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MANAGEMENT

February 2023

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Advocating for the Profession

New SFMA President Sun Roesslein, CSFM, aims to increase awareness of the sports field management industry and its members



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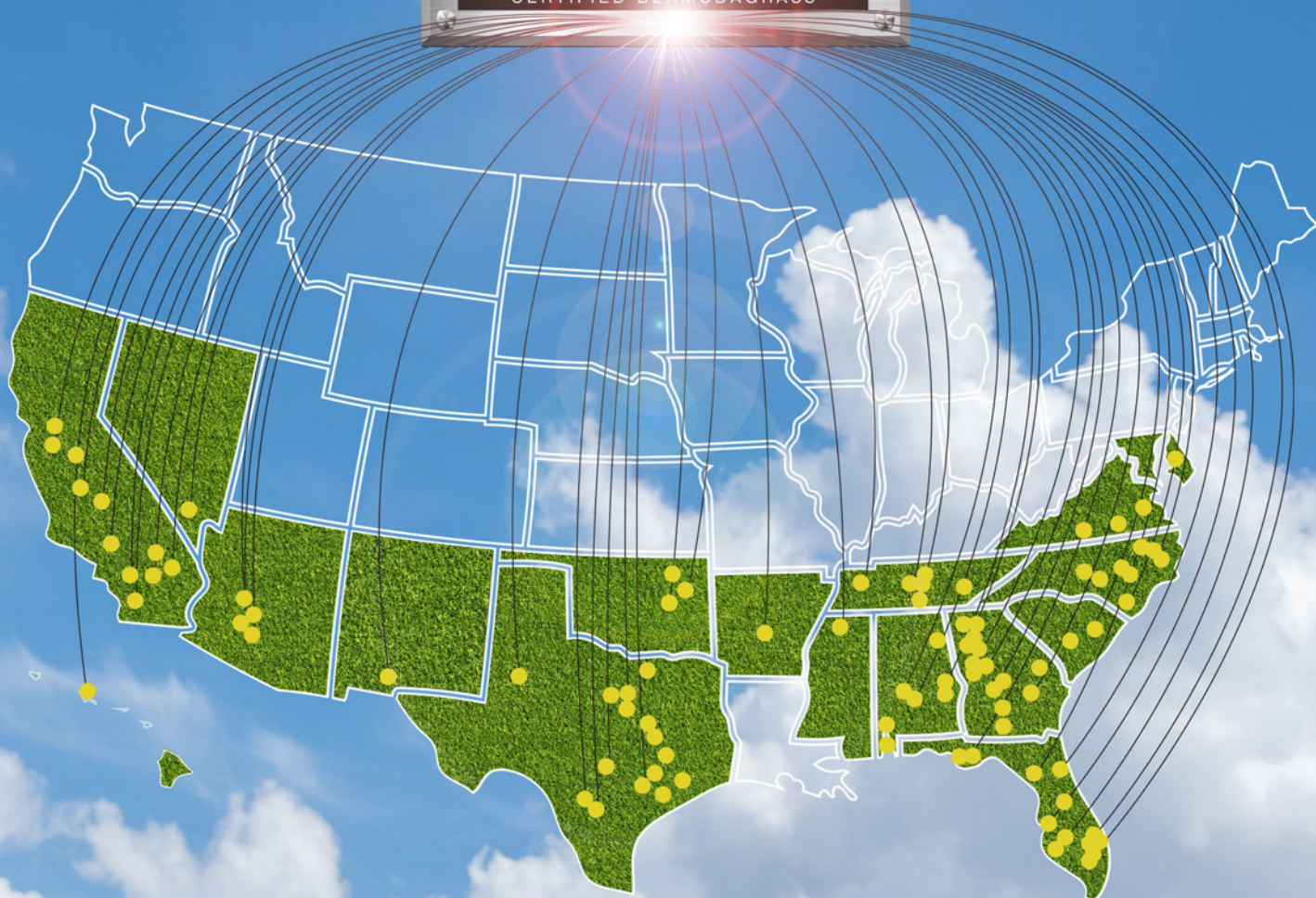
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Editor's Note



John Kmitta

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Throughout this year, we are profiling college and university turfgrass programs and what they have to offer.

David Crouse, Ph.D., associate department head and director of undergraduate programs, Crop and Soil Sciences department at NC State, said most students come to the NC State turfgrass program with this career and major already in mind.

But for those who don't have a career in turfgrass in mind, or aren't even aware that sports field management is a profession, what is the key to raising awareness and getting them interested in turfgrass majors and related careers?

"This is an ongoing issue that I've dealt with for the past 40 years," said Barb Clawson, student services specialist, associate teaching professor and academic advisor at Iowa State University. According to Clawson, students who are high achieving in the sciences fail to realize horticulture is an amazing career in which they can excel.

"How do you go into every science classroom?" Clawson added. "You can't; so we try to have a website that is interactive and up to date."

Doug Linde, Ph.D., professor of Turf Management at Delaware Valley University, said employers need to hire young people in high school.

"Most traditional-age college students who want to study turf have

had some type of work experience around golf, baseball or have been running a part-time lawn mowing business," said Linde. "Hiring teenagers for a summer job can be challenging for employers, but they are the feeder system for the industry."

Linde added that programs such as First Green (<https://www.thefirstgreen.org/>) are vital for getting young people interested in turfgrass careers. He would also like to see sports field manager and golf course superintendent associations continue to make promotional videos and use social media to distribute information.

Chase Straw, Ph.D., assistant professor, turfgrass management and physiology, Texas A&M University, attends conferences in Texas that allow him to speak to high school agriculture teachers.

"I spoke to a room of 40 agriculture teachers and had six follow up with me to schedule site visits to campus," said Straw. "That is one way I'm trying to get word out about program. I'm also going to pursue athletic directors' conferences to give the same sort of presentation about turfgrass science."

Added Clawson, "Just get the word out over media, Tweets, Instagram, TV, radio, etc. The more out there, the better chance we have of reaching folks who didn't know these careers exist." **SFM**

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President's Message



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Sun Roesslein, CSFM

SFMA President

Sun.Roesslein@jeffco.k12.co.us

2023? Where did that come from? Happy New Year, SFMA members! As I write this, I am preparing to head to Salt Lake City, Utah, for our 34th Annual Conference and Exhibition.

As usual, my excitement to attend our profession's "family reunion" is growing as it gets closer.

I am a big fan of music, and often find particular songs hit the spot to align with events that are happening. The SFMA conference makes me think of a few lyrics from "Crowded Table" by The Highwomen:

"If we want a garden, we're gonna have to sow the seed."

It reminds me that while we literally plant grass seeds, on a larger picture, big goals start with a small step. Where we want to grow as an association starts with a strong foundation. Strengthening and better supporting our chapter network is a key focus moving forward as we begin to implement our strategic plan.

"I want a house with a crowded table and a place by the fire for everyone."

Having the opportunity to connect with industry peers and grow our networks will help us each succeed. Friends with different experiences, knowledge and viewpoints to bounce ideas off can help when we need it most. There is strength in building your crowded table. From an association standpoint, a crowded table means expanding our membership, which will strengthen our association in many ways.

Looking forward into 2023, I am thrilled about working closely with Laura Simmons as our new CEO and the SFMA Board of Directors to begin work on the detailed strategic plan. We will work hard, planting the seeds to grow the respect for our profession, spark the passion in emerging professionals, and encourage diverse membership growth.

There is a strong plan in place, and we have a great team to put in the work. Our headquarters staff is absolutely amazing; continually making the magic happen behind the scenes. The volunteer commitment of our members is inspiring – the number of hours donated from all the committee members and the board of directors must be in the thousands! All to make this association stronger and help achieve the goals of SFMA.

In 2022 our rebrand gave us a new name and a new logo. Now that we have our new CEO, the future is wide open for what we can all accomplish together. I strongly encourage you to jump in! Consider getting involved to help shape what this association can do to benefit our members and have a positive impact on our profession. Committee sign up will open soon. I hope to see you at the table. **SFM**

Sun Roesslein, CSFM

SFMA 2023 Board of Directors

The Sports Field Management Association (SFMA) 2023 Board of Directors took office at the association's annual meeting, January 18, in Salt Lake City, Utah. The 2023 SFMA Board of Directors is as follows:

OFFICERS

PRESIDENT: SUN ROESSLEIN, CSFM

Sun Roesslein, CSFM, is sports stadium manager at the North Area Athletic Complex (NAAC), Jeffco Schools (Colo.). She is responsible for overseeing and maintaining the football stadium and the soccer stadium that make up the NAAC. Roesslein got her start in the turfgrass management industry working on the grounds crew for the Lexington Legends Minor League baseball team in 2001. After moving to Denver, she worked briefly for the City of Thornton before taking her current position with Jeffco Schools Athletics. In 2014, the NAAC soccer field was awarded SFMA's Soccer Field of the Year for the Schools and Parks category. The following year, the NAAC football field was selected as SFMA's 2015 Football Field of the Year in the same category. In July of 2016, she earned her CSFM designation.



PAST PRESIDENT: JAMES BERGDOLL, CSFM, CPRP

James Bergdoll, CSFM, CPRP, has been in the turfgrass and parks and recreation industry for more than 20 years. Bergdoll has been a member of the SFMA since 2004, serving on several different committees, and achieved CSFM status in 2013. He holds a MS in Sports and Recreation Administration from Western Kentucky University and a BS in Turfgrass Science from Purdue University. Most recently Bergdoll was the Director of Parks Maintenance for the City of Chattanooga (Tenn.). He is also a member of the TRPA and NRPA and earned Certified Park and Recreation Professional in 2020.



PRESIDENT-ELECT: NICK MCKENNA, CSFM

Nick McKenna, CSFM, is an assistant athletic field manager at Texas A&M University. He returned to Texas A&M in August 2011 after having spent four years working for Virginia Tech overseeing their baseball and soccer/lacrosse facilities. He assists in overseeing all the athletics fields at Texas A&M. McKenna received his B.S. from Iowa State University in Horticulture with a turfgrass emphasis. He also completed coursework and research toward an M.S. in Crop Soils & Environmental Science at Virginia Tech, and in 2007 was the recipient of the Dr. James Watson SAFE scholarship.



[Note: Dan Bergstrom, CSFM, was slated to become the president-elect this year. Unfortunately, he found it necessary to resign from the board of directors. Per the SFMA bylaws and standard operating procedures, President Roesslein appointed Nick McKenna, CSFM, to serve as president-elect this year. This will require President Roesslein to serve as president for two years, as the president-elect appointee will not ascend into the role of president. SFMA thanks Dan Bergstrom, CSFM, for his service and dedication to the work on the SFMA Board of Directors and as the 2022 secretary/treasurer.]

SECRETARY / TREASURER: ADAM THOMS, PH.D.



Adam Thoms, Ph.D., is an associate professor of commercial turfgrass in the Department of Horticulture at Iowa State University. He oversees the sports turfgrass research at Iowa State, and is the Turfgrass Extension Specialist for Iowa. In addition to research and Extension activities, Thoms teaches two classes, as well as serving as an advisor to the Iowa State Turf Club. He is in charge of planning education for the Iowa State Turfgrass Field Day, and helps with planning education for the Iowa Turfgrass Conference. Thoms received his Ph.D. and M.S. degrees from the University of Tennessee. He completed his B.S. degree from Iowa State University. Thoms has been active in the SFMA since 2005, and took part in the very first SFMA Student Challenge.

VICE PRESIDENT – COMMERCIAL: PAULA SLIEFERT

Paula Sliefert joined The Toro Company in 2007, and currently serves as senior manager in the company's commercial business. In her role, she has responsibility for supporting a number of Toro's key industry relationships. In addition, she develops and implements strategies targeted at growing the sports fields and grounds market segments. Sliefert is a graduate of Simpson College with a bachelor's degree in German and International Business and holds a master's degree in German from Bowling Green State University.

**AT-LARGE (ELECTED): RYAN DEMAY, CSFM**

As a sports field manager, Ryan DeMay, CSFM, spent eight years working for Columbus (Ohio) Recreation and Parks managing 110 sports fields for more than 1.2 million participants annually. He guided his organization to become the first in Ohio to hold the SFMA Environmental Facility Certification in 2018. Also in 2018, DeMay founded Field Source Consulting. He now works closely with parks and recreation agencies, K-12 schools, universities, professional sports teams, and amateur sports organizations to ensure they are prepared to play on the best and safest sports fields. DeMay holds associate and bachelor's degrees in Turfgrass Science and Agribusiness from Ohio State University where continues to serve as a lecturer in the two-year Turfgrass Management degree program. He earned his Certified Sports Field Manager certification in 2020.

**DIRECTORS****ACADEMIC: CHASE STRAW, PH.D**

Chase Straw, Ph.D., is assistant professor, turfgrass management and physiology, at Texas A&M University. Straw earned his B.S. degree from the University of Kentucky in Turfgrass Science. During his undergrad he gained experience managing sports fields at the collegiate (University of Kentucky) and professional (Boston RedSox and Cincinnati Bengals) levels. He went on to earn his M.S. and Ph.D. degrees in Turfgrass Science from the University of Georgia. He spent two years as a postdoctoral research associate at the University of Minnesota before becoming assistant professor of turfgrass management and physiology at Texas A&M University in February 2020.



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AT-LARGE (APPOINTED): ZACHARY HOLM, CSFM

Zack Holm, CSFM, is the turf care manager at the Central Park Conservancy in New York City where he oversees 300-plus acres of turfgrass. Prior to Central Park, Holm was the manager of operations at the New York Red Bulls Training Facility, during which time the Red Bulls won SFMA Professional Soccer Field of the Year twice for both the Training Facility and Red Bull Arena. Holm is a graduate of Delaware Valley University with a bachelor's degree in Turfgrass Management. He also earned master's degrees in Construction Management and Sports Management from Southern New Hampshire University.

**COMMERCIAL: ERIN BOYD WILDER**

Erin Boyd Wilder is executive director of Sod Solutions Professionals, and takes great pride in being an active member of an eighth-generation farming family in Florida. After graduating from Florida State University, Wilder returned to the family business, Boyd Sod Farm, to begin her turfgrass career as a sales representative and later as sod production manager. She has worked in the turfgrass



industry for 20 years traveling the world visiting sod farms, university and research facilities, and various natural grass and artificial turf venues. Additionally, she regularly presents educational seminars and works directly with turf professionals to educate on the benefits, proper selections, and maintenance of grass.

HIGHER EDUCATION: JASON DEMINK, CSFM

Jason DeMink, CSFM, is the sports turf specialist for the University of Michigan Athletic Department. He oversees the field maintenance of the baseball and softball complexes, as well as the practice football facilities. DeMink and his team manage game day operations as well as practices and facility rentals. Prior to his career at the University of Michigan, DeMink was the assistant groundskeeper for the Boston Red Sox. He is a graduate of the Sports and Commercial Turfgrass Program at Michigan State University, and received his CSFM in 2013. DeMink served his country in the U.S. Navy, and is a proud veteran.

**PARKS AND RECREATION: JASON BOWERS, CSFM**

Jason Bowers, CSFM, is the sports turf supervisor for the Cabin John Regional Athletic Area in Montgomery County, Md. He earned his associate degree in Landscape and Turf Management from Virginia Tech in 2000. He worked at golf courses and landscape companies until May 2003 when he was hired as the assistant sports field manager at Virginia Tech. After one year, he was promoted to sports field manager. He earned his CSFM in 2007 and won SFMA's College and University Field of the Year in 2008. Bowers also worked for the Philadelphia Union MLS team, then at the Milton Hershey School/ Middle Division where he won another SFMA School and Parks Football Field of the Year (2012).

**PROFESSIONAL FACILITIES: ALPHA JONES, CSFM**

Alpha Jones, CSFM, is the director of field operations for the Fayetteville Woodpeckers, Low-A affiliate of the Houston Astros. He has worked in the turfgrass industry for the past 20 years and 12 years before that in the landscape industry. Fayetteville is his second time in the minor leagues, after several years with the Durham Bulls. Additionally, he was crew leader at WakeMed Soccer Park, assistant athletic director of athletic facilities for Longwood University, and at the high school sports level with Durham Academy. Jones earned his degree in Political Science, graduating Summa cum Laude in 2005 from North Carolina Central University. He achieved Certified Sports Field Manager status in 2020.

**SCHOOLS K-12: JEREMY DRISCOLL, CSFM, ISA-CA**

Jeremy Driscoll, CSFM, ISA-CA, is the grounds supervisor at St. Mark's High School in Wilmington, Del., from which he is an alumnus. He oversees all of the campus and athletic fields. He began his higher education at Paul Smith's College in Paul Smith's, N.Y. He studied Urban Tree Management and earned his A.A.S. Driscoll furthered his education at the University of Delaware receiving his B.S in General Agriculture. Driscoll has been an International Society of Arboriculture Certified Arborist since 2002. He has a Class B CDL license, and is also a licensed pesticide applicator in New York and Delaware. **SFM**



SportsField Management Rising Star Awards

SportsField Management magazine is looking for the best young leaders in the sports field management industry for its 2023 Rising Star Awards.

The Rising Star Awards program will recognize those who are relatively new to the profession, but who are already making an impact on others.

Nominees can be from any aspect of the sports field management industry.

Rising Star nominees must be under the age of 40 as of January 1, 2023; or, if over the age of 40, must be new to the sports field management industry within the last 10 years.

Candidates will be evaluated based on professional accomplishments, community and industry involvement, philanthropic efforts and other exemplary qualities.

And don't feel as if every box and category need to be answered. Some areas will apply and some likely won't.

Rising Star Award winners will be profiled in an upcoming issue of SportsField Management magazine.

Questions? Please email John Kmitta at jkmitta@epgacceleration.com and include "SportsField Management Rising Star" in the subject line.

(Note: Nominees do not need to be members of the national SFMA to be considered for a Rising Star Award.)

Access the nomination form via the SportsFieldManagementOnline.com website, or directly at <https://www.jotform.com/form/223534508210143>.

Nominations are due **March 17, 2023**. **SFM**



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Nutrient Management: Part 2

Editor's Note: The following nutrient management best management practices are excerpted from SFMA's National BMP guide, *Best Management Practices for the Sports Field Manager: A Professional Guide for Sports Field Management*. The full guide, as well as a customizable BMP template, is available at https://www.sportsfieldmanagement.org/knowledge_center/bmps/

For the first part of the BMPs for Nutrient Management, please see the January 2023 issue of *SportsField Management* magazine or refer directly to the SFMA BMP guide.

"NATURAL" AND "ORGANICALLY CERTIFIED" FERTILIZERS

In some cases, communities or organizations require/prefer to use "natural" and/or "organically certified" fertilizers. However, these terms are often the subject of misinformation. It is important to realize that, despite popular opinion, these are not necessarily healthier with respect to human health. For example, arsenic is a natural compound, yet is highly toxic to humans.

In terms of plant nutrition, an atom of a nutrient is chemically identical regardless of source. For example, the fertilizer with greatest volume of use is urea. It is manufactured using nitrogen gas from the atmosphere that is converted to ammonia using natural gas in the Haber-Bosch process, which is then combined with carbon dioxide. The nitrogen in this and the urea molecule itself are identical in every way to the urea that is naturally produced in animal livers. Either source is beneficial to plants and pose no risk to plants or animals (including humans) when used properly. However, manufactured urea requires the use of non-renewable resources. Conversely, low nitrogen analysis fertilizers require more fossil fuel use for transportation in order to supply the same amount of nitrogen (e.g., urea is 46% nitrogen, whereas most of these alternative fertilizers are less than 10% nitrogen). Regardless, demand for these products exists and it is important to understand their properties and the management practices needed for their proper use.

The nutrients in any fertilizer, including natural and organically certified fertilizers, must be factored into the overall nutrient management planning. In addition, some regulatory requirements (e.g., phosphorus prohibitions) must be adhered to regardless of fertilizer source.

Labeling of fertilizers as "natural" is not subject to regulatory oversight. The definition is "existing in or caused by nature." In reasonable consideration, so-called natural fertilizers tend to include protein-rich plant or animal wastes. These tend to have the benefit of including a broad spectrum of nutrients that are generally released slowly, mostly during the summer when temperatures drive high decomposition rates. These materials tend to have high carbon content, which can be beneficial if organic matter building of the soil is desired. This is typically helpful, although not in sand-based fields where excessive organic matter can result in reductions in drainage and increased compaction potential. Some of these materials, especially those with high fiber content, can be a source of pathogen stimulation. Typically, the main disadvantage is that the low concentration of mineral nutrients in these sources correlates to higher costs of the fertilizer, as well as transportation, storage and application.

Many sources of these materials exist, such as:

- Animal manures (uncomposted and composted wastes).
- Animal industry byproducts (bone, blood, feather, fish, etc., meals).
- Green manures (plant-based composts).
- Liquid cocktails (manure extracts, seaweed extracts, compost teas, etc.).

By contrast, "organically certified" fertilizers are any materials approved by the Organic Materials Review Institute (OMRI). These can include any of the products listed previously, including those that are derived from carbon-based materials, typically animal and plant waste materials, but also can include inorganic salts (e.g., calcium carbonate, calcium sulfate, potassium sulfate) and many other materials. OMRI certifies products rather than providing generic certifications for chemicals. For example, one potash source may be certified for organic use after the review and labeling process while another, despite being chemically identical, will not be certified for organic use if it has not gone through the certification process.

Sports field managers should carefully review and evaluate each commercial product before use. Because considerable variation exists in the physical and chemical properties of the various fertilizers, they should be carefully evaluated when used as part of a nutrient management

program. The evaluation criteria should include nutrient content and quality, release rates, cost, ease of handling and distribution, offensive smell or odor, infiltration rate and any tendency to stain shoes and clothing.

PREDICTING/IDENTIFYING NUTRIENT DEFICIENCIES

Predicting or identifying nutrient deficiencies can be done using the following tools:

- Visual assessment
- Soil analysis
- Plant tissue analysis
- Fertilizer response evaluation

VISUAL ASSESSMENT

Visual assessment is a valuable first step for identifying nutrient deficiencies in plants. However, these symptoms are less specific in turfgrass compared with most other types of plants. It is also noteworthy that when avoiding urea application under hot, humid and/or windy conditions there is often “hidden hunger” with no visible symptoms.

In general, nutrient deficiencies cause a reduction in chlorophyll, which results in chlorosis (yellowing) that can progress to necrosis (dead tissue). In many plants, the various nutrients show distinct patterns in terms of age of tissue and type of chlorosis that help in deficiency identification. However, in turfgrass, mowing and relatively thin shoots can make it difficult to see these patterns.

In most instances, when chlorosis occurs, it is usually a result of nitrogen deficiency, although sulfur, iron and potassium deficiencies are also relatively common causes. Deficiencies in most of the

other nutrients can also cause chlorosis, although these instances are rare. It is somewhat common for soils that are excessively wet for prolonged periods to exhibit chlorosis due to problems in soil chemistry. Phosphorus deficiencies are an exception. If severe, these deficiencies result in plant tissues turning dark green or even red/purple. Visual assessment needs to be coupled with the other assessment tools to effectively diagnose deficiencies.

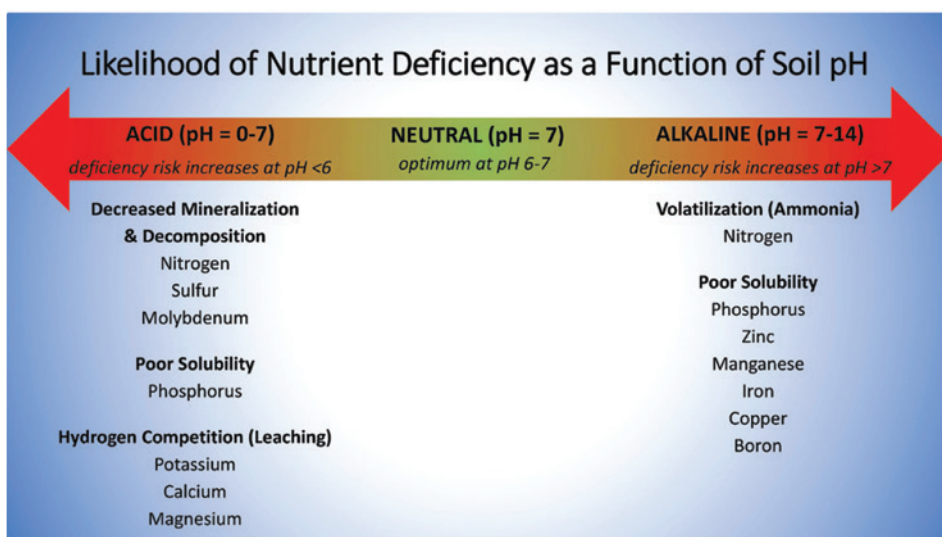
SOIL ANALYSIS

Soil analysis is a tool that can help customize fertilizer needs in turfgrass with estimates of nutrient availability predicting plant response to an applied nutrient. Although a reliable tool, soil testing is not a perfect science. Some nutrients have been more thoroughly researched than others and some tests are more highly correlated to plant response than others. The most reliable tests indicate native soils high in silt and clay are somewhat resistant to change in nutrient and pH levels, and therefore soil testing may only need to be conducted every one to two years (and no less than every five years), unless monitoring corrective action (such as liming an acid soil). Sand-based soils are less resistant to change in nutrient status or pH, and thus may require relatively more frequent sampling such as once per year.

For soil analysis to be effective, accurate and representative samples are needed. Each field should be sampled separately, with about 12-15 cores per sample (typically about a pint in total volume). Within a field, if there are areas that are behaving differently, these samples should be segregated. Laboratories and other organizations/businesses dealing with soils can

provide sampling instructions. Sampling depth for turfgrass is generally recommended at 3” to 4”. It is imperative to take separate samples from areas with varying soils and/or management. In addition, soil samples should not be collected following fertilization.

A laboratory with a record of sound QA/QC should be selected to conduct soil testing. Laboratories can provide documentation of their data quality, such as participation in proficiency testing. It is a good management practice to track data trends over time, which is



Source: Hopkins et. al 2020.

difficult to do if switching soil test methods or laboratories because they often use different methods thus make comparisons difficult. In addition, it is important that the same phosphorus extraction method — the most common are the Sodium Bicarbonate, Bray P1 and Mehlich 3 — is used for consistency in soil test interpretations relative to nutrient concentrations.

In general, soil testing is not extremely helpful for nitrogen and sulfur because the inorganic forms tested for (nitrate and, in some cases, ammonium for nitrogen and sulfate for sulfur) are very transient in their soil concentrations as they are regularly changing between plant available and unavailable forms due to rapid plant/microbial chemical transformations. Additionally, the amount of these nutrients released from soil organic matter is very difficult to predict. As such, it is generally best to develop a nitrogen and sulfur management plan based on reliable research studies and previous results and then use soil and plant tissue analysis to fine-tune the recommendations. For example, adjustments to the fertilization plans can be made if unusually high concentrations exist in the soil, plant tissue and/or irrigation water.

The remaining nutrients are managed mostly by soil test values as the starting point. For most of these, a correlation exists between the soil test and probability of a positive plant response — with high likelihood of response at low soil test values with decreasing likelihood of response as soil test values increase. These correlations are relatively good and significant research exists for phosphorus and potassium. However, minimal data is available in turfgrass for the other nutrients, though there are reasonable correlations for calcium, magnesium, zinc, manganese, copper, boron and chloride for other plants (mostly crops). These give us some basis for judgment, although the confidence in interpreting results is not as high as with phosphorus and potassium. Nevertheless, there is a slim chance of a positive response to these nutrients if the soil test values are high.

Plant tissue analysis, as discussed below, is an additional tool that can be used to make decisions on these nutrients, but it is rare to see responses in sandy soils with low organic matter. Iron is unique, as the correlations for soil testing are very poor. It can also be difficult to obtain clean tissue samples, as dust is very high in iron concentration. Rather, soil pH and plant species/variety selection are used to help manage for iron.

Soil pH is a measure of hydrogen ion (H⁺) activity (“active acidity”). The pH scale is 0 to 14 with 7 being neutral. Values below 7 are acidic, and values above 7 are alkaline. Soils tend to range from pH 4 to 8. The optimal soil pH for nutrient

solubility is approximately 6 to 7. However, turfgrass is commonly grown successfully from pH 5.5 to 8.4.

Alkaline soil can result in poor solubility of plant nutrients. It is generally not practical or affordable to lower the pH as these systems are highly resistant to change due to carbonates in irrigation water (hard water) and in soil (limestone). Rather, the nutrient requirement is slightly higher, and managers need to be aware to watch closely for deficiencies of these other nutrients.

Acidic soil also has nutrient solubility issues, as well as toxicities of aluminum and/or manganese. These results are variable by soil, with some worse than others. Acidic soils can be neutralized with limestone (calcium and/or magnesium carbonate), burnt lime (calcium oxide), hydrated lime (calcium hydroxide), or similar, based on a Buffer pH soil test. The quality of the liming materials (calcium carbonate equivalent and fineness of grind) also needs to be factored in, as well as ease of handling and cost. Whenever possible, soil pH should be adjusted prior to establishment, as preplant incorporation greatly accelerates the neutralization of the acidity throughout the rootzone. Once turfgrass is established, the ideal time to apply lime is in conjunction with core cultivation, which helps to move the liming material into the soil. Cooler temperatures help to minimize risk of foliar burn. Standard lime applications are usually suitable just about any time of year as long as they do not exceed 50 lbs./1,000 ft². Extremely acidic soils may require multiple applications over multiple seasons to sufficiently raise the pH. It is best to have a liming program with smaller annual applications to maintain pH at a reasonable level rather than waiting until it drops to a toxic level and then attempting a rescue.

Soil tests may include the following: organic matter, salinity, sodicity, texture, cation exchange capacity and sand size distribution. A soil textural analysis (percentages of sand, silt and clay) is important as soil texture can impact water- and nutrient-holding capacity, as well as irrigation, drainage and cultivation. Both texture and sand size distribution are vital for proper construction and maintenance to meet ASTM F-2396 specifications of sand-based rootzones.

Organic matter (OM) is not only a source of nitrogen and sulfur, but also all other nutrients. In addition, organic matter increases nutrient and water-holding capacity. Organic matter is often one of the main measures of soil health. Turfgrass is relatively efficient at creating organic matter over time, which is beneficial for the reasons above and as it stores carbon away from the atmosphere. Despite these benefits, organic matter can

be detrimental to compaction potential and infiltration rate in sand-based fields.

Salinity and sodicity are important considerations where greywater is used for irrigation, as well as in certain arid zones where irrigation waters/soils can be natively high in salts. It is important to understand that there can be an overall salt problem (salinity) and/or specific ion toxicities (sodium, chloride and boron are the most common) when irrigating with greywater.

When a soil test shows that the electrical conductivity used to measure salts is above 4.0 dS/m, the soil is considered “saline” although plants can experience stress before the salt concentration in soil gets this high. In this case, it does not matter which salts are present — as all contribute to the overall salt effect. Plants need salts for their metabolic processes and while all fertilizers are salts, excessive salts in direct contact with plant tissues will burn the foliage. In the soil, salts bind to water so strongly that plants can desiccate even when there is ample soil moisture. Saline soils are corrected by ensuring adequate drainage followed by irrigating to excess with reasonable quality water to move the salts below the rootzone.

Specific ion toxicities occur when nutrients and other chemical elements are excessively high. Chloride and boron are both essential plant nutrients, but they are sometimes present in excessive amounts, usually in the irrigation water, which can kill plants. Again, soil testing can identify these toxicities. These are potentially corrected through leaching below the rootzone.

Similarly, sodium is a beneficial nutrient (not essential) found in all soils and most irrigation waters. It can become a problem when its ratio relative to calcium and magnesium is high, creating a “sodic” soil. This is relatively more common in arid regions, but also with some reclaimed irrigation waters. Sodic soils have an Exchangeable Sodium Percentage >15% and/or a Sodium Adsorption Ratio >13, but preventative action should be taken before reaching these levels. Sodicity results in the soil structure being destroyed as clay-based aggregates disintegrate, which is not a problem in sand-based fields. Sodic soils are remediated similar to saline soils except that a soluble calcium source (most commonly gypsum; limestone should not be used in alkaline soils) needs to be applied prior to leaching.

PLANT TISSUE ANALYSIS

Visible plant symptoms and soil testing can offer helpful clues in diagnosing nutrient deficiencies but can also

be confusing and misinterpreted. Tissue testing is an effective way to determine precisely what nutrients are in plant tissue at a particular point in time. While that data is beneficial, it does not necessarily reflect why the nutrient is at a deficient or excessive level. It is important to pair tissue testing with soil testing data to best determine nutrient management strategies and closely follow the lab's guidelines for how to sample and prepare the tissue samples to get meaningful results.

Tissue testing can help to adjust nutrient management programs in these ways:

- Confirm a suspected nutrient deficiency or toxicity.
- Monitor plant nutrient concentrations for sufficiency.
- Pair tissue tests with soil tests for troubleshooting.

Plant tissue samples can be easily taken in turfgrass from fresh mowed clippings — taking them from multiple locations throughout the field. However, careful cutting with clippers may be needed when sampling small areas with visual symptoms for comparison to areas that appear to be healthy. (Soil samples should be taken from the same areas for comparison.) Samples should not be taken within a few days of a fertilizer or amendment application. For micronutrient analysis, plant samples should be rinsed lightly and quickly to remove any dust or soil particles and then air dried or oven dried at temperatures below 150°F before being placed in clean paper bags and sent to the laboratory.

For diagnostic samples, plant tissue samples should be collected as soon as symptoms appear. Plants showing symptoms of severe deficiency are often the most difficult to interpret correctly, since a deficiency of one element may result in deficiencies or excess accumulation of other elements if uncorrected. Plants under prolonged stress of any kind (temperature or moisture extremes, pests, flooding, mechanical damage, etc.) can have unexpectedly high or low nutrient levels due to the stress. As with soil testing, plant tissue analysis is a useful tool but is not always certain in its findings.

FERTILIZER RESPONSE EVALUATION

Another tool for managing nutrients, especially for correcting suspected, but unconfirmed deficiencies is the application of fertilizers to small test areas to observe whether greenup occurs. Application of a complete fertilizer containing all of the nutrients can help determine whether the problem is nutritional or related to some other stress. Application of individual or paired nutrients can help isolate which nutrient is deficient.



Incorrectly calibrated equipment can cause fertilizer burn.

Credit: B. Hopkins.

FERTILIZER TYPES

LIQUID VS. DRY

Turfgrass is unique among most fertilized plants. Each individual plant has a very narrow cylinder root contact with soil. As such, uniformity of fertilizer application is very important.

Dry fertilizers are relatively inexpensive, especially when purchasing common forms in bulk from agricultural suppliers. However, these can result in poor nutrient uniformity. Fertilizers with a high size guide number (SGN) (i.e., larger particle size) result in some plants getting excess fertilizer and others getting none. Conversely, fertilizers with a smaller SGN more uniformly deliver nutrients to all plants.

Liquid fertilizers, when properly applied using an accurately calibrated sprayer, can provide improved nutrient distribution — with every plant receiving nearly identical rates. However, liquid fertilizers do have some disadvantages. The liquid has direct and immediate contact with the shoots, which can have a high burn potential if the rate is high and/or the environmental conditions are hot, dry and/or windy. Liquids can also have chemical reactions in spray tanks, hoses, nozzles and other equipment. This can result in plugging that can be very costly to clean. This is particularly a problem with phosphorus due to its low solubility and highly reactive nature with calcium, magnesium and other cations in the water and/or fertilizer blend. If the liquid is being injected into the irrigation system, distribution uniformity problems related to irrigation water distribution may arise. Finally, liquid fertilizers tend to be more costly if they are shipped already mixed, although some products, such as urea, ammonium sulfate, potassium chloride, etc. can be purchased inexpensively in dry form and then dissolved.

NUTRIENT APPLICATION PROGRAMS AND STRATEGIES

Stewardship that considers the impact of nutrient applications with respect to the environment, economy and society, includes the following “4R’s”:

- Right fertilizer sources
- Right rate
- Right timing
- Right placement

Applying a quick-release fertilizer at high rates on a hot, windy day near impervious surfaces is a good example of ignoring the 4R’s rule. This example represents a waste of natural and facility resources, results in contamination to the environment, and may result in poor plant health as well. Poorly managed fertilizer usage has resulted in some instances of serious environmental contaminations and adoption of regulatory requirements by many state or local agencies. Sports field managers need to be good environmental stewards to avoid further problems and additional regulation. A one-size-fits-all approach to nutrient application is not possible, given all the variables of turfgrass species, sports, traffic intensity, soil, climate, budget and equipment available. Some strategies, such as Minimal Level of Sustainable Nutrition strategy, can be used. Using the information presented in the SFMA BMP guide and consultation with Extension specialists can help managers develop an appropriate site-specific nutrient management plan.

FERTILIZER APPLICATION EQUIPMENT AND CALIBRATION

Dry fertilizers are typically spread with a broadcast spreader (or a drop spreader in rare situations). Liquid fertilizers are applied with a sprayer or injected into the irrigation system.

The selection and calibration of application equipment is an important aspect of nutrient management, as not all fertilizers can be applied with every spreader. For example, coated fertilizers can crack, and their control release properties can be destroyed when handled roughly, such as with certain drop spreaders equipped with an agitator.

Accurately calibrated sprayers and spreaders are essential for proper fertilizer applications. Incorrectly calibrated equipment can result in an application of too little or too much fertilizer, resulting in deficiencies or toxicities, excess costs, and greater potential for nutrient pollution. In keeping with the BMPs for equipment washing, spreaders should always be thoroughly cleaned after each use to remove salt residue that corrodes metal parts of the spreader. Many universities have publications on proper calibration methods. [SFM](#)

JOHN MASCARO'S PHOTO QUIZ



CAN YOU IDENTIFY THIS TURFGRASS PROBLEM?

PROBLEM:

Slight depression in outfield

TURFGRASS AREA:

Little League baseball field

LOCATION:

Callaway, Fla.

TURFGRASS VARIETY:

19 bermudagrass overseeded with ryegrass

Answer on page 33

John Mascaro is president of Turf-Tec International

An advertisement for World Class Paints. It features two large white paint totes on a green field. The totes are labeled 'WORLD CLASS' and 'athleticsurfaces'. The background is a blurred image of a stadium at night. The text 'MOST VALUABLE PLAYER' is at the top, followed by 'For games that matter.' Below the totes, it says 'Ready-to-use Paint Tote System saves time, money, space, and reduces waste.' At the bottom, it says 'We make the games look better.' and 'WorldClassPaints.com | 1.800.748.9649'.

Advocating for the Profession

New SFMA President Sun Roesslein, CSFM, aims to increase awareness of the sports field management industry and its members

By John Kmitta



"When I first started in the industry, there was an underlying theme that if nobody knew your name, you were doing your job properly, because there were no issues, and they didn't have to come find you," said new Sports Field Management Association (SFMA) President Sun Roessein, CSFM. "But now, with the growth in public focus on field safety, it's important as field managers that we are able to step up and let people know that we put a lot of work into this; there is a lot of research and science that goes into turfgrass management; and it doesn't just magically exist so that you can come in to play a game."

As Sports Stadium Manager at the North Area Athletic Complex (NAAC), Jeffco Public Schools, Golden, Colo., Roessein deals with that issue a lot because her facility is off site from the individual schools in the district. Roessein and co-manager Christi Clay, CSFM, are responsible for overseeing and maintaining the football and soccer stadiums at the NAAC, which serve as home field for six of the high schools in the Jefferson County School District.

According to Roessein, teams and parents typically don't see the work that goes into preparing a safe playing surface. As a result, it's important to advocate for the work that goes into the field and understand what owners, managers, athletic directors and others need to know.

"It's about being an advocate, speaking out, making sure people know who you are and what you do, and the science and research that goes into everything you do," said Roessein. "It's not just showing up and mowing the grass. There is so much more that goes into what we do, that really needs a qualified expert who is knowledgeable and is continuing to educate themselves."

As SFMA President, Roessein looks forward to helping other sports field managers put their best foot forward. Whether it is on SFMA committees, the SFMA Board of Directors or other industry service, Roessein has been instrumental in promoting the sports field management industry and its members, and has especially been an example to women in the profession.

She has been involved with task groups and panels promoting women in turf, and has been part of the inaugural all-female grounds crew at the Little League Softball World Series, as well as the all-female crew at the U.S. Women's open.

Roessein said she hopes women know that sports field management is a wonderful career option. "It makes me so happy to see young women involved, excited, interested and opening the door a bit for the next people to come through and push the door open



Two-time Olympic gold medal softball player, ISA softball hall of fame honoree and current ESPN commentator, Michele Smith, on the scoop shovel. Said Roessein, "I grew up watching her dominate the game I loved to play. This was a very cool moment for me!"





Little League Softball World Series crew

even further for the people behind them,” she said. “And that goes for emerging professionals no matter the gender. I’m just hoping to get the word out, increase awareness and open up the possibilities.”

Roesslein said she is thrilled to see the progress that has been made in the sports field management profession with regard to diversity, equity and inclusion; knows there is more progress to be made; and is excited that it’s something to which SFMA is dedicated.

“For anyone who is interested in working outside, regardless of gender, background or ethnicity, it’s a fantastic profession,” she said. “I love going to work every day, and I think I’m one of the lucky ones that gets to say that.”

FOUNDATIONAL ROOTS

Roesslein grew up in Prescott, Ariz., and began playing softball at the age of 8 – a playing career that spanned all the way through college. According to Roesslein, softball was a wonderful part of her life.

“I learned some incredible lessons on the field that I still think about to this day,” she said.



U.S. Women's Open



North Area Athletic Complex soccer field

Despite Roesslein’s love of sports, her interest in sports field management as a career did not start early.

“Prescott is not really agricultural,” she said. “I think there was a 4-H Club in high school, but it wasn’t something I was involved in, so I didn’t know that anything in agriculture was an option. I definitely didn’t know anything about turfgrass then – or that it was even a job.”

Roesslein, however, did spend summers with her godparents in Illinois. “Where I grew up, it’s rocky, and we didn’t have grass lawns,” she said. “One of my summer jobs at my godparents’ was to mow the grass. I love the smell of fresh-cut grass.”

Following high school, Roesslein went to junior college at Arizona Western, in Yuma, Ariz. From there, she attended school in Tennessee for a year before transferring to Eastern Kentucky University, where she studied Sports Administration. She stayed on at Eastern Kentucky for her Master’s in Sports Administration with the understanding that she would be the graduate assistant softball coach.

“It was an incredible experience and a whole different world there with Division I athletics,” she said. “I learned a lot about the administrative side. I had a semester left on my master’s and lucked into a job on the grounds crew with the Lexington Legends. That was my first taste of turfgrass management.”

According to Roesslein, sports field management was a natural fit, and it wasn’t long before she was hooked.

“I got connected with Tom Nielsen early on and learned a lot from him in a roundabout way because our head groundskeeper had been a head baseball coach – he wasn’t a turfgrass guy either – but he was learning as he went because of his connection with Tom,” she said. “Tom mentored Erik Hagen and our crew.”



North Area Athletic Complex football field

Roesslein then heard about the STMA (now SFMA) and sent herself to San Antonio for her first conference.

“Some of the people who reached out to me early on made it such a welcoming group,” she said. “I figured out very early on that this was the career path I wanted to take. I finished my master’s, but decided to change my career path.”

She added that what drew her to the industry was the combination of the hands-on experience, being outdoors, the science involved with the profession, and the problem-solving aspects of the job.

LIFE AT THE NAAC

Now, Roesslein and Clay co-manage the NAAC, a 14-acre facility that features a football stadium and soccer stadium, hosting football and boys soccer in the fall, and girls soccer and boys and girls lacrosse in the spring. Other than some occasional seasonal help, Roesslein and Clay are a crew of two.

“We manage everything from the turfgrass management, field layout, painting, putting goals together, stadium cleanup, field setup for games, and then we switch hats in the evening and we are event managers,” said Roesslein. “We manage the staffing, making sure we have ticket sellers/takers, announcers, people to run the clock, etc. Our jobs are kind of two-in-one during our sports seasons.”

Roesslein said she enjoys the multifaceted aspect of the job and the variety it brings.

“Even though we get into a pattern within each season, it’s never boring or repetitive. I like interacting with the folks who are our game workers,” she said. “Most of them have been doing it for as long as I have



Sun Roesslein, CSFM, (right) at the 2022 Colorado State Track meet with Christi Clay, CSFM.

been here – if not longer (I have been here 17 years – it will be 18 in April). We have people who are like family. That really is special to me.”

According to Roesslein, her skill sets mesh well with Clay’s. “There are a lot of times where I need to aerate the football field and she does whatever else needs to be done,” said Roesslein. “She does not like to aerate or be on a tractor for hours, and I don’t mind it. She would rather do a bunch of other tasks than something that makes her sit on a tractor for too long. When it comes to painting the football field, she runs string lines and I push the paint machine. She often paints the soccer field by herself, while I’m doing some other task. We have it worked out over the years as to our strengths compared to what needs to get done. We also have to pick up trash and clean restrooms from the event the night before, so we usually start with that stuff to get it out of the way, and then get going on whatever needs to be done for the day or to set us up for the week.”

Roesslein said she and Clay don’t handle the scheduling for any of the sports except for football.

“For football we have a big scheduling meeting with the athletic directors, football coaches and stadium managers because there are so many schools and



everybody would like to play Friday night at 7:00," she said. "When we have two to five home football games in a week, that's obviously not possible. Sometimes we have to play mediator."

According to Roesslein, other personnel in the athletic office handle the scheduling for soccer and lacrosse.

"We have had a little more input lately in terms of scheduling a maintenance day on our soccer field because typically our soccer schedule is double headers five nights a week, so sometimes it's hard to get some of our agronomic practices done when we have games on the field that night," she said. "Sometimes we have weather and that takes away the maintenance day, so we have to adjust on the fly. We have a great program going in, but we always have to have a Plan A, B, C and D."

The NAAC primarily hosts varsity games only – no practices. Each school in the district has its own fields on site. Noel Harryman, CSFM, and his crew handle all landscape and site maintenance of the school facilities – including practice fields and fields on which lower-level sports are played.

FINDING SUCCESS

According to Roesslein, the strengths she brings to her job are her problem-solving skills and her creativity.

"I'm willing to try something new, because if you are not trying, you are not growing and you are not getting better," she said. "Hopefully we have some fun along the way. I'm pretty passionate about what I get to do, and I love my job, so hopefully that comes across in my interactions with other people."

Perseverance is the most important quality in a sports field manager, Roesslein added.

"We have to deal with a lot of things at the same time, often coming at us from different angles," she said. "Trying to get a game in with weather, coaches who want to get going, officials who don't, administrators who don't want to reschedule and only two of us to manage it all. It's not the easiest thing to balance everything and come back in the next day and do it again."

"I certainly don't have all the answers," she added. "I have a good base knowledge of what works well for us, but there is always room to improve. So, it's important to be willing to try something new. Whether that means



Mowing fairways at the U.S. Women's Open

success or failure, I'm still going to learn something from it one way or the other."

Roesslein also knows that a key part of her success are the people to whom she turns for advice – first and foremost being her wife of seven years, Tracie.

"She is my go-to with anything I'm kicking around in my head, and she's always honest and has the best intentions," said Roesslein.

"My parents are super supportive and play an integral role in who I am," she added.

Roesslein also relies on her continuously growing network of industry contacts and friends.

"The women in turf network has impacted my life and career," said Roesslein. "Of course, Christi and I bounce ideas off each other and come up with our plans together on a daily basis. I also think back to Tom Nielsen. Darrian Daily was one of the first people who made me feel welcome in San Antonio that first year. Pam Sherratt is always a wonderful person to reach out to. Paula Sliefert has been an incredible resource. There are so many people...Abby McNeal, CSFM; Sarah Martin, CSFM; Nick McKenna, CSFM; Jimmy Simpson, CSFM; James Bergdoll, CSFM; I could go on and on. Locally, Josh DeJong, CSFM, and Evan Fowler are like brothers to me and have become great resources. Nina Oldenkamp is an incredible person to work with, and she's become an even better friend. She and I started organizing the Little League Softball World Series crew this past summer, then with Kelly Lynch and Amy Fouty, CSFM, worked hard with Chris Ball, CSFM, to get that all going. I didn't really know Chris Ball leading up to the Little League Softball World Series, and he has become a close friend. With every interaction your network grows."



Sun Roesslein, CSFM, (left) with her wife, Tracie.

SERVING OTHERS

With each of those interactions and learning experiences, Roesslein was drawn more to industry service, and wanted to have an impact on the association that had so much impact on her career.

“Early on in my career I looked at the people on the board as leaders in the industry and people who are there to serve and help the membership,” said Roesslein. “I always want to pitch in, help out and hopefully make things better. The K-12 segment faces unique sets of challenges, so that is always forefront in my mind.”

Now, for Roesslein, taking on the role as SFMA President is a career highlight.

“It’s humbling. It’s exciting. It’s a little nerve wracking,” she said. “I’m really looking forward to working closely with [SFMA CEO Laura Simmons, CAE] to help her learn our industry and hopefully achieve our goals together. We have a very bright future ahead of us. I’m really excited for what Laura brings to the table, and I think we are on the road to really great things.”

Key focus areas for Roesslein in 2023 are SFMA’s

strategic plan and helping ensure that Simmons is set up for success. Roesslein has also stated that SFMA’s collaboration with other groups in related industries is an area for growth, and it is important for SFMA to promote the value the association offers. For example, groups such as the National Recreation and Park Association have members who manage sports fields and who are not members of SFMA, but could benefit from the resources and knowledge SFMA and its members have to offer, she said.

“We need to spread the word, get our name out there, share our expertise and make others aware that we are here to help.”

Added Roesslein, “I’m really appreciative to have the chance this year to sit in the president’s chair. We all want to do really great things for our industry and our membership. I certainly didn’t get here alone. There are so many people who have helped along the way. A lot of people have impacted me, and I hope to be able to turn around and do that for someone else.” **SFM**

John Kmitta is associate publisher and editorial brand director of SportsField Management magazine.



Getting to know Sun Roesslein, CSFM

When not busy with work at the NAAC or her duties to the association, new SFMA President Sun Roesslein, CSFM, enjoys music and the outdoors.

After college she continued to play softball on a coed slowpitch team, but, as she says, “I hung up the cleats a couple years ago.”

Now you can usually find her enjoying live music – especially at Red Rocks Amphitheatre in Morrison, Colo.

“If there is something good going on there, you can find me tailgating for a couple hours before the show,” she said. “I have a whole system.”

“I enjoy all types of music,” she added. “I grew up on classic rock, so Fleetwood Mac is one of my all-time favorite bands. But really anything that hits the spot – from Tom Petty and Paul Simon to Gregory Alan Isakov and Watchhouse.”

Roesslein added that Brandi Carlile is her favorite over the last 15 years, as well as the best concert she has seen.

“I’ve been a Brandi Carlile fan for a long time, and had seen her in small venues in Boulder and Denver. But to see her the first time she headlined Red Rocks was special.”

Roesslein added that although she loved working in Minor League Baseball, she was drawn to the rectangle sports played in fall and spring, in part, because likes to enjoy her summers – especially camping and paddle boarding.

“When we aren’t paddling, camping or going to concerts, you can most likely find us on a golf course or hanging with our pets,” she said. “We have a 14-year-old Persian cat named Fred, a Goldendoodle named Ethel (12) and a Border Collie named Izzy (10) who bring us a lot of laughs. We also like to travel and enjoy trying out new foods – shout out to the #Foodiesofturf! Ice cream is one of my favorite things, so trying new shops or visiting favorites is always a source of joy.”

College and University Turfgrass Programs

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

In this issue of SportsField Management, we examine the turfgrass programs at Delaware Valley University and North Carolina State University.

DELAWARE VALLEY UNIVERSITY

Located in Doylestown, Pa., Delaware Valley University is known for its innovative use of experiential learning. That approach began in 1896, when scholar, educator and activist Joseph Krauskopf founded the National Farm School based on the idea of “science with practice,” the combination of classroom learning and hands-on experience. Today, as Delaware Valley University, the institution offers 28 undergraduate majors in the natural and agricultural sciences, business, and humanities; more than seven master’s degrees; and a doctoral degree.





Delaware Valley University (DelVal) is the only small, private university that offers a 4-year degree in Turf Management. Facilities include turf research plots, putting green, athletic fields and acres of lawn turf. Small classes make it easy to hop into a van and visit some of the 70 golf courses less than a one-hour drive from campus. Recent graduates work at golf courses, professional sports fields, sod farms and lawn care companies.

Doug Linde, Ph.D., professor of Turf Management heads the program, teaches various turf courses, conducts turf research and coaches the NCAA Division III golf team. According to Linde, there are currently 28 students enrolled in the Turf Management program, and that number has increased each of the past three years.

“Our niche is helping average students in high school that want a career in turf management to get through college academically with two to three summers of work experience,” said Linde.

Students have the same advisor for all four years, and the professors are academic and career advisors.

DelVal first began offering its Turf Management major in 1997. According to Linde, Delaware Valley University students historically got into the turf industry as Agronomy majors, but in the late 1990s, new courses were developed, and DelVal began to offer its Turf Management major.

“Over the years I have tried to make a network of alumni, visit the alumni, visit employers and try to build the program and build our reputation,” said Linde. “The thing that has really changed in the industry is the students. They come in with different learning styles and expectations. That makes it exciting. It makes me have to change and keep up to date.”

According to Linde, Turf Management students are often more energized after their first summer of work experience.

“At that point, they are really easy to teach because they can envision themselves become a golf course superintendent or sports turf manager because they worked for one,” he said. “Hopefully we can continue to grow and provide more graduates to the employers.”

For more information about the Delaware Valley University Turf Management program, visit <https://delval.edu/programs/undergraduate-majors/turf-management-bs>



NORTH CAROLINA STATE UNIVERSITY

North Carolina State University (NC State) Turfgrass Science students work and learn daily with internationally known faculty. NC State faculty serve the entire turfgrass industry by evaluating new and existing cultivars, production practices, fertility systems and pest management systems including weed, insect and disease management. Turfgrass production and management programs are constantly being created or updated and improved as a result of these research efforts. The faculty utilize this new information by teaching and training future and present turfgrass managers through courses along with lab exercises, seminars and professional meetings. North Carolina is situated in a climate transition zone, allowing students to train on cool- and warm-season grasses.



The NC State Turfgrass Science program offers both four-year and two-year degrees. Students in the four-year program earn a Bachelor of Science degree in a program that features intense rigor and breadth. The four-year degree benefits traditional

college students and leads to management, plant breeding and professional supervisory positions. Students in the two-year program earn an associate degree on a compacted timeline with no general studies classes. The two-year program appeals to older or non-traditional students, and is useful for those changing careers or seeking technical or specialist positions.



"In the four-year program, you are going to get the how, the what and the why," said David Crouse, Ph.D., associate department head and director of undergraduate programs, Crop and Soil Sciences department, NC State. "In the two-year program, you are going to get the how and the what."

Crouse added that the four-year program helps students develop critical thinking skills. "They need to be able to think, adapt and evolve to issues they haven't run into," he said.

Current enrollment in NC State's four-year program is 22 students, but enrollment is trending upward with each cycle.

Graduates of the NC State Turfgrass program find careers in sports field management, golf course management, residential lawn care, parks and



grounds, irrigation, seed and sod, as plant breeders or extension agents and more.

"Every one of our students sits across the desk from me at the end of their four-year degree and does their exit interview," he said. "I ask them three questions: What did we do right? What did we do wrong? And do you have a job? When I ask them if they have a job, they always say 'yes.' We don't have a 100-percent placement rate. We have a 100-percent placement rate with a waiting list.

"I asked one student if he had a job. He said, 'yes.' I asked him how many applications he sent out, and he said he didn't send any," Crouse added. "He said, 'As soon as they caught wind I was graduating, I had 31 job offers via text message.' That is pretty much the standard story for our students. If they don't have a job by the beginning of their junior year, they certainly have one by the beginning of their senior year."

NC State's 1,500-acre Lake Wheeler Road Research Lab houses its turfgrass research lab, heralded for advances in turfgrass management, pest control and genetics.

According to Crouse, if there is not a particular research opportunity available for a student, the faculty

will work with that student to create a position.

"It's so much more cost effective to recruit graduate students from your own population," he said. "As that student gets older and more involved in their program, they are going to be trusted with greater skills so that when they do become a master's student, all the basic training is already done."

For high school students interested in NC State, the university offers a program called Spend a Day at State that allows prospective students to visit the college. Those interested in Turfgrass Science sit in on an Introduction to Soils class, and can learn about the Crop and Soil Sciences department, curriculum, scholarships, the application process and the admission process.

For more information about NC State, visit <https://www.ncsu.edu/> or <https://cals.ncsu.edu/crop-and-soil-sciences/>. **SFM**

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

SFMA Mowing Patterns Contest Winning Design



The Sports Field Management Association (SFMA) recently named Nick Miller, field and grounds coordinator for the City of Aurora Parks and Recreation Department (Aurora, Ohio), as the winner of the 2022 SFMA Mowing Patterns Contest. The winning field is located at Hartman Park in Aurora, Ohio.

SportsField Management recently asked Miller about the winning design.

SPORTSFIELD MANAGEMENT (SFM): Please tell us a little bit about yourself, your crew and the fields/facilities you manage.

MILLER: I am the field and grounds coordinator for the City of Aurora Parks and Recreation Department. I was born and raised in the City of Aurora, and have been

working in the “green industry” all of my life. I graduated from Kent State University with a degree in Horticulture. I started my career working in the golf industry for 10 years at the Walden Country Club. That experience provided me with the foundation of my career and the knowledge I use daily. After my time in the golf industry, I worked for The Davey Tree Expert Company as an irrigation technician for the Commercial Grounds division and was promoted to production manager. I was then hired with the City of Aurora as the field and grounds coordinator.

Our department consists of two full-time staff members – Micky Cook and me – along with a few seasonal staff members throughout the year. My department is responsible for the maintenance of 16 ballfields and 15 acres of soccer fields throughout the



city. Since I started in this position in 2018, we have been working diligently to provide the safest and best playing surface possible for the community. Since 2018, we have fully renovated nine ballfields and have implemented a field-by-field fertility program.

SFM: Please detail for us the winning design and your inspiration for the design.

MILLER: The winning field is located at Hartman Park (325 Townline Road, Aurora, Ohio), which is one of many beautiful parks in the City of Aurora. This 28-acre sports complex was constructed in 2018 and is home to four fields (baseball/softball) and 15 acres of multi-use playing fields for soccer, lacrosse, etc.

My department takes a lot of pride in the details of our work. We began the zigzag design in early fall of 2022. During this time, most of our seasonal help had returned to school and the demand of spring/summer baseball was winding down. We had the responsibilities of fall baseball, but with a lighter schedule, we were able to focus on the aesthetics of our grounds. Since Hartman Park is also home to our soccer complex, we had a record number of players (700 plus), which inspired us to showcase the beauty of this park.



The inspiration for the design all started from the SFMA contests. It is amazing to see the creativity and dedication many field managers have, and I look forward to seeing those photos every year. Personally, I really enjoy the “Stars and Stripes” contest around the Fourth of July. That contest really gives managers the opportunity to showcase their dedication and creativity while paying tribute to our great country.

SFM: There is a lot of foresight, planning, dedication and hard work in what you do. What is your overall approach with regard to mowing patterns and on-field artistry, and what is your advice to other sports field managers?

MILLER: The planning, hard work, dedication



and responsibilities go way beyond just “cutting grass,” and includes general ground maintenance, maintaining a budget, ordering fertilizer and infield material, parts for equipment, capital requests, large renovation projects, fertilizer applications and managing the field crew.

SFM: What does winning the SFMA Mowing Patterns Contest mean to you and your crew?

MILLER: Winning this contest is such an honor. I believe it really demonstrates the dedication and passion we have for maintaining these fields for the community. When I started in this position in 2018, it was my goal to provide the safest and most enjoyable playing fields possible. We have been diligently working toward that goal, and I am very grateful for the support we are given from everyone to help achieve our success. Growing up in Aurora and now raising my own family here, there is nothing more rewarding than watching my two girls and our family and friends play on the fields I maintain each day. **SFM**

JOHN MASCARO'S PHOTO QUIZ



ANSWER

From page 17

As you might have guessed, the slight depression in this Little League Baseball outfield is not a naturally occurring phenomenon. Usually, grass does not get depressed or wear into a smiley face. With most youth baseball, bored outfielders will probably never see a ball come their way during a game, so they do what bored Little Leaguers do; dig in the ground with their cleats. The sports field manager said, "If someone starts to damage the turf, like in this instance, they will continue to damage it, or the next day's team will feel it's their duty to 'expand the project.' However, if the area is repaired in a timely manner, the urge to expand on the damage, say, digging better formed eyes, adding a tongue to the mouth, etc., can be avoided." The sports field manager also shared that he assumes the child playing in the outfield is happy with the overall field conditions as it was a smiley face. If the child was unhappy, it probably would have been a sad face.

Photo submitted by Tim Legare, CSFM, CPRP, CPSI, director of leisure services for the City of Callaway, in Callaway, Fla.

John Mascaro is president of Turf-Tec International

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

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Photos courtesy of Runa Leo, @treesofbarcelona on Instagram

2023 Urban Tree of the Year

The Society of Municipal Arborists (SMA) has named blue jacaranda (*Jacaranda mimosifolia*) its 2023 Urban Tree of the Year. Spin the globe, and at the right time of year, you'll find blue jacaranda (*Jacaranda mimosifolia*) lighting up streets and parks with its blue-purple flower panicles in every subtropical or warm climate, including regions within Australia, Myanmar, India, South Africa, Spain, Chile and the United States. Even climates with an occasional light frost may support blue jacaranda trees.

Though its distribution as a cultivated tree is vast, blue jacaranda's native range is limited to southern Bolivia and northwestern Argentina. As is often the case for trees occurring in such a narrow range, the native blue jacaranda population in these South American pockets is considered vulnerable.

It should be noted that in some of the same places

where jacaranda is celebrated (parts of Queensland, Australia and in Pretoria, South Africa, for instance), there have been concerns about jacaranda's invasiveness and displacement of native plants in those regions. In such places, municipalities have had to strike a balance between these concerns and the powerful public affinity for the showy tree.

Sitara Gare is the planning project arboriculture coordinator for Brisbane City Council, Australia, and a jacaranda fan.

"Here in subtropical Brisbane, jacaranda is tolerant of periodic drought," she said. "It is often planted as a park feature tree in avenues or groups due to its iconic showy carpet of lilac-blue, trumpet-shaped flowers that drop in November before it grows its new leaves. The flowering period is only up to three weeks every year, but it proves a stunning spectacle."



Photos courtesy of Runa Leo, @treesofbarcelona on Instagram

According to Gare, the mature height of jacaranda in Brisbane can vary depending on the site conditions, from as small as 30 feet, up to 82 feet. Its success as a street tree is largely dependent on the amount of growing space and the site conditions it's given; jacaranda is most suited to larger sites where the tree roots have adequate, uncompacted soil volume.

According to Gare, *Jacaranda mimosifolia* does not like exposed or windy sites. As a young tree, it needs to be staked to keep it growing straight and strong.

"We've found that jacaranda benefits from formative pruning at years three and seven after planting," she said. It can be grown from both seed and cuttings. Jacaranda can grow in part shade, but it flowers best in full sun.

Felipe Alberto Fuentes Ramírez is an urban planner for the municipality of Calera de Tango in Chile.

He said, "The natural grace of its crown and its large, fragrant, violet-blue flowers make it one of the favorite species to plant along the streets and avenues of Santiago. That said, it should be noted that jacaranda's canopy provides a modest amount of shade."

According to Fuentes, in general, in Chile, the jacaranda does not suffer from the presence of many pests and diseases, except for the flowers and buds, which sometimes attract aphids that do not cause major damage.

"We don't recommend planting it along bicycle paths, since its fruits could affect mobility," said Fuentes. "Apart from that, it can be used along streets and avenues with low vehicular flow and reasonable above- and below-ground planting space and, of course, in parks, squares, and gardens."

Fuentes said that in arid parts of Chile, jacaranda is not very resistant to drought, so it is necessary to water it well during establishment, as well as during periods of low natural rainfall. "This requirement could be affecting the young specimens planted in central Chile, which is currently suffering from a severe drought due to climate change," he said.

"However, its spectacular violet-blue flowering, which floods the urban landscape with a soft aroma and color in Chilean spring until early summer (September to December), and its elegant natural appearance and fine foliage put the jacaranda on the podium of the most attractive trees currently planted in our country," said Fuentes. **SFM**

The mission of the Society of Municipal Arborists (SMA) is to build the confidence, competence, and camaraderie of professionals who manage trees and forests to create and sustain more livable communities.

Sun Queen bermudagrass

Pure Seed and Atlas Turf International announced the introduction of Sun Queen, their newest seeded bermudagrass for the golf, sports field and landscape markets. This new release from the breeding program of Pure-Seed Testing, Inc., delivers the total package in elite seeded bermudagrass, with reliable growth, maximum protection, and advanced playability and appearance.

"Pure-Seed Testing developed Sun Queen using germplasm obtained from Mississippi State University," said Dr. Melodee Fraser, director of Pure-Seed Testing, Inc. East. "It has demonstrated wide adaptability by exhibiting excellent turf performance in multiple trial locations over a range of environments and management conditions. Sun Queen is well adapted for sports turf, golf courses, parks, lawns and amenity turf areas."

Consistently ranked as a top-establishing bermudagrass in NTEP trials, Sun Queen provides rapid grow-in. From there, the durability of Sun Queen takes over with extreme wear tolerance, demonstrated through leading results in trials for performance under traffic stress at the University of Tennessee. And when injury does occur, Sun Queen's aggressive growth delivers quick recovery.

As its name implies, Sun Queen withstands extreme heat without sacrificing performance. Adding further sustainability, it offers dependable drought tolerance. The powerful protection of Sun Queen continues with proven disease resistance.

The total package would not be complete without advances in aesthetics and playability. Sun Queen features a beautiful dark green color, refined leaf texture and early spring green-up. Combine these attributes with excellent turf quality and density, and Sun Queen produces a better and more beautiful playing surface.

For added assurance during the grow-in stage, Sun Queen is protected by PureCoat+ water absorbent seed coating. PureCoat+ guards the seed against environmental pressures and provides faster germination, quicker establishment and improved water efficiency for stronger, healthier plants.



Toro Groundsmaster e3200

Toro announced that its out-front rotary mower, the Groundsmaster 3200 two-wheel drive unit, will be available as a battery-powered option in 2023. Building on a 50-year history from the introduction of the Groundsmaster 72 back in 1973, the battery-



powered Groundsmaster e3200 features the same rugged chassis, commercial-grade mowing deck and intuitive operator controls as the current diesel-powered platform.

"We are very excited to offer Toro's proven Groundsmaster mower platform with a battery-powered option for turf maintenance crews," said Tony Ferguson, senior product manager for Toro. "We understand that customers who want to eliminate engine exhaust emissions and reduce operational noise by transitioning to electric-powered equipment will not sacrifice power, functionality or performance in any way — and the new Groundsmaster e3200 achieves that goal."

The mower is powered by Toro's HyperCell battery technology, which must pass extensive environment and third-party certification testing. The distributed Battery Management System (BMS) optimizes battery performance to enhance reliability and longevity. Because the BMS is integrated, HyperCell lithium-ion batteries communicate with each other to optimize efficiency and extend the life cycle, well beyond the 5,000-hour design life of the traction unit. HyperCell batteries provide diagnostic information to simplify and streamline any service needs. A third-party recycling program is available for batteries that reach end of life.

The all-new Groundsmaster e3200 comes standard with 11 HyperCell batteries, but can be configured with up to 17 HyperCell batteries for heavy users in more demanding applications to achieve all-day runtime. Equipped with a 3.3 kW on-board charger, the Groundsmaster e3200 makes recharging overnight easy.

Smart controls optimize power consumption by providing continuous and efficient power without bogging down the mower. Additionally, the customizable reserve power setting allows the supervisor to establish a minimum discharge level, notifying the operator of low battery charge status and ensuring plenty of power to safely return the mower to the charging location.

The mower comes with Toro's InfoCenter display with battery charge status, hours, alerts, customizable settings and more. It features the same rugged 60-inch side or rear discharge mowing deck options built with

high-strength steel for ultimate durability, and impact bumpers as featured on our popular diesel-powered Groundsmaster models.

Power Turf Renovation PTO-60 sports field renovation machine



The Power Turf Renovation PTO-60 sports field renovation machine aerates, de-thatches, verticuts, levels playing surfaces and removes the problematic infield lips.

With one tractor and an operator, an entire football field can be done in two to three hours. With the 5/8-inch blade spacing and a 60-inch-wide swath, the process can be adjusted down to a depth of 2 inches.

De-thatching: This machine will de-thatch down to a depth of 2 inches, bringing thatch to the surface for disposal.

Aeration: Adjustable to a depth of 2 inches, this machine will alleviate soil compaction, promote nutrient penetration and increase drainage. Since this is not a coring or solid tine aeration machine, there aren't any cores to clean up or holes to fill after the process is complete.

Vertical mower (Verticutter): With 5/8-inch blade spacing, the runners of the turf are cut allowing the root structure to thrive. We have seen the best results alternating 90 degrees each time the machine is run.

Baseball infield lip removal: Finding a solution to this problem has troubled turf maintainers for years. In one pass, the lip where the turf meets the infield brick dirt is removed.

Turf leveling: This machine has been employed by several laser leveling companies to do the very fine finish leveling.

Gopher mound removal: These mounds are removed quickly and easily. Simply run the machine right over the top and behind the machine will be a smooth surface.

APS Press releases *Compendium of Turfgrass Diseases, Fourth Edition*

Compendium of Turfgrass Diseases, Fourth Edition, edited by Lane P. Tredway and colleagues, offers the most comprehensive and up-to-date treatment of turfgrass diseases in both warm-season and cool-season turfgrass species, their pathogenic causes and their effective management. The editors' combined experience, which exceeds 100 years, paired with contributions from 23 U.S. scientists and specialists, ensures the utmost accuracy.

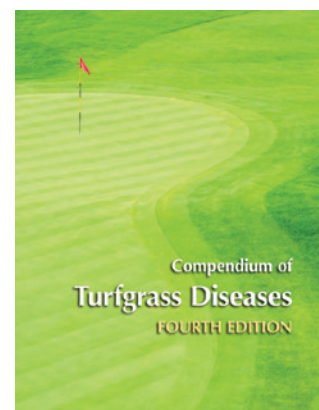
In the new edition of this perennial bestseller, approximately half of the text is new or revised, and more than 200 new, high-quality figures have been added — including disease symptom images, photomicrographs, pathogen drawings and disease cycle diagrams.

While previous editions focused on diseases of cool-season grasses grown in northern, temperate climates, this fourth edition also emphasizes warm-season turfgrass diseases, which will benefit scientists and practitioners in all climates. The new edition covers approximately 75 diseases and abiotic disorders, with detailed descriptions of characteristic symptoms and causal agents. The cycle and the epidemiology of each disease are described, with emphasis on the conditions that stimulate disease development — helping to prevent disease altogether.

The compendium is organized into four parts: infectious diseases, noninfectious agents, disease management and disease diagnosis. Topics include turfgrass characteristics, the damage caused by noninfectious agents in the turfgrass ecosystem, the ecology and taxonomy of fungi pathogenic to turfgrasses, research-based integrated management approaches (emphasizing the use of resistant cultivars or species, cultural management practices, and proper timing of fungicide application when necessary) and basic diagnostic procedures.

This new edition also includes an introduction, appendix, glossary and index. Plus, references sections throughout the book include key sources for further reading on each topic, providing a gateway to the primary literature on turfgrass diseases.

Compendium of Turfgrasses, Fourth Edition, offers a practical and technical reference, blending descriptive terminology with the technical language of plant pathology to accommodate all knowledge levels within the diverse audience of practitioners, academics, and industry workers involved in fine turf. This is a must-have reference for golf course superintendents, lawn care professionals, grounds managers, sports field managers, sod growers, agronomists, turfgrass consultants, educators, turfgrass scientists, plant pathologists, Extension professionals, plant disease diagnosticians, undergraduate/graduate students, postdoctoral research associates, R&D scientist sales representatives, technical representatives, technical managers, brand managers and turf fertilizer and turf products marketing managers. **SFM**



Trimmers and Edgers

EGO COMMERCIAL BATTERY-POWERED OPE

Ego commercial battery-powered outdoor power equipment gives crews all the power and performance of gas without the noise fuss and fumes. At the heart of the 56V system is the battery. The BAX1501 is a 28ah self-contained backpack battery that connects to the tools with an umbilical. Run time for the Ego string trimmer is 5 hours of continuous trigger time. The BAX1501 is IP65 so it will survive a downpour, and it's 19.8 pounds of weight is comfortably carried thanks to the design of the backpack harness. Recharge time is as little as 3.5 hours. The alternative is the Ego Link, which is a backpack that carries any one of Ego's 56v batteries and weighs significantly less. When one battery runs low, pop in another and keep working. The Ego string trimmer, STX3800, features a 15-inch cut with



.095-1.0 line. Run by a brushless motor in an aluminum housing, this tool can survive the elements with its IPX4 rating. Its carbon fiber shaft has a lifetime warranty. All Ego commercial tools have a 2-year warranty.

GRASSHOPPER EDGE-EZE EDGER

Improve productivity, reduce time-consuming hand edging, and eliminate the need for two-cycle edgers with Edge-EZE. Electric and manual models deliver a clean edge up to 2.5 inches deep up to 500 feet/minute along sidewalks, driveways and roadways; and vertical adjustment up to 12 inches, allowing edging from the sidewalk, turf or curb. An optional electric actuator increases downward pressure in tough conditions and raises the disc to cross sidewalks. By increasing productivity and decreasing labor, Edge-EZE can have significant impact on the bottom line. Learn how one operation was able to save more than \$10,000 with Edge-EZE at grasshoppermower.com/edge.



HONDA HHT35S TRIMMERS

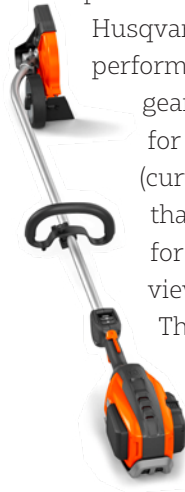
Honda HHT35S trimmers are available in two configurations: the HHT35SLTAT with a traditional loop handle and the HHT35SUKAT with a U-shaped, bicycle-style handle for increased leverage and precise control. HHT35S trimmers also include the Honda flex shaft system that provides increased durability and superior

shock absorption. Both Honda HHT35S trimmers effectively bridge the weight gap with the two-stroke competition while delivering all of the advantages of a four-stroke engine. Honda HHT35S models are powered by the Honda 360° inclinable GX35 mini four-stroke engine known for its low noise level, low vibration level and ease of starting. The engine's oil-immersed timing belt and overhead-cam (OHC) architecture makes it possible to incorporate the valve train into the oil reservoir, ensuring complete oil distribution throughout the engine. This design configuration reduces the size and weight of HHT35S trimmers, making both models ideal additions to Honda handheld power equipment models.



HUSQVARNA 525IECS/525IES

Cut clean, crisp lines in grass and dirt along solid perimeters with dependable power, precision and durability. Available this spring, the Husqvarna 525iECS, and 525iES are the newest innovations in stick edgers for greenspace professionals. These battery tools from Husqvarna enable professionals to change the future by charging their future without sacrificing power or performance. Both edgers feature a



Husqvarna E-Torq motor that exceeds 25cc petrol performance, a metal skid plate to protect the gearbox and powerhead, and is IPX4 certified for operation rain or shine. The 525iECS (curved shaft) offers a faster blade speed than the straight shaft edger which is ideal for light-duty edging. It also offers a better view of the blade and less debris thrown.

The 525iES has a slower, but stronger, blade speed than the curved shaft edger but is ideal for heavy-duty edging, or harder dirt conditions. Its solid steel shaft provides exceptional durability.

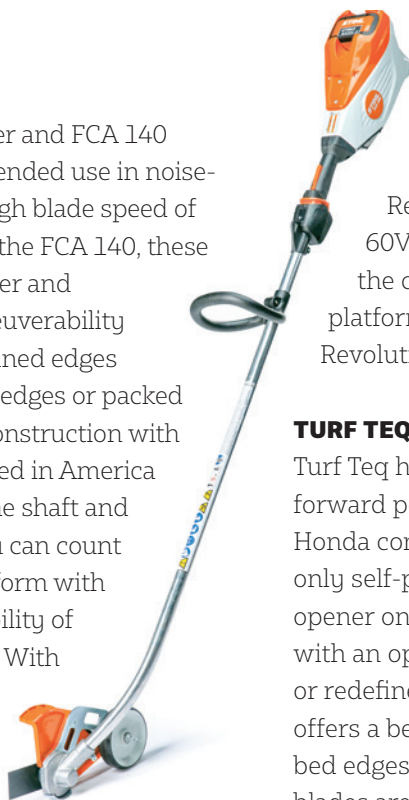
M18 FUEL STRING TRIMMER WITH QUIK-LOK

Milwaukee Tool's M18 Fuel string trimmer with Quik-Lok is designed to meet the demands of professionals by delivering the power to clear thick brush. It features the capability to reach full throttle in less than one second and by increasing user control. Leveraging Milwaukee's Powerstate brushless motor, the trimmer's 16-inch cutting swath maximizes clearing power and clearing capacity, delivering up to 6,200 rpm and the power to maintain speed without bogging down. The advanced electronic package provides an instantaneous throttle response and features a variable-speed trigger while its ergonomic design provides the best combination of balance and maneuverability to deliver increased control in application. The cordless string trimmer is made up of two components – the M18 Fuel power head with Quik-Lok and Quik-Lok string trimmer attachment. The M18 Fuel power head is compatible with multiple Quik-Lok attachments such as the edger, articulating hedge trimmer and pole saw.



STIHL FCA 140 AND FCA 135

The Stihl FCA 135 curved shaft edger and FCA 140 straight shaft edger are built for extended use in noise-sensitive environments. With the high blade speed of the FCA 135 and the high torque of the FCA 140, these edgers offer commercial-grade power and durability. The FCA 135 offers maneuverability ideal for flower beds or well-maintained edges while the FCA 140 is built for uncut edges or packed soil. These edgers feature durable construction with weather-resistant designs. Assembled in America with a brushless motor and the same shaft and gearbox as the gasoline models; you can count on the FCA 135 and FCA 140 to perform with the same high power and dependability of professional gas-powered products. With their robust design and variable-speed trigger, these edgers are perfect for putting the finishing touches on a job well done.



to fully charge Toro's largest battery in the all-new six-pod rapid charger. Plus, the batteries are versatile, powering both Revolution Series handheld tools and the Toro 60V Max 21" Heavy Duty mower. No matter the challenge, the Toro integrated 60V battery platform ensures professionals always have a Revolution tool ready.

TURF TEQ POWER EDGER

Turf Teq has a complete line of self-propelled walking forward power edgers. The model 1305SP1 features a Honda commercial-grade GXV390 engine and is the only self-propelled walking forward power edger bed opener on the market. The machine comes standard with an opening blade to create new landscaping beds or redefine existing beds. The model 1305SP1 also offers a bed grooming blade for manicuring existing bed edges and base fields. A variety of trenching blades are also available as an option. All three of these functions can be performed by simply changing the blade and guard for each application. The power edger features a fully hydrostatic transmission with forward and reverse. The multi-use capability allows the power edger to be converted into a power rake, power broom, brush cutter or snow plow for all-season use. **SFM**



TORO 60V MAX REVOLUTION SERIES HANDHELD TOOLS

Designed with input from professional landscape contractors, the new 60V Max Revolution Series handheld tools were built to perform in demanding work conditions and environments all day long. Powered by Toro's Flex-Force Power System, the new line includes a dual-battery backpack that can hold two 10 Ah batteries — which is designed for comfort and available as a power source for the leaf blower or string

and hedge trimmers to keep jobs moving all day. Operators can easily swap batteries out, so when one battery is done, the workday doesn't have to be. Outpacing the charging speed of larger, lower voltage batteries, the 60V power comes to you fast — taking just 50 minutes



Salt Lake Bees to open new ballpark in 2025



The Larry H. Miller Company will build a baseball stadium in Daybreak, a master-planned community in South Jordan, Utah, for its Triple-A baseball team, the Salt Lake Bees.

The privately financed stadium will serve as a year-round entertainment anchor for the fast-growing southwest quadrant of Salt Lake County. Construction will begin this year, and the stadium will open for the 2025 baseball season. Details, including the location, renderings and surrounding amenities, will be released later this year.

The Bees will spend the next two seasons at their existing home, Smith's Ballpark, before the current lease expires in Fall 2024. During its announcement, the Bees organization stated that the team is grateful for the long-term legacy of baseball in Salt Lake City and for the incredible fans and surrounding community that support the team.

Construction for the ballpark will be underway later this year. The Bees are owned by the Larry H. Miller Company and have been the Triple-A affiliate of the Los Angeles Angels since 2001.

PBI-Gordon hires Salois and Segars, promotes Strano

PBI-Gordon announced that Dan Salois has joined the company's sales team as regional sales representative for the Pacific Northwest. Chrissie Segars, Ph.D. has joined the research and development team as western research scientist. Sal Strano was promoted to marketing product manager.

"We are delighted to add fantastic new talent to our organization and leverage Sal Strano's expertise and experience by promoting him to a new role," said Neil Cleveland, senior vice president and general manager of PBI-Gordon Corporation. "The skills and industry experience these individuals bring will be a huge asset as we continue to serve our customers, develop innovative

solutions, and drive our marketing strategy."

As regional sales representative for the Pacific Northwest, **Dan Salois** will be based in Washington and have responsibility for PBI-Gordon product sales to golf course and turfgrass management customers in Oregon, Washington, Idaho, Montana, Wyoming, Hawaii, Utah and Alaska.



Dan Salois

Salois brings more than 20 years of experience in the turf, ornamental and agricultural industries including as a sales professional, supplier representative and golf course superintendent. Most recently, he worked as senior account manager of agriculture and turf for Milliken and Company. Prior to that, Salois served as territory manager for Planet Turf.

In addition to his professional experience, Salois has been involved in several turf industry organizations over the years. He recently served as Northwest Turf Association president and currently serves on the board. Salois earned his bachelor's degree in crop science from Washington State University.

As western research scientist, **Chrissie Segars, Ph.D.**, will be based in Oregon and conduct her research in the western region of the country. She will primarily focus on product development and research related to sod production and sports turf product applications.

Prior to joining PBI-Gordon, Segars was an assistant professor and extension turfgrass specialist at Texas A&M AgriLife Extension located in Dallas, Texas.

Segars earned her Ph.D. in crop science with an emphasis in turfgrass science from Oklahoma State University. She also holds a Master of Science in kinesiology from Louisiana State University, Master of Science in horticulture



Chrissie Segars, Ph. D.

from Oklahoma State University, and a Bachelor of Science in agricultural education from Clemson University.

In his new role as marketing product manager, **Sal Strano** will develop and communicate product strategy for PBI-Gordon's portfolio of herbicide products. Strano joined PBI-Gordon in May of 2020 as a National Key Account Manager. Prior to PBI-Gordon, Strano spent 10 years as a turf and ornamental product manager for Gowan Company. Strano's experience in the turf industry also includes previous roles as regional sales manager, account manager, and territory sales representative.

Strano earned his bachelor's degree in Agricultural Studies from State University of New York.



Sal Strano

Husqvarna announces partnership with David Mellor

Husqvarna Group announced a partnership with David Mellor, senior director of grounds at Fenway Park, regarding the Husqvarna CEORA robotic mower.

"Using the CEORA robotic mower to assist in day-to-day turf management operations at America's most beloved ballpark is exciting for the turf industry," said Mellor. "I think the CEORA robotic mower helps the turf industry in many different ways. For one, it's going to allow us to reallocate the labor to work on other skilled opportunities and tasks. But also, it cuts down on the compaction that a normal mower would create. So, we're getting an outstanding cut, outstanding quality and multiple jobs done at once."

CEORA is a robotic mower that operates through virtual boundaries with Husqvarna's EPOS (Exact Positioning Operating System), a satellite-based technology that enables the machine to work within virtual boundaries and independently mow up to 18 acres of grass day or night.

"Husqvarna's newest commercial autonomous innovation, CEORA, provides a state-of-the-art solution for cutting commercial sports turf, campuses and municipalities," said Jason Connor, director of commercial robotics, North America. "We are excited to make this game-changing solution available to a wider audience now."

Mellor brings more than three decades of expertise caring for some of the most well-known ballparks in the nation and is collaborating with Husqvarna in a long-term partnership to help shape the future of sports field management.

Equip Exposition to celebrate 40th anniversary with 2023 show



Following record-setting attendance in 2022, Equip Exposition in 2023 will expand on its success by offering new, advanced education, additional entertainment and events including a new arena concert, expansion into the West Wing of the Kentucky Exposition Center (KEC), and improved logistics and food options.

“Equip Expo has evolved into a unique, week-long experience for a range of interconnected businesses including outdoor power equipment, landscaping, hardscaping, tree care, design, lighting, irrigation and more,” said Kris Kiser, president of the Outdoor Power Equipment Institute, which owns and manages the trade show. “And just like our industry is ever-evolving, so is the trade show that serves them.”

Show attendees each year gain access to the latest equipment, technology and software, as well as education and connection with their peers. “But they should also expect new and improved experiences,” said Kiser. “So, when attendees speak, we listen. Our philosophy is ‘same show, new show, every year.’”

Equip Expo, the international landscape, outdoor living, and equipment exposition, will be held October 17-20 in Louisville, Ky.

A sneak peek into the new 2023 show experiences being planned:

- A new arena concert at the Yum! Center featuring headline band, Third Eye Blind.
- A return of the New Product Showcase.
- A Welcome Party at the downtown Kentucky International Convention Center (adjacent to the downtown Marriott and Hyatt hotels) with a concert from Expo house band, The Crashers.
- An “adventurous” keynote speech by Polar Explorer and master storyteller Ben Saunders who completed the longest-ever polar journey on foot.
- The debut of the Equip Exposition Equipment Museum to showcase the evolution of the industry.
- The addition of a business lounge, meeting spaces and expanded seating areas at the KEC.
- Landscape education for young people sponsored by the TurfMutt Foundation. Children ages 12 and up may attend the show.
- Improved shuttle bus, rideshare and transportation logistics.
- More coffee shops and food offerings on-site, including breakfast options.

Fan favorites also will return to the 2023 Expo including can’t-miss education and connection events for landscapers and dealers; live in-tree climbing demonstrations; Mulligan’s Fun Run & 5K; the UTV Test Track; the Drone Zone; and Mulligan’s Mutt Madness, a national dog adoption event, sponsored by the TurfMutt Foundation.



Bernhard Academy appoints Craig Haldane as director of education

Bernhard and Company appointed Craig Haldane director of education for the Bernhard Academy. During the coming months, Haldane will play an important role in developing the training programs that will form key elements of the academy.

“We’re thrilled to unveil Craig as director of education for the Bernhard Academy,” said Steven Nixon, Bernhard and Company managing director. “Craig has had an outstanding career as golf courses manager at Gleneagles and at some of the best venues in the Middle East. He’s undoubtedly one of the most well-respected and knowledgeable members of the industry and brings with him a passion and drive to help others.”

Discussing his new role, Haldane added, “I’m delighted to be following my passion, which is developing both the industry and its people. My career has allowed me to understand the need for education to continue to move forward, and the Bernhard Academy has a wonderful opportunity to provide that. To be given the chance to lead that process and develop these educational programs for the future is really exciting.”

Haldane starts his new position at Bernhard and Company with 26 years of experience in the golf and turf industries. After spending many years in the Middle East, working in both Bahrain and Dubai at venues such as the Emirates Golf Club, he took on the role of golf courses manager at Gleneagles in 2018. During his time there, he oversaw the playing of the Solheim Cup and more recently the Senior Open Championship.

The Bernhard Academy is located at the company’s factory in Haverhill, Suffolk, UK, with further satellite training facilities at Moortown Golf Club and Royal Norwich. Haldane and his team will be refining existing training modules in addition to creating entirely new programs designed to help turf professionals take their performance to the next level. **SFM**

The following are some industry Tweets from the past month.



@DuuuvalTurf

What a year and crew! No practice facility this year while the new one is being built but we pulled it off! Practices and games in the stadium and an offsite training camp that we were responsible for. So many resods and Late nights. Shoutout to @laserturf for the help

JANUARY 24



@Clintsman_STM

The Eagles staff won't be out done by anyone!!! Too bad Bermuda won't work up north oh wait.

@Tahoma31Bermuda

JANUARY 21



@HutchensWendell

When the light hits yellow patch just right #NoFilter

@APS_Turfgrass

JANUARY 23



@LeppelmeirK

Perfect example of why we like snow in cold temps. We had 1" of snow with 50mph winds. All snow blew to center. Next 5 days temps from -5 to 15 degrees with 20-30+ mph winds. Snow IS a n insulator.

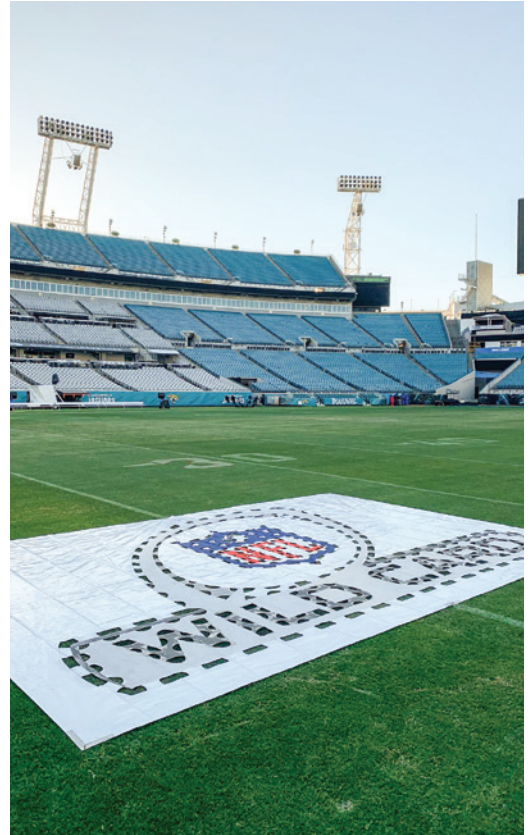
JANUARY 21



@QuinnerAnthony

Great effort from the grounds team leading up to the south west London derby last night. @AbernethyGareth @oisinmacr

JANUARY 13



@HamzahJAX

Wild Card field stencil

JANUARY 12



@RobJulian11

Thanks @TonyDungy for SNF shoutout! Getting ready for the tourney... #GoBucs #LFG!!

JANUARY 10



@GroundsCrewLuke

Hosting friendly between @RiverPlate and @Rayados tomorrow. Shade grass is looking the part. Hoping it plays just as well.

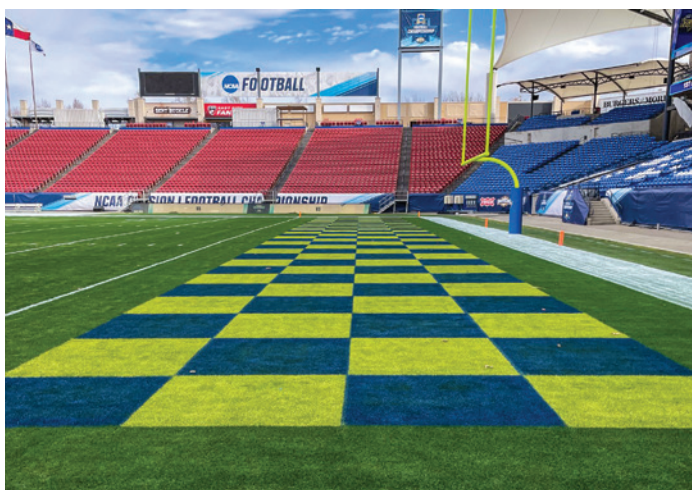
JANUARY 9



@mpuckett31

Few snow delays and a marathon day of painting later, we are ready to play football

JANUARY 7



@reedag04

And just like that our 2023 season has started! Field is ready for tomorrow's @NCAA_FCS Championship against @NDSUfootball and @GoJacksFB Weather has been great all week for painting and looks perfect tomorrow. The South Dakota St endzone was a fun one.

JANUARY 7



@OSUgrounds_crew

HOC adjustment to remove some damaged leaf tips from the crazy weather before winter break
@OSUBaseball @thenke_turf

JANUARY 4

@realparkmcglone

An incredible shift pulled by the crew. 8:00pm @CFAPeachBowl kickoff. Ready for 1:00pm kick today. Game 8. @AtlantaFalcons hosting @AZCardinals #RiseUp

JANUARY 1



@NFedewaturf

Ready for the @taxslayerbowl tomorrow. Crew did another amazing job this week! @ASMGloablLive @BrianKowski6

DECEMBER 29



@alexpoinow

Blankets down before the cold snap this week. That's a wrap for 2022 #SleepTight #SeeYouNextYear

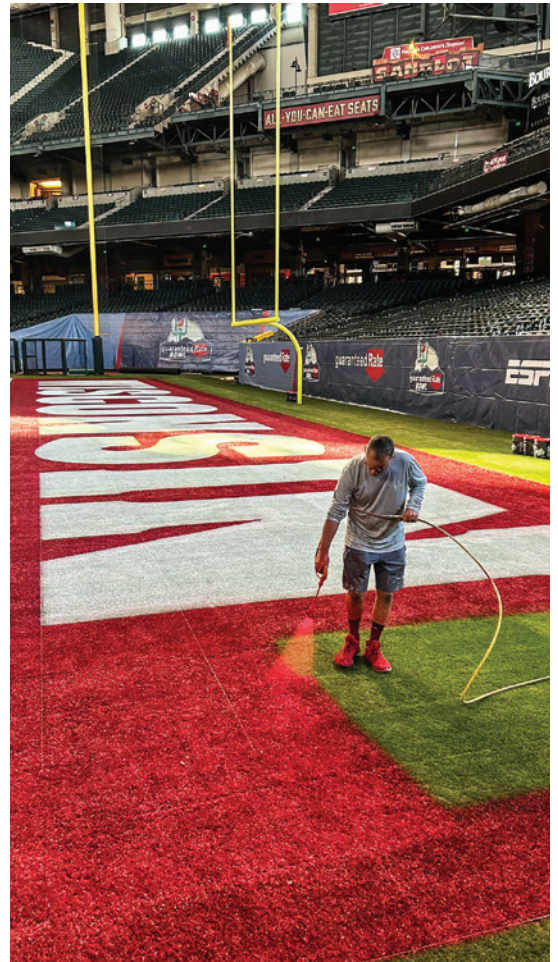
DECEMBER 20



@BlayneJesse

Tarp on, tarp off, tarp on, tarp off

DECEMBER 27



@bermuda419s

I LOVE background day!! @RateBowl @BadgerFootball @CowboyFB

DECEMBER 23

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MANAGEMENT

SFMA Affiliated Chapters Contact Information

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Colorado Sports Turf Managers Association: www.cstma.org

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John Mascaro, john@turf-tec.com

Florida #3 Chapter (Central):
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dale.croft@ocps.net

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

Georgia Sports Turf Managers Association: www.gstma.org

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

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

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or Contact Joey Stevenson,
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Iowa Sports Turf Managers Association:
www.iowaturfgrass.org

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

Mid-Atlantic STMA: www.mastma.org

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

Minnesota Parks and Sports Field Management Association: www.mpsfma.org

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

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

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

North Carolina Chapter of STMA:
www.ncsportsturf.org

Northern California STMA:
www.norcalstma.org

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

Oklahoma Chapter STMA:
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Oregon STMA Chapter:
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Ozarks STMA: www.ozarksstma.org

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

Southern California Chapter:
www.socalstma.com

South Carolina Chapter of STMA:
www.scstma.org

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

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www.txstma.org

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Wisconsin Sports Turf Managers Association: www.wstma.org

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JOHN DEERE

Dormant Seeding

Q: Is it worth applying seed as a dormant seed this winter, or should I wait until spring?

A: Great question! Dormant seeding describes the process of applying seed to the field with the knowledge that it will not germinate/will stay dormant until environmental conditions are favorable for germination in spring. For cool-season grasses, that means applying seed during winter, knowing that it will not germinate until soil temperatures at 2" depth are consistently above 50 degrees F. While 50 degrees F soil temperature is the minimum, it's worth noting that the optimum air temperature for cool-season grass germination is 60-80 degrees F.

In short, it's absolutely worth it, particularly if you need to get a jump start on game preparation. Early spring sports often begin before the conditions are favorable for regular spring seedings. Getting the seed out in February and early March will offer many benefits: (1) the seed is already in place, ready to germinate when conditions are right; (2) the seed is applied at a time that might not be as busy for the grounds crew; (3) the germinating seed may have a competitive edge on emerging spring weeds; (4) it might be easier to use seed-spreading equipment on fields before spring rains; and (5) the germinating seeds will provide quicker ground cover than a conventional spring seeding.

Applying seed to bare soil or a thin sward is the goal. It is futile to apply seed – dormant or otherwise – to a full, dense sward of existing turfgrass. The existing, established sward cannot be switched out by applying a different seed type as a topdressing. Remember the golden rule of seeding success – there must be optimal seed-soil contact. During the freezing and thawing cycles in late winter, the soil structure changes due to the swelling and shrinkage of soil particles; the volume of frost-susceptible soils increases; and pores expand due to ice expansion during freezing. These soil pores offer a great opportunity for good seed-soil contact.

Seed rates during dormant seeding are generally increased by 30 to 50 percent to account for higher seedling mortality and seed loss through wash-out, birds, etc. If the seed germinates and then a hard frost occurs, there might also be some seedling injury and/or death.

It's important not to apply excessive seed amounts for the turf species. While "more is better" is tempting, partic-

ularly if there are spring deadlines to meet, the long-term success of the turfgrass plants relies upon having space and resources to fully develop and mature. In essence, larger plants have increased wear tolerance. Sod farmers will generally seed at, or just below, the recommended seed rate for a good reason. The turfgrass plants will not just grow, but will develop tillers, stolons and rhizomes that are critical during harvest. Those tillers, stolons and rhizomes are also critical for the long-term health of the plant and its ability to withstand athletic field traffic and wear. If seed rates are too high, the seedlings will be weak and susceptible to disease and other stresses.

To spread the seed, walk-behind spreaders/equipment that won't cause soil damage and compaction are best, but if the soil is dry enough, heavier equipment can be used.

The only product applied during the winter dormant seeding operation should be the seed. Do not add a fertilizer product. In accordance with sound environmental stewardship, fertilizers should never be applied to snow-covered or frozen soils as there is a risk of runoff.

The types of seeds sown will depend on what the end goal is. If quick ground cover is the goal, faster-establishing species such as perennial ryegrass could be used. Tetraploid ryegrasses are an option worth investigating since they can germinate at lower temperatures than the standard perennial types.

A growth blanket is a great tool to aid germination and establishment – especially in high-traffic areas. Growth blankets keep the seed in place by minimizing wash-out; retain moisture and heat, thereby accelerating the establishment rate and extending the growing season; and keep birds and humans off. **SFM**



Pamela Sherratt

Sports turf extension specialist
The Ohio State University

Questions?

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



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