IN THIS ISSUE: Anatomy of a field renovation

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

FEBRUARY 2018

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"My vision for the STMA is to continue to increase professionalism and awareness of the jobs that Sports Turf Managers do through education, community outreach and networking. It is important that we promote our profession as a respectable and highly educated group of individuals."
– Sarah Martin, CSFM, new STMA President

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FROM THE SIDELINES

Your new job

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

THERE IS ONE CONSTANT at every STMA Conference I've attended (now 16 and counting): turf managers at all levels are networking. While a lot of the conversations are sharing success (and failure!) stories about their fields, catching up with friends, sports, and "where should we go eat and drink," there is another consistent topic: looking for a new job.

I am certain hiring decisions (including interns) are made at the Conference every year. To assist those who are making a change and about to start a new gig, here's some advice from Trudy Steinfeld, associate VP/executive director of career development at New York University:

Before your scheduled start date, inquire of your employer if there are materials or resources that you should review ahead of time or if there is anything else you can do to prepare before you start work.

Complete any hiring forms and paperwork ahead of time and make sure to bring any required documentation with you on the first day.

Follow your new employer on various professional and social networking sites and in mainstream media to make sure you are in the know about any developments (bad or good) that might impact your new employer. You don't want to be caught unaware if everyone is discussing some major issue or development and you have no idea what they are referring to.

Your work reputation begins before you know it. You've heard it a million times but I'll say it again: first impressions can be lasting impressions. In an increasingly competitive and demanding work culture your co-workers will form an impression of you quickly. Make it a positive one!

Be respectful and polite to everyone, especially administrative and support staff whose opinions often influence senior management. Make everyone you work with feel important, valued, and respected.

Avoid the "I'm new" excuse. Be ready to work, take on an assignment, and deliver on it. If you can find the answers yourself, great, but if you need help or clarification, ask before you get too far into the project.

Know the rules. Most companies have policies on accessing social media, phone calls, and other technology during work. Make sure you know and abide by these guidelines.

Be the "go to" person. Volunteer for projects and be willing to take on more work or assist your boss or co-workers. Be willing to come in early or stay late. This is not the time to make extensive after-work plans, as you want to have the flexibility to take on additional work if necessary. Be sure to thank people, share credit, and give compliments when appropriate.

Work within the system. If you have a great idea, think it through, anticipate the questions, and then bring it to your boss or team. Don't let your enthusiasm cause you to send this to the CEO and make what could be a fatal error to your career advancement.

Engage with your co-workers. Go to lunch, invite a colleague to coffee, or have a drink after work. If you receive invitations, accept them if you can. This will let you get to know your co-workers and they you. As an added bonus, you are likely to learn important information that can be helpful in your new job.

Avoid the drama. Be a good listener and don't take sides in conflicts. **/ST/**

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EPG Media & Specialty Information
10405 6th Ave. N., Ste 210
Plymouth, MN 55441

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SALES REPRESENTATIVES
Chris Pelikan
Senior Account Manager - East
Phone: (763) 383-4408
cpelikan@epgmediallc.com

Peggy Tupper
Senior Account Manager - Midwest
Phone: (763) 383-4429
ptupper@epgmediallc.com

Leslie Palmer
Senior Account Manager - West
Phone: (763) 383-4460
lpalmer@epgmediallc.com

EDITORIAL
Group Publisher:
David Voll
Editorial Director:
Eric Schroder
Technical Editor:
Dr. Joey Young
Managing Art Director:
Dodi Vessels
Associate Art Director:
Phil Tippin
Production Manager:
Angela Scott

SUBSCRIPTION SERVICES
Phone: (847) 763-9565
Sportsturf@omeda.com

REPRINTS
Wright's Media
Wyndell Hamilton
epg@wrightsmedia.com
(218) 419-5725, ext. 152

DIRECT MAIL LIST SALES
MeritDirect, Jim Scova
Phone: (914) 368-1012
jscova@MeritDirect.com

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At-Large Appointed: Tom Nielsen

Stma Office
805 New Hampshire, Suite E
Lawrence, KS 66044
Phone: 800-323-3875
Fax: 800-366-0391
Email: STMAinfo@STMA.org
www.STMA.org

STMA Editorial Committee
Chairman: Mark Frever, CSFM
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PRESIDENT'S MESSAGE

Dedicated committee service keeps us moving forward

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

I HOPE THIS MESSAGE finds everyone safely home from the STMA's 29th Annual Conference and Exhibition and energized for the coming year! Spending time with so many amazing turf professionals never fails to get me "geeked up" to try new processes, products and equipment. The education sessions and trade show were full of amazing information. While those are the most commonly thought-of education sources, the conversations that occurred in the hallways, at meals and at the social events were truly marvelous. These networking opportunities are a huge part of what brings us back year after year. A huge "thank you" to our speakers, trade show exhibitors, moderators, and staff for putting on such a marvelous event! And, a big thank you to all of you who participated. The 2019 show in Phoenix has big shoes to fill!

THE STMA BOARD OF DIRECTORS is set for a busy year moving forward with our new Strategic Plan and revamped Committee Structure. We have a lot to accomplish in 3 years, and this year will set the tone for achieving the five main goals set out in the strategic plan. The new committee structure will continue to allow involvement from those who wish to participate, while streamlining processes for more productive committees. There will be five overarching committees under which subcommittees and task groups will operate. These key committees are Advocacy, Education, Growing STMA Organizational Capacity, Membership, and Awards and Scholarship. I look forward to working with the committee chairs and everyone on committees and charge you with being creative, forward thinking, energetic, and environmentally conscientious as we move into the next year. It is dedicated committee participation that really keeps the boat in motion.

I'D LIKE TO TAKE A MOMENT to thank Tim Van Loo, CSFM, for his excellent leadership and direction in the past year, and welcome the new members to the board: James Bergdoll, CSFM, City of Chattanooga, TN - Parks & Recreation; Jason Kruse, Ph.D., University of Florida – Academic; and Tom Nielsen, Louisville Bats, Louisville, KY - At-Large Appointed. It will be sad to see Jeff Salmond, CSFM, Doug Schattinger and Dr. Beth Guertal leave the board after 12 combined years of dedicated service. Their wit and energy will be missed in the boardroom; may they enjoy the coming year of "peace."

I'LL LEAVE YOU WITH THIS QUOTE from Mother Teresa: "I alone cannot change the world, but I can cast a stone across the water to create many ripples."

Here's to the ripples! ***/ST/***

NEW STMA PRESIDENT

L to R: Orlando Ortega, Craig Gallagher, Sarah Martin, & Erik Rico. Crew not shown: Victor Gomez, Johnny Aguirre, & Abel Tover.

CAPTAIN OF HER TEAM

SARAH K. MARTIN, CSFM

SARAH K. MARTIN, CSFM, graduated from Colorado State University with a degree in Landscape Horticulture and Turfgrass Management. She has worked in A, AA and AAA minor league baseball as well as at the home of the Milwaukee Brewers' Spring Training in Phoenix. For the past 16 years Sarah has been employed with the City of Phoenix Parks and Recreation Department. Martin has been a member of the National STMA since 1998 as well as being active in her local chapters. She currently holds the position of Vice-President of the Arizona STMA.

Vision for STMA

"My vision for the STMA is to continue to increase professionalism and awareness of the jobs that Sports Turf Managers do through education, community outreach and networking. It is important that we promote our profession as a respectable and highly educated group of individuals. To do this we need to attract membership and participation from all levels of Sports Turf workers, management and supervisors. Not only this, but to impress upon General Managers, Administrators, Coaches and others who hire and work directly with Sports Turf staff know how important it is to have knowledgeable Sports Turf Managers and crews working for the safety and playability of all surfaces." *[from STMA.org]*

When we emailed Sarah from the home office in Pennsylvania one day last December around 9 am, we were surprised to hear from her a few moments later. Turns out Sarah works from 5:30 am to 2 pm in Arizona. Here are her responses to our questions:

SportsTurf: Where did you grow up and what were your interests then?
MARTIN: I grew up in Wichita, KS (mostly) with a couple of years in Buffalo, NY while I was in elementary school. I loved everything outdoors from swimming to bicycle riding. I've always been an avid reader, and have had a love for music and art.

ST: What things did you learn from your parents that still stick with you?
MARTIN: My parents have taught me to do all things with love and persistence. Kindness above all.

ST: ***How did you decide where to go to college and what your major would be?***

MARTIN: In high school I was watching a football game and thought "someone has to take care of that." I told my folks, and my dad came home from work shortly thereafter with the huge book of colleges by major. We looked up Turfgrass Management, and that was it. My dad grew up on a farm and says that the ag gene just skipped a generation, as he was a math major in college. We started looking at colleges, and the second I stepped on campus at Colorado State I knew that is where I wanted to go.

ST: ***Now that you've been working in turf management for awhile, are there any changes you'd like to see in how the major is taught at the collegiate level?***

MARTIN: I think we do our students a disservice by not requiring more management classes. Budgeting and people management is what I spend most my work time on.

ST: ***What was your first job out of college, and what were the most memorable things you learned from that job?***

MARTIN: My first job out of college was as the Head Groundskeeper for the Kane County Cougars, Single A baseball

in Geneva, IL. I learned quite a few things there, mainly what it takes to do the job, do it well, but also to take care of myself in the process.

After my three seasons in Kane County, I moved to Phoenix to take a job as the Assistant Groundskeeper for the Milwaukee Brewers Spring Training Facility with the City of Phoenix Parks and Recreation Department. This position taught me a lot about

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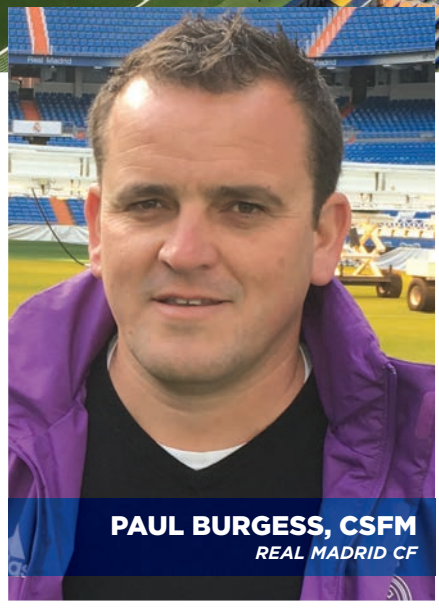

PAUL BURGESS, CSFM
REAL MADRID CF

Paul Burgess, CSFM, has served for nearly nine years as the Head Groundsman for Spain's legendary Real Madrid CF at Santiago Bernabéu Stadium and its 14 training pitches. Named the "Most Influential Figure in the Turf Care Industry" by Turf Business magazine, Burgess was the first in Europe to earn a Certified Sports Field Manager certification as well as the first European turf manager to be awarded an STMA Environmental Certification.

It's no wonder that he was the very first turf professional in Europe to purchase an Air2G2 Soil CPR machine. Burgess first heard about the Air2G2 at the 2013 STMA Show in Daytona Beach, Florida. After watching a demonstration by Glen Black, inventor of the Air2G2 and founder of GT AirInject Inc., Burgess was impressed by the technology and purchased the Air2G2 through his European distributor, Campey Turf Care Systems.

"The idea didn't' take any selling. I got the idea straight away," Burgess said. "It's a brilliant machine, it does exactly what it says it does."

The Air2G2 Soil CPR machine relieves **Compaction**, increases **Porosity** and enhances **Respiration** by laterally injecting air into the soil profile to fracture hardpan layers and enable airflow, without surface disruption.

"Our root development is much better. We don't have any big issues with layering, black layer or anaerobic layers. We get sod to root down quicker. We have deeper roots. There's more nutrients available to the plant to grow a healthier sword of grass," Burgess said. "It's the cleanest, most effective way of aerating the surface. It's pure aeration. It's brilliant."

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managing a crew, and working with bermudagrass; in Chicago I had Kentucky bluegrass. I also learned how further manage my work time and my personal life together.

ST: What role have mentors played in your career?

MARTIN: Mentors played a HUGE part in my development as a turfgrass professional. I should say they still play a huge part. Having mentors was a huge help for my confidence and learning. Knowing that there were folks in the industry, outside of my immediate university community that I could talk to, visit, and learn from, was a very large part of my lasting love for the career.

ST: What's your philosophy on hiring and training in your current position?

MARTIN: Working for a municipality has its own set of rules for hiring, which I cannot change. However, once someone is hired, I believe that teaching becomes extremely important. There are many ways to get a job done, but it is important to be hands on when teaching new crew members how you have found things work best.

ST: What are your current job responsibilities?

MARTIN: At Reach 11 Sports Complex I am responsible for the maintenance of 17 bermudagrass/overseeded with ryegrass soccer fields, one synthetic soccer field, two Little League natural

grass baseball fields, two tot-turf synthetic little league baseball fields, 20+ miles of natural trail system and all the landscaping around the soccer/baseball facilities. I have a crew of six that do a magnificent job.

Within this I handle purchasing of materials, work-orders (light repairs or plumbing issues for example), scheduling of the crew for daily tasks and projects, as well as tournament set-up and cleanup. I am fortunate that there is another group of recreation staff that works during events and does a fabulous job of facilitating and working with the tournaments to keep the facility running at top speed.

***ST:* What qualities do you think a successful sports turf manager must possess today to be successful?**
MARTIN: A willingness to start low, get dirty, put in the time and work your way up the ladder.

***ST:* How do you think the profession will change in the coming decade?**
MARTIN: As technology continues to take a firmer grip in all areas, I see the Turfgrass manager's job becoming more about utilizing those resources.

***ST:* When and why did you join STMA?**
MARTIN: I joined the STMA more than 20 years ago as a student at Colorado State. I wanted to expand my learning about the industry, and was also looking for scholarships from the national organization as well as our local Colorado chapter. This is one of the best decisions I have ever made, as it resulted not only in a couple of those scholarships, but more importantly introduced me to mentors and life-long friends.

***ST:* In your experience, what are the benefits of being an STMA member?**
MARTIN: Networking is the biggest benefit. Sports Turf Managers are amazingly open and willing to talk to other turf professionals. Membership gives you an icebreaker for starting a conversation with any turf manager out there.

***ST:* What are most important issues facing STMA members today?**
MARTIN: Managing new technology, keeping the hands-on skills of the industry while doing so. Another is maintaining a work/life balance; many sports turf professionals face extreme work schedules that require them to spend more time at work than with families. We need to balance our lives to avoid burnout and dissatisfaction with work.

***ST:* And how do you think the Board can best address those issues?**
MARTIN: The STMA Board is working to make sure that we are staying at the forefront of the industry. We continue to push the professionalism of sports turf managers, through programs such as the Certified Sports Field Manager and Environmental Certification programs.

We also are promoting the sports turf professional as the expert that he/she is, helping show the value that we bring to the table, and that this value should be reflected in paychecks as well as in terms of respect. This is a process, however, and not one that we can achieve overnight. ***/ST/***

See the whole plant to become a "Grass Master"

// By TYLER J. HOPKINS & BRYAN G. HOPKINS, PHD

The sports turf management paradox is to create a safe, beautiful and playable surface while staying on budget and being sustainable. As many readers know this is easier said than done; sports turf managers face comical constraints and an endless stream of demands. We've all heard some form of "It's just mowing grass," right?

Do these sound familiar?

- The field needs to be playable even though it has rained for 7 days.
- Your task list requires twice as many people as you have.
- You need to find a miracle fertilizer to keep grass healthy at half cost.
- Your organization wants to leverage perception by not negatively impacting the environment.
- Water consumption needs to be reduced but the grass better be green even when it is 100 degrees with no rain for months.

You should be doing more for your turfgrass to thrive, not just survive. But, honestly, how?

PLANT NEEDS

Light Energy			
Proper Environment	Minimal Toxins	Proper pH, Moderate salts, No toxic levels of any chemical	
	Minimal pest pressure	Insects, Nematodes, Pathogens, Weeds	
	Growing medium	Anchors the plant, Holds water and nutrients	
Nutrients	Non-Mineral	Oxygen, Carbon, Hydrogen (found in air and water)	
	Macronutrients	Primary	Nitrogen, Phosphorous, Potassium
		Secondary	Sulfur, Calcium, Magnesium
	Micronutrients	Zinc, Iron, Manganese, Copper, Boron, Chloride, Molybdenum, Cobalt, Nickel	

Work the problem

We suggest three strategies: see the whole plant; look for parallels; and reduce the complexity to essentials.

When we think landscapes, most of us think about shoots. The roots (~50% of the plant) and the complex soil environment they grow in are often ignored. We should give more than a passing thought to "dirt" and its vast population of organisms.

In terms of parallels, compare turfgrass to humans. Both are intricate organisms . . . and sometimes difficult to repair. On the other hand, providing suitable nutrition and care is cheap in comparison – prevention is the key. Most of us understand this for ourselves, but don't apply it to turfgrass.

Finally, we shouldn't let complexity confuse us (or be used against us to sell us high $ snake oils). Growing turfgrass can be reduced to a simple set of variables as we blend these strategies to be better Grass Masters.

What are the variables?

The system is complex, but to simplify management, we need to understand plant needs. How can we grow healthy turfgrass in a water bucket? By supplying its needs artificially, which are:

Growing turfgrass hydroponically in a growth chamber is tricky; you must ensure everything is provided and maintained in balance. Light is provided electronically. The pH is carefully buffered. Pests are rarely a problem due to isolation, but sometimes fungicides are needed. Nutrients are carefully balanced. The normal atmospheric air provides ample carbon dioxide and oxygen. Although this is adequate for shoots, the roots need additional air bubbled into the rooting solution.

What does hydroponically grown turf have to do with anything in the real world?

We can draw parallels to aid our understanding and management. It demonstrates that we know everything turfgrass needs, not only to survive, but to thrive. One thing we've learned from hydroponics is the effect of nutrient balance. Countless studies show what happens when nutrients are deficient and also when they are excessive. And, we've learned the importance of oxygen. The roots can be literally bathed in water as long as there is oxygen present. Even though shoots are surrounded by ubiquitous oxygen and some oxygen-containing compounds are translocated to the roots, it isn't enough and air has to be provided for in the rootzone.

Where should we focus? Our outcome control comes down to a smaller subset of variables.

Well-managed sports turf at LaVell Edwards Stadium on the campus of Brigham Young University.

Variables we generally don't have to worry about include:

- The sun provides the light for us as long as we aren't too shaded (i.e. no light bulbs necessary most of the time).
- The air provides carbon dioxide and oxygen to the shoots.
- The soil provides a growing medium, anchor, and a nutrient store
- The basic laws of biology, chemistry and physics often take care of our plants.

If everything necessary for life is provided, biology thrives regardless of complexity. If a plant is already healthy, it's likely to fight off potential pathogens, such as pythium or brown patch. If it's well established, weeds can't compete. If roots are encouraged to grow deeply early in the season, the turfgrass will thrive even when it's blazing hot in August with no rain. The turfgrass will hold up better under the wear and tear when the coach insists on practicing in the exact same spot every day. All because the soil is healthy.

The soil is one thing that we do need to worry about and there are specific aspects to focus on. Healthy soil = healthy roots = healthy grass = healthy, and happy, turfgrass manager. Well . . . mostly . . .

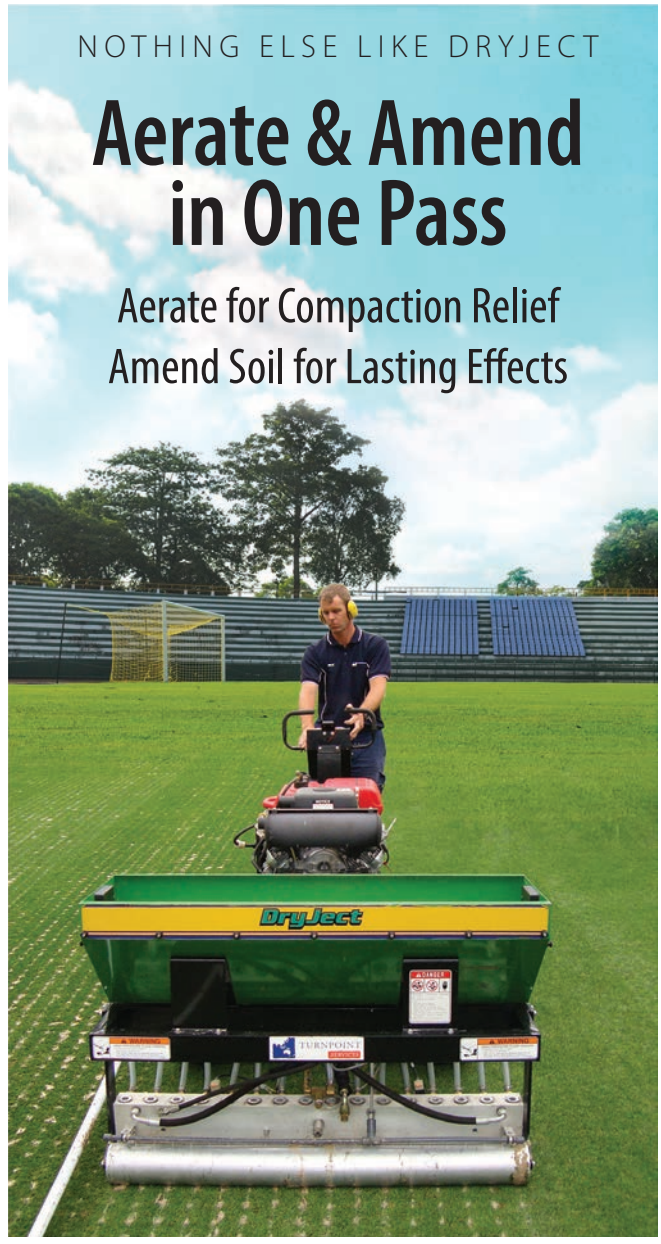
What soil variables matter the most? Optimal levels of mineral nutrients (nitrogen, potassium, etc.), and balancing non-mineral nutrients (water and oxygen).

Optimizing mineral nutrition

Plants require 15 essential mineral nutrients and benefit from others. However, the most important is nitrogen – the rest aren't even in the same league. In our experience, most turfgrass is receiving deficient or excess amounts of nitrogen. And in the sports turf world nitrogen is usually excessive. It is like an illicit drug . . . sure it gives a short-term pleasing look, but the long-term impacts are unhealthy roots and increased disease and insect pressure.

Soil, water, and plant tissue testing can fine-tune a nitrogen fertilization program by identifying excesses and deficiencies. However, unlike most nutrients, soil testing poorly determines base application rates because nitrogen is so transient in the system.

Ideally, nitrogen is spoon fed at 2.5-3.5 lb. N per 1000 sq. ft. throughout the growing season because it is so easily lost below



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the shallow turfgrass rootzone or to the atmosphere. Less is needed if the irrigation water source has nitrogen in it, which is surprisingly common.

Uniform application is key (compared to applications to species with larger root systems which can effectively use large fertilizer particles every few inches). Unlike other plants, the rooting cylinder for an individual turfgrass plant is tiny. Thus, frequent foliar sprays or injection into the irrigation system of urea ammonium nitrate (28-0-0 to 32-0-0) or similar is ideal. If applying with the irrigation, realize that sprinkler patterns are never uniform, resulting in higher nitrogen in areas receiving more water.

For soils with low nutrient holding capacity (i.e., sandy and less organic matter) more frequent applications are needed. Some turfgrass grown in sand gets an application with every irrigation. Otherwise, monthly applications suffice.

Although this is the ideal, this approach is costly and time consuming.

Another option is using control or slow release fertilizers at higher rates per application. These fertilizers are costly, but generally labor savings of fewer applications offset this. Our research reveals a minimum of two applications is needed for results to be almost identical to constant spoon-feeding. Note: carefully select these products and use only those scientifically and independently vetted. Despite claims, many are ineffective, with their effect largely gone within a few weeks.

We recommend applying the following rate in early spring and double this rate in early fall. Note: the high rate in the fall has proven to be the most effective application to help survive dormancy and to provide healthier roots into the next summer.

- 1.5 lb./1000 sq. ft. ammonium sulfate (21-0-0-24S) or 0.6 lb./1000 sq. ft. urea (46-0-0) if your sulfur is high in the water/soil
- 1.5 lb./1000 sq. ft. polymer coated urea (43-0-0) or similar controlled/slow release nitrogen

This equals 1 lb.-N/1000 sq. ft. in spring and 2 lb.-N/1000 sq. ft. in the fall and about 0.3 lb.-S/1000 sq. ft. of the sulfur nutrient, which is likely enough for most situations. Sandy, low organic matter soils may require up to 50% more of these fertilizers.

Other nutrients are generally easier to manage because soil holds them in supply to plants using principles of equilibrium chemistry. It is rare to find deficiencies in turfgrass of anything other than nitrogen phosphorus, potassium, sulfur, and, in cases of older varieties, iron. Sounds complex? Well, we recommend soil testing, especially for phosphorus and potassium, to insure adequate, but not excessive, levels. Remember, too much of a good thing is toxicity, which is very common.

Take a proper sample and submit to a trusted lab. Generally the lab can provide guidelines for interpretation based on the methods they used and the scientific calibration of those tests. We emphasize to not fertilize with nutrients that are already adequate in the soil; at best it is a waste of time and money and at worse can cause toxicity and legal liabilities due to environmental hazards.

Balancing water and oxygen

This is a thorny problem. Plant roots need water and oxygen, and a toxic gas escape pathway from soil. Unfortunately, soil water saturation pushes oxygen out and eventually traps toxic gases. Plants

Soil-root plugs demonstrating the effect of too much nitrogen (short roots).

can grow submerged in water as long as they have oxygen. In a well-developed soil there is a balance of water holding micropores and air filled macropores. Unfortunately, frequently overwatered and heavily trafficked sports fields have compacted pores, resulting in more water and less air.

Unlike nutrition, we don't have simple reliable aeration tests. Rather, we assess soil moisture through hand probing and sensors. Also, smell your soil. Yes, smell is an excellent detector. Soil cores will have a "swamp" gas smell when they are lacking oxygen.

How do we prevent oxygen deficiency? We start with drought tolerant varieties/species, proper mowing heights, nutrient (especially nitrogen) management, intentionally moisture stressing the grass in the spring, and other best management practices to foster deep root development. Drying the soil down between irrigation and then refilling the profile with water to rooting depth is essential. And, managing the macropore content of the soil is another key through traffic management, frequent aeration and topdressing. Some soils (such as ASTM spec sand rootzones) require rare aeration; others require it frequently in proportion to traffic rates. Still others, which are prone to compaction (such as sandy loams), require near constant aeration.

Most of us are applying too much water and fertilizer and not supplying enough oxygen to roots. Great soil doesn't solve all your problems. And your bosses may not understand or appreciate your ninja-like Grass Master skills. But that's the difference between a layman and a master craftsman, who sees beneath the surface, focusing on what is not seen. **/ST/**

Bryan G. Hopkins, PhD, is a Certified Professional Soil Scientist and a professor in the Plant and Wildlife Sciences Department at BYU in Provo, UT. Tyler J. Hopkins is now with SciScapes in Provo.

JOHN MASCARO'S PHOTO QUIZ

JOHN MASCARO IS PRESIDENT OF TURF-TEC INTERNATIONAL

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ANSWER ON PAGE 37

CAN YOU IDENTIFY THIS SPORTS TURF PROBLEM?

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How the soccer pitch fits on baseball field.

Field transition: baseball to soccer

Up keeping a field used for one sport requires a lot of work with minimal room for error. Up keeping a field used for two sports requires a lot of work with no room for error.

Field sharing between soccer and baseball is a growing trend that many stadiums are embracing. The challenges are numerous, but if a field manager can master the process, the shared stadium space saves money and unites two unique fan bases under one roof.

In 2015, the Greater Nevada Field's Director of Field Operations, Joe Hill, learned the field he managed, home of the Reno Aces minor league baseball team, would be welcoming the Reno 1868 FC soccer team in as little as 18 months.

He had a year and a half to figure out a game plan that would work for both teams.

Planning a field transition

As soon as the decision to field share became official, Hill started working on a plan. The soccer team was scheduled to officially start using the field in 2017. With that in mind, Hill set up two friendly matches during 2016 to get an idea of what the conversion process would need to look like.

"We used the two matches not only to understand how the conversion process would work at Greater Nevada Field, but also to see how feasible it was on our field and inside our building," Hill said.

The two friendly games allowed Hill to assess things like sod direction, staff size, materials and ultimately how much time was needed for a full field conversion.

By the start of the 2017 season, Hill had a blueprint created for how the field transitions should run.

The baseball field was ground zero. To get ready for a soccer game, Hill's crew starts by scratching the infield skin's edges down to 1 inch.

Next, they lay sod over approximately 9,000 square feet of the infield skin. The sod takes up all of third base, shortstop and runs all the way up to second base.

Placing the sod takes close to 5 hours.

After that, detail is the name of the game. Making sure the edges are correct and mowing the grass to the game-day height requirement are essential.

Once that's complete, the crew shifts their focus to painting the field lines.

While the time between games varies, typically they have 2 full days to make the conversion.

Sometimes, however, they're only given one.

EDITOR'S NOTE: This article was written by Kayli Hanley of Ewing Irrigation's public relations team. She visited Joe Hill, director of operations for Greater Nevada Field, Reno, NV about the challenges and benefits of field sharing. Joe manages fields for both the Reno Aces baseball team and 1868 FC soccer team.

Joe Hill, Greater Nevada Field's director of field operations. Photo credit David Calvert.

Their tactics and timing have to be precise and accurate. Identifying pain points before a season starts makes a big difference in what they can accomplish.

Prepping the turf for success

During the 2016 season, when Hill scheduled two friendly soccer games, he noticed the transition process was causing extra wear and tear on certain areas in the baseball field.

Solving this problem was a two-step process:

Step 1: Addressing high-traffic areas. First, Hill asked his team be intentional about moving their traffic areas around. Avoiding certain areas consecutively gave the field a chance to breathe and recover despite the frequent transitions. But adjusting traffic areas on its own wasn't enough.

The full solution lay under the surface – all the way down to the roots.

Step 2: Addressing the root of the problem. Hill knew if he could get the turf to establish deeper roots, it would strengthen the plant and reduce the impact of field transitioning. His goal was to push the roots as deep as they could go before the start of the 2017 season.

Hill tried a combination of Holganix, a plant based bionutritional product, and Mirimichi Green, a soil enhancer, on the baseball field's turf.

"Those two products alone may have completely changed our entire year," Hill said. "They drove our roots all the way down to the gravel layer!"

The combination of alternating the crew's traffic pattern during transition and adding those products to the field has

Reno Aces Field

kept the Greater Nevada Field green and thriving, despite its heavy use.

Hill encourages other field directors to experiment with different supplements and additives to find a solid combination that works for their turf. He said Holganix and Mirimichi Green combined with his regular granular program has been a foundation for the field's successful season.

With thousands of fans and two sports teams counting on successful field transitions, reliable staff, products and support are a must.

Hill said one of the toughest challenges he faced was creating and balancing a schedule that had his crew in the right place at the right time.

"I am extremely fortunate to have two great assistants, Drew Tice and Corey Diaz," He said. "They greatly contribute to our program's success."

Going through the process to find great assistants and assemble a foolproof staff took time, but Hill said it's a large part of what has made the field transition program at Greater Nevada Field work.

When it comes to watering the soccer field, Hill turned to Kochek hoses and nozzles.

"They're crucial to this process as we have them plugged in and ready to go as we are laying sod for the soccer field," He said.

Currently, Hill's crew hand waters 100 percent of the field during the soccer season; so reliable irrigation products are critical.

Hill also suggested field directors find a reliable supplier. Hill teamed up with Jim Barbuto, a National Turf Fields Specialist for Ewing Irrigation & Landscape Supply.

"He's been a huge help in making sure that what we need for both baseball and soccer is here on time and in order," Hill said. "He has a true understanding of what we are doing here and he helps me out in every way that he can."

Finding a supplier that understands your needs can make or break a program that deals with frequent field transitions.

Love what you do

Baseball hall of famer Tommy Lasorda once said, "In baseball and in business, there are three types of people. Those who make it happen, those who watch it happen and those who wonder what happened."

When presented with the challenge, Hill and his crew stepped up to home plate and made field transitioning a winning operation at Greater Nevada Field.

"On the surface, baseball and soccer sharing a field looks like a major task, and it is," Hill said. "But it's been the best thing that I've ever done in my career, and I'm thankful for it." **/ST/**

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Beautiful sward in University of Iowa's outfield was replaced with synthetic turf.

CASE STUDY: NATURAL GRASS TO SYNTHETIC TURF

University of Iowa baseball coach wanted synthetic

// By JON P. FITCH, PE

When the University of Iowa hired a new baseball coach in 2013, it was with the agreement that a new synthetic turf baseball field would be built. Our design team at Shive-Hattery and the turf vendor faced many challenges throughout the project, including a tight schedule impacted by cold weather, having to work around other Iowa sports schedules, and communication issues.

Team challenges

The university broke the project up into two phases. Phase I work was to include the synthetic turf conversion on the infield and new bullpens for both home and visiting teams.

Wanting to keep costs down on the first phase, the owner decided to award the base work as one project and hire the turf vendor separately. This can create challenges for a project team,

Jon P. Fitch, PE

as it puts additional pressure on the base contractor to complete their work in time to allow the turf vendor time to come in and finish their installation. When the two are hired as a team, the process can be more collaborative.

Schedule challenges

Shive-Hattery was approached very late in the summer of 2014 with a request to complete the project during the fall construction season. This meant that all survey, design, and installation needed to be finished before Thanksgiving, since turf-sewing methods typically do not work well when temperatures dip below 45 degrees. The carpet gets cold and a little rigid, and the sewing machines and needles tend to break due to the cold.

Conversations with the university started at the beginning of September. As part of the design, Shive-Hattery had to consider if and when the outfield was going to be done; however at that time the university did not have a timeline for Phase II. Therefore, a concrete curb wall was installed at the lip between the natural and synthetic turf; had a known schedule of 1 or 2 years been conveyed, there might have been an opportunity to save dollars by installing a wooden curb in lieu of concrete, knowing it would be removed in Phase II.

Our design team worked with the university over the course of 3 weeks to complete the design. This required weekly meetings with the owner's representative, in this case the associate athletic director, to review plans, go through details, and discuss the construction schedule. Short schedules can lead to errors and omissions, so our team tried to stay in constant contact to avoid these pitfalls.

After the design was completed, the construction went to bid October 13. The base work needed to be completed by November 8 and turf installed before November 29. Adding to an already tight schedule, no work could be completed after 3 pm on Fridays or all day Saturdays on home football game weekends. There were three home games during this 6-week span.

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Spring 2014 after Phase 1 should have been completed. Because winter hit early in 2013, the turf was installed but all of the infill still had to be placed before spring ball.

Racing the weather

The base field contractor was able to complete their work in time by working at times until midnight. This sometimes required rock to be stockpiled to allow work to continue under the lights.

As the fall construction period wore on, temperatures continued to fall. When the turf vendor, Astroturf, arrived, they had a difficult time getting all of the infield and bullpens completed due to the weather. Knowing it was imperative to finish before the baseball season began in early spring, the project was in a race against the weather.

Ultimately, snow began to fall before the turf could be completely installed; however, Astroturf was able to find a window of opportunity in the spring to finish their work so that the team did not have to practice on an alternative field.

Shive-Hattery began asking questions about the next phase of work as the first phase was wrapping up in the spring of 2014. Everyone agreed that we did not want a repeat of the previous year's hurried design and late fall construction.

This next phase was to include installing the outfield synthetic turf, a new fence with padding, a new batter's eye, power for a new scoreboard, and backstop padding on the existing concrete wall. Due to budget issues, the university ended up modifying its existing batter's eye instead of creating a new one.

Shive-Hattery was contacted in early June with a request to get Phase II design completed as quickly as possible. With this scope of work, design is typically done over a period of 3 months to try and limit errors and omissions. In an effort to accommodate the university's schedule, our team had 75% completed plans at 3 weeks. At 7 weeks, full construction documents were out to bid.

Construction was to start August 25, right before the start of the football season. This put constraints on the sub-base contractor once again to stop at 3 pm the night before home football games and not work on game days. Again by the time Astroturf arrived, the weather was changing. Only a few days had passed of putting down the first panels in the outfield when the cold started to impact installation.

This fence was replaced and the batter's eye modified in Phase II

The finished product.

It was decided to allow Astroturf to use their patented glue system for the seams in lieu of sewing. This ultimately allowed the turf and infill to be completed before Thanksgiving, when cold temperatures and snow hit campus. The vendor was once again able to come in the spring and finalize the infill and clean up the field before the first practice.

After completing the project in the spring of 2015, we became aware that the coaches were expecting additional work on the field that Shive-Hattery had not been made aware of. The owner's representative, the associate athletic director, had been removed from her position during the project, leaving a facilities director to help complete the field. Some of the items that the coaches were expecting had to be completed at a later date by the owner.

Lessons learned

Some key takeaways our team has been able to learn from this experience:

- Always try to meet with the coaches and other users early on in the project and find out their expectations. While the consultant may not be able to achieve each of the requests, at least they can be discussed with the owner's representative and all parties will be on the same page, with no unhappy surprises at the project's end.
- Knowing all of the intended goals for the project would have allowed us to plan out both phases and create options that would have reduced the overall costs. For example, a wood curb with stakes could have been used to separate the natural and synthetic turf instead of a concrete curb wall and nailer board that had to be removed the following year to eliminate any potential trip hazards.
- Also, as the consultant, remember that you have the experience and know how much things cost – always be confident and don't let the owner's representative try to get you to back down on the cost opinions. Many owners feel that consultants are just trying to up our fees, but you don't want to give low-cost opinions just to make the owners feel good and then ultimately fall way short on bid day.
- Involve turf managers with the design, as they will be the ones maintaining the facility and could have some ideas on best practices for extending the life of the field. **/ST/**

Jon P. Fitch, PE, is a civil engineer with Shive-Hattery, an architecture and engineering consulting firm in Cedar Rapids, IA.

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JEREMY HUSEN

This month in "The *SportsTurf* Interview," we meet Jeremy Husen, Executive Director, Alliance for Low Input Sustainable Turf (A-LIST). This organization is a non-profit university and industry cooperative that serves to test, identify and promote varieties to consumers that maintain acceptable turf quality while requiring reduced water, chemical and fertility inputs.

Husen has 15 years of turfgrass experience, having worked with every facet of the grass seed lifecycle including research, production, product development, marketing and sales. He also serves as the director of marketing for MSH associates, an agricultural-based marketing and accounting firm based in Oregon's Willamette Valley, also known as the Grass Seed Capitol of the World. Husen, a native of Oregon, graduated in 1997 from Oregon State University with a degree in marketing and visual communication.

***SportsTurf:* What are your main responsibilities? And what does a regular working week entail?**

HUSEN: As the Executive Director my primary duty is to spread the A-LIST message to the turf industry and beyond. I work with industry associations, our university cooperators, our members' distributors and key opinion leaders across the turf industry to bring about awareness to our program. I also develop, in conjunction with our board of directors, our marketing and strategic plans and then work to implement them. This includes managing our trials, speaking at field days and other turf events, participating on industry committees, speaking to distributors and end users, and fostering relationships with our research partners. As important as those duties are, I also consider my role to be that of a general turf advocate. I think those of us who work in the turf industry have an obligation to help elevate the image of turfgrass to the world around us. I love talking grass with anyone that will listen, and most are amazed at how much turfgrass impacts their lives every day, and how important it is to protect this valuable resource.

ST: How are the metrics generated in A-LIST's voluntary evaluation program?

HUSEN: We spent a lot of time setting up our research protocols, so they delivered what the industry was asking for in improved varieties but also, we wanted to create a program that was transparent and quantifiable. We worked with our university cooperators, our members' research directors and industry experts to develop a system that considered both low-input metrics and turf quality together. There are a lot of varieties that can live under low-input conditions, but they aren't necessarily attractive to look at. Our trials coincide with the National Turfgrass Evaluation Program cycles, so this last year we planted our new Kentucky bluegrass trial along with the NTEP. Our members submit varieties to our university cooperators to undergo the A-LIST low-input trials. These are completely managed by our university cooperators utilizing human and digital-image-analysis data from light boxes and digital cameras. After the first year of data the top varieties are selected. These varieties are then evaluated using NTEP turf quality data. If the varieties have superior performance at two or more trial locations and are in the top 50% of the NTEP turf quality trials, they are given a "promising" identification. If they perform to the same level the following year they are granted A-LIST certification.

AS MUNICIPALITIES, WATER DISTRICTS AND STATE AGRICULTURAL DEPARTMENTS BEGAN RESTRICTING WATER AND CHEMICAL USE, THE NEED FOR LOW-INPUT VARIETIES BECAME EVIDENT.

ST: What are the most important changes you've seen in turfgrass varieties over past 10 years?

HUSEN: The focus on low-input varieties has really made a significant impact. As municipalities, water districts and state agricultural departments began restricting water and chemical use, the need for low-input varieties became evident. There was a lot of germplasm that had been shelved in favor of varieties that showed exceptional turf quality or had unique traits such as tall fescue with rhizomes. Those shelved varieties became very relevant with the national move toward sustainable practices. The beauty

contest was over and varieties that could maintain acceptable turf quality with little to no inputs became the most important varieties that were being worked on. These traits, along with salt tolerance for effluent water use, were taking center stage. As we move toward these low-input type turf grasses it helps with the overall impression of the turf industry as well. Not only are they the right varieties to plant for most applications, they also do more to help the industry image overall. As stewards of the industry and land these low input, sustainable varieties help us tell an important story about doing the right thing for our sports fields and the environment.

ST: What are the biggest challenges facing grass seed companies?
HUSEN: I've worked in the turf industry for almost 15 years and it still amazes me the amount of low-quality seed being used. The biggest challenge I see is getting end users to move to improved varieties and move away from commodity seed. There are so many high-quality varieties out there that work in any region and any application that to choose an underperforming variety based on price costs you more in the end and causes more work and headaches. I know budgets are tight, especially at municipalities and smaller schools, but spending a little more for good varieties when planting can save a lot of money in the long run.

ST: What improvements are breeders working on now? Are we close to having more drought-resistance grasses or other major breakthroughs?
HUSEN: Drought, wear and pest/disease resistance are always at the top of a breeders list. These are great benefits for the end-user but still need to be produced cost effectively. Breeders have started looking at crop yields more and more over the years. I have lost count of how many amazing varieties are sitting on shelves because they can't produce seed for harvest. So, it's not so much about creating the next variety with a specific trait, it's about breeding a variety that has all the good traits: drought and heat tolerance, disease/pest resistance, excellent turf quality, ability to produce ample crops for productions, and performance for the end-user, all while doing so with reduced inputs.

Often the optimal solution can't be had in a single variety, so breeders are instrumental in helping the seed companies develop mixtures and blends that can handle a multitude of tasks and different times of the year. The A-LIST looks to identify the ideal candidates for these solutions. The varieties that are identified are the best-of-the-best and offer end users significant improvements from traditional varieties.

ST: How do you think natural turf proponents should approach the increasing number of synthetic turf fields being built?
HUSEN: We have to speak truth to the lies that are spread about natural turf. We weren't there combating the negative press we were getting early in the fight against natural turf, so we have a lot of ground to make up. Opponents of natural turf and lawns created a negative narrative about water consumption and egregious chemical use; we weren't there with a unified voice rebuffing those statements with our own claims about carbon sequestration, groundwater filtration or the cooling effect turf has. We must be more vocal about those things now, not just within the industry but to everyone we know.

Those of us who are proponents need to arm ourselves with good information that is available from our industry associations such as the Turfgrass Producers International, GCSAA, and of course, the STMA. Our most important partners in the discussion for natural turf playing surfaces are the players themselves. It's no secret that their preference leans heavily toward natural fields.

In addition, I think the work that the STMA has undertaken with their SAFE program is doing a lot to bring attention to the safety aspect of playing surfaces as well. I know there is work going on to quantify the increased safety benefits of playing on natural surfaces and this is our best avenue to combat artificial turf installations. Player safety is the key and we know that natural fields offer the best surface to avoid injury.

ST: How has social media impacted your work?
HUSEN: It's created a daily opportunity to see what's going on across our industry. Traditionally you would see your peers once or twice a year and find out what everyone had been working on. Now with Twitter and Facebook you can see it in real-time. It's also a great way to share your message for free. It's another tool in the marketing toolbox that I'm learning to use.

ST: What are your passions and interests outside of work?
HUSEN: My wife and I have five kids so most of our spare time revolves around whatever they are doing. Our two oldest boys are in college and require more money than time right now. Our three youngest, all girls, are involved in all sorts of school activities from volleyball to drama to choir. But if we find ourselves with some free time we take our trailer to the coast and camp, or we take the boat out and fish or crab. We have a place in northwest Montana as well, on Flathead Lake near Glacier National Park. We are currently building a home out there and that has given our family a goal we are all working toward. But my passion is fishing, from fly-fishing blue ribbon trout streams to chasing tuna in the ocean – I love it all! ***/ST/***

While facilities can be liable for many injuries, they are generally not liable for injuries that are a direct result of the game.

LIMITING LIABILITY FOR YOUR SPORTS FACILITY

// By PATRICK MCGUINESS

There are lots of reasons to love a great stadium: team loyalty, seats with perfect views, fond memories, or maybe just the best stadium food in town. But when you manage a sports venue, you face the not-so-glamorous challenge of trying to minimize the facility's liability. High liability resulting from unsafe facilities can be catastrophic for your bottom line and reputation.

Liability is the risk that your organization will be sued for injuries (or property damage) that occur at your facility. You can't eliminate liability altogether – some events just aren't foreseeable. But making your sports facility as safe as possible, obtaining waivers, and purchasing liability insurance can dramatically reduce your risk.

Safety

Operating a safe facility is critical to limiting liability. Sports participants and attendees can only win a lawsuit against the facility if they can show harm to them or their property. Without injury, there's no basis for a lawsuit.

Even if an unforeseen injury occurs, facilities that have taken all reasonable steps to ensure visitor safety will be exposed to less liability. On the other hand, venues can generally be held liable for injuries caused by situations that they knew or should have known were dangerous. "Should have known" is often interpreted broadly; if something is on your property, there's a good chance a court will find you should have known about it. And if you know something is dangerous, you're obligated to mitigate that risk.

On the field

Take the example of a football field. If you place a wall too close to the end zone, it's reasonable to expect that a player may accidently run in to it and injure himself. When the wall is already in place, it is tempting to ignore the risk. But if a player does get hurt, he or she will have a strong claim that your organization was negligent because you should have anticipated how dangerous the wall was. It's far better to be cautious and try to mitigate the risk by padding (or even removing) the wall.

A situation like this occurred in the State of Washington, where a football coach at an away game noticed a concrete curb separating the football field from track facilities. The coach worried that an athlete would be propelled out of bounds and run into the curb. The coach stationed himself between the curb and the field. Sure enough, two athletes collided with him and the coach was injured. He sued the facility, arguing that he had no other reasonable choice in

order to protect players. The Washington Court of Appeals held that the argument was reasonable, and his case was allowed to proceed.

You need to be just as conscientious in maintaining safe practice facilities as with the primary field or court. Injuries that occur during practices (and the resulting lawsuits) can be just as catastrophic as game-day injuries.

And off the field

Facilities also need to minimize the risk to spectators. Visitors often sue for injuries wholly unrelated to the main sporting event, including slip-and-fall accidents and injuries inflicted by other fans. Again, the best way to avoid lawsuits is to prevent injuries. That can mean keeping floors dry (many venues sell drinks in oversize cups or cans to limit spilling). But it can also mean ensuring adequate security to prevent spectator fights such as an easy way for spectators to easily notify staff of other disorderly spectators.

Think about pre- and post-game accidents

Take reasonable precautions against foreseeable accidents that might happen outside of game hours. For example, a common facility-related injury is caused by unanchored soccer goals when fans use the field for postgame Frisbee or tailgating. Unsecured goals have killed or seriously injured nearly 100 people over the past 50 years by falling on them. Many of those people were probably reckless; maybe they were hanging from the goal or attempting to climb it. But as a facility manager, you're expected to anticipate that people will do risky things, and you're expected to take precautions to limit the possibility of injury.

Think about where fans will be outside of game hours. They'll be travelling to and from cars or other transportation. They'll be in restaurants, merchandise stores, and restrooms. They'll certainly be on the field and will interact with any equipment left on the field, like bases or backstops.

Don't assume that fans will follow all warnings and posted signs. You can't completely control their behavior, but if it's foreseeable that they'll take a shortcut

Patrick McGuiness

across the field instead of staying on a marked path to the parking lot, inspect the field for holes. While visitors are sometimes deemed to have assumed liability for injuries resulting from their bad decisions, it's best to take as many precautions as possible.

Exceptions to the rule

While facilities can be liable for many injuries, they are generally not liable for injuries that are a direct result of the game. The rationale is that by playing sports at all, athletes assume certain risks. The facility is generally not liable for those injuries, unless its negligence helped cause the injury. For example, a football player who sustains a knee injury when he's tackled would be unlikely to win a case against the stadium, because that's a regular part of playing the game. However, if the same player sustains an injury because of the poor condition of the field, he may well have a viable case.

The same principle usually applies to spectators. For example, courts have found that by going to a baseball game, fans assume the risk of being hit by balls and broken bats that fly into the stands.

As a result, they are unlikely to win a suit against the facility for their injuries. However, facility negligence can change the outcome.

As a manager, you should think defensively in order to limit liability. Try to anticipate what could go wrong at your facility, and think about what you can do to limit the risk. If you notice a hazard, take care of it as soon as possible.

Training workers

Good employees are essential to maintaining safe facilities. As a facility manager, you should ensure that your workers understand that safety is a high priority for your organization. Establish clear policies so that workers who spot a potential hazard know what to do, including where to report concerns. Find areas where poor maintenance might lead to safety concerns and do routine checks to make sure everything is in order. Train employees to use checklists so they don't miss safety steps.

Remind your employees to think through the safety implications of their actions. In Louisiana, a concertgoer sued the concert venue's owner after she walked down a hallway in the back of a building and fell from an aboveground platform. Ordinarily, the platform was blocked by a door with a "Do Not Enter" sign. However, the door had been propped open to improve airflow. Ultimately, the concertgoer received almost $200,000 in damages. Train your employees to think through whether a seemingly good decision – increasing airflow in a crowded building – will create risks like concealing warning signs or inviting attendees to enter employee-only areas of a venue.

When you're hiring new workers, try to assess whether they will be safety-conscious and committed to making sure the facility is as safe as possible. If you take safety seriously, your staff will too.

Waivers

No matter how cautious you are, injuries happen. To limit liability, it's essential for you to require athletes to sign waivers that limit suits against the facility. If the athletes are minors, their parents must also sign the waivers.

Waivers typically reiterate that the activity is inherently risky, and the participant waives claims against the facility for any injuries sustained. While waivers are critical for limiting liability (and often required by insurance carriers), they don't eliminate the possibility of a lawsuit.

You should check with an attorney in your state about the rules surrounding waiver enforceability. Certain states may refuse to enforce a waiver signed by a parent on their child's behalf, or a waiver of facility liability for negligence.

Insurance

So you've limited your liability by running a safe facility, training workers, obtaining liability waivers from athletes. But something totally unexpected causes an injury. Maybe a light fixture falls from the ceiling. This is the type of accident that liability insurance was created for: unforeseen and costly. No matter what other precautions you take, you must obtain adequate liability insurance.

Don't skimp on your insurance policy. You want to avoid the bitter pill of paying premiums only to find that when something does go wrong, it isn't covered because of the fine print. When selecting a new policy, consult with an expert on fine print, such as an insurance agent or attorney who understands what coverage your organization needs and what options exist.

Claims-made versus occurrence policies

Typically, insurance policies only cover incidents that happen while the policy is in effect. But "claims-made" policies are even more restrictive. They only cover incidents only if the claims are *made* while you have that policy. If you switch insurance after the incident, but before a claim is made, you won't have coverage for that claim. This is particularly problematic for facilities that deal with children, because there is usually an exception to the statute of limitations that allows minors to wait till adulthood to make claims.

In contrast, "occurrence" policies cover incidents that happen while the policy is in effect, regardless of when the claim is made. If you switch insurance down the line, the policy will still cover incidents that happened while you had the old policy.

Some policies exclude coverage for athletic participants (typically everyone from players to coaches). This exclusion is unacceptable for sports facilities. After all, the majority of claims are almost certain to come from athletes and team staff. No matter how tempting the price tag, these policies are not appropriate for sports venues.

Riders and other coverage

In addition to general liability insurance, your facility should consider riders for other types of liability coverage. If your facility serves alcohol, you should purchase liquor liability coverage. You should consider some form of business auto liability coverage, which applies to accidents involving employees who are driving their personal vehicle for work purposes. If you have a large staff, you may want employee benefits liability coverage, which protects against claims of negligence in the administration of employee benefit programs.

It is impossible to completely eliminate all risk from a facility. There is no magic bullet that will remove all risk from your facilities. You must constantly analyze and assess what risks are most in need of being corrected. If you take reasonable, careful precautions and obtain adequate insurance, you can make risk liability manageable.

This article provides general information on facility liability matters and should not be relied upon as legal advice. A qualified attorney must analyze all relevant facts and apply the applicable law to any matter before legal advice can be given. **/ST/**

Patrick McGuiness is a partner at Zlimen & McGuiness, PLLC. He assists green industry businesses and organizations with compliance matters and advisory board assistance. He can be reached at pmcguiness@zmattorneys.com *or 651-206-3203 Additional legal resources are available at Zlimen & McGuiness, www.zmattorneys.com.*

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IT ALL STARTED IN TEXAS!

// By MIKE HEBRARD

Some of us entered into the athletic field industry in different, unconventional ways, or so it seems to me. Here's my story:

After graduating from Portland State University and spending most of my time being the team manager for the Vikings basketball team, I was asked to follow the head basketball coach to be one of his assistants at West Texas State University in Canyon, TX just south of Amarillo. So, after 3 years at PSU, I headed to WTSU to assist the basketball program by selling tickets and setting up the arena for home games. One of my ticket buyers just happened to be John Dittrich, the new owner of the AA affiliate of the San Diego Padres, the Amarillo Gold Sox. He noticed while reading my bio in the basketball program that I had experience as a catcher in college and asked if I would be interested in being the bullpen catcher for his new team. I told him I would love the opportunity but needed to find a summer job that could pay my bills since I didn't have any basketball responsibilities during that time of year.

He said, "Why don't you help the guy on the field." A month later the guy on the field left and now I was the head guy! I didn't know much about maintaining a baseball field but was willing to learn. After getting a load of dirt on the infield that had little pebbles in it, the Gold Sox manager at the time, Glenn Ezell, was not amused and told me to get on the roller and pack the skin as tight as I could to compact the rocks. That got us through the first home stand!

Oh, by the way, I was also promoted to throwing batting practice for 8 straight days since the manager had hurt his arm in spring training and was not able to throw. My grounds equipment inventory was embarrassing; a little riding mower, a chalker that didn't work, one irrigation outlet behind the mound and one in center field, and a kid helper that didn't show up most of the time. Since I didn't have a reliable chalker I made a stencil board and used a flour sifter and shook the chalk in the 4-inch gap. That lasted for a 4-game home stand; then I would shave it out and re-mark for the next series.

I accompanied the team on a couple of road trips and the players treated me more like one of them rather than the groundskeeper. When we would arrive at a field, I quickly sought out the head groundskeeper and begin asking lots of questions. I recall one trip when I accompanied our front office to the old Arlington Stadium where I met legendary groundskeeper, Johnny Oliverios. He asked me what I used to mow the infield and how often. I said once a week with a walk behind push rotary mower. He suggested I find an old powered reel mower and mow every day! $35 later I bought one from a thrift shop.

The Hebrard family.

Vintage shot of the Amarillo Gold Sox.

We had very sparse foul area grass and no warning track. When the team left on a 10-day road trip, the four-member front office staff and I used a sod cutter and transferred some newly cut sod (common bermudagrass) to the foul areas. The newly cut sod took with the help of daily heavy watering and rolling. Since I didn't really have a groundskeeping budget, I only fertilized once in four seasons and relied on the common bermuda to come out of dormancy in late May. I never overseeded. So with mowing every other day and heavy watering between series and road trips I was able to maintain a safe playing surface.

One of the advantages of being both head groundskeeper and bullpen catcher was the interaction between the players and coaches. If the mound was bad the night before I heard about it in the bullpen. If the dirt was sticky, I heard about it from infield practice. And if the outfield grass was too long, I would hear from the outfielders. Even the roving instructors would give me advice. I remember pitching coach Warren Hacker suggesting that I use native clay on the bullpens; soak it down and cover it up, he advised. And I remember former MLB player, coach, and manager Bobby Valentine telling me not to overlook the surface of the outfield.

After four seasons, the team announced it was moving to Beaumont, but not without a major hitch! With my wedding upcoming in a few days, my father, Gene, and I walked over to the Budweiser

Field prepared by Mike Hebrard; Alpenrose Stadium in Portland, home of the Little League Softball World Series.

Mike painting the University of Oklahoma and USC logos at a field day at Pure Seed research farm.

distributor facility (conveniently located behind center field) so we could share a couple of beers. While walking back to the stadium before batting practice I was met with the front office staff working on the field. Some wise guy had turned the center field water on, flooding a low area in left field. After squeegeeing the water to the foul area, and a three-way conference call with the Texas League office, the field was deemed playable. Some years later I found out the culprit was my former kid assistant who was upset the team was moving and wanted to show his displeasure.

I also recall a Gold Sox promotional game we played in Lubbock. Unfortunately their idea of pro field preparation and ours were not the same. After some quick fix up the game was played. We also made a trip to Clovis, NM and this time I along with an intern arrived a day ahead of the team in order to prep the field. Clovis had less equipment than I had. When it came time to chalk the lines, the local staff pulled out flour that was bagged in pillowcases. I used the flour and as I was finishing up I turned around and saw birds eating the foul line. We had often heard players referring to our organization as "bush league" and our owner John would always say, "Welcome to the bushes!"

Back to Oregon

In February 1984, my wife and I moved to Portland. I ended up getting a job with a seed supplier. Eight years later, I quit that job and my company, Athletic Field Design, was born. Now 25 years later I couldn't have picked a better industry to work in. Through my affiliation with the Sports Turf Managers Association and my developed clients from youth sports, high school, college and pro, I have been able to service my customers with quality work and education on sports turf maintenance and installation.

The most rewarding accomplishment though is that my son Andy, who started working with me at the age of five, played baseball all the way through college, and subsequently worked with the Washington Redskins and the Los Angeles Dodgers. Andy has taken up my passion and started his own athletic service company, Athletic Applications, and recently relocated to Phoenix.

I'm proud to have helped others get into this industry, like Chris Farhner, formerly with Sacramento River Cats; Chris Arnold, now with the Reds spring training facility in Goodyear, AZ; Casey Griffin, formerly with the Albuquerque Isotopes; and my fan favorite, Ryan Coleman, currently with the Isotopes.

Looks like I'm finishing at the start line! **/ST/**

Mike Hebrard is president of Athletic Field Designs, Clackamas, OR
www.athleticfield.com

Capitol Hill High School before

Capitol Hill High School after

"Fields & Futures" follow-up

Two years ago we shared the story of how a bus tour in 2011 to show donors of the Wes Welker Foundation how their gifts were supporting the equipment needs of Oklahoma City Public Schools Athletics quickly became the launching pad for Fields & Futures. This nonprofit program was created in 2012 by Liz and Tim McLaughlin to help OKCPS grow student participation in sports by rebuilding or upgrading 44 athletic fields across the district. Fields & Futures is a member of the Oklahoma Chapter of STMA (https://fieldsandfutures.org).

STMA member Tracy Schneweis, athletic fields supervisor for OKCPS, recently reached out to us to update the program's progress. "I think it's really great from a sports turf managers prospective that having nice, safe playing fields can really influence whether or not a student participates in sports and can ultimately lead them to having are reason to stay in school and graduate," Tracy wrote.

"Basically there was a concern in OKC as to why students were not participating in school sports so they started asking the kids. A lot of the kids responded with 'look at our fields/facilities; would you want to play on those?' So Tim and Liz decided to start Fields and Futures," he wrote.

Schneweis said the McLaughlins started with the two biggest middle schools in the district just to see if their idea would work. Within a year student participation doubled and the next year it doubled again. With the increase in participation in sports the students who took part were getting better grades and had better attendance (have to stay eligible to play), were being referred to principals much less, had a higher self-worth, and had better social skills.

So the next step was to renovate the high school fields. We are far enough along that the numbers are back; 99% of students who participated in one sport in middle school graduated from high school. This number is well above our average in OKC and well above the national average.

On top of the field renovations there was also a need for professional development for our coaches, which Fields and Futures is also helping with. Because of the success of Fields and Future, there have been many other groups who have joined us in creating better facilities in OKC. The Wes Welker Foundation came on board and supplies each site that is renovated with basically a new weight room/equipment. Cleats for Kids is teaming with us to help provide the student athletes with not only shoes/cleats, but also other equipment; almost 90% of our school district residents live below the poverty line, so many can't afford the equipment needed to play.

"The Cal Ripken Foundation is teaming up with us for the field renovations at Southeast High School starting early this year. Also our local professional soccer team, The Energy, is a huge partner. They use one of four district stadiums and for every ticket sold $2 goes into a fund that is used for the maintenance of the fields (fertilizers, weed control, etc.). We do not want these fields to become neglected and go back into the state of disrepair, so we have a plan in place to make sure that doesn't happen. There are many other donors and partners in the whole project, but I wanted to highlight a few just to give you an idea of how this thing is growing," Tracy wrote.

Recent milestones

- October 2016: Cut the ribbon on three new fields at Roosevelt Middle School
- October 2017: Cut the ribbon on three new fields at Star Spencer High School, bringing our new field total to 20
- June 2017: Secured a $1.5 million dollar gift from Group One Thousand One, an insurance company in Indianapolis, with a $1.5 million match opportunity
- September 2017: Created and launched a new 30-minute television show called "Power of Sports," 100% funded by Group One Thousand One, to advocate for youth sports and education as a proven method for positive social change. The show is filmed in a different market each month and airs on multiple FOX Sports regions across the country. Fields & Futures has a recurring 2-minute segment in each show. For more info and to see our F&F segments, visit *www.PowerofSports.TV*. **/ST/**

JOHN MASCARO'S PHOTO QUIZ

JOHN MASCARO IS PRESIDENT OF TURF-TEC INTERNATIONAL

ANSWERS FROM PAGE 17

The missing pitcher's mound at this AA Baseball Stadium is the result of removing the mound for NASL Soccer. The Baseball Grounds of Jacksonville are home to the Double-A Southern League's Jacksonville Jumbo Shrimp. In 2015 and 2016, the stadium also hosted the Jacksonville Armada FC of the North American Soccer League. During this time period, the field had to be converted from baseball to soccer and back again more than 20 different times. Each conversion involved removing the clay mound, which is specially designed in steel trays to come apart in six separate pieces. A 7-foot swath of sod also needs to be removed around the 95-foot arc from 1st to 2nd, 2nd to 3rd, 3rd to home and along the 3rd base foul line in foul territory. They also remove some warning track material so the sod will be at grade with existing baseball field turf.

Thick-cut sod is then installed over the prepared surfaces and the field is lined for soccer. This entire conversion process takes about 20-25 hours to complete. Removing the sod and converting the field back to baseball takes an additional 30-36 hours. Events like these is why they say being a Sports Turf Manager has very few dull moments.

Thanks to Christian Galen, Sports Turf Manager for the Jacksonville Jumbo Shrimp's Baseball Grounds in Jacksonville, FL for allowing me to take these photos.

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

SMITHCO INFIELD GROOMER

Make your fields safer with a Smithco infield groomer with center-mounted scarifier. Providing safe playing surfaces has become a top priority of Grounds Managers, Coaches and Managers. It's a top priority at Smithco, too. Our new Groomers help make infields, base paths and warning tracks consistently smooth, level and attractive while providing the surface with enough give to help prevent injuries from falls, slides or even bad hops. A center-mounted scarifier is important. It's where most of the machine's weight is available to help dig into hard surfaces. And it separates Smithco from other groomers. Five models in both 2- or 3-wheel drive, 16 or 18-hp gas engines; 18-hp diesel engine, hydraulic or mechanical steering; "Star Trak" drive system on 3-wheel drive models; and a wide range of implements for grooming, rolling, aeration, renovation, construction, debris and core removal, topdressing and fertilizer applications and standing water management.

Smithco

TRIPLE-PLAY INFIELD GROOMER

The simple but rugged design of the TurfTime Triple-Play infield groomer makes it one of the most efficient tools for grooming infields. Keep your maintenance team happy and player's safe with this great infield groomer. Easily and quickly remove debris, uproot invading grass, scarify, groom and level the infield for consistently safer play. Replace crude drag mats, bedsprings or other floating drag devises. Our Triple-Play groomer will loosen, level, smooth, and broom finish your infield for secure footing and ball bounce players expect at a very competitive price. The Triple-Play infield Groomer is designed to shave down high spots while filling in the low spots. Available in 60 and 78 inch 3-point units and 60-inch tow-behind or combo. Tow-behind unit available with manual or electric wheel kit.

TurfTime Equipment

TORO SAND PRO 3040

The Toro Sand Pro 3040 infield groomer is a versatile machine that does an exceptional job in a number of applications. The 3WD Series/Parallel traction drive improves traction in wet or heavy working conditions to get the job completed quickly. The Quick Attach System (QAS) allows for under-a-minute attachment changes for 20 attachments. Each attachment was specifically designed to take the operator influence out of the equation for high performance and a consistent surface finish. To build a Sand Pro using Toro's online configurator, please visit: http://sites.toro.com/sand-pro-configurator/.

The Toro Company

TURFFLOAT FROM G2TURFTOOLS

The turffloat machine is a patented leveling device for use on the existing turf of athletic fields, including baseball infields and warning tracks. It employs a unique design that eliminates turf damage and produces a smooth flat surface. The turffloat is attached to the three-point hitch of a tractor providing a cost effective way of leveling and smoothing any surface. The turffloat has also been proven effective for leveling baseball and softball base paths and warning tracks and infield skinned areas. When the turffloat is used in conjunction with topdressing and aerification, it eliminates low spots and gets rid of the troubling cores on any turf thus making it no longer necessary to harvest the cores. The turffloat is one tool that can be used on both infields and outfields.

g2turftools

KROMER FIELD COMMANDER

The Kromer Field Commander infield groomer is the original Athletic Field Maintenance machine. Kromer is committed to manufacturing the best quality equipment on the market with the best warranty available. During the past 30+ years Kromer Company has been dedicated to using its engineering experience and our customer input to build a superior quality machine with unmatched durability, and the most powerful engines (Honda GX630 20HP), highest capacity fuel tanks, water tanks, and hydraulic tanks. Attachments

include the ridge removal brush, multiple sizes of infield scarifier, spray booms etc. Kromer is also the only Athletic Field Maintenance Machine that has the ability to groom your infield and spray water for dust control all at the same time. The Kromer Field Commander Pro Model, built on our FCX chassis is equipped to take any and all attachments now and in the future, as your needs change or expand.

Kromer Company

PRO GROOMER PR72 INFIELD MAINTENANCE MACHINE

When it comes to preparing infields before and during the season there is no better machine than the PR72 Pro Infield Groomer from Heying Company. It's a multi-function machine that that will save you labor when it counts the most. Provide athletes with better and safer playing conditions and spend less time doing it. Restores, maintains and keeps infields level, and well groomed in less time than other machines. Levels by cutting off high spots and filling in low areas. Breaks up hard-compacted surfaces. Saves labor, reduces water puddling, and controls weeds. Pull with a variety of machines. No tools needed to adjust. Available with manual or electric lift.

Infield-Drag/Heying Company

SWEEP RITE FOR SYNTHETIC TURF

Turf Pride LLC has begun production of commercial Lawn Sweepers. Sweep-Rite is a robust tow behind sweeper. Sweep-Rite can handle cleanup of leaves, debris, and grass clippings. Sweep Rite is the preferred sweeper in artificial turf maintenance. "Along with the proven performance, durability and a great history, we are in a position to provide service parts for the now discontinued Parker Sweeper*," said Don Cotton, President of Turf Pride. Replacement parts are now available for Suburbanite* and Estate Master*, that were manufactured by Parker and Gravely. *OEM names and models are used for descriptive purposes only; Turf Pride claims no association with them. Turf Pride LLC manufactures products for the turfgrass professional. Products include deep tine aerators, Trion Equipment Lifts, Ultra-Thin rotary blades for sports turf.

Turf Pride LLC

NEW RAIN MASTER DX3 SATELLITE CENTRAL CONTROL

Rain Master launched the DX3 Satellite Central Control System, powered by Laguna software. Designed for the needs of specifiers, sports fields and grounds managers, cities and municipalities, DX3 offers a range of unique features that provide convenience, security and flexibility. Able to operate up to 96 conventional stations or 200 two-wire stations, the DX3 is all about flexibility and options to suit the specific needs of many outdoor environments. A hybrid operation option gives the DX3 the ability to operate two-wire and conventional wiring at a single controller. It can accommodate up to 16 programs and includes independent station control (ISC) that allows each station to be programmed separately. DX3 is capable of handling several wireless communication options to establish communication to the central control system from many platforms. It also can operate up to 3 master valves, 3 flow sensors and 2 pumps for large- or medium-sized systems.

Rain Master

SPORTS TURF RENOVATOR

The 60-inch Sports Turf Renovator is a tractor PTO-powered turf renovation machine that has many uses. In just one pass it will remove the problematic infield lip on a baseball diamond, de-thatch, aerate, verticut and level turf. Using this machine will significantly reduce irrigation costs while promoting healthy turf. This machine has been widely used by governmental agencies, cities, school districts, colleges, and professional sports teams. The depth of the cut is infinitely adjustable with the use of a ratchet jack from 0-2 inches. The lips on an entire baseball field can be removed easily without removing the existing turf. This machine will turn rock hard infield red dirt into soft usable media without disrupting the base.

Power Turf Renovation

BEING PRODUCTIVE WITH BLOWERS AND VACUUMS

Editor's note: This article was supplied by Billy Goat.

Blowers and vacuums have become ubiquitous in the equipment sheds of most sports complexes today. Often we see them in high profile events. For example, blowers have been spotted during the US OPEN drying courts after rain delays. Vacuums are seen cleaning celebration debris following a win for many major league teams be it MLB, NFL, or MLS. However, they are most often seen doing the seasonal chores to productively clean up sports turf as well as the pedestrian and parking areas that surround them, to keep them looking their best. Most commonly, we see them in use for seasonal leaf, bloom, and seed clean up in spring and fall as well as litter clean up throughout the year. Following are some productivity tips to consider when buying blowers and vacs.

Blower productivity and tips. When looking at blowers, consider walk behinds. Backpack blowers often require too much labor and a walk behind can accomplish just as much work and more, with less labor. Consider that one 18-hp walk behind blower can do as much work as up to seven laborers with backpacks! A 13-hp blower may be the most productive for the money with the equivalent output of 6 backpacks. In addition, push blowers are often quieter than two-cycle backpacks and require no mixed fuel.

Ergonomically, with walk-behind blowers there is no weight on the backs of your crew and today's walk behind blowers offer an optional single speed self-propelled feature that eliminates the fatigue associated with pushing units on turf or in hilly conditions for even better productivity. The self-propelled feature also comes in handy when loading a truck, as ramp loading can be done with no lifting. Lastly, directional air discharge is available at your fingertips and allows the operator to come on and off work as is required by job for precise control.

Vacuum productivity and tips. When looking at vacuums, key things to consider are: push vs. self-propelled; ease of bag handling; width of intake and ease of adjusting the intake; ease of installing and using an optional hose kit; and need of dust control.

For mostly hard surface and a small amount of time spent on cleanup, an entry-level push model would be best. If the crew is using vacs often, and also on turf, then a wider model is best. Self-propelled systems, easy slide out bags and simple debris loading and unloading make for the most productive models. If the crew is frequently using the optional hose kit to clean up in hard to reach areas, then models that allow the system to easily shift between vacuum and hose kit are preferred. Also, look for systems that have adjustable height intake doors that are adjustable from the operator station to easily handle different size debris such as larger bottles or cans.

Lastly, in the case of dusty conditions, new dust socks are available to keep the dust to a minimum. These dust socks wrap around a standard turf bag. Remember, however, that these bags can only be used in dry conditions. Should they get wet, they will not work as it knocks out the static charge in the material that helps them attract the dust.

Turf application with a 29" gobbler door that switches between hard surface, turf or hose application.

Models that allow the system to easily shift between vacuum and hose kit are preferred.

13-hp walk-behind blower with optional single speed self-propelled feature.

IMPACT OF BLOWER ANGLES ON PRODUCTIVITY

After hearing from sports turf managers about losing operators to hours spent blowing debris, Turfco looked at how using different blower angles can impact productivity, and how its Torrent 2 Debris Blower could be modified to help operators in the field. The company found that setting blower angles too low or too high can add 2.7 to 5.5 hours to an operator's work, taking away labor and productivity that are critical to daily operations.

Turfco found that it can take as little as 0.27 seconds of reaction time with a remote to miss the optimal angle on any blower. In response, the company designed its MagnaPoint technology for the Torrent 2 with patent-pending adjustable magnetic stops that allow operators to pinpoint the optimal blower angles for common debris at every pass. Because managers can set the blower angle in the shop, it removes the guesswork for operators in the field.

Turfco's observations showed that:

- Close to 31 percent of distance is lost when a blower is set 15 degrees too low.
- Distance can be reduced by as much as 48 percent when a blower is set 30 degrees too low.
- Blowers set above the optimal blowing angle can reduce the distance debris is blown to as little as four percent.
- Blowers set to horizontal or higher have zero results in moving debris.

WRIGHT INTRODUCES NEW GENERATION STANDER X

Wright Manufacturing has introduced an all-new Stander X Gen 2 mower. This new mower improves on the original Stander X, introduced in 2013. The Gen 2 has more than a dozen new features, including: 8-gal fuel tank; push-button deck height adjustment lever; 3" wider platform; larger frame tubes; more sealed connections in the wiring harness; redundant circuitry in the PTO switch; sealed platform switch; larger muffler with engine guard; highly visible hydro oil cover; easy access to the hydro oil filter; and heavy-duty control rod ends. The Stander X Gen 2 is available with AERO CORE deck widths of 48", 52" and 61" and engines ranging from 22 to 24 HP. With no seat, seat belts or armrests, you can step off for a quick exit or to pick up debris. The Stander X's low center of gravity and large wheels optimize stability, even on hillsides.

Wright Manufacturing

BRIGGS & STRATTON V-TWIN ENGINES NOW IN MORE EQUIPMENT

Briggs & Stratton Commercial Power introduces an upgraded and expanded line of Commercial Series V-Twin engines backed by a global 3-year commercial limited warranty. The light-duty commercial line now includes nine models, ranging from 16 to 27 gross horsepower. The patented Integrated Cyclonic System offers air handling to help the Commercial Series stand up to demanding, high-debris applications. A rotating debris-chopping screen cuts debris into smaller pieces while a robust fan forces the debris particles down and away from the engine. Further, a series of baffles and an ejector chute prevent dirt and large debris from reaching the air cleaner housing, which ejects dust and fine debris through a duckbill-shaped valve. The engine's large cyclonic air cleaner filter lasts for 250 hours of operation and requires no tools to replace. An optional high-flow static cover further improves airflow in high-debris applications.

Briggs & Stratton

Turfco Torrent 2 Debris Blower

Wright Stander X Gen 2 mower

Briggs & Stratton V-Twin engine

FIELD OF THE Year

FIELD

PATRICIA WILSON FIELD

STETSON UNIVERSITY

LOCATION

DeLand, FL

- **Category of Submission:** College Softball
- **Sports Turf Manager:** Steve Barnard
- **Title:** Field Maintenance Technician
- **Education:** Bachelor of Science Field of Study: Turfgrass Science
- **Experience:** Former foreman for the City of DeLand's Sperling Sports Complex for 25 years. It is a 35-acre park (1 full size baseball field, 3 adult softball fields, 3 soccer/football fields, and 4.5 practice area for total of 22 acres of bermuda turf); 7th year at Stetson Softball (Patricia Wilson Field).
- **Full-time staff:** Steven Barnard; Frank Griffin, Head Softball Coach; Vanessa Bataille, Associate Head Softball Coach; and Joanna "JJ" Payette, Assistant Softball Coach
- **Original construction:** 2002
- **Rootzone:** 100% sand
- **Turfgrass variety:** Tifton 419 bermudagrass
- **Overseed:** We overseed in late November or early December after an application of pre-emergent. We use typically 500 to 700 pounds of Trilogy Signature BT Perennial Ryegrass Blend on our entire complex.
- **Rootzone:** 80% sand, 20% other, which includes native soil in common and practice areas; 80/20 in outfield; Turface (Pro League Red) 2-3 tons on skinned areas.
- **Drainage:** Sideline drains; slight valleys built into terrain emptying into culverts to retention area; field itself has a 1% grade to outfield.

Why STMA should consider your field a winner?

This year at Patricia Wilson Field (PWF) has been a busy one, filled with major renovation projects for the first and third base bullpens and the addition of a new batting cage. As PWF continues to age, we find ourselves always trying to upgrade the facilities.

The bullpen renovation was a major undertaking. Both areas needed to be raised, enlarged, and re-leveled. The bullpen area now has a block retaining wall and concrete footings for the pitching mound perimeter. Both bullpens were designed to be identical, equity for both home and visiting teams. The bullpens are now the top in the Atlantic Sun Conference.

During the coolness of the new year, we renovated our backstop. The structure and the padding were in excellent condition, but it needed a new weather resistant exterior.

In August, we finally broke ground on the 70-foot batting cage addition to our hitting facility. In order to create space for the new cage, we removed one hitting station and built a 4-foot high retaining wall. After rerouting sprinklers, conduit, and drainage,

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

the area was backfilled. The new batting cage reduced the size of our warmup turf, but expanded the functionality of our hitting facility at PWF.

Just as the new batting cage was being completed, Hurricane Irma decided to make landfall. Prior to landfall, the softball staff took 2 days to secure PWF: the removal of all windscreen, the attachment of possible projectiles, and various other tasks that seem menial until it comes to hurricane season.

After Irma made her appearance, only essential university staff was allowed back on campus. Luckily this year, our staff was considered "essential." Upon returning to PWF, we found that from the wind and rain, the majority of the infield was in the outfield turf. The other portion had washed out beyond the outfield fence. Though the damage seemed minimal in comparison to other hurricane seasons, it was still a challenge to make immediate repairs while the university and county was still without power. After being closed for 2 weeks, the university reopened to students and we were finally able to resume practices.

> "JUST AS THE NEW BATTING CAGE WAS BEING COMPLETED, HURRICANE IRMA DECIDED TO MAKE LANDFALL."
>
> – *Steve Barnard*

Our final project in this STMA cycle was the hardware overhaul of the scoreboard. The scoreboard itself was gutted 2 years ago; however with technology changes and the adverse climate of Central Florida, parts needed to fixed.

SportsTurf: What are your main responsibilities? And what does a regular working week entail, if a "regular week" even exists?

BARNARD: My main responsibilities consist of the care of all turf in and around the softball park including the maintenance of the infield and all warning track material in and around the park. Typically, we play 80% of our games at home, including hosting multiple tournaments. This means that a typical work week does not usually exist; however Coach Frank Griffin, players, and staff pitch in to help wherever they are able.

ST: Are you planning anything different (major or minor) this year for the winning field?

BARNARD: Our plans consist of the installation of underground wiring and new camera platforms with additional locations that will be used for television broadcasts. We are also looking into fraze mowing our 16-year-old original outfield.

ST: What advice would you give to someone looking to start the journey in turf management or what advice do you wish someone gave you when starting out?

BARNARD: For someone just starting my best advice would be to take in ideas from wherever you can; there is always

something new to learn. Eventually, one of the most important lessons you learn will be that we all share the same obstacles and challenges, so it is beneficial for you to network with your fellow turf managers.

ST: You know a lot of sports turf managers; what are they saying are the biggest obstacles to overcome for them to be successful today?

BARNARD: Unfortunately we're still seeing limited budgets and understaffing along with overscheduling. Having everyone involved understand the importance of drill rotations to ensure safe playing conditions.

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

BARNARD: STMA has been a good source of information by which I have been able to improve the work that I do daily.

ST: How do you think the industry will change in the next 10 years?

BARNARD: In the future, the industry will likely face further limitations on water consumption and the usage of fertilizers and pesticides. To overcome these obstacles, technological advances in equipment, irrigation systems and chemical applications must be made.

MAINTENANCE PLAN

January

- Element 6 1⁄2 gal twice a month per acre 3lbs turf fuel 6-0-0 minor pack monthly Vanquish wetting agent 3oz. per 1,000 monthly

February

- 15-0-15 plus, 67% Ronstar 1lb. N per 1,000 Element 6 1⁄2 gal twice a month per acre
- 3lbs turf fuel 6-0-0 minor pack monthly Vanquish wetting agent 3oz. per 1,000 monthly

March

- Element 6 1⁄2 gal twice a month per acre 3lbs turf fuel 6-0-0 minor pack monthly Vanquish wetting agent 3oz. per 1,000 monthly 21-7-14 = 1lb. N per 1,000

April

- 24-2-11 50% XCU 1lb. N per 1,000 Element 6 1⁄2 gal twice a month per acre 3lbs turf fuel 6-0-0 minor pack monthly Vanquish wetting agent 3oz. per 1,000 monthly Top choice 2lbs.per 1,000

May

- Tranxit herbicide 1 1⁄2 oz. per acre Element 6 1⁄2 gal twice a month per acre 3lbs turf fuel 6-0-0 minor pack monthly Vanquish wetting agent 3oz. per 1,000 monthly 21-0-0 twice a month, 1lb. N per 1,000 6 inch by 1⁄2 inch core and Harvest 2x2 spacing

June

- Verticut and Top dress 21-7-14 1lb. N per 1,000 21-0-0 1lb. N per 1,000 3 times Element 6 1⁄2 gal twice a month per acre 3lbs turf fuel 6-0-0 minor pack monthly Vanquish wetting agent 3oz. per 1,000 monthly

July

- 15-0-15 plus .67% Ronstar 1lb. N per 1,000 Core 5/8 tines and Harvest before Pre-emergent application Element 6 1⁄2 gal twice a month per acre 3lbs turf fuel 6-0-0 minor pack monthly Vanquish wetting agent 3oz. per 1,000 monthly

August

- Element 6 1⁄2 gal twice a month per acre 3lbs turf fuel 6-0-0 minor pack monthly Vanquish wetting agent 3oz. per 1,000 monthly

September

- 24-2-11 50% XCU 1lb. N per 1,000 Element 6 1⁄2 gal twice a month per acre 3lbs turf fuel 6-0-0 minor pack monthly Vanquish wetting agent 3oz. per 1,000 monthly

October

- Element 6 1⁄2 gal twice a month per acre 3lbs turf fuel 6-0-0 minor pack monthly Vanquish wetting agent 3oz. per 1,000 monthly 21-0-0 1⁄2 lb. N per 1,000

November

- Element 6 1⁄2 gal twice a month per acre
- 3lbs turf fuel 6-0-0 minor pack monthly Vanquish wetting agent 3oz. per 1,000 monthly Tranxit herbicide 1 1⁄2 oz. per acre (10 to 14 days before overseed) Air 2g2 injection before overseed Scalp down and versa vac before overseed Overseed 15 lbs. per 1,000 Blue Tag Perineal Rye

December

- 18-24-11 25% XCU 1lb. P per 1,000 Element 6 1⁄2 gal twice a month per acre 3lbs turf fuel 6-0-0 minor pack monthly Vanquish wetting agent 3oz. per 1,000 monthly

2018 STMA Board of Directors take office

THE 2018 STMA BOARD OF DIRECTORS took office during the association's annual meeting on Thursday, January 18, in Fort Worth, TX. The meeting is held in conjunction with the association's annual conference and exhibition.

The Officers are:

President: Sarah Martin, CSFM, City of Phoenix Parks and Recreation, AZ
President-Elect: Jody Gill, CSFM, Blue Valley School District, Overland Park, KS
Immediate Past President: Tim Van Loo, CSFM, Iowa State University, Ames, IA
Vice-President Commercial: Boyd Montgomery, CSFM, CSE, The Toro Co., Bloomington, MN
Secretary-Treasurer: Jimmy Simpson, CSFM, Town of Cary, NC
Directors include:
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Randy Price, Tri-Tex Grass, Granbury, TX - Commercial
Sun Roesslein, CSFM, North Area Athletic Complex, Golden, CO - Schools K-12

A NEW STMA.ORG

STMA unveiled its new website during the STMA Conference last month. A 12-month project, the website underwent a total redesign in look and feel, and in functionality.

Sporting a contemporary design, the site is now mobile responsive, search friendly, and its updated technical content is easy to find and download.

A new feature is the Job Board, which is searchable and available on the public side of the website for anyone to view the listings. Open positions can now be posted through an online form by members and non-members. There will be a fee of $60 assessed to non-members to post an open position; this automatically includes an STMA Affiliate membership.

Another new feature is an interactive map of STMA's affiliated chapters. Click on a state and the chapter that serves that geographic area will pop up. Within the chapter micro-site, chapter administrators will find helpful information all in one place to better manage their responsibilities.

Members who log in will experience a seamless transition from the public side – to members only – to public: the same look and feel for both, with only logging-in one time.

The STMA Technology Team, led by Matt Anderson, CSFM, guided the development of the new website. Members of that team are Chris Bell, Jason Craft, CSFM, Grant Davisson, Ben Polimer, Jeff Salmond, CSFM, and Edgar Vallejo. Kenzie Jay, STMA Sales and Marketing Manager, led the project at Headquarters. The website redevelopment was funded, in part, by the 2018 membership dues increase with additional funding committed by the STMA Board of Directors from the reserve fund.

For the immediate future, STMA will be adding more video content.

Screen shot of the new STMA website.

When does a field become unsafe?

STMA received an innovation grant from the American Society of Association Executives Foundation to investigate if it is possible to determine when a field becomes unsafe for athletes. Led by Dr. Brad Fresenburg, a team of academics addressed this challenge and ultimately recommended that STMA's Playing Conditions Index (PCI) include additional information and be reengineered into a digital format.

The expanded spreadsheet now allows sports field managers to keep ongoing records for each field, generates a PCI for each field being tested, and it provides immediate feedback to sports turf managers about areas of their field that need attention, if unsafe conditions are present. The spreadsheet may be used for all the sports fields at the facility and can be used as many times as needed.

Currently, the spreadsheet is only available for natural grass fields and can be found on STMA's website, STMA.org, in Athlete and Sports Field Safety section. A spreadsheet for synthetic fields is being developed.

Over time, STMA plans to develop a database that will help bring our industry closer to making informed decisions about when fields become unsafe by identifying trends with field usage. Please help us with this data. When you collect field data using the spreadsheet, please send the results to STMAinto@stma.org to help us further the mission of keeping fields safe and playable for our athletes.

	A	B	C
169		1 = Dormant	
170		3 = Over-seeded	
171		5 = Actively growing	
172			
173	12. Percent worn turfgrass cover		
174		1 = More than 40% is bare soil	
175		2 = 30 to 39%	
176		3 = 20 to 29%	
177		4 = 10 to 19%	
178		5 = 0 to 9%	
179			
180	Using a free app, (http://www.canopeapp.com/applications.html). Answer the following questions.		
181		Questions 13 & 14 should total 100	
182	13. Percent turfgrass cover by digital imaging		
183			
184	14. Percent bare ground by digital imaging		
185			
186	Progression of wear could be tracked weekly during the season showing which parts of the field wears more quickly.		
187			
188	15. Percent infestation by weeds		
189		1 = More than 40% infested	
190		2 = 30 to 39%	
191		3 = 20 to 29%	
192		4 = 10 to 19%	
193		5 = 0 to 9%	
194			
195	16. Type of weed infestation (answer only if 1 to 4 received on question 15)		
196		-1 = Manageable (dandelion, etc.)	
197		-3 = Difficult (dallisgrass, goosegrass, etc.)	
198			
199	17. Percent infection by diseases		
200		1 = More than 40% infected	
201		2 = 30 to 39%	
202		3 = 20 to 29%	
203		4 = 10 to 19%	
204		5 = 0 to 9%	
205			
206	18. Severity of disease (answer only if 1 to 4 received on question 17)		
207		-1 = Manageable (red thread, dollar spot, etc.)	
208		-3 = Difficult (spring dead spot, gray leaf spot, etc.)	
209			
210	19. Percent infestation by insects		
211		1 = More than 40% infested	
212		2 = 30 to 39%	
213		3 = 20 to 29%	
214		4 = 10 to 19%	
215		5 = 0 to 9%	
216			
217	20. Type of infestation (answer only if 1 to 4 received on question 19)		
218		-1 = Manageable (grubs, etc.)	
219		-3 = Difficult (billbugs, etc.)	
220			
221	Records should indicate type of pests by genus/species, amount of infestation, time of year, control measure and control.		
222			
223	Cultural Practices:		
224			
225	1. Mowing frequency for this field		
226		1 = Less than weekly	

An example of the new digital PCI worksheet.

Tim Van Loo, CSFM, STMA President, presented the STMA/MiLB Sports Turf Manager of the Year Awards at the 2017 MLB Winter Meeting.

STMA/MiLB Sports Turf Manager of the Year Award winners, L to R: Presenter Tim Van Loo, CSFM; Ray Sayre, Pensacola Blue Wahoos; Ryan Olszewski, Mahoning Valley Scrappers; Mike Williams, Charleston RiverDogs; Matt Parrott, Charlotte Knights; and Robert Fogg of award sponsor, John Deere.

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STMA Affiliated Chapters Contact Information

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

Colorado Sports Turf Managers Association: www.cstma.org

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

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

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

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

Georgia Sports Turf Managers Association: www.gstma.org

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

Illinois Chapter STMA: www.ILSTMA.org

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

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

Iowa Sports Turf Managers Association: www.iowaturfgrass.org

Kentucky Sports Turf Managers Association: www.kystma.org

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

Mid-Atlantic STMA: www.mastma.org

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

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

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

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

Sports Field Managers Associationof New Jersey: www.sfmanj.org

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

North Carolina Chapter of STMA: www.ncsportsturf.org

Northern California STMA: www.norcalstma.org

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

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

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

Ozarks STMA: www.ozarksstma.org

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

Southern California Chapter: www.socalstma.com

South Carolina Chapter of STMA: www.scstma.org.

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

Texas Sports Turf Managers Association: www.txstma.org

Virginia Sports Turf Managers Association: www.vstma.org

Wisconsin Sports Turf Managers Association: www.wstma.org

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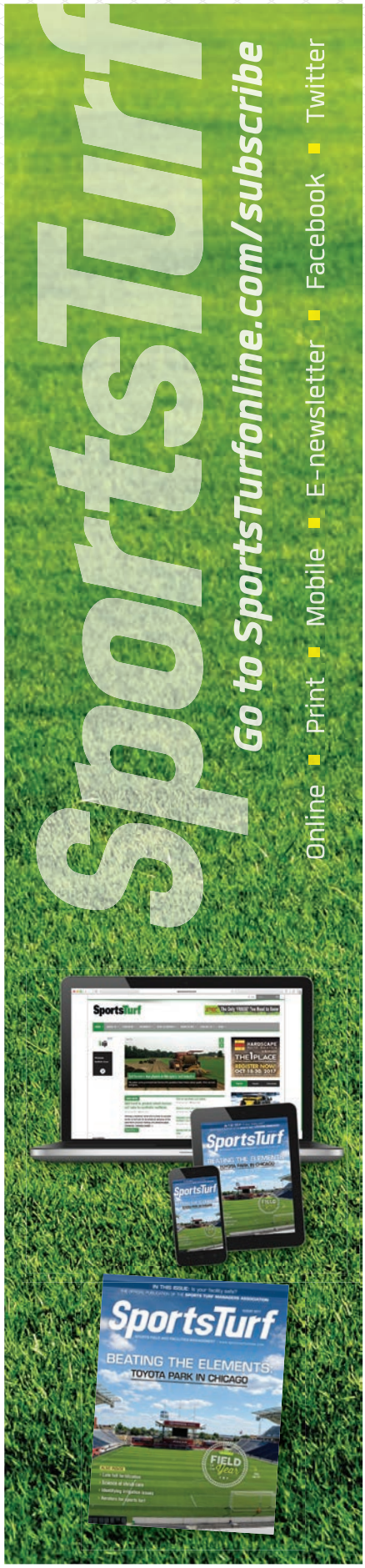

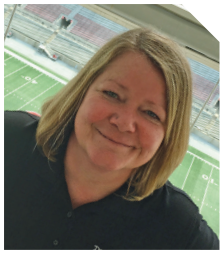

Q&A *with* PAMELA SHERRATT

Sports Turf Extension Specialist

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

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

Think spring — and seeding

Q: How soon can I seed this spring, and do you have any tips for me?

A: Cool-season grass seed germinates best when the soil temperatures are between 50-65 degrees F. If we look at Ohio, soil temperatures are consistently above 50°F by early April; however, there may be circumstances where getting the seed out a little earlier is warranted. Applying the seed in winter as a dormant seed ensures the seed is in place and ready to germinate when conditions allow. The advantages of dormant seeding are that soils are sometimes drier and easier to work, there might be more people available to do the job, and the seed may germinate earlier than a conventional spring seeding, giving it a competitive edge over crabgrass and other spring weeds. The disadvantage is that seed mortality is 30-50% higher, particularly if the seed germinates and then there's a late spring frost. So it's somewhat of a gamble, but one you might choose to make.

With any type of spring seeding, the key is to have seed down before mid-April when crabgrass germinates. Weed pressure in spring is a challenge, so ideally the seed operation would also include an application of a preemergent herbicide that controls weed seed germination without adversely affecting the grass seed. An application of mesotrione or siduron on the day of seeding, or an application of topramazone the day before seeding, should provide good weed suppression. Be careful applying other preemergence herbicides that might impede grass seed germination. Weed pressure is so great in the spring that repeat applications of preemergence and/or a postemergence herbicides may be warranted.

Another important point to make with any spring seeding is to avoid, if possible, disturbing the soil. Achieving good seed:soil contact is possible without disturbing the soil with equipment like slit-seeders, and fraze mowers. Cultivating the soil in spring opens up the weed seed bank and brings weed seeds up to the soil surface where they germinate. Weed seeds can remain viable in the seed bank for many years. The main source of weed seeds in the seed bank is from local mature weeds that set seed, so it's important to control weeds like crabgrass, goosegrass and *Poa* before they set seed.

Unfortunately it is not possible to build up a seed bank of desirable, domesticated grass seed in the soil. For a viable seed bank to build up, the seed must be in the soil but not subject to the germination triggers, i.e., moisture and warmth. It is highly unlikely that seed that has been broadcast or slit-seeded into the soil surface and subjected to rain or irrigation wouldn't germinate. This makes sense, when you think that we store grass seed in cool, dry places to prevent it from germinating or rotting. Biological seed bank management as a tool for sustainable weed management is not a topic that's discussed a lot, but maybe it should be.

Seed rates and plant health are also worthy of a mention. It's important to seed at the recommended rate for the turf species. While "more is better" is tempting, particularly 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 as they mature they will reach a carrying capacity within their community where they start to self-thin. A good example of this is crabgrass; in spring there are lots of tiny seedlings, but by the end of the season only large, singular plants remain. The crabgrass plants have competed with each other and self-thinned because they can only grow at the expense of others, otherwise known as survival of the fittest.

Ultimately, the most successful plants in the sward are those with quick germination, seedling vigor, the greatest density, and good tillering capacity. Turfgrasses with endophytes also have an advantage. It's not surprising then, that perennial ryegrass dominates and monopolizes resources, and why it's hard to get Kentucky bluegrass established in a mix where perennial ryegrass is greater than about 30% by weight.

One last point to make is that seeding is not successful on areas that already have a full, dense cover of turf. Years of research have shown us that you cannot change the species composition of an established sward by applying seed. In other words, if the field is comprised of a thick healthy sward of tall fescue, overseeding it with another species will not work. This is due to the exclusion of light in the turf canopy and the existing competition for below-ground resources. The turf sward must be thinned and soil exposed for the new seed to have a chance at germinating and establishing.

Good luck! ***/ST/***

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