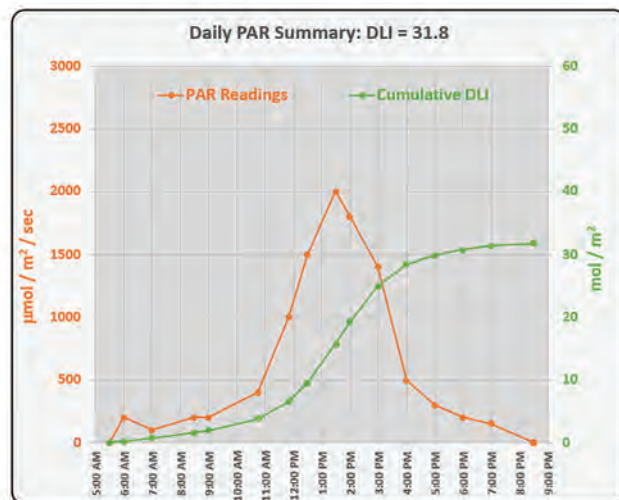
As the infrastructure war continues to wage on, athletic complexes and stadiums are continually becoming more luxurious, enclosed, and yes, even taller. While these structural advancements significantly improve the fan experience (especially if your team comes out victorious), these new state-of-the-art complexes can leave sports turf managers with significant migraines. These migraines are not caused by being out in the sun too long but the complete opposite—the lack of available sunlight in these bigger and better venues can wreak havoc on turfgrass plant health.

Turfgrasses require sunlight to catalyze the photosynthetic reaction to create carbohydrates for growth and survival. This type of light is termed photosynthetically active radiation (PAR) and has wavelengths between 400-700 nm, encompassing almost the entire visible light spectrum (380-750 nm). Regardless of any cultural practices we may do to increase plant growth, if there is not enough PAR light to complete the photosynthetic process, the turf is going decline in quality. For most turf managers outside of sports turf, trees and topography can be the main sources of shaded environments. But for sports turf managers, infrastructure around the playing surface is what deprives the turfgrass of essential sunlight. It is imperative that we know precisely how much PAR light is available at our facility so we can tailor our agronomic decisions to deliver a quality and safe playing surface.

Before the 2000s most turfgrass shade research focused on determining what percent of continual shade would result in acceptable or unacceptable quality turfgrass. While this information

Directions: 1) Enter sunrise and sunset times in orange cells. 2) Take up to 20 periodic PAR readings throughout the day and record PAR values and times in blue cells.

Sunrise:	5:30 AM	
Sunset:	8:30 PM	
Reading #	Time	($\mu\text{mol}/\text{m}^2/\text{s}$)
1	6:00 AM	200
2	7:00 AM	100
3	8:30 AM	200
4	9:00 AM	200
5	10:45 AM	400
6	11:50 AM	1000
7	12:30 PM	1500
8	1:30 PM	2000
9	2:00 PM	1800
10	3:00 PM	1400
11	4:00 PM	500
12	5:00 PM	300
13	6:00 PM	200
14	7:00 PM	150
15		
16		
17		
18		
19		
20		



Example spreadsheet used to calculate DLI at a particular site.

Table 1. Minimum daily light integral (DLI) requirements of turfgrasses managed at different mowing heights.

Turfgrass Type	Mowing Height	DLI*	Source
'FloraDwarf' hybrid bermudagrass	< 0.150 in	38.6	Miller et al., 2005
"TifDwarf hybrid bermudagrass	< 0.150 in	38.6	Miller et al., 2005
'TifEagle' hybrid bermudagrass	< 0.150 in	32.6	Bunnell et al., 2005
'Tyee' creeping bentgrass	< 0.150 in	30.0	Russell, 2018
'Champion' ultradwarf bermudagrass	Putting Green Establishment	27.1	Hodges et al., 2016
'Diamond' zoysiagrass	Putting Green Establishment	42.3	Hodges et al., 2016
'MiniVerde' ultradwarf bermudagrass	Putting Green Establishment	28.1	Hodges et al., 2016
'TifEagle' ultradwarf bermudagrass	Putting Green Establishment	30.1	Hodges et al., 2016
'Astro-DLM' bermudagrass	0.500 in	20.4	Russell, 2018
Common bermudagrass (cultivar unknown)	0.500 in	25.9	Russell, 2018
'Cavalier' zoysiagrass	0.500 in	15.0	Russell, 2018
'Meyer' zoysiagrass	0.500 in	21.1	Russell, 2018
'Celebration' bermudagrass	1.500 in	20.2	Zhang et al., 2017
'Palisades' zoysiagrass	1.500 in	10.9	Zhang et al., 2017
'Taccoa Green' zoysiagrass	1.500 in	10.5	Zhang et al., 2017
'TifWay' hybrid bermudagrass	1.500 in	21.4	Zhang et al., 2017
'TifGrand' hybrid bermudagrass	1.500 in	20.9	Zhang et al., 2017

* Daily light integral reported in units of mol per m2 per day



Spectrum FieldScout Quantum Light Meter being used in a stadium to measure PAR. Photo courtesy of Micah Woods, PhD.

is valuable in advancing the scientific knowledge of turf response to shade, continual shade throughout the day rarely exists in nature, and is not common in most athletic complex scenarios. More often than not, portions of the playing surface will experience varying degrees of shade at different times throughout the day. Therefore, shade issues at every athletic field differ.

In order to account for the varying light availability at each location we need a standardized method to calculate exactly how much light is available at these problem spots on the field. That is where the daily light integral comes in. The daily light integral (DLI) is the total amount of PAR light delivered to the turfgrass surface over an entire day. PAR light is reported as a quantity of light energy (μmol of PAR) and DLI is reported as a larger quantity (mol of PAR/area/day). The DLI takes into account all changes in shade levels throughout the day and leaves us with one important number of our light availability at a certain site. It is essential to make this measurement on several days throughout the year to fully account for the variation in light conditions across seasons at that particular site.

Turfgrass researchers have been using the DLI measurement as the new standard in determining minimum light requirements for turfgrasses. Previous research has determined minimum DLI thresholds for many grasses under varying management regimes. Most established



PAR sensors aligned to determine DLI quantities at positions where turf has full coverage, is slightly declining, significantly declining, and where turf has failed due to shade stress.

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thresholds are for warm-season grasses due to their relative intolerance for shade compared to cool-season grasses. While these minimum DLI requirements may not fit your exact turfgrass type or management regime (i.e. mowing height), an important rule of thumb will be that the necessary DLI for a certain turfgrass will get higher as mowing height is lowered and vice versa.

A study in Florida reported that for each 1 mm mowing height increase; the minimum DLI requirement was lowered by 2.0 mol of PAR/area/day for 'Champion' and 'TifEagle' ultradwarf bermudagrass. Additionally, using the growth regulator trinexapac-ethyl has improved turf quality in shaded areas and has been shown to lower the minimum DLI by over 6.0 mol of PAR/area/day DLI on a 'TifEagle' putting green.

Turfgrass managers can calculate the DLI at their facilities and then compare their results to minimum DLI requirements established by researchers to help guide agronomic decisions. Determining the DLI at your site is actually a very easy calculation that just requires a few measurements per day of light using a PAR light meter. [We used a FieldScout Quantum Light Meter.] The meter will give you an instant measurement of PAR (μmol of PAR/area/second). Drs. Mike Richardson and Doug Karcher at the University of Arkansas (my master's thesis advisors) have developed a handy DLI calculator freely available for download (<https://github.com/trr33/DLICalculator/blob/master/DLICalculator.xlsx>). You plug in the PAR numbers that you measure over the course of the day, and the spreadsheet will tell you what the DLI is and produce a graph that illustrates the distribution of light throughout the day at your site.

As part of my master's research at Arkansas we looked at four turfgrass types at three golf courses mowed at a fairway height where shade was an issue. We set up sensors at different levels of shade stress and connected them to a data logger that measured PAR every 15 minutes for 6 days to calculate the DLI at each sensor

location. By looking at the break-even point of turfgrass quality at each site, we were able to determine what the site-specific minimum DLI was at that location. We also took each one of these grasses and put them under varying levels of shade stress (22, 40, 60, and 90% shade) in a research setting for two growing seasons. What we found is the minimum DLI obtained from the 6-day evaluation period in the golf course setting accurately matched the minimum DLI for 2 of the 4 grasses in the 2-year research trial. We theorize that the continuous 6 day evaluation period was not a fair representation of the long term (2+ years) DLI at that location for the other two turf types and if we had spread our evaluation dates out over the season, we would have matched our minimum DLI for those grasses obtained in the research setting.

It is recommended to take PAR readings to calculate DLI once per month in the growing season to get an accurate representation of the DLI at each site you wish to quantify.

Knowing the DLI at locations throughout the field provides turf managers with essential quantified data to improve their agronomic plan for the field. This could be as simple as raising mowing heights or using growth regulator in these shady spots. Alternatively, the DLI could provide data to support more expensive options such as planting a different species/cultivar in problem areas or investing in supplemental lighting (capable of providing ~1 mol of PAR per hour).

As the next generation of turfgrass management continues to lean more on data driven technology to improve playing surface quality, it is important that turf managers be able to put numbers and data to these shaded problem areas. Athletic complexes and stadiums are going to get larger and taller, but turf managers have the tools and expertise to overcome these shaded areas and bring light to where there is none. **/ST/**

Travis Russell is a PhD student in agronomy, Department of Plant Science The Pennsylvania State University.



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Is there an off-season any more? Part II

// By SCOTT STEVENS, CSFM



Photos courtesy of Scott Stevens

Do you have suggestions for how to communicate with management about the need for turf rest and maintenance?

The key word in communicating with management is communication! With technology these days, getting in touch with management can easily be done. Whether the sports turf manager sends an email, a text message, uses social media, a phone call, or an in person face-to-face conversation, direct contact with management should always be the goal. The sports turf manager is the eyes and ears checking out field conditions every day, whereas management is typically further removed. It is essential to pass information about field conditions, both positive and negative, up the chain of command so that high quality turf can be maintained throughout the year.

Technology has impacted field use considerably. Scheduling of facility use has become electronic and now, with the push of a button, anyone can schedule to use a field. This makes scheduling practices and games easier because a user can see when the field is not being used and sign up their event. A turf manager needs to use this system to his/her advantage, too, and schedule in time where the field cannot be used. Blocking off time allows the turf manager to do much needed maintenance and give the field rest. Turfgrass is a natural living, breathing plant that needs this time to adequately recover. Depending on the field use, the time of year, and the types of events on the schedule the sports turf manager can work in more or less time between events for turfgrass recovery. Communication with upper management and coaches can be achieved by using the scheduling systems in place to protect field maintenance, growth, and resAnother option for field

**JEREMY DRISCOLL, ST. MARK'S HS,
WILMINGTON, DE**

Communicate on what management wants to see, if it is primarily used for football and management wants that field to be a showpiece for football, keep activity limited on that field throughout the seasons. Any flat area can work as practice field. Try to move sports from field to field if possible as each sport has its own wear patterns. Discuss with athletic directors and coaches the need for moving around the field during practice as to not wear down one area. Hold off on painting lines and grids; it not only saves money on paint and labor but the principality is once there is a line coaches and players are drawn to it to work from a designated area. Finally, take pictures and show what and why things are happening to fields throughout the seasons and sports. As they say a picture is worth a thousand words!

Managing turf through all the summer activities is challenging because you are never quite sure where the camps are going to congregate. I do my best discussing with camp counselors and moving different camps to different fields week by week as to always give one field a short rest. I try to get in some form of extra aeration, irrigation, or maintenance practice the week prior on that field. Sometimes during sessions I simply head out and move cones so the afternoon session won't be in the exact same place as the morning.

regeneration after overuse, if your budget allows, is the use of thicker cut sod. Thick sod can turn a worn out area into a playable surface immediately. This is expensive and needs to be built into the budget just as normal expenditures, such as fertilizer, grass seed, topdressing material, and others do. Thicker cut sod is a tool that turf managers can use to keep fields safe and playable.

Work with management to add this line item into the budget for the next year. Managers will appreciate advance warning coupled with a conversation about the importance of sod in the plan for field repair after inevitable overuse in these times where an off-season no longer exists.

Communication is vital in all aspects of the business, whether you are communicating up the chain of command, down the chain of command, or to users. Regardless of the communication channel being used, it is important to be sure that both sender and receiver are clear on the message. A best practice is to follow up any phone call or face-to-face conversation with an e-mail recapping the discussion and what decisions were made. Adding pictures of the areas of concern will only help your cause. Bad news or poor field conditions do not get better with time, so be sure to share conditions consistently and as soon as relevant information is available.

Currently, where it seems a true off-season for fields no longer exists, pressure mounts on everyone involved to get what they need from the field. There is pressure on coaches to get practices so they can be prepared for games. There is pressure for facilities to stay open, so they can have revenue to fund their operations. There is pressure on sports turf managers

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to keep the fields playable. In all of this, safety should be the common denominator. If a field is not safe for practice, revenue generation, or playability, then the field should not be used. The liability of injury is more expensive than shutting down a field for no use as the result of safety issues. Shutting down a field can be done simply by the push of a button electronically or by posting a flag; red for no use, yellow for caution, or green for playable. Communication needs to happen as quickly as information is available to have a successful operation.

Maintaining a field throughout the year can be challenging, especially during times when the field is in constant use. Having a plan of action, sharing it widely and openly, and implementing the plan can aid the sports turf manager in clearly communicating conditions and keeping the field playable.

Managing turf through summer

During the summer months is the best time for recovery for fields for many areas of the country. This is also the time when many younger athletes are out of school for the summer and participate in numerous sporting activities. Here at Elon University, located in North Carolina's transition zone, these months are vital for turfgrass to recover from winter-spring use to prepare the playing surfaces for fall use. There is adequate sunlight and growth on bermudagrass. Numerous summer camps, tournaments, workouts, and construction projects happen throughout the summer. There are a couple of ways that we manage the fields that help us to keep them playable.

We begin by preparing a schedule of all the activities that will be impacting the fields throughout the year. This plan is arranged in the winter months simply by writing events on a calendar. Around the activities, we begin to put together our maintenance program that includes aeration, slicing, fertilizing, mowing, verticutting, and topdressing. We plan to do any major repairs early in the summer, such as sodding, sprigging, or renovation work. This occurs in May. Toward the end of the summer months, in the maintenance plan, we schedule in several weeks of no use on fields or limit areas that users can go, mainly July and August. Growing in a healthy field does not occur over night and needs several weeks to recover. This time of no use or limited use allows time for the turf to recover.

As the summer months get nearer we begin to put the maintenance plan into action. As events occur, we make repairs and continue with our maintenance program. Activities cause compaction of soil on turfgrass. Compaction makes growing healthy



turfgrass difficult. After a camp or activity, we will aerate the field. Since most compaction usually occurs in the upper 2 inches of the soil, aeration helps to relieve this. We try to aerate every 3 weeks. Most of the time we are pulling cores with aeration and occasionally will solid tine, punching in holes every 3 inches at a minimum depth of 3 inches. One of our aerating machines pulls cores every 6 inches on one pass. In order to meet our desired 3-inch spacing rate we end up running this aerator multiple directions on the field. We try to get in at least 15 aerations on per field per year.

Throughout the summer, we adjust the plan as necessary. As activities are occurring, we begin to change field dimensions or field layout directions to move high wear areas to different areas of the field. For example, for a soccer field we will shrink the field or run the field east to west versus north to south. This moves the high wear on the goal box area to multiple places on the field. We also communicate to users to move their drills around the fields daily rather than staying in one spot day after day. Our maintenance plan is also adjusted, depending on how well the field is growing. We will increase fertility rates if necessary to help promote growth. We may also use plant growth regulators to slow down growth if fields are growing well.

Having a plan, working the plan, and making adjustments allows us the opportunity to grow healthy fields. Communicating to users what is going on with the fields and what we are seeing helps. Sports turf managers need to know their fields and the impacts of activities. Managing a field year-to-year changes, just as a maintenance plan does with these changes. **/ST/**

Scott Stevens, CSFM, is sports turf manager for Elon University, Elon, NC.

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DR. LOU MARCIANI

This month in “The SportsTurf Interview,” we meet Dr. Lou Marciani, National Director, National Center for Spectator Sports Safety and Security (NCS4), at The University of Southern Mississippi in Hattiesburg. His work at the Center focuses on the development and implementation of FEMA sport risk management, incident and evacuation training and exercise courses. He has been involved in the development of a computer-based modeling, simulation and visualization tool to aid sport managers, policy makers as well as emergency managers in their “what-if” scenario training to enhance their critical decision making capabilities of preparedness, response and assessment of their overall sport event security.

Under his leadership, the center has grown into a National Center, the addition of a National Sport Security National Laboratory, establishment of the Institute for the Study of Sport Incidents and the Annual Sport Safety and Security Conference & Exhibition.



Dr. Lou Marciani

SportsTurf: What prompted the university to open the National Center for Spectator Sports Safety and Security?

MARCIANI: The idea for the National Center emerged from a 2006 doctoral dissertation about the standards required for effective security management at university sport venues. Building upon this fundamental research, the NCS4 is now an international research and education center for sports safety and security. The NCS4 collaborates with professional sport leagues and venues, intercollegiate and interscholastic athletics, marathon and endurance events, and international sporting events along with professional associations, private sector firms, and government agencies. Its partnerships bring together subject matter experts from government, industry, public safety, private enterprise, and academia to explore lessons learned and share ideas about best practices, strategies, training and certifications, and technology solutions for sport safety and security challenges.

In the aftermath of September 11, 2001, the US Department of Homeland

Security (DHS) identified sport venues as potential soft targets for terrorism. In 2006, The University of Southern Mississippi (USM) established the National Center for Spectator Sports Safety and Security in response to the nation's emerging security needs. Today, NCS4 is the nation's leading research center devoted to the study and practice of spectator sports safety and security. It is a cornerstone in the scholarship arena as it represents USM's innovative approach to research, training, and development.

Since its inception in 2006, the NCS4 has played a critical role in helping the ever-growing US sports industry through thought leadership, professional development, and hosting of industry and academic forums. The Center promotes research, scholarship, and sports safety and security solutions through annual forums, professional certification programs, academic research, training, assessments, laboratory evaluations, and partnerships.

Through its standard setting research, scholarship, thought-

leader summits and annual forum, the NCS4 employs research-based methodologies to develop industry best practices, quality training programs, capstone exercises, technology assessments, workforce competencies, and professional development offerings.

The NCS4 team has extensive experience in sports management, homeland security, emergency management, incident response, professional development, research, and education and training. Combining operational perspectives with collaborative research and education, the NCS4 at Southern Mississippi contributes expertise in translating lessons learned into best practices, professional competencies, cutting-edge research, and tested and validated technology solutions in safety and security.

ST: What is NCS4's mission?

MARCIANI: Our vision is to become the world's leading academic research institution in addressing sport safety and security risks and threats. Our mission is to conduct innovative

research, deliver quality training, and enhance professional development thus contributing to the standards and core competencies of the profession.

ST: What role does the Department of Homeland Security play at NCS4?

MARCIANI: DHS plays a major role at the National Center for Spectator Sports Safety and Security. NCS4 is part of the National Domestic Preparedness Consortium through a cooperative effort between The University of Southern Mississippi and The Texas A&M University System. Through funding from the Department of Homeland Security, our combined efforts and unique partnership provides the capability to deliver the most comprehensive set of sport security trainings to emergency responders, senior officials, and medical personnel conducting sporting events.

ST: What other entities are involved in putting together your programs?

MARCIANI: We offer a Master of Business Administration Degree with an emphasis in Sport Security Management, the only program of its kind in the US. The program is designed for those who currently work (or aspire to work) in management/leadership positions in the sport safety and security industry, and offers students flexibility with a face-to-face or online format.

Today, it is essential for individuals seeking top management positions in the sport security industry to possess the business knowledge needed to manage operations, including the ability to present a business case for return on investment for security and management solutions. By supplementing the MBA with an emphasis in Sport Security Management, graduates will be able to differentiate themselves by gaining the standard principles of business in conjunction with real-world experience necessary for security practitioners.

Our National Sport Security Laboratory (NSSL) exposes practitioners and students to a fully outfitted

“TODAY, IT IS ESSENTIAL FOR INDIVIDUALS SEEKING TOP MANAGEMENT POSITIONS IN THE SPORT SECURITY INDUSTRY TO POSSESS THE BUSINESS KNOWLEDGE NEEDED TO MANAGE OPERATIONS, INCLUDING THE ABILITY TO PRESENT A BUSINESS CASE FOR RETURN ON INVESTMENT FOR SECURITY AND MANAGEMENT SOLUTIONS.”

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research, training, and operation center with integrated safety and security technologies. The NSSL derives its unique position through its connectivity to each of the university's three main sports facilities. The M.M. Roberts Stadium (football), Reed Green Coliseum (basketball), and Pete Taylor Baseball Park (baseball) serve as extensions of the laboratory. The university applies sport safety and security best practices in an environment uniquely designed to integrate people, processes and technology. Students, practitioners, and solution providers can engage in exploring the problems of today in an effort to solve the problems of tomorrow.

NCS4 hosts the following events annually: National Marathon and Running Events Safety and Security Summit, National Intercollegiate Athletics Safety and Security Summit, Commercial Sport and Entertainment Facilities Safety and Security Summit, Interscholastic Athletics and After-School Activities Safety and Security Summit, and the National Sports Safety and Security Conference and Exhibition.

Our target audience includes a wide range of security directors and operators, facility and stadium

managers, event planners/operators, law enforcement personnel, emergency managers, fire/hazmat, emergency medical/health services, athletic administrators, and governmental representatives. These are individuals representing or supporting professional sport venues, intercollegiate athletics, interscholastic athletics, marathon/endurance events, and commercial sport and entertainment facilities (concerts, festivals, motocross, wrestling, etc.).

ST: What security issues should managers at K-12, municipal and small college levels be focusing on now?

MARCIANI: Each public school should have a School Resource Officer assigned to the school. If no School Resource Officer is assigned, then local law enforcement coverage should be provided. Develop assessment teams for mental health evaluations, services or treatment when appropriate. Each local school system should designate a school safety coordinator and conduct an annual safety evaluation. This includes: (1) identify and, if necessary develop solutions for physical safety concerns. (2) Identify and evaluate any patterns of safety concerns on school property or school-sponsored events. Each local school system should update their Emergency Planning Guidelines (EOP's). The EOP should address after-school activities and events.

ST: What are other trends in the facility security industry that you're addressing?

MARCIANI: We are addressing the following trends:

- Changing domestic and international terrorist threats
- Increase in cyber risks
- Increase use of social media
- Emerging threats for use of unmanned aircraft systems (UAS)
- Growing size and frequency of mass protests
- Armed attackers
- Pandemic
- Explosive devices
- Chemical, biological, radiological attacks **/ST/**

All about vented turf blankets

// By ROSS KURCAB, CSFM

Vented turf blankets go by different names in the industry; “growth covers” is perhaps the most common. Whatever we call them, they can be most valuable tools for any sports field manager trying to improve the performance and extend the playing season of their natural grass playing surfaces.

The better manufacturers can make vented turf blankets in almost any shape and size. They serve a variety of purposes for turfgrass and sports field managers, but all stem from warming the soil and grass canopy using sunlight and minimizing radiation heat loss at night. Turf blankets are used by field managers to warm all or part of the playing surface in an effort to extend growing seasons for natural grass surfaces.

They are also used to enhance seed germination and grass growth and development when normal climatic conditions would otherwise keep or put the turfgrass into a slowed state or dormancy. They are made of a lightweight, high-tech woven plastic material that can be installed with as few as 1-4 people in light wind conditions (depending on size of the cover) and 2-8 people in higher winds (10-15 mph), in my experience.

The result is a simple, easy tool for field managers to see sometimes dramatic results with proper use. Even if your current budget has little room this year, try getting a small, vented turf blanket that covers a critical, high-use area of your field, for example one soccer goal mouth. When the field stakeholders and decision-makers see the results, you will stand a better chance to fund more or larger covers as you may need.

Vented covers work the same reason your car heats up when you leave the windows up in the sun. A vented cover allows sunlight to pass through (translucence) to the surface. The surface (soil and grass in our example) is warmed by the sun, re-radiating longer wave infrared heat. Much of these heat waves are reflected by the cover material back down



to the surface. In this way, the cover traps and builds heat energy underneath the cover. The result is the turfgrass growing in temperatures up to 35 degrees higher in certain situations than conditions outside the cover, in my experience.

Second, the vented turf blanket can trap and hold heat from escaping at night due to this shortwave/longwave “greenhouse effect.” Especially on cloudless, clear nights when temperatures can plummet, vented turf covers can hold



Even on a cold winter day, the sun can significantly warm the field. ©Ross Kurcab, CSFM



JOHN MASCARO'S PHOTO QUIZ

JOHN MASCARO
IS PRESIDENT OF
TURF-TEC
INTERNATIONAL

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ANSWERS
FROM
PAGE 17

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This photo dates to 2012 when this municipality hosted a summer camp's "water day" on one of their youth softball fields. For the first week of camp, they used an inflatable water slide, placed directly on the field near the left foul line. In previous years, they would turn off the water when the slide was not in use. This particular year, they failed to do so, allowing the water to continually saturate the beautiful Georgia clay. To aggravate the situation, some of the camp counselors allowed the kids to "stomp in the mud puddles." This additional activity resulted into what you see here. The Sports Turf staff applied a green colored calcined clay-type conditioner to dry the area, as the inset photo shows. The area was allowed to recover on its own. The Parks Coordinator has not allowed them to have another event like this one unless they set the slide up on a common area.

Photo submitted by Mark Holder, Parks Coordinator for the City of Roswell Recreation & Parks Department in Roswell, GA.



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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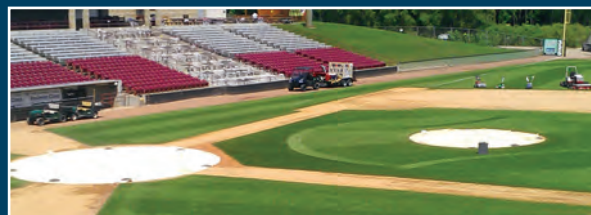
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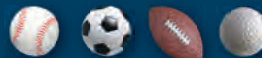


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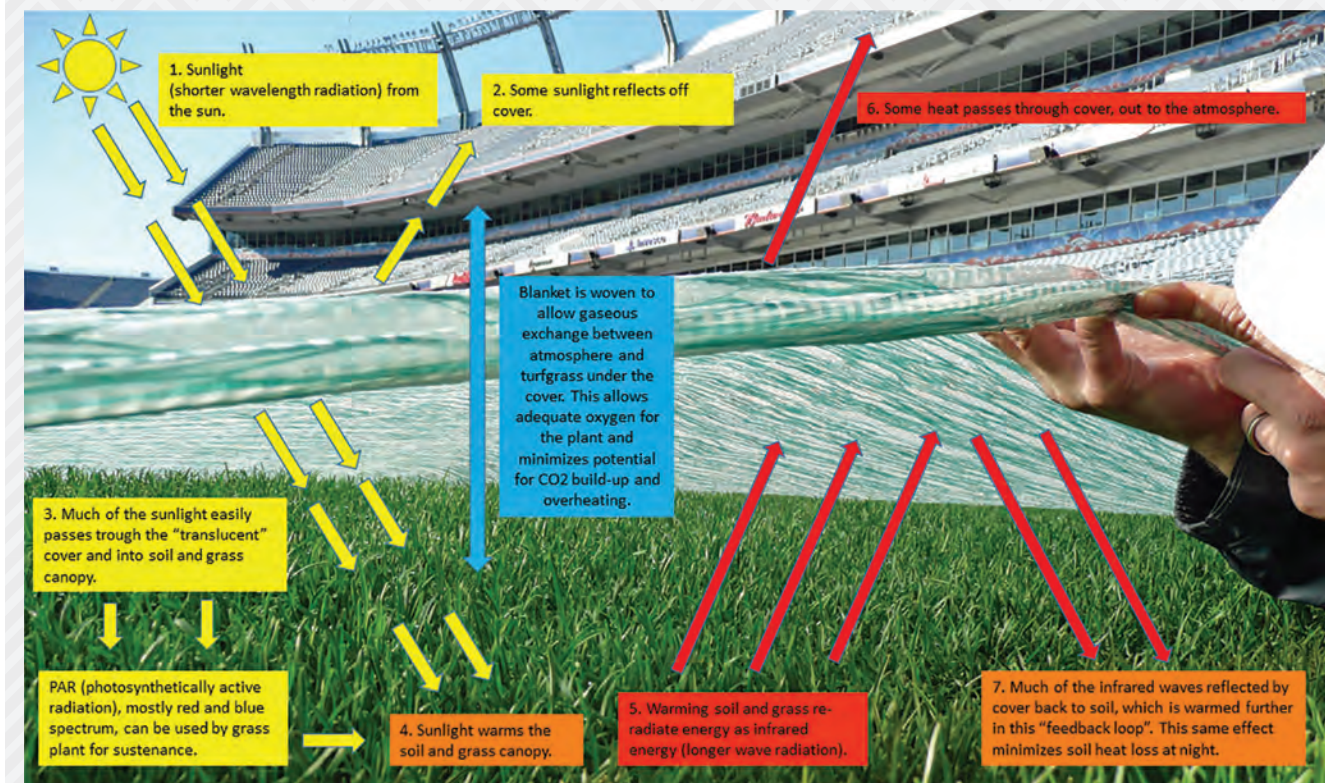
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Basics of how a vented turf blanket works



©Ross Kurcab, CSFM, Championship Sports Turf Systems

in some of the trapped heat overnight. This may also help to minimize the potential for direct low temperature injury (DLTI) to the turfgrass.

Third, a vented turf blanket can minimize the chances of cool and cold season desiccation (drying out) of the turf and hold moisture in the seedbed for seeding and overseeding.

The vented design allows for gaseous exchange, getting needed oxygen to the turf and releasing built up carbon dioxide from respiration. The woven design also allows some heat out to minimize potential for high temperature stresses on the grass and even some injury in extreme cases. As such, vented turf blankets are not designed to be used in the hot months. Always monitor temperatures and conditions under your cover frequently. Temps can build up fairly rapidly in certain conditions.

Day length will affect the amount of warming, and the higher sun angles of spring and fall will intensify the heating compared to the lower sun angles of winter.

"Cheap is not less expensive" applies well to vented turf blankets. There is a lot of technology in the higher quality vented turf blankets that you don't really notice, but these technologies make a huge difference in performance.

The quality of the material used to make the cover is key. Woven polyethylene fabrics are not a highly durable product. They may break down quickly from UV radiation in sunlight, especially in certain climates. The woven construction can come apart. Tears can keep going.

The better manufacturers have solved this issue with colored lace coatings, which not only add tremendous strength to the woven cover, it also allows the edges of the cover to remain free of sewn seams and grommets. The edges don't fray and you can pin the covers down as tightly as needed, placing powder-coated pink pins wherever you need them, even out in the middle of the cover to baffle wind waves. If you happen to get a tear in the cover, it will not advance with this technology.

Another advantage of this technology is that it will allow you cut and fit your vented

turf blanket to the specific shape of your field or area. Higher quality covers are also treated with a UV-resistant protectant to extend the life of the fabric of the covers.

Tips for using blankets

Vented turf blankets are a versatile turf management tool and can be used to achieve a variety of objectives. A few simple tips on their use and maintenance:

Make sure it is safe to push 6-inch pink anchor pins into your surface without hitting dangerous or damageable field components or underground elements.

Storage, deployment and uncovering: From my experience, it's worth storing your vented turf blankets indoors to limit UV degradation and other forms of weathering. How you fold and store your cover(s) depends on your storage capacity and the size of the cover(s). Small covers can simply be unpinned and folded up by hand like a bed sheet. Large pieces, like part of a full-field turf blanket system, can still be folded, but the size and weight will require more people.



The results can be dramatic compared to uncovered turf (brown). ©Ross Kurcab, CSFM.



Covers can be folded in successive halves and rolled up onto a drum for removal and storage. ©Ross Kurcab, CSFM



Large area covers can also be folded lengthwise and placed on a smooth-topped pallet for careful removal with forklift. ©Ross Kurcab, CSFM.



It's not a good idea to anchor the corners or edges of your vented turf cover with heavy equipment to hold against the wind. The anchor pins are designed to hold the cover securely, but if high winds hit, they are designed to release before tearing the cover, at least that's what I learned here. Monitor and check turf often

I have used two different ways to do this: Large area covers are typically folded in successive halves to create a long, skinny run of folded covers. From here the cover can be rolled up onto a large diameter tarp drum, maybe rolled onto one of the new custom lightweight inflatable drums or folded in successive halves lengthwise to create a square, folded cover on top of a solid-topped pallet. Each situation is different.

For breezy conditions, you can leave one edge pinned down as you fold in half a

the edges and any other area where anchor pins were used during deployment to make certain none are left in the field.

In the mornings, covers can sometimes be wet and heavier from condensation under the cover under certain conditions. The covers dry quickly with a little sun or wind, making them lighter to handle.

Be sure to secure any field irrigation system before you deploy your field covers. You don't want irrigation zones and heads popping up and washing out under the cover. You can however irrigate

a couple of times to fit your needs. This can also be done during a breezy deployment of the covers.

Always walk

over the top off the cover with hoses and/or water cannons as needed.

In terms of maintenance, there is hardly any. The covers tend to be "self-cleaning" whenever you get a good rain or irrigation over the top. If, with a lot of use, the edges of your high-quality vented turf cover get a little beat up from constant pinning and unpinning, you can simply cut back an inch or so on the edges to get a clean start. You can't do this with the less expensive imitations, and also why I don't prefer grommets on my vented covers. **/ST/**

Ross Kurcab, CSFM, is owner of the sports field/turfgrass consulting firm Championship Sports Turf Systems, LLC; Turf444@gmail.com and @NaturalGrassMan.



WINTERIZING YOUR IRRIGATION SYSTEM

// By CHRIS DAVEY

It's a simple fact: Water expands when it freezes. And when temperatures drop, that can spell trouble for an irrigation system that hasn't been properly winterized. The good news is that you can take precautions to prevent damage and extend the life of your system components.

3-step process

The process of winterizing (also called decommissioning) an irrigation system may vary from region to region, but the principles are the same:

Turn off the water and electricity. First, you need to make sure the water is turned off so there's no source pressure in the system. In addition, if you have a pump or other electrical components, it's important to turn off the electrical supply so that nothing can be accidentally turned on during the off-season.

What if you still need the electricity to keep running a gate or water feature, or to actuate valve controls in an automatic system? There are several things you can do. You can just connect the wires from the controller to keep key functions running,

or you can use a handheld commercial actuator to actuate solenoids one by one.

Drain water from the system. You can empty the system out one of two ways: by gravity or by using a pressure source (usually air). For every single lateral, make sure that you install a drain valve at the lowest point in the lateral—where it's deepest in the ground or at the lowest point on a slope. Plastic or brass drain valves are inexpensive and easy to install. Just glue in an upside-down T, thread it in the drain valve down into the ground and

EDITOR'S NOTE: Chris Davey is a product marketing manager at Toro. He also co-hosts a radio show called "The Water Zone," sponsored by Toro, which is broadcast Thursdays at 6 pm on iHeart radio and throughout Southern California on NBC News radio stations. The podcast is available on iTunes.

put about 6 to 8 inches of gravel around it for drainage. In some climates, this makes it possible to operate and drain the system multiple times until the temperature drops for extended periods.

Actuate valves and solenoids. Actuate or manually bleed the water from anything that is connected to the source, including check valves, double check valves, solenoids, atmospheric or pressure vacuum breakers, and reduced pressure actuators. Water often becomes trapped in the valve above diaphragm and in the solenoid ports, so it's important to evacuate them to avoid freezing and damaging the rubber tip on the plunger.

Many manufacturers recommend actuating components to get as much water as possible out of the pipes, sprinkler heads and upstream control devices. The system doesn't need to be bone-dry, but you shouldn't have any standing water in these components.

If you're using a pneumatic pressure source to empty out your system, you will want to keep the air pressure below 50 psi, which gradually opens the lines and slowly displaces water. During winterization, compressed air travels through the piping system at a much higher velocity than water, and trapped water pockets that break loose during winterization can move quickly through the pipe and cause damage to whatever it hits along the way, including pipe, fittings, sprinklers and valves. Gravity draining is an extremely effective alternative, and can significantly reduce major damage to the sprinkler.

Always remember, if your system has these features, open low point drains and vent high points, and allow the system to drain naturally several days before using compressed air. Additionally, attaching the compressor to the highest point possible and using compressed air to force remaining water out of the low points is the most effective way to blow out the system using compressed air. When working from high points to low points, you will want to blow out the lines until the expelled air looks clear.

Time required

The time needed to winterize depends on the scale of the property. As a general guide, on larger sports fields with 6- or 4-inch mains and 3-inch laterals, it can take several hours per zone to complete all the steps and



check the heads. Also keep in mind that the time increases at a 4-to-1 ratio when you scale up. That means if the pipes are twice as big and the heads are twice as big, it's going to take four times longer.

The decision to winterize depends on the part of the country you're in and how you use your irrigation system. The general rule of thumb is that it's time to winterize when you have three or more days at 3 degrees below freezing. That's when water begins to freeze deeper in the ground where the laterals are typically buried. If you expect an extended period of freezing temperatures, evacuate your system. However, if you're in a region where you need to irrigate during the fall or winter months, winterizing may not be required.

Maintenance

When you're short on staff and even shorter on time, maintenance can take a backseat to other priorities. But that doesn't mean it's not important to take care of the equipment you'll be shutting down for the winter. After you have evacuated the system, opened all the drain plugs and drained the lines, it's a good idea to disassemble and clean large commercial sprinklers and nozzles. That's especially true if you blow out the system with pressurized air hoses, because any debris can be blown to the end of the line. Toro also recommends lubricating O-rings and other components as required before reassembly.

If a thorough cleaning isn't possible, there are other options. You don't have to service

every sprinkler on the lateral, but take the time to clean out the last one and blow out the line. Water isn't the only thing that flows to the lowest point, which means drain valves can also become clogged with debris.

Maintenance can be done in the spring, but there are good reasons to do it in the fall. For instance, in most areas, the ground doesn't just freeze once and stay frozen. It typically thaws and refreezes over and over again, which can put significant stress on O-rings and other rubber components if they are not properly lubricated. In addition, spring tends to be a busier time for many sports venues. If the activity at your facility slows down in late fall, you may have more time to perform thorough system maintenance.

What you don't do in the fall will likely come back to haunt you in the spring. Frozen pipes can break, resulting in costly repairs. Freezing and thawing can also cause damage to more delicate parts, such as valves, diaphragms and pressure vacuum breakers. In the worst-case scenario, if you don't drain the system and it freezes, you could see damage at the point of connection or valve manifold. You could even end up having to dig and replace the lines and sprinklers.

A little winterization and maintenance can go a long way to protect your irrigation system. Plus, any effort you put in now will likely make it easier to get your system up and running in the spring with fewer problems. */ST/*



NEW TECHNOLOGY, EVOLVING MOWERS

// By LEE FRIE

Lee Frie is a product manager for Jacobsen.

Mower technology continues to evolve bringing with it advancements designed to deliver increased productivity and greater comfort for operators without sacrificing quality of cut. Sometimes the “advancement” is merely a better seat position for the operator, providing greater sightlines to the work in front of them, while other upgrades may reimagine how the mower cuts altogether. Here are three of the latest must-haves that crews will be asking for.

Cutting unit side shift capability

Side-shifting cutting units have been a game changer for the mowing industry, giving the operator the ability to adjust the mowing deck or reels from the operator’s platform during operation. For example, our AdaptiShift technology enables operators to shift all three reels or decks to either side of the mower, creating between 12 to 18

inches of offset. More manufacturers are offering this innovation because operators are reporting big benefits, and your crew will likely do the same.

This technology offers a few benefits. The operator can concentrate on mowing, rather than focusing on goal posts, foul poles or other obstacles, and in some cases eliminates the need for additional mowing equipment. The technology allows operators to set the position of the reels or cutting deck, helping to make them feel safer thus increasing productivity. Plus, the ability to shift mower decks or reels allows for variation in wheel path from one day to the next, which reduces turf compaction caused by repetitive mowing patterns and improves the overall health of the turf.

Jacobsen side-shift mowers have wheels that remain behind the cutting units, which we believe is a higher cut quality since the blades won’t be layed down before cut.

Onboard diagnostics

Onboard diagnostics are growing in popularity with turf equipment managers. With the ability to efficiently troubleshoot, maintain and track faults as well as receive routine service reminders, service technicians can get more done in less time.

A large intuitive graphics display with any onboard diagnostic will have a direct impact on worker productivity. Critical mower information such as battery voltage, engine temperature and service reminders are within easy view.

Ergonomically engineered

There is a direct correlation between safety, productivity and ergonomics. In general, ergonomics is aimed at making the operator more comfortable when performing a repetitive task. The result is the worker feels better and more confident on the mower, which helps them to be more productive.

Most new product offerings have an ergonomic-contoured seat. While this is a start, consider selecting a unit that features a mechanical suspension seat, perfectly positioned for comfort and safety. This delivers a smoother ride, reduces fatigue during operation and gives a clearer line of sight to the cutting units. Evaluate the seat position. Some designs are in a more reclined position; while comfortable to sit in, the worker may strain to reach the controls during operation. Also, evaluate the distance and angle of the steering column. Is it easily adjusted? Professional groundskeepers will appreciate a mower that has an operator platform specifically designed for ease of use, access and comfort while maintaining a low center of gravity for safe operations on slopes. Also, it is important to look for a unit that is easy to get on and off of.

Opting for a technologically advanced, ergonomic mower is an investment in a crew's safety and health. The return on investment will be increased productivity.

PRODUCTS



LELY WFR SPREADER

A hopper capacity of 600-800 lbs. makes the Lely Ground Driven WFR ideal for use on golf courses, sports fields, parks and green areas. Lely spreaders feature a force feed mechanism that can achieve spreading accuracy up to 52-ft wide and offers the flexibility of being compatible with a workman, UTV, tractor or most other power units. Along with a forward speed of 4.5 mph, the Ground Driven WFR incorporates a unique differential gear system, which allows the tires to turn independently. This design prevents turf damage on the most sensitive areas and

offers an even application, even on turns. All Lely spreaders carry a 2-year limited warranty and can be outfitted with several accessories.



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Instantly upgrade your existing FDS9200 Turf De-thatcher, tractors, road maintenance equipment, lawn mowers, beach groomers, ATV's, yard vehicles, trucks, or forklifts with a hanging magnetic sweeper and do two jobs at the same time. Magnetic sweepers remove ferrous metal objects from terrain. Ideal for users that need to keep large areas free of metal debris continuously.



TORO REELMASTER 3555-D/3575-D

Toro recently introduced two new models in the Reelmaster family of reel mowers, the Reelmaster 3555-D with 5-inch reels and the Reelmaster 3575-D with 7-inch reels. Both deliver a 100-inch width of cut. The new mowers also feature Toro's new EdgeSeries reels in 8- or 11-blade configurations, and are built on proven and tested Reelmaster platforms. These machines feature Toro's proven Dual Precision Adjustment (DPA) cutting units with EdgeSeries reels, which retain their edge longer, and provide a crisp, clean cut. The efficient traction system enhances maneuverability in wet conditions, while the three-wheel design minimizes turnaround time and wear and tear on turf. Additionally, the all-wheel drive traction system prevents wheel slip

and loss of traction for improved performance. The new Toro Reelmaster 3555-D/3755-D models have new design enhancements to optimize the power needed to drive the cutting units and traction system, maximizing the efficiency of the 24.8 hp engine. A quiet machine, the Reelmaster 3555-D/3575-D operates at 84 dBA at the operator's ear, which is very low compared to a typical reel mower.



DEERE 8900A LARGE AREA REEL MOWER

The John Deere 8900A PrecisionCut large area reel mower offers turf professionals a productive and versatile reel mower solution. The 8900A features a broad width-of-cut (114-inch or 130-inch) and 8 mph mowing speed, allowing operators to cover more area in less time. A shorter wheelbase (62.4 inches) makes the 8900A more maneuverable in tighter areas. Additionally, an operator station with easy-to-use fingertip controls and air ride seat offer operators improved productivity and comfort.



CUB CADET INFINICUT

"The Infinicut has become a vital part of our program," says Scott Tingley, Head

Groundsman of the 2018 Premier Grounds Team of the Year, at Watford Football Club, talking about the Infinicut by Cub Cadet. "The quality of cut has led to a better visual appearance, but more importantly, a healthy plant that suffers less from disease." The Infinicut has been turning heads throughout the professional sports turf community. Widely celebrated for unrivaled results on prestigious European venues, the Infinicut is proving its worth on baseball diamonds and grass stadiums worldwide. Sporting features like a dynamic return floating head, variable cut rate, and flexible setup using a wide variety of cassettes, the Infinicut delivers a spectacular quality of cut while ensuring healthier turf.



JACOBSEN SLF530

Raise your standards for perfect turf with the SLF530 super lightweight mower from Jacobsen. Designed with versatility and application flexibility in mind, the SLF530 is packed full of standard features including a high-res full color LCD screen, which puts advanced on-board diagnostics at your fingertips. With a patented lift-arm mechanism with precision cutting motion that allows reels to follow contours more accurately, the Jacobsen SLF530 delivers a quality of cut that the competition can't match.



KUBOTA F SERIES MOWERS

Kubota's F Series commercial line front-mount diesel mowers features three different model. Each model has a 16.1-gallon fuel tank and is

powered by a clean performance Kubota diesel engine offering more power, precision and efficiency than ever before. The single-speed pedal hydrostatic transmission allows for quick directional changes at varying speeds to keep the operator's hands free for steering and implement control. The F Series' versatile implement options offer year-round solutions to help turf professionals to get more done. All models offer greater safety, easier maintenance and superior operator comfort, as well as a higher level of productivity and reliability, making them the right choice to meet all your mowing needs.



MASPORT ROTAROLA

The Masport Rotarola is a 21" wide rear roller rotary mower that delivers a crisp and clean stripe and superior mowing performance. This machine is designed to give appearance of a reel cut with the low cost of purchase, operation and maintenance of a rotary mower. The Rotarola is self-propelled with a commercial grade gearbox and powered by the 190cc Professional Series 850 Briggs and Stratton engine. It features a counter balanced single lever height of cut adjustment, a folding padded handle and extra-large capacity Aero-catcher for sturdiness and great air flow. Finally, this machine is backed by a one-year commercial warranty from top to bottom. The Rotarola is easy to use, has plenty of power and durability all while delivering a dramatic and beautiful stripe for a classic look.

EXMARK LAZER Z DIESEL ZTR MOWER

Exmark raises the bar for commercial zero-turn mower productivity with the 2018 Lazer Z Diesel. Available with a new 96-inch UltraCut Flex Wing cutting deck and state of the art RED Technology-equipped Yanmar liquid-cooled diesel engines, the



new machine can cut more than 10-acres per hour. To reduce operator exposure to bumps and vibrations, the Lazer Z Diesel features isolation mounts under the seat base and footrest, as well as within the motion control system. The full-suspension operator seat uses Exmark's scissor link ball-bearing suspension system, an Elastomeric Vibration Control (EVC) stretch fabric base and custom foam for all-day comfort. Lazer Z Diesel models are also available with a choice of 60- or 72-inch UltraCut cutting decks, in side-discharge and rear-discharge configurations.



WALKER H37i PROFESSIONAL MOWER

Powered by a 993cc Big Block Vanguard EFI engine, the H37i is a powerful and efficient machine for the professional user. Its engine with high capacity air cooling system, big 5 inch diameter Donaldson air cleaner, Grammer suspension seat, and fully articulating decks means the H37i can mow complex properties easier, in harsh conditions longer. And with the optional Model H deck Power Tilt-Up, maintenance and storage are even easier. The Big Block engine has power to operate all the biggest Walker decks and attachments, including DR64 and 50" snowblower. Even with increased power, the ground speed and fuel economy are optimized for high production mowing, and the 50-amp charging system easily supports the optional hard cab heater in winter conditions.



BILLY GOAT FORCE BLOWERS

Force Wheeled Blowers provide up to 7x the power of a backpack. Smooth rounded composite housing versus stamped steel eliminates air voids for quiet output, will not rust or dent, and is up to 34% lighter in weight. Advanced technology fan is a single shot 16-blade closed face. Combined CFM and necked down discharge create high pressure and discharge velocity resulting in maximized work. With up to 52% more concentrated debris blowing force and 55% more air velocity, operators can blow debris farther and clean up facility grounds faster this fall. Available in 9,10,13 and 18 HP.

PERFORMANCE NUTRITION ANNOUNCES KELPENE PRODUCT LINE

Performance Nutrition announces Kelpene, a new line of products developed to help plants adapt to diverse environmental conditions. With products in the line suitable for use on turf, research shows the Kelpene line of products support plant health, increase yields, improve nutrient uptake, enhance resiliency, and encourage robust root development by adapting to diverse environmental conditions: high heat, intense sunlight, shade, extreme cold, drought, salinity, anaerobic conditions, and water stress. Kelpene products are blends of sea kelp extracts and plant extracts, primarily terpenes, derived via a unique proprietary extraction process. Kelpene plant extracts are



derived from plants that thrive in diverse environmental conditions. With Kelpene, the keyword is "adaptive." Kelpene's plant extracts supplement the plant's own supply of these organic compounds, helping turf, ornamentals, and crops naturally adapt to, and be more resilient against, changing environmental stress.



TERRAPLAS AT 2018 RUGBY WORLD CUP SEVENS

This is the first time the Rugby World Cup Sevens has been held in the US and AT&T Park provided the perfect backdrop for such a world-class event. The 42,000-seat park

is home to the San Francisco Giants. To meet hosting duties for the Rugby series, where New Zealand completed an historic double-double of men's and women's victories, the traditional clay areas of homeplate and the basepaths were replaced with 3" thick cut sod to make a perfect playing surface.

Greg Elliott, the Giants Grounds Keeper, managed the field transition and he and his staff then reversed that operation on July 23, so that the Giants can play a home game just 5 days after the conclusion of the Rugby World Cup Sevens. Michael Beane, Director of Terraplas in the Americas, said, "AT&T Park own their Terraflor system, therefore all of the sideline signage boards, photographers and camera crews were stationed on the turf protection product.



3 NEW ARMORTECH PRODUCTS

United Turf Alliance recently announced the launch of three new product additions to its ArmorTech portfolio. ArmorTech TETRA, ArmorTech GOLD STANDARD 45 and ArmorTech ZOXY-PG are the result of significant effort and represent UTA's ongoing dedication to a customer-focused portfolio. ArmorTech GOLD STANDARD 45 is a comprehensive plant health tool that utilizes game-changing technology to deliver rapid, efficient plant uptake and utilization. Use of Gold Standard 45, either alone or as part of a spray program, will promote stronger, healthier turfgrass plants better able to withstand the rigors of intense maintenance and weather. ArmorTech TETRA is a premium herbicide containing 2,4-D, Fluroxypyr, Triclopyr and Flumioxazin for fast, selective weed control in ornamental lawns and turfgrasses. The ester formulation offers excellent early- and late-season control of difficult-to-manage weeds including ground ivy and wild violet. This four-way herbicide provides control of more than 250 broadleaf weeds.



► FIELD

JIM WARREN PARK COWBOYS FIELD

► LOCATION

City of Franklin, TN

- **Category of Submission:** Schools/Parks Football
- **Sports Turf Manager:** John Wagnon
- **Title:** Athletic Crew Chief
- **Experience:** While in college, I worked as the head turf groundskeeper at my school, Tennessee Tech University, overseeing baseball, softball, football, and soccer fields. I also held a turf intern position with the Tennessee Titans for a full NFL football season. After graduation, I began obtaining a position as a turf groundskeeper for the University of Florida, where I worked for 2 years assisting with 11 fields. Then I moved on to work with Tennessee Smokies as an assistant groundskeeper followed by the University of Tennessee as an athletic surfaces worker for about 3 years. These positions serve as the foundation for my career. I accepted a supervisory position with City of Franklin in September 2016 and now have responsibility for all the city athletic surfaces. During my time at the City of Franklin, I have strived to bring continuous improvement to the program and surfaces.
- **Full-time staff:** No one person is dedicated to these fields. We share the workload of all 45 acres of sports turf as a team: John

Wagnon, Ricky Cox, Ricardo Friesen, Aaron Putyrski, and Andrew Woodfin.

- **Original construction:** 1992
- **Turfgrass variety:** TifSport 419 bermudagrass and perennial ryegrass
- **Overseed:** We overseed yearly at approximately 10-12 lbs. per 1000 ft. sq.
- **Rootzone:** Sandy loam native soil
- **Drainage:** The fields are graded for surface drainage.

Why STMA should consider your field a winner?

STMA should consider Jim Warren Park - Cowboys Field a winner because we have worked with original construction to maintain a very safe and aesthetically pleasing playing surface for the citizens of Franklin, TN. This field is open to the public 24/7 and is heavily trafficked due to the walking trail that surrounds it. Therefore, on top of the scheduled practice hours, there is additional activity on the field that is not recorded.

As city park staff, my crew is made up of four other employees plus myself. We are not only responsible for this

The Field of the Year Awards program is made possible by the support of sponsors Carolina Green Corp., Ewing, Hunter Industries, and World Class Athletic Services.



field, but also an additional 35 acres of sports turf, which presents its own set of challenges. In the fall, we prep 19 clay surfaces for daily practices and games of adult softball, fall recreational league baseball, and fall travel ball. Thus, we have to be efficient with our time in order to keep up with the high demands of field usage.

We are also on a limited budget for field supplies. We must ensure timely applications of fertilizer, scheduling and performance of topdressing and aerification, and other field requirements. Not only do all these tasks need to be executed in a manner that does not interrupt play but that also maximizes the application resulting in the best playing surfaces. We continually adapt and respond to our field needs and requirements to provide the best playing surfaces for the citizens of the City of Franklin, especially the Jim Warren Park – Cowboys Field. I believe all of these reasons make us a great candidate for Field of the Year as we represent a highly respectable field that meets the high standards of the turf industry.

SportsTurf: What are your job responsibilities?

WAGNON: I am in charge of all the athletic surfaces for the City of Franklin TN, about 45 acres of sports turf that include



six football/lacrosse, 15 baseball fields, four adult softball fields and a 300 x 150-ft. outdoor equestrian arena.

ST: *What attracted you to this industry?*

WAGNON: I have always had a passion for sports and playing on nice surfaces as well as being outside. I grew up mowing and on tractors and always enjoyed being on them.

ST: *What do you do that's the most enjoyable?*

WAGNON: I love the challenge of taking a problem area and making it better and trying to fix issues, whether it's something simple as a broken irrigation head to more complex such as finding a way to get water to it or move water away from it! But there is nothing better than seeing a field change its look for the better after putting some TLC into it and seeing the result.

ST: *What changes if any are you considering or have implemented for the winning field in 2018?*

WAGNON: At the end of last year we planted HGT bluegrass to try and keep a better playing surface year round and cut down of fungicides, not only for sustainability purposes but also to save money for other projects.

ST: *What are the biggest obstacles you deal with at work, and how do you try and overcome for them?*

WAGNON: Lack of staff and equipment. We have to get creative on when and how we do things because we only shut down for 4 weeks in the summer for projects and cultivation practices.



ST: *How has your career benefitted from being a member of STMA?*

WAGNON: I have met many friends and been to some great facilities to learn new ways of taking care of turf. I have also enjoyed having people reach out to me for advice. It's a big network of people trying to help each other.

ST: *What's the best piece of turf management advice you have ever received?*

WAGNON: "Grass is grown by the inches, but killed by the feet. Are they yours?" from Terry Porch, and it's just a reminder than you are working with a living organism that needs its certain things to survive and that every little thing you do or don't do is gonna affect the outcome.

ST: *What are your passions and interests outside of work?*

WAGNON: Love to hunt waterfowl and other migratory birds, fish both freshwater and salt, and train and run my labs in hunt test/field trial events. /ST/



Free Money and Recognition Offer: October 15 deadline

The deadline to submit an application for a SAFE Scholarship, grant, or a STMA Award is October 15. The SAFE Foundation offers several scholarships, which are judged by the STMA Scholarship Committee:

■ **DR. JAMES WATSON.** Awarded in honor of pioneer James R. Watson, Ph.D., who for 46 years was the lead researcher for, and in later years a consultant to, the Toro Company. These scholarships are awarded to students in 2-year, 4-year and graduate turfgrass programs and are funded by the Toro Foundation.

■ **FRED GRAU SCHOLARSHIP.** Is named in honor of the first turfgrass extension specialist in the US. The recipient is the top applicant who is in a 2-year turfgrass program.

■ **SAFE SCHOLARSHIPS.** Each year SAFE may award scholarships in 2-year, 4-year and graduate studies in turfgrass to deserving students. Awards are not need-based.

■ **DARIAN DAILY LEGACY SCHOLARSHIP.** This scholarship is designed to help parents/guardians provide a college education for their children. It honors Darian Daily who was a great supporter of STMA and exhibited strong family values. Two qualified individuals will be awarded \$2500 each. Applicants must be currently enrolled or enrolling into a recognized college or university within a field of study not related to the turfgrass industry.

SAFE also provide several grants, also judged by the STMA Scholarship Committee:

■ **LEO GOERTZ MEMBERSHIP GRANT.** Established to honor longtime SAFE Board of Trustees member and STMA member Leo Goertz, this grant awards up to \$1500 annually to fund new, 2-year memberships in STMA. The eligibility criteria for nominees includes: must be a Sports Turf Manager or member of a crew managing sports fields and should not have been an STMA member for at least 5 years. The grant is funded by Pioneer Athletics.

■ **GARY VANDEN BERG INTERSHIP GRANT.** Honors Gary Vanden Berg, CSFM, for his contributions to the industry in promoting internships. He was the Director of Grounds for the Milwaukee Brewers until his death in 2011, and his commitment to creating an excellent learning experience for interns was legendary. Students who complete an internship are eligible to receive this \$1,000 grant as reimbursement for their internship expenses.

■ **TERRY MELLOR CONTINUING EDUCATION GRANT.** Terry, the brother of Boston Red Sox groundskeeper David Mellor, was committed to education. To honor his short life, this \$1000 grant was established and is sponsored annually by Turface Athletics. The grant helps to fund a portion of the winner's attendance at the STMA annual conference; all STMA chapter members are eligible to be nominated.

STMA administers three award programs: the Fields of the Year are judged by the STMA Awards Committee; the Founders Awards by the STMA Board of Directors; and the Innovative Awards program has a separate judging committee.

■ **FIELD OF THE YEAR.** Is awarded to the top fields in baseball, softball, soccer, football and sporting grounds (non-mainstream sports such as rugby or lacrosse) and across three employment categories: schools and parks, college and university and professional stadium fields. Winners receive an award presented during the annual STMA Conference in January, complimentary Conference registration, three nights hotel, signature clothing and the field is profiled in an issue of *SportsTurf*.

■ **FOUNDERS AWARDS.** These four awards are STMA's flagship awards, named in honor of its founders: Harry Gill (deceased), George Toma, William Daniels, PhD. (deceased), and Dick Ericson. George and Dick continue to contribute their time and energy to advancing the association and the profession. Anyone can nominate a deserving individual who emulates the characteristics of our founders.

■ **INNOVATIVE AWARDS.** Presented to one or more exhibitors whose innovation has made the sports turf manager more



effective or the playing surface safer. Applicants must be a Commercial Member and exhibiting at the upcoming STMA Annual Conference and Exhibition. Eligible innovations can be a brand-new product, service or piece of equipment or a material improvement to an existing one. Winners receive an award, promotion during the annual awards banquet and the use of the Innovation logo.

Those judging these programs include:

Scholarship Committee: Steve Dugas, CSFM, Chair; Chris Ball, Brian Bornino, CSFM, Michael DiDonato, CSFM, Ed Hall, CSFM, Eric Harshman, Ben Jackson, CSFM, Jeff Langner, Billy Pipp, CSFM, Kyle Slaton, CSFM, Brett Tanner, CSFM, Zach Willard.

Awards Committee: George Trivett, CSFM, Chair; Weston Appelfeller, CSFM, Jaxon Bailey, CSFM, Russ Baucom, CSFM, Noel Brusius, CSFM, Vincent Cassata, Alan Dungey, CSFM, Michael Flowers, CSFM, Vince Jagodzinski, Carter Metclaf, Jackie Mroz, Anthony Smerk, Daniel Strey, CSFM, Rob Walls, Derek York, CSFM.

Innovative Awards Committee: Dan Bergstrom, CSFM, Chair; Weston Appelfeller, CSFM, Joe Collins, CSFM, Mark Holder, Nathaniel Miller, CSFM, Eric Reasor, Grant Spear, CSFM, Richard Wilt, Ryan Woodley.

To apply for any scholarship, grant or award, go to STMA.org and click on Programs.

SIGN UP FOR THESE CONFERENCE EVENTS!

As registration opens for our 30th Annual Conference & Exhibition, it's time to get in the know of where you should be spending your time in Phoenix. Head on down to the sunny weather a day early and participate in our brand-new Volunteer Field Rebuild. STMA has partnered with Project Evergreen to rebuild one of Phoenix Parks and Rec Department's baseball fields. All members are invited to participate, but registration is required. Transportation, products and materials will be provided.

Whether you're a first-timer at our conference or a seasoned regular, you will not want to miss the Seminar on Wheels Tour. You'll be transported around to Phoenix's finest stadiums and facilities to have a behind-the-scenes look with education and lunch included. Some stops include University of Phoenix Stadium, home of two Super Bowls and two National Championships, the Dodgers/White Sox Training Facility at Camel Back Ranch and Arizona State University. Don't miss out, this is an additional cost event and books up fast!

If being competitive with your fellow attendees is more your speed, sign up for the SAFE Foundation's Golf Tournament and/or Bowling Tournament. The Golf Tournament will



be heading back to its traditional golf course setting and will take place at Grand Canyon University Golf Course, featuring new tee boxes, challenging greens, extended fairways, updated practice facilities and a 10,000-square-foot clubhouse including a restaurant and bar. The Bowling Tournament will be celebrating its 5th year at Brunswick one Desert Sky Lanes. Join your chapter members or other friends and bowl as teams or as an individual for a chance to win prizes and join in on crazy-fun bowling games! Food and transportation will be provided for both events. All proceeds benefit SAFE's scholarship, grant and research programs.



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STMA Affiliated Chapters Contact Information

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Colorado Sports Turf Managers Association: www.cstma.org

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

Florida #3 Chapter (Central):
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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>

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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:
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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

Virginia Sports Turf Managers Association:
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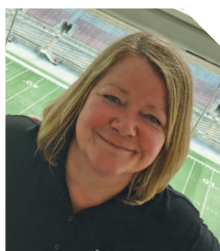
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Q&A with PAMELA SHERRATT

Sports Turf Extension Specialist

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sherratt.1@osu.edu

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



Organic fertilizers

Q: I'm curious on your thoughts about the rate and use of an organic fertilizer on football fields?

A: The term "organic fertilizer" refers to fertilizer derived from a plant, animal or human source. Those sources might be biosolid (human waste), chicken litter/manure, blood & bone, or plant material like corn gluten meal. While synthetic fertilizers are sometimes referred to as inorganic because they are manufactured, many also come from natural sources, like mineral deposits. An example of this would be phosphorus, derived from phosphate rock. Like inorganic fertilizers, organic fertilizers can be manufactured and shaped into a prill so that they can be applied with a rotary or drop spreader. If the biosolid or animal or plant waste is mixed with a bulking agent like woodchip, it is referred to as compost and they are applied on a volume basis, rather than a rate per 1,000 sq. ft. A typical application rate of compost on an athletic field would be 0.25-inch depth spread evenly over the field in conjunction with soil cultivation and coring, while an organic fertilizer application rate might be 1 lb. nitrogen per 1,000 sq. ft.

Organic fertilizers usually have a lower nutrient analysis than inorganic fertilizers, since they come from a source that typically contains less than 10% nitrogen. This means that more organic fertilizer needs to be applied to the turf compared to an inorganic source. For example, if the desired application rate of fertilizer is 1 lb. nitrogen per 1,000 sq. ft., then 5 lbs. of product per 1,000 sq. ft. would be required with an inorganic fertilizer containing 20% nitrogen, compared to 17 lbs. of product per 1,000 sq. ft. with an organic fertilizer containing 6% nitrogen.

Bottom line is, more organic fertilizer is typically needed than inorganic fertilizer. Keep in mind also that the cost of organic is generally higher than inorganic. How often any kind of fertilizer is applied to the field is dependent upon the results of a chemical soil test, done through a reputable soil-testing lab. On cool-season turf, most applications are made in the fall, with little applied in the spring and summer months. A typical amount of nitrogen fertilizer would be 3 to 4 lbs. applied over the growing season.

Organic fertilizers are usually slow-release because the nutrients need to be converted into inorganic nitrogen by fungi and bacteria in the soil before the grass plant can take them up. The rate of release depends on soil temperature, so warm soils and ideal growing conditions are perfect times to apply it. In the Midwest, this would be between late spring and early fall. The more extreme the weather is, the slower the

rate of release. Being slow-release, there is little chance of burning the turf, and they generally don't need to be watered in. For this reason they are considered "safe" to turf, but avoid applying any kind of manure-derived compost or fertilizer in hot weather. Manure and biosolid composts have salt contents that could cause turf damage in hot weather. They can also be a source of weed seeds. Some organic fertilizers, particularly those derived from biosolid and manure, may also have an odor for a couple of weeks, so be prepared to answer questions from field users. If a turf response is needed quickly, due to field damage or to get seed established quickly, an inorganic, quick-release fertilizer might be a better option.

Organic fertilizer generally contains lots of different nutrients, like phosphorus, iron and a range of micronutrients. In states or regions where phosphorus applications are banned or heavily regulated this might create a challenge. Some organic fertilizers contain appreciable amounts of phosphorus, sometimes on a 1:1 or 2:1 ratio with the nitrogen source. If this is the case, carefully monitor soil phosphorus levels to make sure it is not being over-applied. This is especially important if compost is being applied as topdressing. Inorganic fertilizers usually contain nitrogen, phosphorus and potassium and sometimes micronutrients depending on the job it is designed for. Inorganic fertilizer can be tailor-made for different situations like "starter" fertilizers used during seed establishment. They can also be manufactured to be quick or slow-release and can be mixed with other products so that they play more than one role. An example would be starter fertilizer plus the herbicide mesotrione applied at seeding to aid seed establishment at the same time as preventing and controlling broadleaf and grassy weeds.

If soil improvement is a goal, using composts on the field is a good idea. They contain nutrients for turf growth and the bulking agent used in the compost (usually woodchip) helps improve soil structure. It's very important to pick high-quality, mature compost that has a pH between 6 and 8.5, low soluble salt content, 30-65% organic matter and meets EPA standards for harmful pathogens. A reputable supplier, turf diagnostic lab, or University Extension Service can help pick a good local compost product.

One final advantage of using organic fertilizers and composts is social acceptance. Reduce, reuse and recycle are all programs the public understands and supports. However, as stated earlier, be very vigilant on how much phosphorus there is in a product. We should never over-apply products that contain large amounts of phosphorus, especially near water. **/ST/**



1 HURRICANE.

3 FOOTBALL GAMES IN NOVEMBER.

9 TACKLE COMPACTION AND WEAR.

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