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May 2016

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May 2016 | Volume 32 | Number 5

FEATURES

DEPARTMENTS

ON THE COVER:

You can't have an award-winning field without paying attention to the details of maintenance. Bruce Suddeth, Director Building & Landscape Services at the University of South Carolina Upstate in Spartanburg, and his crew of Ben Williams, Daniel Jackson, Travis Dill, David McNair, James Shull, as well as softball coach Chris Hawkins, certainly do at Cyrill Softball Stadium, the 2015 College Softball STMA Field of the Year. The STMA's Field of the Year Awards program is made possible by the support of sponsors Carolina Green Corp., Ewing, Graff's Turf, Hunter Industries, Pro's Choice, and World Class Athletic Services.

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REPORT FROM CUBA

Eric Schroder
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Former STMA President Murray Cook sent us these notes on the work done in Havana, Cuba to prepare Latino Americano Stadium's surface for the historic exhibition game in March between the Cuban national squad and MLB's Tampa Bay Rays, attended by President Obama and President Raul Castro:

"Unfortunately the field and ballpark would not meet MLB standards so significant upgrades had to be made. It was the first time since 1999 that a MLB club had played in Havana; that was with Orioles and I had to tweak the field then, too.

"Project A was renovating the infield and foul territories, which included removing the turf and raising the grade 5 inches to level it before resodding. All of this work was done by string lines, wheelbarrows, and old-fashioned manpower. We also had to spread by hand several hundred tons of sand and warning track mix to repair that warning track. DuraEdge infield clay and Diamond Pro conditioner added another 65 tons of material which, along with new outfield wall padding and field equipment, had been barged over from the USA and then were left as gifts for the Cuban field crew.

"But that was the easy part. The hard part was installing sod and growing it in a country that has very limited resources. The Tifway 419 bermudagrass sod was harvested from an agricultural farm north of Havana. It was in pretty good condition. Luis Oliveras, a Cuban turfgrass agronomist, had the turf grown to be the best it could but it still had a long way to go. We sodded the infield (it took 2 days) about 6 weeks before the event using 6 x 6-inch squares. We had just enough bermuda plugs to finish the infield so we grassed foul territory with zoysia.

"We brought in reinforcements to help with the grow-in. My good friend, Cindy Unger, from Palm Beach, FL spent a month in Cuba. I was there for 3 weeks and brought in Chad Price, president of Carolina Green, to take a look. Our sportsturf team included other STMA members as well, including Zach Severns, head groundskeeper from Augusta Greenjackets; Anthony DeFeo, sports turf manager for Tennessee Smokies; Justin Sadowski from the Potomac Nationals; and Neil Pate, stadium field manager for the Cleveland Browns.

"This was my fifth visit to the country in 3 months, which ended up being about 6 weeks on the island. It was a challenge getting the field ready for the game but it was also a wonderful experience thanks to our sportsturf team. We worked with a terrific group of people from the Latino Americano stadium staff, the Veradaro golf course crew, and the large group of local volunteers. Pretty much everyone I met working on the stadium were always asking if we needed anything or if they could help. Just great people."

Correction to the Committee List: The Innovative Task Group is chaired by Dan Bergstrom, CSFM; Mike Andresen, CSFM is a member of the task group. Lynda Wightman and Leah Brilman, PhD, were added to the Student Challenge Committee.

CLARIFICATION

In our March issue we should have credited Sports Turf Canada and its publication, *Sports Turf Manager* with their permission in allowing us to reprint the article on page 20, "Managing Water for Playability" by Brad Park of Rutgers University. We regret the oversight. ST

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DUTY OF CARE

Jeff Salmond, CSFM
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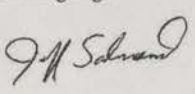
Sports turf managers are the directors of first impressions at their fields and facilities. Whether it is a recruit coming to a college campus for the first time, a fan seeing their first game at a professional stadium, or a parent bringing their child to the field for their first Little League practice, our fields leave the first, and lasting, impression upon our visitors and how we conduct our business as sports turf managers. Our performance in providing high quality surfaces for the general public to see is a direct reflection upon our employers and the perception of our sports turf industry.

A number of years ago I heard Dr. Frank Rossi of Cornell University explain a philosophy that has always stayed with me. His presentation summarized our foundation in how we should be providing safe athletic surfaces. It is called the Duty of Care. In legal terms, "the Duty of Care is a legal obligation on an individual or organization requiring that they adhere to a standard of reasonable care while performing any acts that could foreseeably harm others. It is the first element that must be established to proceed with an action of negligence."

We must bring the sense of safety and the urgency of duty of care to serve as an extension of the medical and risk management units of our institutions. Sports turf managers cannot be viewed as just grass mowers; rather we assist in a higher purpose of providing safe surfaces for athletes and work in conjunction with medical professionals such as doctors and athletic trainers. Due diligence ensures that our day-to-day actions and observations do not go unnoticed, while using the "see something, say something" attitude that will help us stay on top of underlying issues. We need to afford each child, youth, or young adult the best opportunity to excel without jeopardizing his or her experiences. We have the very important and crucial task of providing high standards and protecting the well-being of athletes that play on our fields.

The Playing Conditions Index (PCI) was established by the STMA in 2009 for sports turf managers to track field conditions. *Developed to assess the playability of your fields, the PCI is used to provide a snapshot of your fields' playability at a specific point in time. The continued use of the assessment tool provides invaluable information to the sports turf manager and can help guide field management practices, assist with communication to user groups, can help to substantiate the need for more resources, and as needed provides a way to provide information to the media relations department* (www.stma.org/playing-conditions-index-pci). The PCI along with regular Gmax testing can also be valuable to share with team doctors and trainers. The PCI is a valuable document to implement in your turfgrass management program.

As sports turf managers, we need to be better at data collection and documentation to support our maintenance and management practices to achieve our objective of safe fields. Safety/duty of care of our playing surfaces should be our universal language. ST



UNDERSTANDING, ASSESSING, & MANAGING SPORTS TURF SHADE ISSUES

BY JOHN SOROCHAN, PHD

When it comes to managing turfgrass in shade, an understanding of the actual causes of shade is important. Shade is simply the lack of necessary light for optimal turfgrass growth. Reduced light, or shade, results in reduced photosynthesis, in turn causing the induced turfgrass stress. A simple definition for photosynthesis is light energy plus carbon dioxide plus water yielding chemical energy (carbohydrates) plus oxygen plus water. Light (sunlight) is the ultimate source of most terrestrial life on earth. The sun provides light in abundance and does not appear to be a limiting factor for most turfgrass growth. However, changes in light, either quantity or quality, has dramatic effects on plants, thereby making it a limiting resource.

The components of light include light quality and quantity. Light quality is the wavelengths of light (measured in nanometers, nm), and range from very short (cosmic or x-rays) to long (radio) waves lengths. Turfgrasses, like all plants, require the visible light form 380 to 700 nm in order for photosynthesis to occur. The visible light spectrum (380 – 700 nm) is known as photosynthetically active radiation (PAR). Within PAR are the blue and red light wavelengths, which are important components for turfgrass growth and development. Blue light (~ 380 – 500 nm) is important for photosynthesis, and is the stimulus for short sturdy growth.

Conversely red light (~ 600 – 700 nm) is also important for photosynthesis, and is the stimulus for turfgrass cell elongation. Green light typically is not important for photosynthesis and is reflected giving the turf its green color.

Light quantity is the actual particles of light providing the energy necessary for photosynthesis to occur. Light quantity (energy) is the most important light component for photosynthesis to occur.

Variations in light quantity occur with the time of year, latitude, time of day, atmospheric screening, structures (stadiums, fences, etc.), and topography. During the summer light quantity is greatest; while, winter provides the least light energy. Many sports are played in spring and fall, and even into the winter months where light quantity for turfgrass growth may be limited. Depending on the time of year and latitude, the light quantity can vary greatly. In the northern hemisphere the farther north you go during the summer the longer the days are and greater the light quantity. Between 12:00 and 14:00 the light energy is most abundant. It is significantly less abundant during the time of day before and after the time when the sun is at it solar zenith. Atmospheric screening reduces light quantity, and is caused by anything that has a potential to interfere with the light wavelengths. Clouds, air pollution, humidity, and even stadiums and fences are some examples of atmospheric screening that can limit growth on athletic fields.

Dr. James Beard (1995) estimated that over 25% of all managed turf is under some sort of shade stress. Thus, shade stress likely occurs anywhere turfgrass is managed which can include golf courses, athletic fields, and home lawns to name a few. Shade (reduced light) is a reduction in both light quantity and quality. Simply having a shade situation means not enough light energy is being supplied to the turf for efficient photosynthesis to occur. Reduced photosynthesis results in reduced carbohydrate synthesis, and in turn causes turfgrass stress conditions resulting in insufficient growth and development. Tree shade greatly reduces both blue and red light quality, with the blue light being affected the greatest. As a result the short sturdy stimulus for turfgrass growth is reduced and turfgrasses elongate from the more abundant red light stimulus, and continue to lack the necessary light energy important for optimal photosynthesis to occur.

Morphological changes that occur as a result of shade stress include decreased leaf thickness, decreased density, decreased tillering (rhizome and/or stolon growth), decreased root to shoot ratio, and increased leaf height and elongation. Turfgrass physiological responses to shade include reduced carbohydrate reserves, reduced transpiration, reduced respiration, reduced cuticle thickness, and increased succulence.

25%

of all managed turf is under some sort of shade stress

PHOTO COURTESY OF SIMON GUMBRILL OF STADIUM GROW LIGHTING

Stadium grow lights at Lambeau Field, Green Bay, WI.

As a result of these morphological and physiological changes, athletic fields have a decreased capacity to recover from traffic damage.

Environmental conditions that typically accompany shade stress situations include increased relative humidity, more moderated temperatures, and restricted air movement. In turn, athletic fields become more susceptible to common low light turfgrass diseases like pink snow mold and powdery mildew.

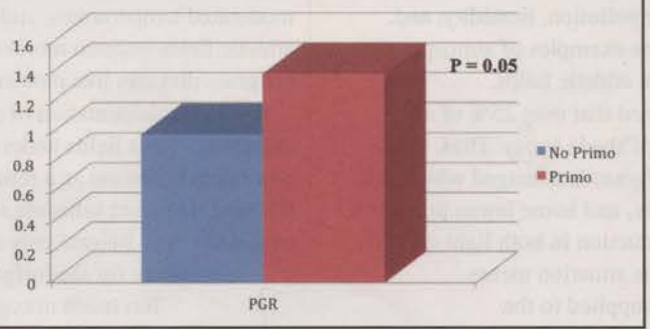
Proper implementation of cultural practices can help when managing sports fields under shade stress conditions. Because root depth is limited as a result of shade a light and more frequent irrigation schedule should be used. However, avoid over watering! Irrigate only as needed to maintain adequate soil moisture for the turfgrass. Also, avoid excess nitrogen. Too much nitrogen will stimulate increased shoot growth; thus, making the turfgrass plant more stressed. A good rule of thumb to go by is to fertilize at half the recommended rate for nitrogen requirements for the turfgrass species being grown. If possible increase mowing height to enable more surface area for light absorption. Unfortunately, for a shaded putting green increasing the mowing height is often not possible, because of the increased demands for faster putting surfaces. Finally, turfgrasses under shade stress conditions have an increased susceptibility to fungal turfgrass diseases. Therefore, if possible fungicide applications are often necessary for turfgrass survival.

Other management practices aid in turfgrass shade stress situations include limiting or redirecting traffic, tree canopy and root pruning, using plant growth regulators and increasing morning light. Although limiting traffic may be difficult, particularly on putting greens. However, any reduction in wear

PHOTO COURTESY OF SIMON GUMBRILL OF STADIUM GROW LIGHTING.

will help alleviate added stresses to the turf already under shade stress conditions. Trees are usually the major cause for shade problems, especially in golf course situations. Unfortunately, trees are also an important component to the golf course landscape. Trees add depth and aesthetic value to complement any golf course design. However, trees can also grow to exceed their original benefit and cause problems such as turfgrass shade stress. If the tree causing the shade cannot be removed, pruning both the limbs and roots will help reduce some of the problems being caused to the turf. Pruning the limbs will allow for more light to penetrate to the turf surface, and root pruning will lessen the competition for nutrients and water. Several research studies have been conducted to show the benefits of using plant growth regulators (PGRs) on turf under shade stress conditions. Stier and Rogers (2001) found that the use of PGRs like Trinexapac Ethyl (Primo), have shown to limit shoot elongation and improve photosynthetic efficiency (Figure 1). Finally, when at all possible, any attempts to provide morning light will greatly help with dealing with shade stress conditions. Morning light is when cool-season photosynthesis is at is greatest; thus, enabling for maximum photosynthetic efficiency.

Fig. 1. Effect of PGRs on Pn in reduced light conditions (3.5 mols PAR day-1) Nov. 1996

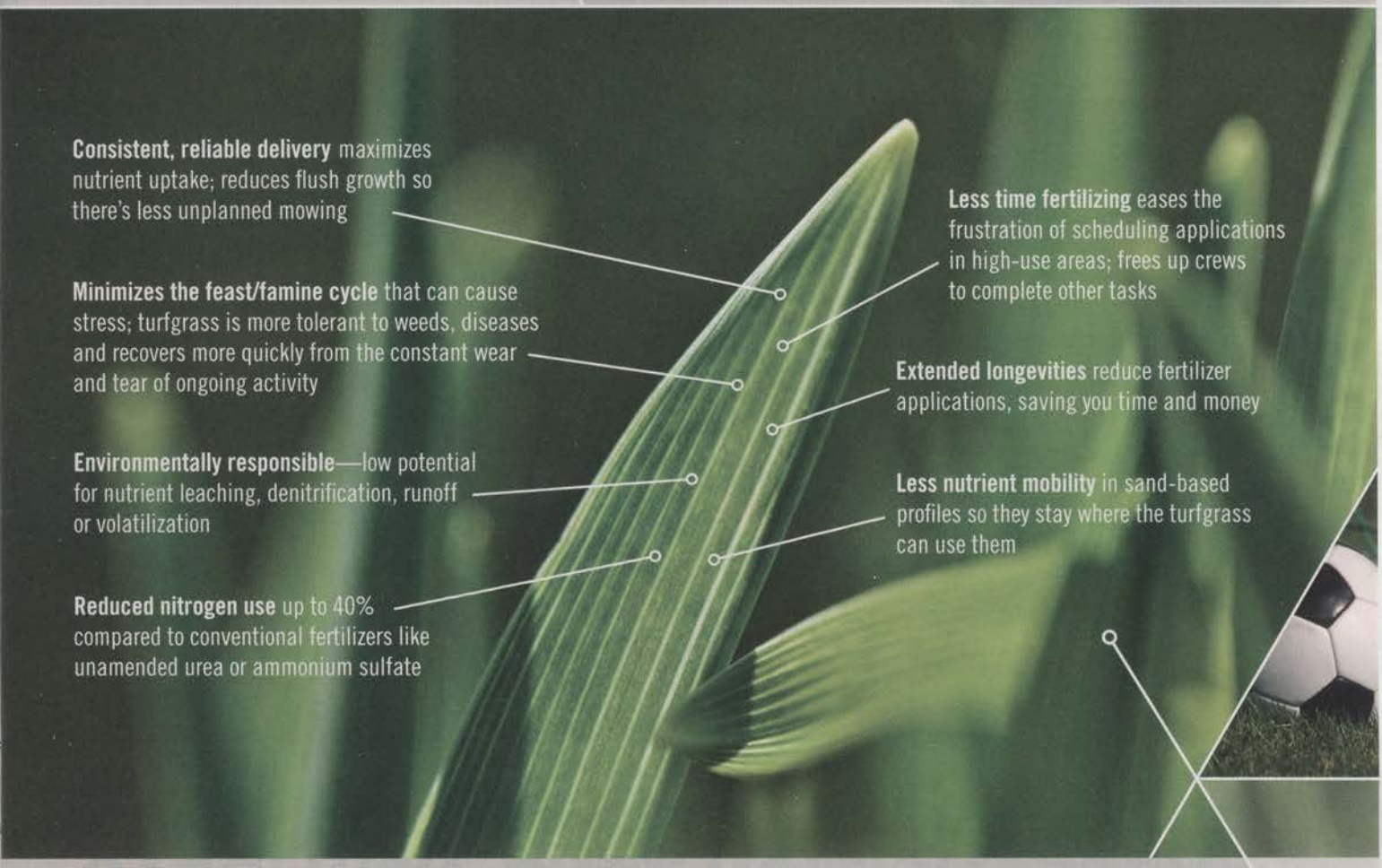


Selecting the proper turfgrass species is one of the most important decisions to make when trying to manage turfgrass in shade. Unfortunately for golf course putting greens turfgrass species selection is limited; however, for tees and roughs using a turf well adapted to shade will significantly improve your turf quality and golf course conditions. *Poa supine* is one of the best, if not the best turfgrass for shade situations. A native turf of Austria, *Poa supine* is well adapted to cool climates and performs exceptionally well in the shade.

More then 140 stadiums worldwide use grow lights to compensate for shade stress conditions. These lighting systems use high-pressure sodium (HPS) lights similar to grow lights used in greenhouses. Another benefit from the HPS lights are the increased temperatures under the lights which also improves growing conditions for stadiums in cool climates, like Lambeau Field in Green Bay, WI.

In conclusion, turfgrass management under low light/shade is common in many sports turf situations and an understanding of the cause and effects of shade stress can help a turfgrass manager improve turfgrass conditions in the shade. ST

John Sorochan, PhD, is Distinguished Professor-Turfgrass Science and Co-Director for the Center for Athletic Field Safety at the University of Tennessee in Knoxville.



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GROWING GRASS IN THE #NOTRANSITION ZONE: NEW IDEAS

BY **BRIAN WINKA, CSFM**

For years, those of us who are fortunate or unfortunate to work in the transition zone, we have dealt with the issues that come with this transitional area. We are fortunate because we can grow both warm and cool season turf grasses, but unfortunately neither one grows exceptionally well. Sports turf managers in the transition zone deal with extreme weather conditions on both ends of the spectrum. In 2013-15 we were hit especially hard with an extremely cold winter followed by a very mild summer. For those of us trying to keep bermuda fields alive in these conditions, it was one of the worst scenarios possible. If you are managing high-use fields this can be a gamble each season. So what can we do to help protect our investment?

The Chesterfield Valley Athletic Complex has nine soccer fields. We went from a little over 2000 hours of use in 2010-11 to close to 9000 hours of use in 2014.

For many of us in the transition zone this means we are overseeding in the fall, which happens to be the busiest time of year for use on our fields. We are attempting to get newly seeded grasses established in the middle of football, lacrosse and soccer seasons. If you work at a Parks and Recreation facility like I do, then there are no road games and there is play on the fields every day from either practices or games. Seed usually germinates

Five-day old HGT variety of Kentucky bluegrass

and comes up great in the low use areas of the fields; but in areas of high use that need the cover, most are often difficult to get established. By the time the high traffic areas do get established, it's time to start thinking about transitioning them out.

This is the part that makes a lot of managers anxious each spring. Each spring we are hoping that the winter was not too harsh and that our bermuda will come back. Some years we are fortunate enough to have great results managing this way and other years we deal with the challenges of establishing bermuda back to 100%. Many managers will need to seed or sprig bermuda to get the field re-established. I have read where bermuda grass needs 100 days of competition-free growth to provide maximum performance during the summer months. In some years, this can be a challenge and once the field is re-established it is just about time to over-seed again and start the process all over. So we can ask, "Does this still make sense for us in the transition zone?"

A BETTER WAY

I believe there is a better way for some of us to manage our high-use facilities. If any of you have taken the time to observe newer cool season grasses over the past 8 years, you have seen some impressive varieties appear in NTEP (National Turfgrass Evaluation Program) and real turf situations. While warm-season breeders have been producing bermuda to travel North, cool season breeders have been producing ryegrass and bluegrass varieties to travel South and there we are, in the middle. I believe they can co-exist, and this may be a viable option for some turf managers in the transition zone.

So why would you try this? 1) Extend the growing season for the FIELD. There is always a real fear of winterkill in the transition zone. 2) Provide dense and consistent green turf year round that is aesthetically pleasing. 3) Develop a stronger root system and healthier field. 4) Reduced weed invasion during winter dormancy. 5) Protect your asset while saving time and money.

By the time the high traffic areas do get established, it's time to start thinking about transitioning them out.

At our facility we need to be able to extend the season as long as we can. If you have ever looked at the growth charts for warm and cool season turfgrasses, you can see that the peak growing seasons for each come at different times in the year. If you overlay the two charts on top of each other you would see a steady growth pattern almost year round. We have managed our fields with this concept in mind and have kept both warm and cool season grasses actively growing together. We are more concerned about turfgrass cover on our fields than we are about any particular species of turfgrass. Green is green. Managing both this way has allowed us to provide a dense and consistent green field almost year round without the dips in quality that come with transitioning cool season out of bermuda.

The fear of winterkill is in almost all of us who live and work in the transition zone. Working at a complex that plays almost year round, we cannot afford to close a field due to winterkill. By having both warm and cool season turfgrass co-existing on our fields, we have virtually eliminated field closures due to winterkill. Having a

Two weeks after fraze mowing and seeding.

need to completely re-establish a bermuda field is something of the past. We can focus on building roots and developing a healthy field year round. How strong of a root system are we developing if we are constantly overseeding a field only to remove that grass months later? How strong of a root system can we be developing on our bermuda fields if we are struggling to re-establish each season?

THE PROCESS

In the fall of 2009 we inter-seeded two soccer fields with one of the newer rhizomatous perennial ryegrasses (RPR) with the thought of leaving it in the following season and start growing the field as a mix. We inter-seeded two soccer fields at 6.3#/1000sq ft and began our experiment. From this point on, the mistakes began. We thought that we could manage the field as a cool season field in the spring and fall and then change to warm season management in the summer. We fertilized with the wrong products trying to push growth on the bermuda in the summer months. We were also lacking a solid fungicide program since we did not have a lot of pressure on bermuda in the past. Needless to say we had some setbacks that first summer but we also learned some valuable lessons. If you are going to grow your fields as a mix then you need to manage your fields as a mix.

The mix is working and is successful for us. We decided to try a bluegrass bermuda mix in 2014. In May we fraze mowed our Quickstand and Patriot bermuda fields, then topdressed the surface with ¼ to ½ inch of sand and then seeded. One field was seeded at a rate of 2.2#/1000 and the other was seed in two directions totaling 4.4#/1000 sq ft. In the spring of 2015 we converted two more fields to the blue/bermuda mix. The process was the same as before except this time we introduced Northbridge and Latitude by sprigging after fraze mowing.

All turfgrasses have the same basic requirements for growth: water, sunlight, air, soil and nutrients. It is our job as managers to determine how the plants

If you are going to grow your fields as a mix then you need to manage your fields as a mix.

receive each one. We understand that the needs of one grass might not coincide with that of the other species and this may cause competition. We are sports turf managers; we manage for competition on the field so why do we shy away from it when it comes to our turfgrasses? Isn't competition a good thing? Don't we want the strongest to survive? Again it's about managing the field, not a particular grass.

By making mistakes the first season, we were able to adjust our management practices the following season. By having the warm and cool season grasses growing together, we had good cover on the field year round. Now, we no longer worry about the 100 days of competition-free growth and pushing the bermuda to

Eight weeks after fraze mowing and seeding.

Kentucky bluegrass and bermudagrass mix in June 2015.

fill in. We now feed our fields slowly year round and reduce the amount of nitrogen that we are applying. By having the ability to grow the plants slower, they are in turn healthier and stronger. Cell walls are no longer elongated and weak. Bi-weekly summer applications of 21-0-0 ammonium sulfate have been replaced by foliar feeding, slow-release organics and extended release fertilizers. Foliar nutrition can be very effective in providing nutrients to your plant, in particular if your root system is damaged or not functioning correctly. Foliar applications bypass the challenges of nutrient tie-ups in the soil that granular applications can fight. Generally, liquid applications require very small amounts of product to be effective and have little chance of burn potential.

Reducing the nitrogen has also reduced disease pressure on the fields. The transition zone can be a harsh environment to grow grass so we needed to implement a better fungicide program to fight diseases like brown patch, grey leaf spot and pythium. Conditions vary from year to year but in most years we can get away with three or four fungicide applications depending on conditions.

Results have been great with the warm and cool season mixes. Traffic tolerance has been excellent for both mixes on the fields. The Chesterfield Valley Athletic Complex has nine soccer fields. We went from a little over 2000 hours of use in 2010-11 to close to 9000 hours of use in 2014.

Before starting with the idea of managing two different species in your turfgrass program, we strongly recommend going to the NTEP website and look at the bluegrass data for OK, TN, and NC.

These three states provide the best data to find a proven bluegrass to co-exist with bermudagrass based on summer hardiness. Test plots of the bluegrass bermuda mix were established in Virginia, Kentucky and multiple sites in Missouri in the fall of 2015. We are hoping to gather information from these sites and hope to have data on seeding rates, turf quality, timing and methods of seeding. The advancements in plant genetics keep evolving and as sports turf managers, we should evolve too. The burden of managing in the transition zone can be a little less difficult if we open ourselves up to new concepts. ST

Brian Winka, CSFM, is parks maintenance supervisor for the City of Chesterfield, MO.

Thick-cut, big-roll sod being installed for Super Bowl 50

PHOTO COURTESY OF WEST COAST TURF

LEAN AND MEAN: SOD PRODUCTION FOR IN-SEASON FIELD REPLACEMENTS

BY EVAN MASCITTI, DR. ANDY MCNITT & TOM SERENSITS

Nowhere is the familiar hierarchy of field safety, playability, and aesthetics more crucial than in the National Football League. In the philosophical sense, a safe field is like an insurance policy for NFL teams. Pro athletes are pricey investments (as well as human beings!) and stable turf reduces the chance for player injuries, which are already common in football. A tightly knit turf with a dense network of roots and rhizomes provides divot resistance and surface stability. Aesthetics are also important, and a safe field can certainly look good. However, the research outlined in this article demonstrates a scenario where maximum safety and performance were achieved by sacrificing some degree of visual quality.

Nearly all grass fields in the NFL are re-sodded during the season, with some being resodded multiple times per season. Many professional stadiums also host large concerts, college and/or high school games. The additive effects of wear and non-football events eventually reduce turf cover despite the field manager's best efforts. The wear is both intense and concentrated: the majority of play occurs between the hash marks, which are only 18 feet, 6 inches feet apart in the NFL compared with 40 feet in college and 53 feet, 4 inches in high school. Heavy field use combined with low temperatures and decreasing sunlight significantly reduce turf recovery. In many cases, thick-cut sod (up to 1.75-inches thick) is installed to provide a "new" playing surface. When installed correctly, thick-cut sod can be played on almost immediately.

Once the new turf is installed, the field's initial performance is determined by the care and maintenance that it received at the sod farm. The new field must be safe and playable right out of the gate. Thus, the sod grower must institute practices in the production field that result in a turf with excellent divot resistance.

To our knowledge, no prior research had studied the best way to pre-condition thick-cut Kentucky bluegrass sod for divot resistance. We designed a 2-year study at Penn State to test various cultural practices and their relationship to performance of thick-cut sod. Our goal was to determine which treatments during the production cycle would yield the most divot-resistant sod immediately after installation.

TREATMENTS

Treatments were chosen based on input from sod growers, including James and John Betts of Tuckahoe Turf Farms in Hammonton, NJ, NFL field managers, and other researchers. The experiment was conducted at University Park, PA.

N program label†	Mar.	Apr.	May	June	July	Aug.	Sept.	Total N application
2-0	x	x						2
2-1*	**x**	**x**					**x**	**3**
3-0*	**x**	**x**	**x**					**3**
3-1	x	x	x				x	4
4-0	x	x	x					4
4-1	x	x	x				x	5

† Each N application was made at 1 lb N/1000 sq ft via ammonium sulfate.
*Fertilizer treatments which produced most divot-resistant turf

Table 1: Labels for the six nitrogen treatments, based on the number of N applications made during the spring and fall months.

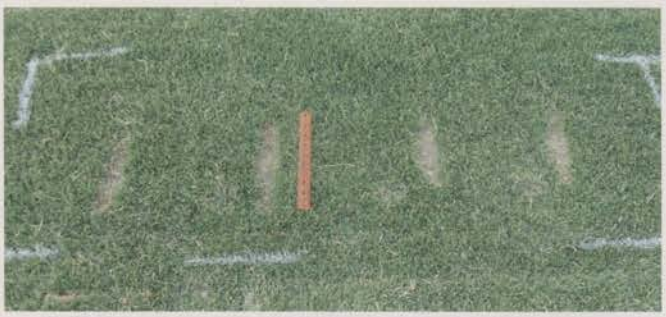
A duplicate study was also conducted at Tuckahoe Turf Farms. Plots were established atop a sand-based rootzone to mimic the native soil found at Tuckahoe and other farms that produce turf for sand-based fields. A four-cultivar blend of Kentucky bluegrass was seeded in September 2012 and 2013 (30% P-105, 30% Everest, 30% Boutique, and 10% Bewitched). The turf was fertilized with 2 lb N/1000 ft2 to quickly develop ground cover. Treatments began the spring after seeding. We chose three treatments: cutting height, sand topdressing, and nitrogen rate/timing. The treatments were applied over the second growing season to simulate a typical 14-month production cycle (Sept. seeding and Nov. harvest the following year). The experiment was duplicated over the 2012-2013 and 2013-2014 production cycles.

The four cutting height treatments ranged from 1.0-1.75 inches. Sand topdressing treatments included either three split applications to total 40 tons/acre or an untreated control. Nitrogen treatments ranged from 2-6 lb N/1,000 ft2 and were further split by application timing (Table 1). Each N application was made with ammonium sulfate at 1 lb N/1,000 ft2. We applied the plant growth regulator Primo Maxx at the label rate of 0.60 fl oz product/1,000 ft2 on 28-day intervals to the entire experimental area. Research at Penn State has shown Primo can precondition Kentucky bluegrass to improve divot resistance, and this practice has been adopted by many NFL field managers and sod farms.

In late November, 14 months after seeding, we used a sod cutter to harvest the sod at 1.75-inch depth and measured divot resistance for each plot. Divots were produced by dropping a weighted pendulum fitted with the head of a golf club pitching wedge. Smaller divots indicated high divot resistance.

NITROGEN EFFECTS

Of all the treatments, nitrogen rate had the greatest effect on divot resistance. When we began the study, a typical production cycle would include fall seeding, with 4 lb N/1,000 ft2 applied during the subsequent spring and another pound applied before the November harvest. We designated this treatment 4-1. The 4-1 treatment generally resulted in the worst divot resistance of the six N treatments. The most effective nitrogen regimes delivered just 3 lb N/1,000 ft2 during the entire season (2-1 and 3-0 treatments); these were nearly 40% more divot resistant than the "standard" 4-1 treatment.



The Pennswing divot resistance tester (left); examples of small divots (above) and large divots (below) produced by Pennswing, with 12-inch ruler for scale.

Not surprisingly, the grass had more visual appeal when higher N rates were applied; however, these rates also reduced root mass and divot resistance. The goal of NFL field managers and sod growers isn't to maximize color or density. Their objective is to produce stable turf with as many roots and rhizomes as possible.

Let's examine plant biology to propose why applying less fertilizer produced more resilient turf. Turfgrass plants are "shoot prioritizers." This means when N is readily available, the plants use most of their carbohydrates to produce new leaf tissue. The grass may look dark green and vigorous, but excess top growth comes at the expense of valuable belowground biomass. The leaf tissue is also succulent and more easily torn from the soil.

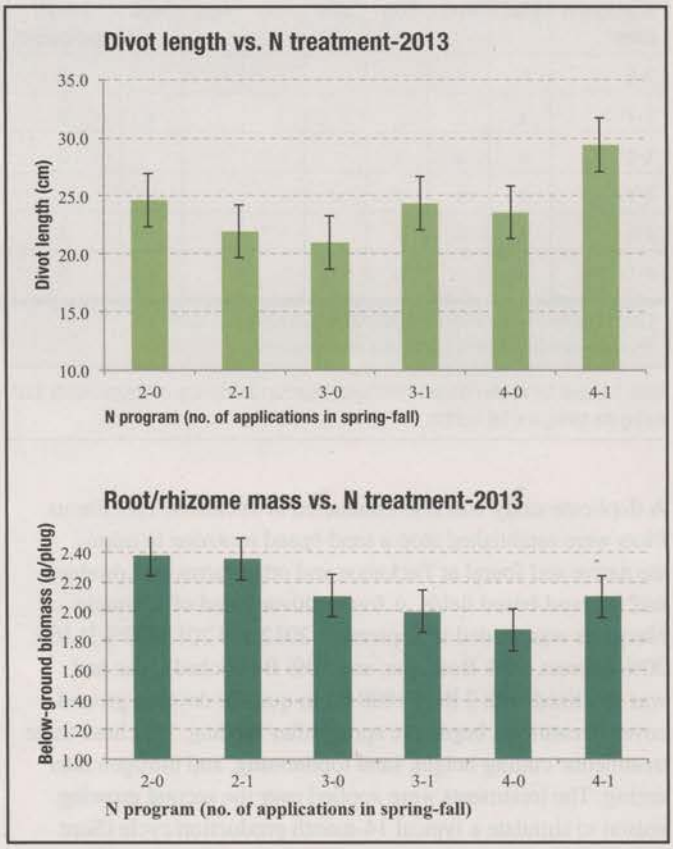
MOWING HEIGHT EFFECTS

We were surprised to find no significant differences in divot resistance across cutting heights, although cutting height did affect shoot density and surface shear strength (data not shown). Prior research at Penn State has shown better divot resistance with lower mowing heights. Although the turf produces fewer total roots when clipped closely, most of those roots are concentrated in the top inch of soil and help stabilize the turf. This strategy is not recommended for facilities that receive less intense but more frequent use, such as multi-use high school fields. There the cutting height should be higher to counteract the frequent, abrasive wear. The lack of a mowing height effect in our recent project could have been related to the cultivar blend or the use of Primo masking the effect.

TOPDRESSING EFFECTS

NFL field managers prefer sod with little thatch because the thatch-soil interface represents a shear plane along which divots may form. Unfortunately, the aggressive nature of Kentucky bluegrass cultivars used for NFL sod production also makes them heavy thatchers. We included topdressing as a treatment because light, frequent sand applications can mitigate thatch buildup without the need for mechanical cultivation. Aerification or verticutting to remove thatch would temporarily reduce surface stability and prevent the sod from being harvestable.

We hypothesized that divot resistance would be improved by light topdressing, just enough to dilute the thatch as it formed. However, the data in this project did not support our hypothesis. Divot resistance was not significantly affected by the topdressing treatment in year 1, and in year 2 topdressing actually reduced divot resistance by a slight margin (6%). This part of the project raised more questions than answers, and the interactions among thatch, topdressing, and divot resistance warrant further study.



CONCLUSIONS

For NFL field managers and the sod growers they trust, surface stability always trumps visual appeal. While the two are not mutually exclusive, our research demonstrated that sacrificing some color and density by lowering N inputs could improve divot resistance by 30% or more. Applying less nitrogen means the grass will not be as dark green or as dense. But beneath the surface, roots and rhizomes will flourish and help to improve divot resistance.

Divot resistance cannot be predicted solely by shoot density, root mass, soil moisture or any other single characteristic. It is a combination of many turf properties, and there remains much to learn about the effects of sod pre-conditioning on divot resistance. ST

Evan Mascitti is assistant sports turf manager with the Triple A Gwinnett Braves; he completed this project while earning his MS in Agronomy at Penn State. Dr. Andy McNitt is program coordinator-turfgrass science major, professor of soil science, and director, Center for Sports Surface Research at Penn State; and Tom Serensits is manager of the Center for Sports Surface Research.

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RENOVATING AN HISTORIC FIELD IN NORTH CAROLINA

BY **STEVE PEELER, CSFM**

This past fall and winter, I had the opportunity to work in coordination with UDC Sports (Claremont, NC) to renovate an old baseball facility that will serve as the new home for the Catawba Valley Community College (CVCC) Red Hawks in Hickory, NC. Henkle-Alley Field has a long history of baseball and has served as the ballpark to Hickory American Legion Post 48 for more than 50 years. Located at the Catawba County Fairgrounds, it has also served as a venue for concerts and other entertainment attractions. Back in the mid-80's, it became known as the venue that recorded the most arrests in a single day when Night Ranger played the venue and included a "pig picking" buffet for all attendees. However, when the pork ran out, fights broke out as the band finished their show. More than 100 arrests occurred that day.

Since that time, many years have passed and the facility was in dire need of a facelift. The field had become unsafe, had poor playing conditions, and in need of repair. CVCC had initiated its baseball program that has become well known regionally and nationally for winning baseball. The college started the program in 2009 with the intentions of building an on-campus facility shortly there after. However, funding was not readily available to break ground, so other options had to be explored. Henkel-Alley Field was located less than 2 miles away from campus and was the logical choice for consideration.

CVCC has a popular turfgrass management program and this facility would also provide a perfect place to learn about the turfgrass industry through hands on experience, turfgrass maintenance, renovation procedures, and construction management. Jimmy Abernathy, a lead instructor at CVCC and a turfgrass graduate of North Carolina State, has been heavily involved in the project since day one. He has been able to use the facility as an outdoor classroom setting. Abernathy installed a much needed irrigation system on the infield sections of the playing field and planned the installation of an entire system this coming summer to make the field complete. Students get to learn about the characteristics of normal sports field play and special cultural practices. The turfgrass instructors and their students apply herbicide, fungicide, and pesticides to the field regularly. Soil and water conservation classes also have

used the facility for topography mapping and plotting.

Horticultural students also have opportunities on the project, which will include installation of woody ornamentals, landscape structures, and landscape maintenance, which, will continue to grow with even more opportunities for students to obtain knowledge and experience. There are plans to add a surrounding park in the future that will provide even more opportunities for the students in the Life Science curriculum.

Given the overall amount of earthwork that was going to be disturbed and placed, two retaining ponds were required to be constructed to accept all of the runoff that would occur during the construction timeline. Constructing these two water-retaining ponds took 10 days to construct and they would actually aid in the overall removal of water that had fallen in record-setting amounts.

A new backstop wall and wall caps were to be constructed as a part of the overall plan, which made things really tight for access behind the plate. Just as the rain had delayed work on the field, it also delayed work that was taking place in the perimeter of the field. Dugout renovation was also included in the renovation package that was on the same schedule as the backstop wall and netting system.

The Red Hawks played their first season at Henkel-Alley Field in the worst conditions possible. Many concerns were raised and noted about the safety to the players and possibility of injuries that could occur. The infield grass was old and a mixture of hybrid and common bermudagrass. It was clumpy, thatchy, with undulations and lips. This certainly was not an ideal surface to have grown men playing the game of baseball at full speed. Fielding a ground ball fundamentally was almost impossible. It also hurt the program's recruiting of student/athletes because of the appearance and outdated structures that were on site. Given the rapid success of the baseball program at CVCC, something had to be done.

I began working with CVCC on the potential renovation project two years prior and UDC Sports was hired as the contractor to provide services for the renovation project. September 8, 2015, was the planned starting date for groundbreaking and initiation of the project. However, permitting and other legal issues halted the project and delayed the start for additional 2 weeks. This put the project behind schedule before it had even started. However, all issues were taken care of and the demolition started on September 28.

First task on the list was to strip all the old, mutated and contaminated turf. Secondly, the infield and foul territories were graded but all operations would soon be halted by the first of

many rainstorms that would occur over the fall and winter months. The field was originally built on native red clay and silt, and the entire infield areas that had been stripped turned into an unworkable material that stalled the work schedule behind another week. At this point, a month of progress would have to be made up for the project to be completed on time for opening day January 29.

The playing surface sits 100 feet below surrounding areas in a natural bowl layout. Therefore, all water from the upper elevations was running directly onto the playing surface. It seemed things would never dry out and present workable conditions again. Soil had to be removed, stockpiled, dried, and then replaced over and over. One of the most critical tasks to be completed was installing the Tifway 419 bermudagrass. Normally, bermudagrass should be installed no later than mid-October for it to take root and thrive for the following spring. However, this would not take place until the second week in December, very late in the year to be installing bermudagrass and expecting it to root. However, Mother Nature helped out and the turf began to stabilize and intact within the soil. Addition ryegrass was seeded to enhance the stabilization and spring color.

Additional work still had to be completed before the remainder of the sod could be installed which meant more delays and risk of putting opening day in jeopardy. The main concern and issue that was causing a major delay was the saturation of the soil. Once the normal, seasonal temperatures returned, so did the freeze and thaw effect. The soil was firm when it was frozen, but became unworkable during the day once thawing started to occur. Precise grading was most challenging and almost impossible. Little by little, grading was completed and all sod was installed.

Freezing and thawing continued throughout the month of January and foul territory was very "pumpy" and unstable. The team had to start using the field for workouts 3 weeks before the season began. Coach Paul Rozzelle was very concerned with the safety of his players and opposing teams. Special rolling techniques were used to firm the soil and to level the turf after each use and practice until freezing and thawing were no longer an issue. Three-quarter inch thick plywood was used to cover the turf and a 1-ton roller was driven over the plywood to balance the down force over the surface. The procedure was performed several times until favorable weather conditions returned so the soil and sod didn't pump.

Opening day was rapidly approaching and there were many tasks that still had to be completed. Unfortunately, a decision was made to delay the opening day for 2 weeks so everything could be completed. Pat Underhill of UDC Sports worked tirelessly to ensure all amenities were completed. Foul poles, large scoreboard, backstop netting, hillside tarp covers, windscreen covering, and the indoor hitting facility were all installed by Underhill and his crew within 10 days. The delayed opening day finally occurred February 27 against Louisburg College with doubleheaders Saturday and Sunday. Underhill had worked nearly around the clock with challenges from the weather to make sure that the facility would be ready, and I assisted on the playing field portion of the project.

Former players from the past 5 decades who had played at the facility were invited to come and see the facility and take in the first games on the newly renovated field. All of the attendees could certainly see a major difference in the field and were very pleased with the success of the project. CVCC will continue to perform upgrades on the facility to make it a first-class venue for baseball and other events that are held in coordination with the Catawba County Fair Association.

Baseball In The Valley will continue to grow and be successful well into the future due to a lot of local talent that is available within a 50-mile radius and with one local high school program being ranked nationally over the past few years. Such stars like Madison Bumgarner, Brian Harvey, Bob Patterson, and many other former big leaguers call the valley their home and are returning the gift of baseball back to the community. ST

Steve Peeler, CSFM, is sports turf instructor for Catawba Valley Community College, Hickory, NC.

John Mascaro's Photo Quiz

Answer on page 47

John Mascaro is President of Turf-Tec International

Can you identify this sports turf problem?

Problem: Debris on soil
Turfgrass Area: Tree well in sports complex
Location: Gulfport, Mississippi

BACKGROUND ILLUSTRATION COURTESY OF ISTOCKPHOTO.COM

THE SPORTSTURF INTERVIEW: PETER THIBEAULT, CSFM

Editor's note: *This month in "The* SportsTurf *Interview," we feature Peter Thibeault, CSFM, the turf manager at the Noble & Greenough School, Dedham, MA.*

Thibeault: Social media has helped to make our work more noticeable to the larger community. This gives a good avenue to showcase our facility. In some ways it has made it very challenging in that more people can see your work. We are all under pressure whether it is professionally or personally and I think social media can be one of our biggest allies. For example, if you can pull off an event during poor weather or by making the place look exceptional during the big events. I believe social media is a big help, even in our profession I have made many friends and continue to stay connected thru social media even if we are hundreds of miles apart.

SportsTurf: What are the most important changes you've seen in sports turf management since you started working in the profession?

Thibeault: Since being in this profession since 1994 I have seen a greater focus on player safety. When I first started there wasn't much talk of player safety, not sure if it was just our facility or it was the industry. Through the years there has been a lot more research and work done on promoting this. Each year I attend the national STMA conference there is a new study or research being done to greater impact the player's safety. We have a lot more tools in the shed than when I first came into this business, both at our facility and in the profession. We have always been very concerned for the athletes at our facility and if there is an injury we like to know what can be done to help prevent it, whether it be equipment-related or surface-related. Safety is one of our biggest concerns and when you talk of player safety people tend to listen.

> Safety is one of our biggest concerns and when you talk of player safety people tend to listen.

SportsTurf: For years you were a 1-man show; now that you have some help, what are you able to do now that you previously could not?

Thibeault: Hmmm, this is a tough question that has many answers. I would say the biggest and best thing is to be able to start and spend time with my family. The work that I used to spend tirelessly doing alone is now divided by two and sometimes we may even have four or five. The best part about the work is that I can now micro manage a lot better, intend of just giving it the "once over," I can now re-visit until happy with the results. I manage around a million square feet of turf; even with two of us we have times of almost biting off more than we can chew. We now can do our fertility in house. This is huge in that we can now make applications when they will be most beneficial versus when the contracted company can come out. There are a lot of other things too but it really is a good feeling to have some one to share the workload with I am most grateful for that.

Peter Thibeault standing in a sinkhole on his school's grounds

SportsTurf: What's your favorite on field maintenance task?

Thibeault: I would have to say mowing. There are many thongs that I do enjoy, such as going on a wild goose chase to get the geese off the field, but mowing is one of my favorites. The smell of fresh cut grass seems to be relaxing to me, I know that they do say that is actually good for you in some way I really do enjoy it. It also helps me to see every square inch in a different way.

SportsTurf: What don't you like about your job?

Thibeault: That's a tough one to ask after you just had me thinking about cutting grass. I would have to say that being in

New England and I do work outside, sometimes Mother Nature can make things very difficult. That really is it, I truly love my job and sometimes the weather can be cruel. It can get to be 100 in the summer with 80% humidity you can smell the material in your shirt cooking, or it can be minus 10 and snowing 3 inches an hour, these can be difficult circumstances to work in.

SportsTurf: How has being an STMA member benefitted you?

Thibeault: The STMA has benefitted me in many ways. The first is that it has helped me to achieve a higher sense of professionalism. My first conference was in 2003 in San Antonio. I met many great people that year; I was new I had a green dot on my badge. I knew nobody and was a long ways from home, by myself. Members continued to come up and introduce themselves and share information on how they manage their facilities and their lives. This was incredible; what a great group of people. After attending the awards banquet on the last night and getting all dressed up and seeing people on stage winning awards it brought a greater sense of pride to the work I do.

Our facility won high school soccer field of the year in 2006 and that was a great feeling to be recognized by my peers for the work I do. In 2007 I returned back to San Antonio and passed my certification exam and became a CSFM, again this helped to give me a stronger sense of my knowledge in the work that I do. The STMA has given me a large network of answers. By this I mean that if I am unsure of something I can look through the members and reach out to help find the best answer.

SportsTurf: How do you think the profession and industry will change in the next 10 years?

Thibeault: Water is such a valuable resource that I see more improvements being made in the way we use it. Non-potable water is being used more and more and I see plants that are developed to use this type of water and actually require less water to thrive. Technology is changing and even in the past few years irrigation systems have become way more advanced where you can actually control some of them through your wicked smart phone.

SportsTurf: What are your passions and interests outside of work?

Thibeault: I love spending time outdoors. I find fishing to be quite relaxing and like to get out any chance I can. ST

HOW TO HAVE A BIGGER BUDGET WITHOUT ASKING

BY **REBECCA AUCHTER**

Bargain hunting?

Shopping is more fun than cooperative purchasing, right? Shopping with other people's money is even more enjoyable! Reframing that way is what finally got my fingers on the keyboard to write this article. I've learned some rather interesting ways to stretch a budget, allowing for a substantially more sophisticated grounds management program than I could have without those cost-saving measures. I have to approach government purchasing (boring!) like a creative bargain-hunting mission if my team and I are going to be able to meet the challenges of our operation. Conversations with peers always echo that common theme to some extent. If you find yourself in the same position, the following ideas might help combat some of your budget issues.

Spending taxpayer dollars is a pretty serious responsibility. Municipal parks and athletic fields, my niche, are funded in that manner much the same as public schools. My grounds management experience extends into the private and university segments and there is no less gravity when running a program underwritten with tuition dollars or a portion of the business revenue. The bottom line is that every dollar has to count. In that vein, paying less for the products and equipment we use increases our buying power.

THE POWER OF A BID

Hundreds of purchasing alliances exist on both national and regional scales, which allow not-for-profit and governmental agencies to buy equipment, products, and services that have been competitively bid and offer deep discounts. Membership is generally free or available at a nominal administrative fee. A few well-known examples are NJPA (njpacoop.org), U.S. Communities (uscommunites.org) and National IPA (nationalipa.org). Through these cooperatives, you can find national brand mowers, wood chippers, field lighting, tennis court surfacing, a Zamboni, and many other products at fixed contract prices.

Since commercial grounds equipment is sold through a dealer network supported by a few national manufacturers, the contracts in place with these large organizations are usually the bottom line in pricing. Be sure to ask your local salesperson for details. This gives tremendous purchasing power to small outfits that, on their own, would not generate the volume to attract the best pricing. I've been using a U.S. Communities contract for janitorial supplies and paper products for 2 years. Saving a couple thousand dollars annually on stocking and cleaning the restrooms throughout our parks gives me room in the budget to spend more on athletic fields.

Being married to a specific brand name can be a costly decision when trying to stretch your budget through savings.

SHOPPING LOCALLY

Many products and services are best sourced locally. That's where I've been able to maximize the power of cooperative purchasing. With hundreds of these organizations across the country, the best way to find yours is to Google "cooperative purchasing" and add on your state or county. Folks in your finance or administrative offices are likely already familiar with some of these groups. Regional Councils (RCs) or Council of Governments (COGs) are common acronyms used to identify the outfits. These local units are extremely well suited to help you get the best price on products like fertilizer and pesticides that are the backbone of a grounds management program. Services such as mulch blowing and landscape maintenance can be put to bid this way, too.

While the cooperative purchasing framework is almost certainly in place within your region, it doesn't mean they have expertise in turf and

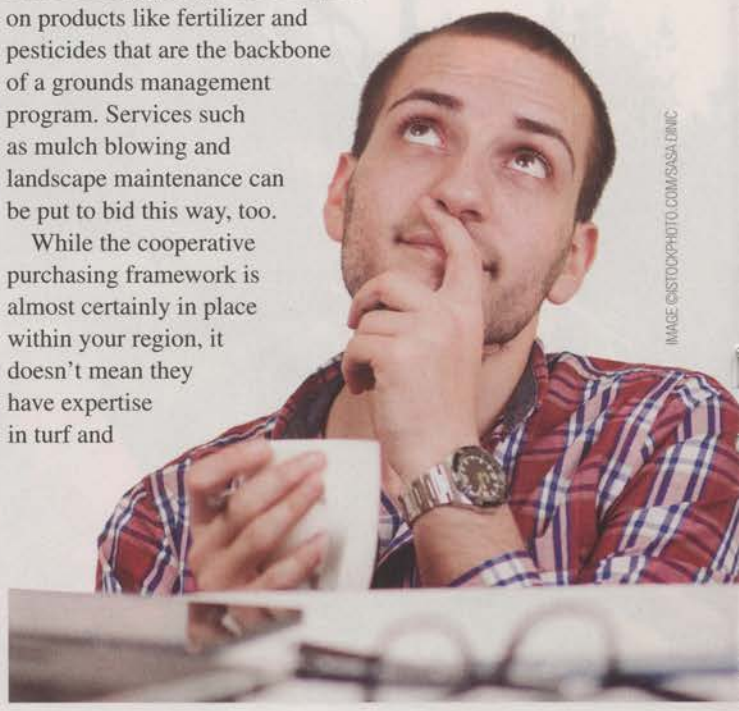

IMAGE ©ISTOCKPHOTO.COM/SASA DINIC

ornamental products. This is where you and your peers have to take leadership. Simply by working the phones, I brought together a group of grounds managers and the vendors we most frequently use for our agronomic products. We were able to talk through timing, specifications, substitutions, and the administrative nuts and bolts of the process to assure both sides understood expectations. It incentivizes the vendors to offer low prices during the bid phase, because they know the consortium of buyers is likely to purchase an overall larger quantity of a consolidated list of products.

SPECIFICATIONS

This is where the rubber meets the road. In order to take delivery of a product you want in your program, you have to be able to specify what you want. There is no way a busy grounds manager can be familiar with every brand name product on the market, especially when they change constantly. Paradoxically, I just sat with a trusted sales rep recently who said there's not much new chemistry to discuss this year! Most everything we are seeing is a reformulation of familiar active ingredients.

Being able to differentiate the active ingredients of pesticides and the components of fertilizer is where a grounds manager earns his or her pay. Loving your labels is the way to sort through the myriad of pesticides. CDMS Label Database (cdms.net) is the most comprehensive location to search by manufacturer or product. Fertilizers are a different beast that boils down to doing your homework on the various carriers and proprietary coatings wrapped around the granular nutrients. Chelation, stabilization, and nutrient form all come into play with sprayables. To make sure I'm on top of the technical aspects, I read industry publications and university research, in addition to forming great relationships with my sales representatives. I can't begin to express how important it is to know and trust your vendors. Get them to your site and pick their brains. Their job is to be an expert on the products they have for sale. These visits and conversations throughout the season are the foundation of how I determine what products to specify when it's time to go to bid.

Take fungicides for example. There are only about two dozen active ingredients available. That is a manageable list to digest. Mancozeb is an affordable contact fungicide I rotate through my preventive spray program. I can buy it under at least 15 different brand names in no less than four different formulations. But

when I specify that fungicide in a bid document, it is simply listed as mancozeb 75% DF. When vendors submit labels and pricing, I can easily check to see if the specification is met regardless of the name on the label.

SUBSTITUTIONS

Being married to a specific brand name can be a costly decision when trying to stretch your budget through savings. With regard to public bidding, a substitution is "equal to" but not identical to the specification. A good example of this is the growth regulator trinexapac-ethyl. For the purposes of a bid specification, it might be listed as Primo Maxx: trinexapac-ethyl 11.3%. Vendors, in an effort to win the bid, might substitute Podium, T-Nex, Trin-Pac Select or PGR 113. All of those products meet the bid specification and may be offered at very different prices. So why not award the contract to the vendor with the best price? Usually the answer is because the purchaser is not familiar with the off-patent or generic brands and believes they will not have the same efficacy or manufacturer support as the branded product. This is generally a myth, but each turf manager has to come to that conclusion independently.

In order to receive EPA registration, which all of the off-patents can substantiate through the information on their labels, a product must have the same technical merit as the manufacturer's branded product. Visit the EPA's Pesticide Product Label Site (PPLS) at http://iaspub.epa.gov/apex/pesticides/f?p=PPLS:1 for an eye-opening lesson in the incestuous relationship among product formulators. When an EPA Registration Number from a pesticide's label is entered, the database will commonly reveal that registration number is shared by several identical products marketed under different names. Primo Maxx's EPA Registration number is 100-937. PPLS verifies that Podium has the same number. Syngenta has registered and markets both of the products. For the often-substantial difference is price, it is worth a bit of research to establish the provenance of each commodity.

There are many ways to stretch a budget and grounds managers are a notoriously creative bunch in that regard. In many cases, there are big advantages gained through cooperative purchasing and the public bidding process. We work with diligence to provide the best athletic fields, parks, and grounds, so it only makes sense to solicit the best possible prices for the tools of the trade. Embrace the bargain hunting! ST

Rebecca Auchter is grounds maintenance manager for Cranberry Township, PA.

COMMON PURCHASING METHODS

BY RON HOSTICK, CSFM, CGM

In the course of doing field maintenance over the years I have learned having the correct resources available at the right time is critical to producing a quality product. A part of any good logistic plan often requires purchasing products or services. While I work in a state governmental environment and may be limited by legal and bureaucratic restraints not all persons are subject to it is likely some of the purchasing methods we use will be relevant to your situation as well.

The first important separation is what's needed — a service or a material. If it is a service where a vendor is coming onto campus to perform a task, a Purchase Order (PO) must be initiated. This puts the process into the hands of our Purchasing Department to ensure liability has been indemnified. The contractor will need to provide liability insurance, prove that fair labor practices are being observed, and since this is a union environment prevailing wage must be paid to the staff of the contractor. Materials are slightly easier but the responsibility in some cases falls on me to make sure we are getting the fairest price for the materials. The chart (on opposite page) outlines the methods available to me.

For POs $2,500 or less, one quote will suffice but Purchasing will always prefer at least two quotes; more than likely I will use a Direct Buy or a ProCard that does not require multiple bids. But the responsibility of fair purchasing practices falls on the purchaser, unless it is a service in which case as discussed above a PO will be required.

The first important separation is what's needed — a service or a material.

Confirming orders really hasn't been an issue for me but if you had an emergency, flooding or the like, it is a tool that could be used to bring in a contractor to make repairs. It must be approved at a high level position within the University.

ProCard is a credit card allowing me to make online purchases, pay for training, and purchasing materials up to $3,500. No travel expenses can be paid from my ProCard and there are a few other limitations placed on this purchasing method as well.

Dollar Value (includes tax & shipping)	Purchase Type	Contract Type
$0 - $2,499	Maintenance Services and Material or Equipment Purchases	Purchase Requisition
$2,500 - $49,999	Maintenance Services and Materials or Equipment Purchases	Purchase Requisition with Competitive Bid*
$50,000 and over	Maintenance Services and Material or Equipment Purchases	Purchase Requisition with Formal Bid*
$0 - $5,000	Construction Services (Public Works)	Low Value Public Works
$0 - $610,000	Construction Services (Public Works)	Job Order Contract (JOC)
Over $610,000	Construction Services (Public Works)	Major Cap (Formal Bid)
$0 - $610,000	Consulting Services	TOSA (Task Order Service Agreement)
$0 - $610,000	Emergency Services	Immediate Response JOC

*You must contact Contract & Procurement Services for assistance with the bid process

A Direct Buy Form basically falls into two categories; it can be an open account allowing charges up to $2,500 per invoice on an account paid as invoices are received, or it may be an open purchase order allowing multiple purchases to be made against a PO that places a limit on the total dollar amount of purchases that can be made to one vendor. No one invoice may exceed $2,500. Splitting invoices, having one delivery or purchase divided into multiple invoices, is frowned upon. The responsibility of following acceptable purchasing methods falls on purchaser.

Emergency Contracts are negotiated for our system of 23 campuses and are in place to cover typical emergencies like a water line blowout over the holidays or discovery of a hazardous material needing to be immediately removed from our property.

Petty cash is not being used.

Equipment purchases typically require a PO. Here your Purchasing Department can provide guidance but I have found National Purchasing agreements to be very valuable. They are contract prices negotiated on either a state or national level and are accepted as competitively bid prices. This allows purchase the precise piece of equipment desired since it is so hard many times to compare manufacturers especially if you are purchasing equipment as a replacement for existing and have specialty tools and attachments that might not work on another manufacturer's model.

When contracting work there are levels of complexity as the dollar value of the project increases. For us, $2,500 or less is pretty straightforward; get a quote and write a requisition. Between $2,500 and $50,000, a completive bidding process is necessary, for us under $5,000 or so getting three quotes might be enough once your exceed that the Purchasing Department wrights a Request for Proposal (RFP) and will advertise our intent to purchase. Over $50,000 a formal bidding process will occur. There may be a Request for Qualification (RFQ) that requires a company interested in bidding on a project to provide its qualifications and experience before they can even get the opportunity to bid on the job. This can be a very valuable tool to prevent companies with a lack of expertise getting into the bidding process when it is obvious they do not have the ability to complete the project at an acceptable level of quality.

Low value public works is just that, a construction project for under $5,000.

Job Order Contract (JOC) is a pre-negotiated construction contract where the contractor has bid a set rate of profit over costs and can be used in a variety of situations. At times you can use this agreement to get a project completed when there isn't enough time to go through the bidding process.

Major Capital Projects are not something I have been involved in other than as an in-house consultant; they are overseen by project management professionals with the expertise to handle multiple trades and follow the project from design to notice of completion.

A Task Order Service Agreement is basically an open purchase order with a professional consultant such as an architect or designer. I have used this purchasing method for survey work through a civil engineering firm in the past to make accurate as built drawing of in house projects.

Last on this list is using a JOC to perform emergency services, which could be a separate contract set up to provide a service or it could be tied to an existing JOC in an emergency situation.

One lesson I have learned the hard way is that trying to get around the Purchasing Department can cause significant grief for me and sometimes the vender hired to perform work. So a good rule of thumb is to identify the person in Purchasing responsible for the buying in your area and develop rapport with them. Involve them early in the process so you don't waste time proceeding with a method that will not be approved. You are the subject matter expert so write down what you need, how it should be performed with the expected outcome, and products you have had the best success installing and provide that information to your buyer.

My experience has been they are just as interested in getting the best products and services installed as I am, but they have a stringent set of rules to follow and, if given the proper information, they can provide you with guidelines that will lead to the desired outcome. ST

Ron Hostick, CSFM, CGM, is manager of landscape services for the California Polytechnic State University, San Luis Obispo, CA.

IMAGE ©ISTOCKPHOTO.COM/ALACATR

SO, YOU'VE BEEN ASKED TO BUILD AN ATHLETIC FIELD; NOW WHAT?

BY TOM RYCHLIK

Your role has progressed from field operations technician, through a supervisory role, and finally promoted to a superintendent — congratulations! Now the new director, recently promoted from the recreation side, is requesting that you get his rec folks two new fields. Commonly, the components to a successful design, construction, and grow-in project, are not the curriculum of the years training in park and school districts.

As a civil engineer who works commonly with park and school districts on developing their new fields, I empathize with the role that you have now been cast. What follows, we hope, is a brief primer on some of the questions that you will want to answer, or at least, formulate opinions on, to best leverage your district's resources.

WHAT ARE YOU LOOKING TO DO?

This might sound a bit nebulous, however understanding the end goal, defining what the objective outcome as early as possible, is critical. All of these projects draw on the communication between demand (recreation supervisor or athletic director) and supply, or operations staff (parks department or facilities staff). Ultimately, your district will engage an appropriate consultant and having a handle on these questions will make efficient application of their time.

EXPAND

For example, you are told, "We have four soccer fields now, knock that neighbor's house down and build me a quad of baseball diamonds." How should the district proceed with land acquisition? Condemnation, eminent domain, or call the local realtor? What entitlement process is in ordinance for the expansion of your district's land? If you have the land, or after you've acquired it, what conditions exist for the

project to handle. Good sandy subsoils? Or murky, organic silty clay? Potentially, expanding the site may also require traffic engineering considerations, like additional parking, access, or offsite improvements, as the municipality dictates. Vacating right of way may also require relocation of public utilities. Expansions may require stormwater management, depending again on your region, and the local ordinances.

CONSOLIDATION

For example, we have a pair of large baseball fields for high school scale baseball, but the demand has steadily declined, and we see a growth in demand for adult softball leagues. How much demand? Enough to warrant skipping the skinned infield in favor of a synthetic turf system? Typically these will require the irrigation and/or lighting system to be manipulated or full out replaced. What condition are the backstops or other baseball equipment; should any of these be salvaged?

INCREASED USE

For example, we have enough soccer fields, but would love to start up a second league using the same turf. As compaction increases from the continued use, does the district have the capacity to combat with mechanical means? Should the district consider shifting from natural to synthetic surface to provide the fields in response to the growing program demand?

INCREASED LEVEL OF SERVICE

For example, converting a practice field for use in tournament soccer games, or a turfgrass grid to a Friday night football field. To those not in the maintenance field, few will understand the increase in demand when a practice field that sees four or five weekly practices in various areas of the field moves to a consistently striped football field, where the turf between the hashes is constantly fighting compaction.

Increasing the level of service also may warrant adding in irrigation, athletic light towers, perimeter fencing, and bleachers. Knowing the parameters of the demand will facilitate the scope of the design and construction.

Within the facilities or parks department, a critical parameter to be aware of is your limit of maintenance. The expansions in field, the new stadium are great, however without the manpower, equipment, or material resources, these will be hardscrabble in months without being maintained appropriately. Would your district authorize out-sourcing aeration or other additional activities that could assist in maintaining the high-end fields you provide. Should the project include new synthetic surface, did the project's budget provide grooming and cleaning equipment for keeping the new playing area in top shape (and within the parameters of the product's warranty!)

If there is not a system in place to gather answers to your questions, commonly a land planner or landscape architect are

If the project encompasses building spaces, an architect is needed to efficiently apply space to match demand.

skilled in outlining the stakeholders, effectively soliciting the demands from each, and organizing the data to facilitate the decision process. Once this information is collected, and you are ready to engage your design team, the last task is to ascertain which types are necessary/appropriate, again to best fit the demands of your district.

Typically land planners and landscape architects are skilled in managing the space utilization, envisioning the aesthetics, and commonly well versed in planting applications. When the fields include drainage, utility challenges, subsoil deficiencies, or labyrinthian regulatory ordinances, a civil engineer typically becomes necessary. If the project encompasses building spaces, an architect is needed to efficiently apply space to match demand. For the delivery method, when the trades can be counted on one hand, typically a general contractor and your lead architect/engineer can manage the construction. Once buildings and site work are combined, a construction manager is effective at combining the two trades for effective timing and budget conscious delivery. ST

Tom Rychlik is an associate/senior civil engineer at Gewalt Hamilton Associates, with licenses in Illinois, Ohio, and Iowa and 18 years of experience, and is a Sports Turf Managers Association member.

JOHN FECH TALKS MEDIA & INTERVIEWS

Here are some of the highlights from a presentation we attended at the San Diego STMA Conference. John Fech, a horticulturist and certified arborist with University of Nebraska-Lincoln Extension who specializes in turf care, arboriculture, and water issues, spoke about media interviews.

Objectives of interviews: To pitch ideas, effectively deliver message points, and promote the value of your facility. Why bother?

- Disprove misconceptions
- Promote yourself and your skills
- Build credibility
- Increased awareness/favorable perception of your facility
- Demonstrate your value to environmental responsibility
- Increased interest in recreation and fitness
- Get out in front of a topic that is of local interest or somewhat controversial … frame the issue to your (or your facility's) best advantage

John Fech, left, a horticulturist and certified arborist with University of Nebraska-Lincoln Extension, gives a television studio interview.

Types of interviews: Informational, which shares what you want the audience to know; Inquiry, which is about what the **reporter** wants the audience to know; and Promotions, most likely on behalf of your facility.

Fech told the audience that learning to perform well in media interviews "is a marathon not a sprint. You have to go slow to go fast and there are a lot of individual steps to get there," he said. "Don't think you'll be an expert right away but don't be discouraged, sometimes it's three steps forward, two steps back."

Fech then described how modern newsrooms work, which includes story meetings where reporters and editors pitch ideas to news directors and assignment editors, as well as social media producers. These are people with whom to build relationships with or at least get on their list of experts, i.e., the old Rolodex. Someone from your organization might have existing relationships here so go through him or her if that's what it takes.

Preparation. Three things are necessary before you start pitching yourself to media outlets: Setting goals, defining your theme, and creating (3) message points. You also must realize you need to be appealing, Fech said, meaning "eye and ear candy." People love machines that move and make noise. So find an entertaining "hook" that the audience can relate to, e.g., how and when to fertilize or how to maintain mowers, etc., and let the media know why you are a credible source. And don't forget to let your boss know what you're doing!

Pitching your idea. A staple of this process is the Press Release or Media Advisory that includes the who, what, why, when, where and how of your idea with short, simple facts. Use only one page, tripled-spaced, and make sure to include your contact information.

But you're not a public relations professional and might not have one handy, right? So we go to the informal idea pitch, with the first goal being to get the reporter's attention (think of sending them a hunk of sod for example). The next goal would be to establish a relationship with the reporter or media outlet; perhaps you could offer to write a "Turf Tips" column or invite the station's meteorologist to do some weather reports from your facility.

Fech said, above all, BE PATIENT with this process.

Creating message points. Start with a key point or conclusion, e.g., water can be conserved in a healthy landscape. Then use one or two descriptive statements, and think of two or three sentences that you could "ad lib" for your point, and end by explaining what your point means to the audience. For our water example, this might be a lower water bill.

If you have arranged an interview, Fech described how you should do some homework on your interviewer if possible to see if they might have an agenda you should know about. Also ask for their questions in advance, or better yet, give them the questions. Fech said if the reporter will not share his or her questions and isn't interested in seeing yours, be aware that potentially this could be a "gotcha" interview. If you do anticipate tough questions you should rehearse your answers, Fech said. Finally, reporters often ask at the end of interviews, "Do you have one more thing for our audience?" so be ready with something.

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OPINION

BLINDED BY THE LIGHTS

BY **JOEY STEVENSON**

Since the day I realized my 77-mile per hour fastball wouldn't quite cut the mustard in the big leagues, I needed a plan B. At 15 years old, I started working at a local golf course during the day and for an independent league baseball team at night. At the time, I thought the wheels were in motion to start my career toward Major League Baseball, but as I found out during the 2015/16 offseason, sometimes the juice isn't always worth the squeeze.

Before we get into the details, it's important to realize what a professional baseball groundskeeper does yearly. Of course we've all seen the job descriptions before: ensure the playing surface meets or exceeds MLB standards, supervise, schedule, and train the grounds crew, coordinate field use for non-baseball events, and, my personal favorite, "other duties as assigned" to name a few. But let's dive into this a little more.

First, 81 home games. That might not seem like much, but that's 81 home games, 81 batting practice setups, 81 potential early work opportunities, "off-day" team workouts; you can count on the field being in use from 2 pm to 11 pm on every game day and sometimes earlier for day games. And in that period from April 1 to October 1, you can almost guarantee that each time it rains during that period the tarp will be on. A typical season tarp pull tally can easily exceed 100 per season.

Second, extra events. It's clear now that baseball stadiums are multi-use facilities. What does this mean? Large concerts, post-game concerts, high school games, college games, softball games, soccer games, football games, charity games, corporate batting practice, season ticket holder batting practice, post-game catch, yoga workouts, TV commercials, youth clinics, marathon races, fantasy camps, beer & bacon festivals, and the list goes on. Keep in mind, many of these events occur on a game day. Imagine three high school games in the morning from 8 am to noon, batting practice from 2 pm to 6 pm, followed by an MLB game and a post-game firework shoot. When do you get your work done, 5 am to 8 am and 11 pm to 12:30 am? When do you sleep? When do you see your family?

While all these events take place, you are expected to ensure the playing surface meets or exceeds MLB standards. And, for example, when the Red Sox play the Yankees you need to ensure that $406,689,396 worth of players have a consistent playing surface and not one bad hop occurs, all while balancing your life at home, picking the kids up from daycare, making sure you don't forget your wife's birthday, missing your son's t-ball game, etc. What's that worth to you? What salary is worth all of this?

To your friends, family, vendors, and people in general, being a head groundskeeper in the MLB is glamorous. You have the big corner office, you interact daily with million dollar athletes, and you have brand new, shiny equipment. We have done extensive work and made serious progress on annual budgets and staff and education at all levels and we are even fighting the good fight when it comes to natural turf, but what is being done for our salaries? There are only 30 MLB jobs in the world; one could conclude these are the top 30 baseball jobs in the world. Do the salaries reflect that? Let's say hypothetically that the superintendent at Augusta National retired and the position was open. Augusta is arguably the top golf course in the country. They would be inundated with resumes, some with the experience and some not. Would Augusta National hire their top candidate with the most experience at $250,000 per year (I am guessing here, but I bet it's close) or would they look for a bargain and hire someone cheaply? I proposed this question to a turf science professor and he mentioned you could take the top 30 golf course superintendent salaries in each state and they would probably be higher than all the averages in Major League Baseball. That's a problem.

This past off-season I was extremely fortunate to have had the opportunity to interview with a Major League club and eventually be offered the position. Ten years ago I would have taken the positon for next to nothing, but after 18 years in the industry, I was fortunate enough to be able to call on several past employers and former co-workers, and I discovered all five of us candidates were friends.

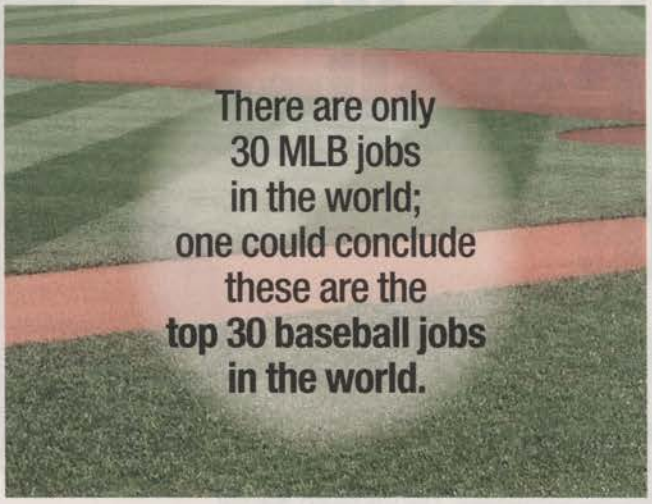
I had great advice going through this process and with that came up with four criteria: a salary that was at least average but preferably above average for MLB groundskeepers; my hiring at least one staff member (we are all only as good as our staff and I didn't feel a job of this magnitude should have to inherit 100% of the old regime); we recently bought a house and since this was a nationwide search for a candidate, I felt it should be standard to help with a housing transition; and the MLB pension, which is probably the main draw for an MLB job. The team in 2015 had a $92 million payroll, so it didn't really seem I was asking that much, right?

During my negotiation process, the team president informed me of the data that is collected in terms of groundskeepers' salaries. Salaries are divided into two categories, Tier 1 and Tier 2, basically large market and small market. But let's be honest about this number; with the average team payroll well over $100 million per year, record TV contracts and not to mention that in 2015 MLB showed record profits in excess of $8.7 billion, are there really "large market" and "small

market" teams? It's not 1985 anymore.

Should groundskeepers be paid from TV money, MLB profits, and included in team payrolls? Should the groundskeeper fall under baseball operations or ballpark operations? You might say, what's the difference? Baseball operations include everything related to on-field personnel and includes people from the general manager to scouts to the director of minor league operations to trainers and the clubhouse managers. It's basically everyone who interacts with the players and has their best interests in mind. Ballpark operations include the VP of operations to the director of security to guest relations manager to the cleaning operations manager.

So where should the head groundskeeper fit? We are the piñata, we fit into both; we are pulled by coaches and players and we are pulled by the operations department. In my opinion, I think we fit best with baseball operations. The majority of the events we manage are baseball team-related, we deal directly with the players and coaches and at the end of the day who is your end-user, who do you need to make happy? If it's the fans you should fall under ballpark operations; if it's the players, you should fall under baseball ops.



One other important aspect of hiring a head groundskeeper for any baseball organization, MLB or MiLB, to find a qualified candidate a nationwide search is necessary. Being a groundskeeper is both a science and an art and typically to find a successful candidate you must do a nationwide search. We don't fall into a typical "front office" job category, where you can find someone to fill a job from another local company or a local university; we are unique in that way and we should use that to our advantage.

So, when it came to my four requests, the salary was below average, I was not allowed to hire any staff member, no help selling our house, and the pension would be taken away at the end of the 2016 season. If that doesn't scream, "WE WANT YOU" I don't know what does. Needless to say, they made the decision extremely easy for me. Ultimately it would have moved our industry backward.

This past STMA Conference, I was approached by several Minor League groundskeepers who share the same frustrations and that's the main reason for my writing this opinion piece. The small bump in salary from a well-established MiLB groundskeeper to the Big Leagues isn't always worth it. Is it worth the bright lights for a 15-20% bump in salary, twice the extra event load, risking your credit to sell your house, moving your family across the country, and inheriting a staff with whom you've never worked? The current market favors a person who is single, doesn't own a home, and is very mobile.

As a MiLB head groundskeeper, your goal is to learn your craft and work out the kinks and then hope for a call-up to the bigs. If I could give gals and guys advice who strive to be an MLB groundskeeper, it would be to jump at your first opportunity to become an assistant in the Big Leagues. You keep your expenses low and you stay mobile. As long as we have gals and guys jumping at jobs below the league minimum, we will continue to lose respect and not move our industry forward.

If I collected baseball groundskeeper cards, I would covet Tom Nielsen's rookie card. I've gotten to know Tom over the past 10 years and he is principled and is in this profession for the right reasons. He's not in it to get rich, but rather to teach and mentor; he looks out for his profession. If I have the chance to go out like Tom Nielsen or go out by someone who chased the bright lights, I'd go out like Tom every day of the week. My favorite movie quote of all time: "The end comes no matter what, the only thing that matters is how do you wanna go out, on your feet or on your knees? I bring that lesson to this job. I act, knowing that someday this job will end, no matter what. You should do the same." ("The Kingdom" 2007).

So what's the answer? First you should ask, do you think there is a problem? If not, then just forget about it. If you think there is a problem then we should do something about it. The first step would be to say "No" to deficient offers. I have more questions than answers and I always will. Do we unionize? Do we ask the STMA to negotiate for us or come up with some guidelines? Do we all walk out on Opening Day (just kidding)?

Seriously, perhaps salaries are a reason we have such a shortage of turf students. Bottom line, you get what you pay for and you get paid what you accepted. I take this job extremely seriously and with the utmost amount of professionalism and I think our salaries should reflect that. The gals and guys who have been in this industry for 10, 20, 30, 40+ years have done an excellent job of getting us to where we are today and we need to build on that and keep our industry moving forward, not the opposite. ST

Joey Stevenson is head groundskeeper for the Indianapolis Indians.

Cyrill Softball Stadium, University of South Carolina Upstate

Spartanburg, SC

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

WHY STMA SHOULD CONSIDER YOUR FIELD A WINNER?

Cyrill Stadium is the pride and joy of USC Upstate. The field is one of the premier softball venues in the Atlantic Sun Conference. The University and our Athletic program take pride in Cyrill Stadium and showcase it every opportunity we get.

We've had visitors from Canada and other International teams that comment about how well the field is maintained and plays. USC

Upstate hosts more northern climate teams in January and February when they are unable to play on their own fields due to inclement weather conditions.

This past January and February was some of the coldest months we've had in Upstate South Carolina in quite some time. That posed a few problems as the Northern based teams were already here in South Carolina so the Sports Turf crew made great strides in preparing the fields for play. With nighttime temperatures in single digit numbers for extended periods of time it made field preparation quite the challenge. Sports Turf team members would begin working the skin areas as soon as daytime temperatures rose so visiting teams could get on the field as soon as possible.

The field renovation of 2012 has helped improve the preparation turn-around on the field. The renovation included the removal of existing turf and top 6" of root-zone materials as well as regarding the infield skin to better transition to the turf. Installed drainage was one of the most beneficial components of the renovation. With the drain system sand channels, topped off with a sand/topsoil mix, then capped with 100% sand material, sodding with sand based root-zone, it has made drainage issues non- existent. Prior to the renovation we were constantly fighting the wet conditions and inability to allow the athletes on the field. Now when inclement weather comes our way, even in the frigid days of winter, we just pull the infield tarp, wait for weather to pass, peel the tarp away, roll it up, and we're ready to play.

With so many teams visiting our facility this renovation has been monumental in getting those teams on the field when they need to be.

The USC Upstate Sports Turf Team works very hard to provide our Spartan Softball team a first-rate quality safe field. The Spartans won the 2015 Atlantic Sun championship and an automatic bid to the NCAA tournament. The Lady Spartans have made their third consecutive regional appearance and look to do it again in 2016. During the 2015 season the Lady Spartans ranked in the top 25 in nine different categories.

Cyrill Stadium provides the platform for two great teams to excel: the Lady Spartans Softball and the Upstate Sports Turf Team.

SportsTurf: What attracted you to a career in sports turf management?

Suddeth: I guess you could say that I've been a very fortunate person to be associated with this industry. Growing up on a farm in Inman, SC I was on tractors by the age of 9 and we knew what work was about if you wanted to eat. In high school I got a job at the local golf course and fell in love with turf management. All the time I played one sport or another and knew what it took to keep up turf. A few years went by and off to college then went to work for a large company that was involved with turf management chemicals. The production and applications of the products intrigued me so I went back to school for my horticulture degree. Soon after an opportunity came up here at USC Upstate and I've been here as the Director of Landscape ever since. There isn't a day that goes by that

I'm not thankful to be where I'm at and to those individuals that opened those doors for me.

SportsTurf: What are your biggest challenges in providing excellent playing surfaces? And how do you approach those challenges?

Suddeth: That is really a multi-component question when dealing with our athletic fields. Many departments and outside groups use our athletic facilities so communication is key. From our athletic programs, intramurals, education departments (PE), and outside user groups, that term "communication" is so critical. We rely on all groups to use our Special Events scheduling program so we can plan in advance for preparation of fields, any maintenance issues, or just the simple fact of knowing who is or is not supposed to be on a field.

The other side of this component is the actual sports field playing surfaces themselves. The staff is trained to know what needs to be done and what issues to look for in the management of the fields. Along with that we have a direct communication to each coach. We all work together to obtain the best fields our budget allows. And speaking of budget, we are a University that does NOT have unlimited resources. We have to pick our battles and prioritize and address those issues and management tasks that give us the biggest bang for our buck. Then we address the others as the budget and resources allow. This isn't particular popular with those that do not manage the budget. However, we have great support from our Administration and they understand what we need and that we are very resourceful managers of the sports turf program here at USC Upstate.

SportsTurf: What changes if any are you considering or implementing for the winning field in 2015?

Suddeth: Cyrill Stadium has already undergone some changes and we have more planned. The warning track in the outfield

Category of Submission: College Softball

Sports Turf Manager: Bruce Suddeth

Title: Director Building & Landscape Services

Education: AA Horticulture Field of Study: Plant & Turfgrass Science

Experience: I have worked in industry dedicated to turfgrass management for 20 years prior to coming to USC Upstate where I have worked for the last 14 years as Director of Building & Landscape Management. I've been responsible for the management of 10 athletic fields, 3 sports practice facilities as well as a golf practice facility.

I've been a charter member, board member, and chapter officer for the SCSTMA since its conception in 2004. I have served as chapter secretary for the last 4 years.

Full-time staff: Bruce Suddeth, Ben Williams, Daniel Jackson, Travis Dill, David McNair, and James Shull, as well as Chris Hawkins, softball coach.

Original construction: 2001

Rootzone: Before renovation it was native clay; now the composition is a clay, topsoil, and sand mix

Turfgrass variety: Bermuda TifWay 419 overseeded with Eagle Blend Perennial Rye.

Overseed: We overseed with Eagle Blend Perennial rye at a rate of 12 pounds per thousand square feet. As the season progresses we also apply rye in worn areas to keep a canopy. The seed bed is prepared by previous applications of Primo MAXX to keep the Bermuda growth regulated, mow down to 1/2-5/8" depending on season, overseed with rye, topdress with light coat of USGA spec sand, then turn the water on. Water is regulated to maintain optimum moisture so it can have playability in 2 weeks.

would accumulate water during heavy rains and we spent considerable time removing the water and using drying agents to make it playable faster. The Sports Turf Crew installed a drainage system the entire length of the warning track with pipe and a straight sand vein topped off with crushed brick material. This not only cured the manpower issue with removing water but also made the field look better and play safer.

Another area we wanted to improve on was aerification. USC Upstate has always contracted our deep-tine aerification through the years. Our contractors have been good to us and we worked out the logistics of scheduling. Cultural practices are so very important and we felt the aerification frequency needed to be taken up a notch. We knew that more aerification needed to take place but due to cost and scheduling it just wasn't feasible. Working through the numbers and presenting justification to our administration has shown that not only would we save money with a payback of 2.5 years but we would also aerify on our time schedule. This would allow us to control the frequency and obtain the results we were trying to achieve. By the time this goes to print we will have already broken in the machine on USC Upstate athletic fields.

» With more and more demand for quality playing surfaces it requires the sports turf manager to evolve with change.

SportsTurf: What's the greatest pleasure you derive from your job? What's the biggest headache?

Suddeth: I would have to say the greatest pleasure I have is working with the crew and knowing we made accomplishments each and every day we set foot on our fields. As you all know you build special bonds with those you work closest with. You can read each other and know the strengths and weaknesses so we all form that team for success. I would just like to recognize Robert Easler, Ben Williams, David McNair, Travis Dill, Daniel Jackson, James Shull, and Zachary Honeycutt that make up the Sports Turf Team. These guys work very hard to make our athletic facilities the best. And it doesn't just stop with the Sports Turf crew; it involves all of our coaches from baseball to golf. We all work as a team to accomplish set goals ultimately making the best and safest playing surface for our athletes.

There are no headaches, there are opportunities. It is one's ability to cope with those opportunities that define success.

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

Suddeth: Accept change. Many years back I was told that change is inevitable so you better deal with it. Over the years when I think about it, how true a statement that was. As we reflect back through our lives and careers you can see the things you've done well and some that you haven't. In each case it was a matter of how to deal with change. Making the best of situations and learning from them allows one to adapt to change. Sports turf management techniques, equipment, chemicals, etc. have all changed. We as sports turf managers adapt to change all the time. The sports turf industry has experienced change and always will. Be prepared for it and use that change to make positive impacts on everyone you may come in contact with. Live each day to the fullest to do what is right and be thankful.

SportsTurf: Are you yet involved in "sustainable" management practices? If so, what are you doing?

JANUARY
21-0-0 @ 0.5#N/1000 ft/sq 1" HOC mow as needed due to colder temps. Skin prepped and dragged, all edges cut, bullpens prepped. Irrigation as necessary to obtain proper moisture content. Not much of an issue right now due to cold temps. Rye still looking good even though very cold temps. Dugouts and bleachers pressure washed. Continue routine daily maintenance.

FEBRUARY
24-0-5 w/4%Fe @ 1#N/1000 ft/sq 1" HOC mow as needed due to colder temps. Edge skin/turf interface Skin prepped and dragged, all edges cut, bullpens prepped. Irrigation as necessary to obtain proper moisture content. Rolling Infield due to regular season play. Continue routine daily maintenance.

MARCH
Foliar Manganese 5%, Long Iron N30 @ 6oz/1000 ft/sq 20-0-8 w/ Ronstar @ 1.5#N/1000ft/sq 1" HOC mow as needed. Edge skin/turf interface. Skin prepped and dragged, all edges cut, bullpens prepped. Irrigation as necessary to obtain proper moisture content. Applications of Pro's Choice Red as necessary. Continue routine daily maintenance.

APRIL
Foliar Manganese 5%, Long Iron N30 @ 6oz/1000 ft/sq 1" HOC mow as needed. Edge skin/turf interface. Skin prepped and dragged, all edges cut, bullpens prepped. Irrigation as necessary to obtain proper moisture content. Applications of Pro's Choice Red as necessary. Continue routine daily maintenance.

MAY
24-5-11 @ 1#N/1000 ft/sq
1" HOC mow as needed while rye still on field. Edge skin/turf interface. Skin prepped and dragged, all edges cut, bullpens prepped. Irrigation as necessary to obtain proper moisture content. Applications of Pro's Choice Red as necessary. Continue routine daily maintenance. Season ending, transition back to TifWay 419 base, reduce water, lower HOC to 0.5", Revolver herbicide.

JUNE
24-0-5 @ 1#N/1000 ft/sq
0.5" HOC mow as needed. Typically 4x week.
Aerify w/ John Deere AerCore 800 with hollow tine in 2 directions. Edge skin/turf interface. Skin prepped and dragged, all edges cut, bullpens prepped. Irrigation as necessary to obtain moisture content. Applications of Pro's Choice Red as necessary as prep for camps. Continue routine daily maintenance.

JULY
21-7-14 @ 1.5#N/1000 ft/sq Primo MAXX @ 15oz/acre rate. Ryan TracAire Slicer in 2 directions plus Sisis MaxiSlit Aerify with Toro hollow tine aerator. 0.5" HOC mow as needed. Edge skin/turf interface. Skin prepped and dragged, all edges cut, bullpens prepped. Irrigation as necessary to obtain moisture content. Continue routine daily maintenance.

AUGUST
21-7-14 @ 1.5#N/1000 ft/sq Primo MAXX @ 15oz/acre rate. Ryan TracAire slicer/Toro aerator w/ hollow tines/Sisis MaxiSlit 0.5" HOC mow as needed. Edge skin/turf interface. Skin prepped and dragged, all edges cut, bullpens prepped. Irrigation as necessary to obtain moisture content. Continue routine daily maintenance.

SEPTEMBER
5-5-10w10%Fe @ 1#N/1000 ft/sq 0.5" HOC mow as needed. Primo MAXX @ 11oz/1000 ft/sq. Edge skin/turf interface. Skin prepped and dragged, all edges cut, bullpens prepped. Irrigation as necessary to obtain moisture content. Applications of Pro's Choice Red as necessary. Continue routine daily maintenance.

OCTOBER
18-24-12 @ 1#N/1000 ft/sq Overseed w/ Eagle Blend Perennial Ryegrass @ 10#/1000 ft/sq. Topdress with 1/8" USGA Utility GA45 sand. Transition to 1" HOC after ryegrass establishes. Edge skin/turf interface. Skin prepped and dragged, all edges cut, bullpens prepped. Irrigation as necessary to obtain moisture content. Applications of Pro's Choice Red as necessary. Continue routine daily maintenance.

NOVEMBER
12-0-0 + 6%Fe @ 3oz/1000 ft/sq HOC = 1" Bermuda 419/Perennial Rye Application of ProGrass for Poa Annua control. Edge skin/turf interface. Skin prepped and dragged, all edges cut, bullpens prepped. Irrigation as necessary to obtain moisture content. Applications of Pro's Choice Red as necessary. Continue routine daily maintenance.

DECEMBER
12-0-0 + 6%Fe @ 3oz/1000 ft/sq
HOC = 1" Bermuda
419/Perennial Rye
Application of ProGrass for Poa Annua control. Skin amended with sand/clay/calcined mix and field laser graded and rolled. Edge skin/turf interface. Skin prepped and dragged, all edges cut, bullpens prepped. Irrigation as necessary to obtain moisture content. Applications of Pro's Choice Red as necessary. Continue routine daily maintenance.

Suddeth: The term "sustainable" can be pretty broad depending on how you look at it. Some of the projects we are doing here at Upstate are more than likely the same across the country. We're looking at our nutrient inputs by keeping records for each field as well as soil tests. For 2016 USC Upstate has a couple other initiatives we are working on. The first is collaboration with the Audubon Society in an effort to make the University a more bird friendly campus. The South Carolina Audubon Society and I have performed an audit and now we have a plan to enhance the bird population of the campus. Our second initiative, which is also an environmental topic, is to enhance our flowering plant count in an effort to increase the pollinators on and around the

campus. Spring and Fall of 2016 we will be identifying and planting plots that will increase pollinators such as bees, butterflies, hummingbirds, and more. We're very excited about these initiatives and contributing to the "sustainable" environment.

SportsTurf: How are you using social media at work?
Suddeth: I'm a bit of old school but in the last year or so I've been a little more active with social media. All of the Sports Turf crew is younger than I am so they are way ahead in the learning curve. We have Facebook, Twitter, and Pinterest sites for the University sports so naturally the crew has their accounts to communicate to the world what is going on at USC Upstate. So with that I had to get on board to keep up with the news across the sports turf arena. Being new to this has enlightened and confirmed to me just how close we as sports turf managers are. Everyone is willing to talk about their findings and share to help their fellow sports turf managers.

SportsTurf: How do you see the sports turf manager's job changing in the future?
Suddeth: Over the years of being in the industry I've seen the sports turf manager's role evolve in so many positive ways. The days of being the "grass cutter" are gone. Sports turf managers are now required to not only manage the athletic grounds but the whole facility with so many necessary skills. So we all have become proficient with turf, soils, weather, personnel, training, public speaking, communications, and so much more. With more and more demand for quality playing surfaces it requires the sports turf manager to evolve with change. Evolving with this change gives us the opportunity to be more valuable to our respective organizations. I can't think of a better way to embrace this great opportunity we have than obtaining continued education through the STMA and your local chapter. Being a member of STMA and SCSTMA has helped our team learn these many valuable skills that we can exhibit daily. It doesn't matter if you maintain sports fields at the professional, college, high school, or parks and recreation level, I encourage you to adapt with the change and join your local chapter. The benefits are immeasurable. ST

NFL field managers and event sponsors donate to SAFE

During its 10th annual NFL Sports Field Manager Symposium in March, the Foundation for Safer Athletic Fields for Everyone (SAFE) was designated the event's charity. SAFE's mission is to enrich communities through championing safe, sustainable sports and recreation fields for all athletes. It is also the charitable arm of STMA.

The symposium's sponsors donated $3,600 to SAFE. Sponsors include Covermaster, ProSeeds, Syngenta, Toro, Turface Athletics and World Class Athletic Surfaces. Individual NFL field managers and their employers are also making pledges to SAFE.

"We appreciate the generous support of the NFL field managers and the sponsors of this event," says Jay Warnick, CSFM, SAFE's Chairman of the Board of Trustees. "These donations will go directly to fund our education for parents and volunteers about safe playing surfaces for young athletes."

Drawing more than 70 sports turf managers, the meeting includes representation from NFL groundskeepers, administrators, and college academia. Although not sponsored by the NFL, the meeting promotes direct communication between the NFL Operations department and the field managers of each team.

SAFE
The Foundation for Safer Athletic Fields

Rare sighting

At the recent New England Regional Turfgrass Conference & Show, held in Providence, RI, all four current STMA Founders Award recipients were in attendance and posed together for this rare opportunity. From L to R: Michael Goatley, PhD, Virginia Tech, Harry C. Gill Memorial Award; Ben Polimer, Town of Weston (MA), Toma Golden Rake Award; Mary Owen, University of Massachusetts Amherst, William H. Daniel Award; and Michael Buras, CSFM, Longwood Cricket Club, Dick Ericson Award.

The SAFE Foundation was established in 2000 to fund research, educational programs and scholarships geared to the sports field profession. SAFE is a 501(c)3 charity; most donations are tax deductible. To date SAFE has awarded $250,000 in scholarships, grants and travel grants to students. In 2015, SAFE rolled out its video series, "Sports and Recreational Fields, Safety-First." These videos provide easy to follow instructions for field users, parents, and volunteers to assess the safety of sports fields for baseball, softball, football, soccer (for natural grass and synthetic turf) and the facilities that surround the fields. These free videos and safety checklists can be downloaded at SAFEFields.org.

SAFE raises funds primarily at the STMA annual conference from a golf tournament (sponsored by Diamond Pro), bowling event (sponsored by FIELDS Inc.), silent auction (sponsored by Pioneer Athletics), live auction, and raffles. At this year's conference in San Diego in January, SAFE raised nearly $50,000 from these events. Three of STMA's chapters, New England STMA, Southern California STMA, and the Keystone Athletic Field Managers Organization also made significant donations this year.

A new grant is being developed to honor a former SAFE Board member, Leo Goertz, who passed away in 2015. He worked tirelessly on SAFE's auctions and other programs to insure they were successful fundraisers. The grant is being funded for 10 years by Pioneer Athletics. SAFE offers two other grants, the Gary Vanden Berg Internship Grant, and the Terry Mellor Continuing Education Grant, which is funded by Turface Athletics. Two of SAFE's scholarships are named after Dr. James Watson, a long-time green industry researcher and consultant. These are funded by the Toro Foundation. Depending upon its annual resources, SAFE typically funds eight to 10 scholarships per year.

Donations will go directly to fund our education for parents and volunteers about safe playing surfaces for young athletes.

In addition to Warnick, the SAFE Board of Trustees includes: Mike Andresen, CSFM, Scott Bills, CSFM, Jon Butler, David Houseknecht, Sarah Martin, CSFM, Nick McKenna, CSFM, Craig Potts, CSFM, Chad Price, CSFM, CFB, Doug Schattinger, Paula Sliefert, John Sorochan, PhD, Chris Sperry, and Steve Wightman. STMA's CEO Kim Heck serves as SAFE's Executive Director and is a voting member of the Board.

To help make fields safer, make your tax-deductible donation at SAFEFields.org.

YOUR $100 STMA CREDIT IS READY

Participate in STMA's "Referral Rewards" program and you receive $100 for each person you refer. Any current member who refers a new qualifying individual that signs up for a membership will receive a $100 voucher that can be used on a variety of items, including conference registration fees, certification fees, or membership dues. Qualifying referrals include practitioners, academics or commercial members. Be sure to remind your referrals to include your name on the membership application, paper version or electronic, so that you get the credit.

There is a bonus also for the new member: they will receive a free conference registration to be used within 3 years.

There is no limit to the number of new recruits a member can refer; the referring individual will receive the $100 voucher incentive for each new qualifying person they pass along who signs up.

For more information, visit stma.org, call 800-323-3875, or view the STMA Membership Application in this issue on page 19.

STMA Affiliated Chapters Contact Information

STMA thanks new chapter sponsor, Team Premier Pro, which is part of Riverside Turf. Their latest grass release, PremierPRO, has a versatility not seen in other Bermudagrass varieties.

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.

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

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

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

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

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

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

North Carolina Chapter of STMA: www.ncsportsturf.org.

Northern California STMA: www.norcalstma.org.

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

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

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

Ozarks STMA: www.ozarksstma.org.

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

Southern California Chapter: www.socalstma.com.

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

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

Texas Sports Turf Managers Association: www.txstma.org

Virginia Sports Turf Managers Association: www.vstma.org.

Wisconsin Sports Turf Managers Association: www.wstma.org.

Chapter Sponsors

INNOVATIVE AWARD

LED TURF TILES WIN STMA INNOVATIVE AWARD

Here is a Q & A with John Royse, president of Royse Green Technologies (RGT), which was presented in January with the Sports Turf Managers Association's Innovative Award, which recognizes commercial members that have developed a product, service, equipment, or technology that substantially enhances the effectiveness of sports turf managers.

SportsTurf: What technologies make your product different from your competitors'?

Royse: With our patented technology, we are able to substantially reduce or eliminate damage to turf under stages, tents, and roadways during events held on the field. We do this by providing irradiance to turfgrass through the use of Light Emitting Diodes (LEDs) integrated into our LED Turf Tile flooring system. By providing light energy to turf that is covered for an extended period of time, plants continue to photosynthesize and thus do not die or go though a number of major physiological and morphological changes including etiolation, reduced pigments, depleted carbohydrates, thinner leaves, decreased leaf width, reduced stem diameter and decreased roots. Our Turf Tiles are designed for covering natural grass, and allow for consistent sunlight passage from tile to tile, without leaving grid patters or potholes on the grass because of blockage of light. Our Turf Tiles also link up with LED Turf Tiles and in combination may be used for illuminated walkways that help guide patrons safely to on-field seating sections. Our non-lit Turf Tiles and LED Turf Tiles are compatible and create a complete uniform covering solution for events on natural or synthetic turf.

SportsTurf: How did you develop these technologies?

Royse: We developed these technologies through literature reviews, field research, experience, and trial and error. While I was a Graduate Assistant at Virginia Tech researching Turf Protection systems for my master's thesis, Dr. Michael Goatley allowed me to use his backyard to run trials on our prototype LED Turf Tiles. We used 50-gallon drums placed on LED Turf tiles partially simulating the load a stage may exert during a concert. The glow at the test site sparked a neighbor's interest and he wanted to know what the zealous turf professor was up too. Dr. Goatley explained and the experiment became the talk of the neighborhood. After running trials in his backyard and tweaking the design, RGT conducted trials at MLB stadiums and fine-tuned our product for mass production last year.

SportsTurf: Do you contract with customers directly or are installations handled by a separate company?

Royse: We handle all contracts directly with either the production company or the facility. Installations are performed with a RGT supervisor(s) and the help of local labor. RGT is there during setup, teardown and cleaning of the system. We provide turnkey operations for installation of the Turf Tiles because most new clients are not familiar with deployment of the system.

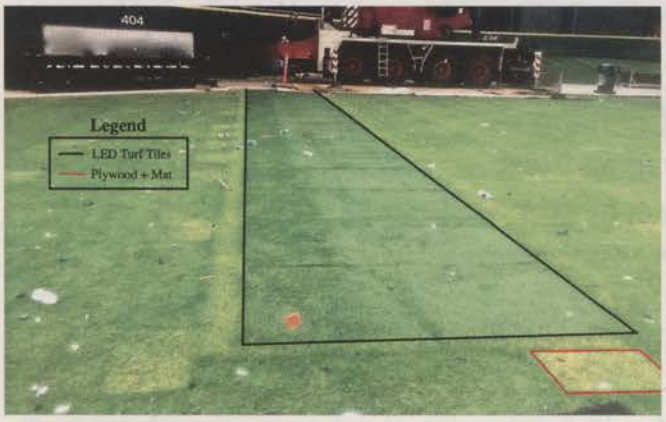
SportsTurf: What were you doing before you developed this product?

Royse: Before developing this product, I was the groundskeeper for the Washington Nationals in DC at RFK stadium and at Nationals Park. I, along with Larry DiVito (now with the Minnesota Twins), hosted the first major event at Nationals Park, the 2008 Papal Visit. In the summer of 2009, I was left with the tasks of hosting the Elton John and Billy Joel concerts

Illuminating LED turf Tiles under sound towers at Lincoln Financial Field in Philadelphia.

Research plots with various protection covers for evaluation of trafficked turf at Virginia Tech.

Sun Rover being used a Minute Maid Park in Houston, TX.



Turf quality after a stage was in place for 5 days.

at Nationals Park. That summer I started thinking about the idea that there should be a better way to preserve grass during entertainment events. At that time were using plywood and mat under the stages and considerable damage was left after the concert. Representatives from the National Park Service in Washington, DC, also saw a need to manage events better on the National mall so they visited me at Nationals Park during concert setups. I did a number of small experiments using LEDs in my backyard the next spring and obtained promising results so RGT was founded in 2010.

SportsTurf: What other products do you offer?

Royse: We also offer the Sun Rover for mobile light supplementation. This product also uses energy efficient LED Technology and is constructed with lightweight weather-resistant aluminum. The Sun Rover's light spectrum is turfgrass-specific so plants do not elongate as may occur under other light sources. Our system is 30% more efficient than High Pressure Sodium (HPS) lights for producing Photosynthetic Active Radiation (PAR). Along with the Sun Rover, we offer Sun Vision service for tacking Day Light Integral (DLI), operational management and Rover placement, all presented on a mobile app.

SportsTurf: Can you discuss what new technologies you may be developing?

Royse: We are building a larger version of the Sun Rover this year called the Sun Rover XL that will have a bigger footprint and will continue to bring LED grow light technology to the forefront of innovation in sports turf management. LEDs are ready for mainstream use on sport fields and RGT has demonstrated they produce quality results on multiple deployment platforms. ST

EQUIPMENT FUEL PROBLEMS

Editor's note: This article was provided by Loretto M. Thompson, VP of sales & marketing for Kinetic Fuel Technology Inc.

There was no lack of head scratching and question marks among the STMA attendees in 2015. Why would a fuel treatment manufacturer be exhibiting, let alone advertising to the STMA? The connection was not easily made a year ago. However, in 2016 the tides were beginning to turn. Sports turf managers and technicians alike have started to see the correlation between fuel management and equipment maintenance, and they will never look at their fuel tanks the same way again.

It's easy enough to blame equipment manufacturers for equipment failures, or better yet, could the problem have been caused by user error? However, the reality is that a large percentage of equipment failures and maintenance costs are fuel related. Why is this? Well, fuels have changed and for the most part, behaviors have not. Gone are the days when fuel could be held over from season to season with only stabilizing required. Today's fuels, both ethanol blended gasoline and ULSD, start to break down in 30 days.

Without proper fuel management, equipment is subjected to the highly corrosive effects of phase separated E10, or ULSD tainted by microbial growth in the warmer months or gelling in

the colder months. When all is said and done, new fuels demand new behaviors. Long gone are the days when old standard fuel additives are able to resolve the new challenges facing fuel management.

So, what can be done? Most sports fields, universities, golf courses, and municipalities have their own fuel tanks on premises. Many are above ground and subject to the climate and seasonal elements. During the peak season, fuel doesn't sit long enough to begin turning bad, however when the season slows, or ends all together, and the fuel is destined to sit longer than 30 days, inevitably it starts to break down. While many have been assured that they've purchased "pre-treated" fuel, and have been fortunate not to experience "ruined" fuel, there are a few preventive measures that can be taken to ensure the fuel is good to go when the season cranks up again.

If fuel has been "pre-treated," it is wise to ask a few questions of your fuel distributor. Find out what the fuel was treated with and also what it has been treated for. This will give you a starting point to determine if the pre-treatment will manage the harmful changes today's fuels experience when they sit for too long. If the treatment being used contains petroleum distillates, you will most likely be fine for stabilization, but petroleum based products cannot protect against water contamination and it's the water that is causing the problems in both your E10 and diesel tanks.

Water has been the worst enemy of all fuels since the dawn of time.

Water has been the worst enemy of all fuels since the dawn of time. In non-ethanol gasoline, it was, and remains, more of a nuisance, but it won't alter the quality of the fuel. However, new ethanol-blended fuels are a completely different animal. Gasoline itself is hydrophobic, and wants nothing to do with the water. Ethanol, however, is hydrophilic and is attracted to water. When water contaminates ethanol-blended fuels through condensation, human error, or heaven forbid, bad fuel, the ethanol grabs the water and eventually gets too heavy, falling out of suspension and to the bottom of the tank. This alters the quality of the E10, resulting in low octane fuel on top and wet ethanol at the bottom, or phase-separated fuel. It takes ½ of 1% by volume at room temperature to start phase-separation, so roughly .64 oz. per gallon, or less than ½ a jigger!

In diesel fuel, any water present will remain at the bottom of the tank where, in warm climates, it provides a feeding ground for microbial or algae growth. In colder climates, especially when fuel is stored above ground, any water present will freeze, forming ice crystals, which creates a jelly-like fuel, a process referred to as "gelling." So, whether it's E10 or ULSD, water in fuel alters the quality of the fuel and has a high probability of damaging your equipment. In order to maintain your equipment, you need to manage your bulk fuel tanks.

Since all you equipment feeds off a main source, your gas or diesel bulk tank, we recommend that you treat, and manage the source. Look for and use an additive that offers multiple benefits in a single product, verses using multiple products to treat multiple issues. Instead of using one additive to stabilize, one to boost, one to add lubricity, one to clean, and finally one to remove the water, try to find a product that can provide all five benefits with a single treatment.

Be wary of petroleum-based products, as they will not touch any water issues since oil and water will not mix. Also, understand the product's ability to address water in the fuel. Many products claim to "disperse," or "emulsify" or "demulsify," but in the end, the water is still present and a simple water-detecting paste check will easily prove it.

Finally, know your alcohols! Like cholesterol, there are good alcohols and bad alcohols. Knowing which type of alcohol is used in your additive will mean the difference between corrosive fuels and dried out seals, gaskets and hoses, or a problem-causing additive, and a problem-solving additive. Many "good" alcohols fall in the primary alcohol category, while other "bad" alcohols tend to fall in the secondary or tertiary alcohol category.

Instead of focusing on "alcohol" in general, try to determine which category of alcohol is used in your additive; good or bad? Also determine how much is used. Alcohol is often used in the blending process of fuel additives and limited to vanishingly small amounts. However, some additives primary ingredient is "bad" alcohol. As long as the alcohol in your chosen additive is the "good" alcohol, it will not harm your equipment. In fact, it will prove useful in resolving water related fuel problems because it is highly reactive with water, the source of most fuel woes.

At a time when the end to new fuel introductions is nowhere in sight, both professionals and amateur users of small engine equipment would be smart to focus their attention on managing their fuel source as a means by which to maintain their equipment. The next time that mower or trimmer, turbine or chainsaw, start to act up don't immediately look at the equipment manufacturer or staff as the culprit; perhaps the problem lies in your fuel management. Keep an eye on your bulk tanks, treat them as needed, know what the treatment contains, and take advantage of water-eliminating organic chemistry. Remember to address the source of the problem — the water, and not the symptom — throwing parts at your equipment. By turning your attention to your bulk tanks and ensuring you are putting quality fuel into your equipment, you will benefit from better performance, fewer fuel-related maintenance problems, and higher efficiencies among your department. ST

TORO PROPASS 200 TOPDRESSER

The innovative Toro ProPass 200 broadcast-style topdresser offers a variety of cost-saving features including the unique four-wheel walking beam suspension that allows all four wheels to stay in contact with the ground regardless of terrain. The drop zone system ensures an even application, and the smooth belt eliminates load shifting to prevent material from escaping. Additionally, the 21 cubic foot hopper capacity level ensures high productivity and the capacity to finish a job with minimal stops. Available in vehicle-mounted and towable models, the ProPass is a highly versatile and productive topdresser.

The Toro Company

NEW STAND-ON AERATOR

Classen has introduced its PRO SA30 Stand-Aer. Classen designed the unit to protect wear parts and significantly minimize downtime. A cover for the chains decreases dirt and debris buildup, and Classen's unique automatic chain tensioner reduces the likelihood of chain slippage and popping. Together, the components virtually eliminate the hassle of chain maintenance. The unit also features Classen's Hydra-Cool system, which feeds a circuit of coolant to the unit's transaxles to prevent the drive system from overheating. The Stand-Aer also offers maximum efficiency because of its speed, maneuverability and large fuel capacity. A powerful 15-hp Kawasaki engine provides increased efficiency for a variety of jobs with transport speeds as fast as 7.4 miles per hour. Its true zero-turn maneuverability allows contractors to work close to shrubs and trees. The unit also offers a generous 5-gallon fuel tank.

Classen

K100 FUEL TREATMENT

Developed in 1965, K100 Fuel Treatment removes water from fuel systems by seeking out water, encapsulating it, altering the chemical make-up of water by changing it to a combustible compound that burns clean, lubricates, and increases power in gasoline, diesel, and home heating fuels. K100 Fuel Treatments are designed and formulated for use in all fuels including E-10, ULSD, Off-Road, Bio-Diesel and Home-Heating Fuels. For the Turf Industry Professionals, these fuel treatments will keep on-site fuel tanks fresh, increase your gas mileage, reduce maintenance costs on both equipment and vehicles, and transform standard fuel to premium fuel, which will not harm your investments.

Kinetic Fuel Technology Inc.

TEMPORARY ROADWAY MINIMIZES GROUND DAMAGE

SlatTrax is a ground protection system for your skid loader that rolls out or retrieves up to 100-foot temporary roadway in about 2 minutes. The system includes a hydraulically powered attachment that holds dual spools of Trax, each 36" wide or 42" wide, up to 100 feet in length. Break-point sections in Trax allow for manual maneuvering. SlatTrax will increase the productivity of work crews and provides a professional alternative to plywood and mats. System can be used on hills, curves, turf and hard cover. Optional trailer holds a complete SlatTrax system with two 100-foot spools.

SlatTrax

NEW DEERE ZERO-TURN MOWER

John Deere has added one new zero-turn mower and expanded an existing model. The new Z960M and expanded Z970R ZTrak mowers provide customers with more solutions to meet the demands of today's business climate. The Z960M provides professionals with a powerful, reliable machine at an affordable price point. Boasting 31.0 HP, the Z960M is available in three deck offerings – 60 inch, 60 inch Mulch On Demand (MOD) or 72 inch. The Z970R now features two additional deck options, 60-inch side discharge (SD) or 60 inch MOD, offering more deck options on the most powerful machine in the Z900 Series line-up. John Deere and EnviroGard recently announced the expansion of the propane conversion program for John Deere dealers and their customers. The program now encompasses 36 different John Deere commercial mowing models, including 21 zero-turn mowers, seven QuikTrak stand-on mowers and eight commercial walk-behind mowers.

John Deere

Membership Application

SportsTurf
MANAGERS ASSOCIATION

Experts on the Field, Partners in the Game.

Fax to: (785) 843-2977

Or mail with payment to:
Sports Turf
Managers Association
P.O. Box 414029
Kansas City, MO 64141

Name _____ Title _____

Employer/ Facility _____

❑ Business ❑ Home

Address _____

City _____ State _____ Zip _____

Home phone _____ Work _____ Cell _____

Fax _____ Email _____

Signature _____

Direct Supervisor Name _____

New Members*

As a new members, you receive a FREE conference registration, value $375, to be used within 3 years! Just indicate your status on the conference registration form.

Did someone refer you to STMA? We would like to thank them, and reward them with an STMA $100 voucher.

Person who referred you:

_____

Facility name:

_____

*Not been an STMA national member since 2000. New student and affiliate memberships do not qualify for the free conference registration. However, all members are eligible to receive the $100 voucher for referring a new qulaifying member.

Membership Category:

❑ Sports Turf Manager	$110
❑ Sports Turf Manager Associate* (Additional member(s) from the same facility)	$75

Please select the primary facility type where you are employed:

❍ Professional Sports ❍ Higher Education ❍ Schools K-12 ❍ Parks and Recreation

❑ Academic	$95
❑ Student (verification of enrollment)	$25
❑ Commercial	$295
❑ Commercial Associate* (Additional member(s) from the same commercial company)	$75
❑ Affiliate (Person who is indirectly or on a part-time basis, involved in the maintenance/management of sports fields)	$50
❑ Retired	$50
❑ Chapter Dues (contact headquarters for amount) Chapter name) _____	$_____
❑ Contribution To SAFE Foundation (research, education and scholarship):	$_____
Total Amount Enclosed:	$_____

Payment Method:

❑ Check ❑ Money Order ❑ Purchase Order #:_____

Credit Card: ❑ Mastercard ❑ Visa ❑ American Express ❑ Discover

Name on Card _____

Card #: _____ Exp. Date: _____

Signature: _____

*There must already be a national sports turf member from your facility or commercial member from your company before you may sign up in the Associate category.

Phone: 800-323-3875 **www.STMA.org**

John Mascaro's Photo Quiz

Answers from page 23

John Mascaro is President of Turf-Tec International

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.

This municipal sports complex was undergoing some construction upgrades to their buildings, sidewalks, planters and other areas when the contractor decided that this empty tree well was a great place to wash their concrete equipment. After their daily cleanup was performed, stones and cement debris were left behind in this tree well. Many times when plants in the landscape fail, it is often a mystery why and you have to do some investigative work to find out the causes. If the contractor had been allowed to continue this process, eventually the area would have been cleaned up and a separate landscape contractor would have come in and planted these Windmill Palm Trees. The trees might do well as they became established but most likely they would have struggled and eventually could have even died. Concrete decreases soil pH and even though Windmill palms like an acidic soil, some of the other ingredients in the concrete could also contribute to plant stress and failure. Since the Sports Turf Manager saw what was happening here, he instructed the building contractor not to wash their equipment in the city's planter beds. In addition, before the palm trees were planted, he had the soil in this area completely excavated and then removed and fresh soil was installed before the final tree planting was done.

Thanks to Kenneth Edwards, CSFM, Sports Turf Manager at the City of Gulfport in Gulfport, MS for allowing me to take this photo.

BACKGROUND ILLUSTRATION COURTESY OF ISTOCKPHOTO.COM

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The interview itself. Managing "stage fright" is important but remember that you are the expert and know what you're talking about so stay friendly, positive and upbeat, said Fech. He said you should neither try to control the interview nor allow yourself to be controlled, but rather use your talking points for answers as well as directly answering questions. And don't forget about branding, which is a must, so wear a shirt with your facility's name on it. Finally, for television interviews, having a prop will make the entire interview more interesting to viewers.

If you are on TV and know when, tape the interview so you can learn and improve your performance for the next time.

Fech said rhythm and cadence are important as you give your answers and to think of yourself as a performer; he referenced how Peyton Manning used to call signals. When you first begin giving interviews, answer questions in about three sentences and then stop talking. If the reporter strays too far from your messaging points, use "bridging phrases" to help bring them back (this bridging also helps deflect any questions you don't want to answer). One good bridging phrase is, "Yes, but the key point is …"

MORE DO'S AND DON'TS

- Listen carefully to each question and pause before beginning your answer.
- Say the most important thing first.
- Maintain steady eye contact with the reporter.
- Wear solid colors, with a logo on the shirt.
- Sit up straight, smile, relax.
- Be reliable. Be early to the interview.
- KISS! (not the rock group) … and use facts only.
- Try to work in another mention of your facility, e.g., "aeration for good drainage and density … that's what we're doing at Burns Stadium right now … "
- Have something extra; reporters are trained to ask, "Is there anything else that we haven't covered."
- Don't say "no comment."
- Don't use jargon. It's hard to understand.
- Don't speculate. Say, "I'm not an expert at that … let me find out and get back to you."
- Don't refer to "off the record." You are never off the record.
- Don't touch the microphone or table.
- Don't use lots of gestures. It's distracting.
- Don't do the interview on the spot. Prepare.
- Don't ask to edit the story or interview; it's insulting to the reporter.

MEDIA INTERVIEW ETHICS

- Always tell the truth. It's about honesty.
- Don't assign blame for something bad, weird or out of your control. Instead use bridging phrases to bring the reporter back to the message points.
- Interviews are not conversations or intellectual discussions; they're just sound bites and quotes.
- It's about representing your facility, your brand, in a positive light, not about social or political agendas. ST

MAY 2016

SportsTurf Magazine ADVERTISERS' INDEX

Q&A with Dr. Grady Miller

Professor, North Carolina State University

Questions? Send them to Grady Miller at North Carolina State University, Box 7620, Raleigh, NC 27695-7620, or email grady_miller@ncsu.edu
Or, send your question to Pamela Sherratt at 202 Kottman Hall, 2001 Coffey Road, Columbus, OH 43210 or sherratt.1@osu.edu

License to kill

Q: ***I work for a high school system and my understanding is that someone here has a license for pesticide use so I do not necessarily need one. Is that true? Should I get one?***

— North Carolina

A: Before answering, I should mention to all the readers that you should investigate the rules/laws in your own state.

Do not assume that the comments I make in this article would apply the same way in your state. I have worked in three states and found that the laws that govern pesticide use to be a bit different in each. Generally the rules are easy find online but one can also ask their local county agent for information. Ignorance of the law is not a viable excuse (in any state) if one is ever found to be breaking the law!

To answer this question, let me first tell a personal story related to this subject. Actually, let me call it what it is — a confession. I admit that I went for a period of time "un-licensed." When I moved from Florida to North Carolina I did not take the time to get a NC license for a number of years. My (licensed) research technician generally sprayed my research trials and the few times that I sprayed, I figured that I was working under either his license or the license of the on-site superintendent. I was technically in compliance with NC rules, but my conscience told me that I should still get my own license.

Ignorance of the law is not a viable excuse (in any state) if one is ever found to be breaking the law!

Over time I just put off taking the exam, even though it was often in the back of my mind. I even felt guilty lecturing to my students that they need to get their license before they graduate. Yet, I had not taken the time to do so myself. I was not setting a good example. During the year I also taught dozens of CEU (continuing education credits) classes to licensed turfgrass managers every year. I had to validate the appropriateness of the program content and submitting the attendance rosters to the Department of Agriculture. More guilt!

So one year getting my license was my New Year's resolution and that is what got me over the edge. North Carolina requires an applicator pass at least two exams, a "core" and at least one specialty exam appropriate for the person's use of pesticides. There are a total of 14 different specialty exams in North Carolina. For me, I needed specialty exams for "ornamentals and turf" and "demonstration and research." I also had to pick the appropriate License Category. Since I work for a state government, my category is Public Operator.

Since I routinely interact with the NC Department of Agriculture, there was added pressure for me to do well on the exam. In fact they kidded with me that I better do well when I was standing in front of them paying my exam fee. I am glad that I had studied since I then knew they would be looking back at my scores.

My test preparation not only gave me peace of mind, but I actually learned a lot of useful information. I can now better answer questions during my extension talks as well as when my students ask about storage, use, transportation, and disposal of pesticides. The various study booklets are also good references for later.

Sorry to personalize your question, but your situation is pretty similar to mine. Yes, in North Carolina you can legally be covered by someone that is willing to directly supervise your application of pesticides. That assumes that his license type is appropriate, up-to-date, and that he is willing to accept responsibilities for your use of pesticides. If this licensed person, your employer, and you are comfortable with this arrangement, then you are fine by the law (in North Carolina).

Despite your compliance, I would still strongly encourage you to get your own license. Not only will you likely gain knowledge during the review to take the exam, but the need to get continuing education to maintain your license is very valuable to you professionally. Those courses and seminars will introduce you to new products and new ways to manage pests that may be cheaper and more environmentally friendly than older products and techniques. You will also have a chance to interact and learn from other turf managers that likely have similar challenges. That knowledge gained can make your job easier and perhaps safer for those that come in contact with your turfgrass surfaces. Plus it may reduce that guilt that I know you must be feeling. ST

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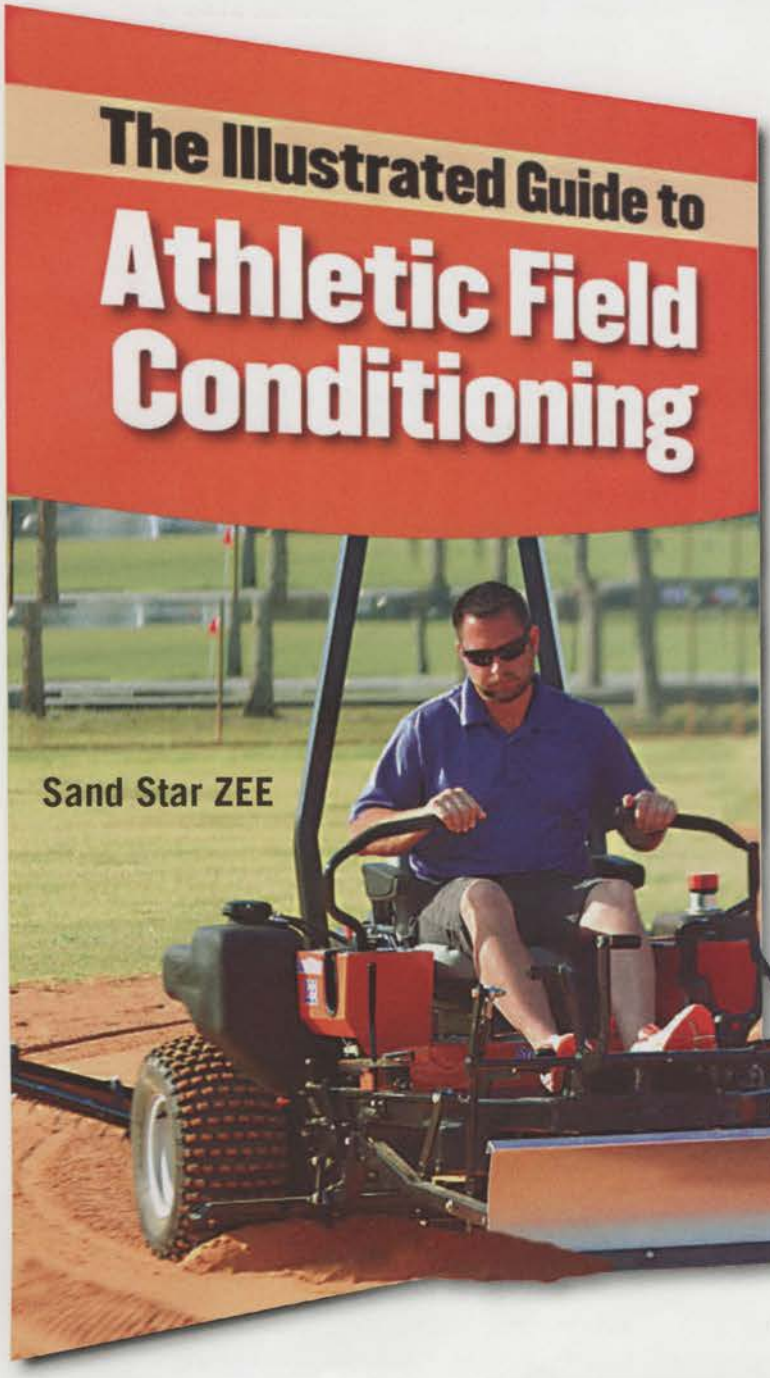

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