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March 2013

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On the cover: STMA 2012 Professional Baseball Field of the Year Fluor Field at the West End, Greenville, SC, home of the Greenville Drive, is managed by Greg Burgess and assistant Ross Groenevelt. Fluor Field has hosted some of the nation's top college programs over the past 7years, and the trend will continue in 2013 as 21 different programs are headed to downtown Greenville, including 2010 and 2011 National Champion University of South Carolina, Clemson, University of Cincinnati, Michigan State, Miami University (OH), USC-Upstate, University of Connecticut, and Northwestern. "Fluor Field has become a highly sought after venue for top NCAA baseball programs in recent years," says Drive General Manager Mike deMaine.

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From the Sidelines

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Early season use of sports fields

THIS MONTH I turn over this space to the gracious Mary Owen, extension turf specialist for the University of Massachusetts:

"Early season use of a field when grasses are not actively growing or when grasses are not growing quickly enough to recover from wear can cause lasting damage. Such damage may require costly renovations, result in down time later in the spring or summer, or require the use of herbicides to combat weeds that will invade areas where grass cover has been lost.

"Cool season grasses grow best when soil temperatures are in the 55 – 65 degree F range. Soil temperatures will vary, of course, by geography and topography and are also highly influenced by an urban "heat island" effect.

"While fields may be showing green and some growth, some fields in play are not replacing leaf and stem tissue at a rate that is rapid enough to maintain a dense playing surface. This replacement of tissue is critical for the turfgrass plant to recover, to grow new leaves and stems, and is crucial for recovery from traffic, maintenance of turf density and field safety. When the grass is not allowed the time to recover or when conditions are not good for recovery, the turf will thin, soil compaction will increase, weeds will invade and player safety will be compromised.

"Strategies for managing fields in early spring should include not only excellent agronomic practices aimed at maximizing shoot density and rooting, but also the scheduling of events (practice, game play or other use) for an appropriate amount of time directly related to the growing conditions and ability of a specific field to handle the play demanded.

"It is prudent to consider the playing conditions that will be expected as the season progresses. Heavy use of a dormant or slowly growing field can result in serious damage to the turf and to the soil. Rest and recovery time must be allowed for in the play/practice schedule, or the result will be an unsatisfactory field, a potentially unsafe field, and costly repairs and renovations later."

Considerations for managing sports fields in the early spring:

- Restrict use on frozen or partially thawed turf.
- Avoid use of dormant (i.e. brown) turf or turf that is not actively growing.
- Reduce or restrict use on excessively wet or excessively dry fields.
- Minimize number of hours of use in relation to the growing condition of the turf.
- Keep practices, especially drills, off areas that are high traffic during games (i.e. mid-field, goal areas) and preferably off game fields entirely.
- Spread the wear out. Shift fields and move goal areas whenever possible. Rotate practice areas.
- Traffic on lighted fields, where there is the likelihood of additional hours of play and practice, should not be increased over what the field will bear simply because lighting is available.
- Require use of "gentler" footwear that is less likely to tear and divot. Suggest or require that sneakers be worn instead of cleats, as long as safe footing is not compromised.
- Overseed to "seedbank" desirable turfgrasses where traffic, wear and use are expected to be high.
- Aerate to reduce soil compaction and increase moisture release or infiltration, using solid tine or a slicer. Take care if there is a history or potential for annual grassy weed (e.g., crabgrass) infestation, so as not to aerate during peak germination times.
- Provide adequate fertility to ensure measured growth, avoiding excessive shoot growth.
- Irrigate, especially heavily used fields, if soil moisture is not adequate.

"Because there are no hard and fast rules about field use and because conditions may vary from field to field, from season to season and throughout the season, the experience of a knowledgeable sports turf manager who has a game plan for turf management and a policy for event scheduling is invaluable in determining when and for how long a field should be used." ■

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President's Message

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Pay it forward

ONE OF OUR CONFERENCE KEYNOTE SPEAKERS, Ian Hill, gave a very thought provoking presentation in Daytona Beach this January. One of the quotes off Ian's website (www.thechangingpoint.com) does a pretty good job of summarizing how Ian goes about living his life: "Most of us don't have the capacity to change the whole big, bad world, but all of us have what it takes to handle our little corner of it."

Ian's no-nonsense speaking method caught many in the audience by surprise, but he quickly won our group over as it was evident that he was speaking from the heart. In doing his background research on STMA, Ian said it caused him to realize that he had never really considered how important sports turf managers had been to him as a standout high school athlete, a college track coach, and now a parent with a young daughter playing sports. In honor of the sports turf managers that had touched his life, Ian said he wanted to now "pay it forward" and donated $1,000 to SAFE. He then challenged all of those in attendance that night to support SAFE by putting some cash into the hands of either Jeff Fowler or myself in honor of a mentor they wished to thank. For the remainder of the week, people from all areas of our industry approached me with cash and the name(s) of those they wished to recognize and thank.

I wish now that we had had the foresight to record the names of all those honored (Ian caught us off guard with his challenge), but I hope that each of you that made a donation takes the chance to share your appreciation in person, if at all possible. SAFE received an additional $1,300 from Ian's challenge, and I am sure that they will gladly accept further donations if you are so inclined!

Paying it forward does not always involve cash. Another way is to volunteer for STMA committee service. The Board realizes that our committees are responsible for doing the "heavy lifting" of the association. As President, it is my charge to appoint Committee Chairs and then make the first attempt (eventually finalized through our Executive Committee) at placing volunteers per their preferred committee and the necessity to ensure that a committee is appropriately represented by all categories of STMA membership. We are engaging our Student Membership subcommittee (chaired by Amy Fouty, CSFM) in 2013, with goals of better serving our students and increasing and sustaining their membership.

We also have a new Sports Turf Curriculum task group committed to exploring how STMA can best deliver and administer the exciting new sports turf curriculum developed by our Education Manager, Kristen Althouse, as part of her Master's degree at The Pennsylvania State University. By way of Kristen's efforts, STMA has a comprehensive sports turf curriculum that is going to introduce a totally new audience to this profession, opening up possible career opportunities while also improving field safety and playability conditions.

Thanks to all who continue to pay it forward. ■

12 ways
a turf manager can help to elevate baseball team defense

IN PROFESSIONAL BASEBALL, the players are the product, without question. As turf managers, we provide the context for the game itself. Our daily goal is to enable the players to play the game to their maximum potential. The modern groundskeeper at the professional level generally does not doctor the field drastically for the home team daily, as may have been done in decades past. However, he can make subtle adjustments to the field that over time should advance the progress of the team. Much of what I will discuss does not necessarily lead to favoring one team over another. The key is to focus on providing the best possible environment for players to perform.

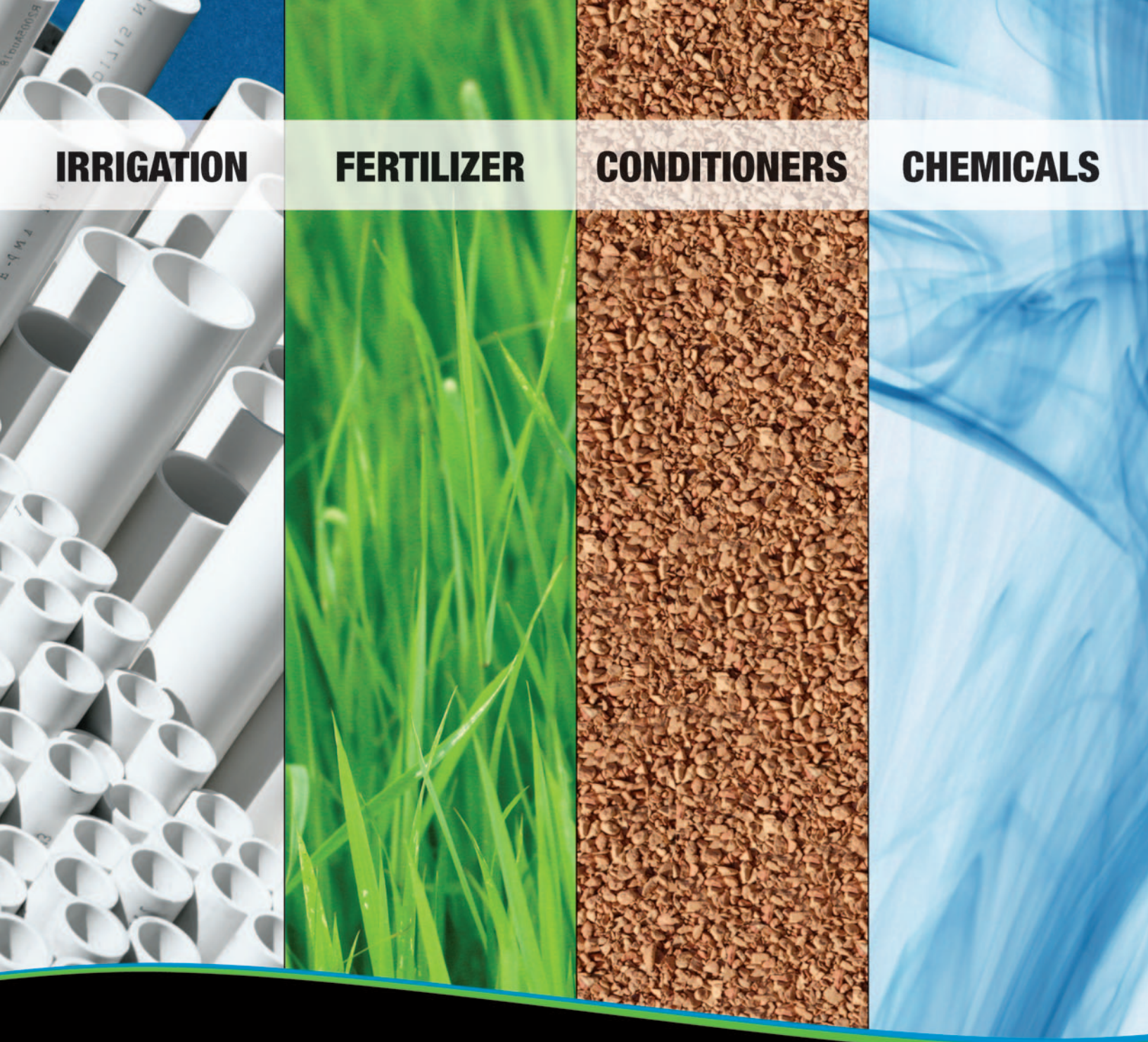
Players play, it's their game. All we can do is promote quality play by providing a consistent surface. Think of your field and how it appears as the managers exchange lineup cards with the umpires at home plate. Essentially, you have given the players a blank canvas. One of the beautiful moments in baseball is the top of the first inning. Not knowing what the next nine innings will offer is part of the daily excitement that motivates me to work on the field year after year. It could be a good day for the hitters, maybe some spectacular defense, or perhaps a no-hitter. These are the things a fan comes to see. Our job is to provide a field that facilitates both routine and outstanding play.

Think about that blank canvas for a minute. Ask yourself what you can do as a professional turf manager to provide a consistent surface for 70 or more home games per year. Turf cut at the same height daily, crisp and smooth edges, even and predictable hops throughout the infield skin area. There are different ways to achieve things with infield maintenance, so I tend to focus on two words as we work: **emphasize results**. The results of your work are what players see every day. Most of them have no concept of what your processes and routines are each day, and most do not care either. It is all about results with footing, ball roll and ball bounce. Here are 12 ways you can help to elevate your team's defense.

1. THE CATCHER'S AREA

Providing your catcher with footing that is firm, moist and comfortable will help him handle the pitches and throw competitively. It is critical to keep this area level with home plate so your catcher is able to transfer his weight effectively and stay on top of his throws to the bases. Another consideration is the dirt behind home plate, directly in front of the catcher. These areas have a tendency to get hard and baked, as they are not worked up by spikes. The key point here is that most of the short hops on pitches in front of the catcher land in this area. Proper appli-

Ask yourself what you can do as a professional turf manager to provide a consistent surface for 70 or more home games per year.



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cation of moisture to this area and daily work with a hard, steel rake is essential. Use a controlled, fine-mist nozzle here; to test this spot, bounce a baseball to check the compaction. Grooming this area will allow the catcher to cleanly block balls with his body.

2. DIRT IN FRONT OF HOME PLATE

Visualize a pitcher making a quality pitch, getting the hitter to hit the ball at a downward angle, with the ball striking dirt out in front of home plate first. As long as I watch baseball, my view will be that this circumstance should produce an out. By keeping this area moist and a bit softer than the infield dirt, you can slow down the speed of the ball. This helps infielders be a little quicker with their first step. It also gives the pitcher a chance on comebackers. Balls that hit hard, compacted dirt on their way up the middle tend to not only get by the pitcher but by middle infielders as well.

Keep in mind how little reaction time your 3rd baseman has, especially on balls hit down the line. Slowing down the ball a bit will give him a chance on backhand plays that may otherwise have been doubles. While extra moisture is a plus in this area, keep in mind that your catcher needs to field bunts there, and hitters coming out of the batter's box need firm footing. By rototilling a high percentage of calcined clay here (keeping it away from batter/runner takeoff area), you will hold more moisture and reduce compaction, thus improving playability.

3. TURF EDGE IN FRONT OF HOME PLATE

Professional teams may only take infield practice once per homestand, if at all. One part of infield practice for the catcher is taking throws from the outfield. Getting a read on the difficult short hops on these throws is not easy. It is necessary here to keep a smooth and level edge, so the catcher gets a clean bounce. Another point here is that the turf edge needs to be flush with the dirt, so that bunts can roll consistently to the infield turf.

4. BASELINE WIDTH

Historically, baselines were 6 feet in width, with the foul line directly in the center. Today we see a great deal of variation in this area. Growing the turf in fair territory closer to, or in some cases right against the foul line, can help slow down balls that may have rocketed past your 1st or 3rd baseman for extra-base hits.

5. PITCHER'S DEFENSE

Fielding by the pitcher is usually not very pretty. Usually, it consists of a reflex by a guy teetering on one leg after hurling a ball downhill. The last thing he needs is a wicked hop at the last instant off of a clay-baked patch of dying turf. We all battle the ongoing problem of wear and stress on the turf in front of the mound. Keep the pitcher in mind as you plan how often you will need to bring thick-cut sod into this spot during the season. Pitchers also have to charge off the mound to field bunts. They may plant and throw or do the pivot, spin and fire move to get an out. I am conscious of this when irrigating the infield during a homestand. My goal is to dry down the turf ahead of the game as much as I can, as the schedule allows. Doing so will help with footing in the infield.

6. TURF MANAGEMENT

My goal during the course of a baseball season is to maintain a consistent height of cut for every game day. We mow each day we have a game, so that the players know what to expect. All professional players have their own internal "game clock" that enables them to know how much time they have to make a throw or complete a play. Keeping the speed of the ball consistent allows both the infielders and outfielders to have a comfort level with the field conditions.

Your choice for height of cut will depend on geography, climate and management practices. The manager and players may have a say in that as well. Regardless of choice for height of cut, I have seen good results in the field when the cut is the same each day. Also, be aware of what your mowing patterns can do to the baseball. Take the time when the team is out of town to try and stand up the turf by mowing in alternate directions.

We also have had good results the past few years with the use of trinexapac-ethyl consistently every 15 days. The speed and density of the turf has been very good and the overall quality improved. Seed banking on the infield, particularly in the spring, has been very beneficial as well as we try to maintain dense turf through an entire season.

Finally, with our sand-based field, we have altered our method of aerification slightly. We now topdress first, aerify and clean up the cores, then finish by running a greens roller over the turf. This gives us an extremely smooth finish and helps maintain playability at a high level.

7. THE 1ST BASEMAN

This is a high-traffic area that needs to be micromanaged daily. If your 1st baseman continues to wear out grass in front of the cutout, consider making the cutout larger. There are many options for designs of cutouts that look good and play well. Keep in mind that the cutout in front of the leadoff area can get quite hard if not maintained. Keep a hard, steel rake nearby and monitor moisture.

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The area around the base and the leadoff corridor are two spots we spend extra time on. After a game, we will sweep them out just like we do the batter's boxes and then water to establish moisture in the base. The next morning we fill in, grade with a level-board and roll. This process keeps the material fresh and the area firm and level. Both of the leadoff areas at 1st and 2nd base are spots we keep an eye on and will level out and roll when the team is out of town. Another area to watch your grade is where the 1st baseman plays with no runners on. They are the least mobile of all of the infielders, so a low spot may soon appear there after a number of games. Finally, consider the dirt a few feet along the foul line past 1st base. This area can get hard and doesn't get worked too much by your nail drag. It requires a bit more water so that the last hop does not dart up at the fielder.

8. INSIDE EDGES

Batting practice is a great time to evaluate the state of your inside edges. There is more to it than keeping the lip down. You want the ball to bounce true as it makes the transition from turf to dirt. This means keeping that first few feet of dirt from the edge level with the turf. You must also be conscious of that first few feet of dirt getting too hard, particularly as you turn and pivot your walk-behind mower there. Remember, any spot on the infield skin that gets overly compacted will require a bit more water to get it to ideal playability.

In terms of edging, consider that more frequent edging and hand rolling is a more efficient method of maintenance and will produce better results. During a homestand, walk your edges and be aware of not only lips, but ledges as well. A ledge is when the elevation of your turf soil is higher than that of your skin. When an edge has a ledge, a ball hitting the edge will gain a great deal of topspin. Instead of bouncing true, the ball will quickly roll and scoot, against the expectation of the infielder. This could cost your team a potential double play.

9. MIDDLE INFIELDERS

Watching the game in person rather than on TV allows you to learn how your infielders move around in different situations. At the professional level, 2nd basemen have the arm strength to play back on the outfield turf much of the time. The shortstop has a longer throw, so unless he has a very strong arm, he will straddle the edge of the grass or be 2 or 3 feet in front of it. What is double play depth? The simplest explanation is: two full steps up and two steps in toward the bag. This allows the infielder to get to the bag faster to receive a throw to begin a double play.

I find that during the day, as I am nail dragging and working the dirt, it helps me to be able to visualize where the infielders play and what types of plays they will be making in different areas. This also helps with knowing how much water to put on the dirt. One other consideration for middle infielders is the 2nd base cutout. In front of 2nd base, where no one runs through, that cutout can be given a little extra water. Your goal is to give the infielder a true hop off the dirt on throws from the catcher. On a stolen base attempt, the infielder reacts reflexively as he picks the throw from the dirt and applies a tag.

10. BACK EDGES

Professional infielders have range that allows them to field balls in unusual places. They need to have confidence in your back edge. The elevation of the dirt needs to be perfectly even to just slightly higher than the level of the outfield turf soil. Again, I have found life to be easier by edging lightly and often. Because of the many types of shifts teams seem to employ on hitters these days, we make sure to walk and check the entire back edge each game day. Having a walk-behind roller around is vital, and allows us to keep the edge in top condition.

11. THE 3RD BASEMAN

Sitting at field level at a major league game, I still continue to be amazed at how difficult it can be to play 3rd base in the big leagues. The game is so fast and the 3rd baseman must constantly adjust his positioning to suit the situation. We spend quite a

bit of time daily on the 3rd base cutout and the edges in front of the player. We want to be sure the edges are clean, the dirt has enough moisture and the topdressing quantity is consistent. In addition to the calcined clay we use throughout the infield, we will also add some vitrified topdressing before the game in this area. Keep in mind the area along the foul line past 3rd base as well. This area, approximately 3 x 40 feet, needs to be managed so that ground balls stay down. The 3rd baseman has virtually no room for error on backhand plays in this area due to the length of the throw to first base.

12. IT IS YOUR DIRT

To cultivate a quality professional infield, I like to think the infield dirt is alive, just like the turfgrass. I find it helpful to maintain an acceptable moisture level in the dirt all the time, even when the team is out of town. I don't like having to totally reestablish moisture just before a homestand. If weather forces you to tarp around the start of the homestand, and your dirt lacks adequate moisture down through the soil profile, the ball will start taking some odd bounces. As you evaluate weather for your turf, do the same for your dirt and water accordingly.

Some other thoughts: try to avoid moving too much loose material around when you screen drag, and consider using a smaller stiff mesh drag. If you choose to nail drag regularly, remember that a light nail drag is the most effective tool for day to day maintenance. Deep spiking is a renovation technique. You want to create a firm, moist base of dirt with some moderate topdressing as an upper layer. I have had good experiences with having calcined clay incorporated into the entire infield dirt profile. Heavy watering early or late in the day will be more efficient for soaking the entire dirt profile.

Finally, it is now widely accepted that new or renovated infield skin mixes have silt to clay ratios (SCR) between 0.5 and 1.0. Our SCR here at Target Field is 0.69. So, watch the game and look for balanced hops. If the ball bounces consistently throughout the infield, you are allowing the fielders to truly determine the outcome of the play. If your infield skin can take some speed off the ball, provide a true bounce and offer clean and firm footing, you've done a great job. ■

Larry DiVito is head groundskeeper for the Minnesota Twins.

Turf farmers' advice on choosing and successfully managing thick-cut sod

Editor's note: *From any good sod supplier, thick cut sod is always more money, and is NOT always the best solution, according to several sources. Some reasons it's more expensive: More soil with the sod means less topsoil for the farmer, which of course he depends on for future crop; more soil means more weight, which means less sq. ft. per big roll of sod, and even less on the truck. If a standard load is 10-12k sq ft, and thick cut sod could be less than half that, it's double the trucking price; more equipment, time and labor on both ends (sod farm and installation at the field).*

In this article we get feedback from turf farmers on two questions: What factors should be considered when a sports turf customer is deciding between thick-cut v. regular-cut sod? What are the most important things turf managers need to do, for both thick-cut and regular-cut, after a sod installation to assure a successful outcome?

GREG JOHNSON,
Bigfoot Turf, LaSalle, CO

Obviously harvesting thick cut sod presents some problems for sod producers. The fast removal of existing topsoil is kind of a scary thing when looking at the long term use of agricultural land. The use of expensive, environmentally damaging and economic deficit growing fossil fuel to haul dirt around is also questionable.

We've found that thick cut sod roots down much slower than regular thickness sod. We've even seen instances where thick cut never roots down at all. Hopefully, we as sod growers have prime soil that we grow sod on and the thick cut seems to be content growing roots in the soil delivered with the sod.

We have found that if our customer needs to use the newly laid sod immediately, a topdressing with sand right after the sod is laid helps keep the sod in place. This allows for the use of regular cut sod, with its faster rooting characteristics, while maintaining the ability to use the area immediately. Also using a core aerator on the prepared ground right before laying sod and removing the cores allows the sod to root faster.

Thick-cut sod experiences at Busch Stadium

Billy Findlay, head groundskeeper for the St. Louis Cardinals, has twice turned to thick-cut sod from his supplier, Graff Turf Farms in Colorado, since the new Busch Stadium opened in 2006. The first time was after a U2 concert in July 2011. "It was a hot summer and Graff's was working hard to keep the turf healthy. We went with a 1-inch thick sod and played on it 3 days after the concert," Findlay said.

"It did well that first year but interfacing can be a problem with the thick cut; ours didn't root down enough and that's tough since we're playing on bluegrass in the St. Louis climate," he said. "But we played on it through the 2012 season, which was the hottest summer on record in St. Louis, and with bluegrass in that heat, the roots just weren't optimal. By mid-August last year we had some divoting and black layer forming. I poked some holes but you can't aerate too much that time of year here.

"After last season we stripped it all out, put in a ½-inch sod, and I have an amazing root mass now. We took another inch of rootzone during the changeover to get rid of the black layer and put down fresh sand before the laying the new sod," Findlay said. "In my experience thin-cut sod has always yielded amazing results."

Findlay said when the new Busch Stadium opened he had only a 2-week window to finish the field and 1 ¼-inch sod was put down. "The second season on it we had major issues with tearing and the players were losing footing; I'm a fan of the thinner the better.

"But there are situations, especially after major events like a concert, where you might have to use thick-cut. And after our experiences with it, management is much more likely to let me take out any thick-cut we have to put it, to see it only as a temporary fix," Findlay said. "You can aerate that bluegrass until you are blue in the face in this climate and you won't get the rooting you need."

JAMES GRAFF, Graff's Turf Farms, Ft. Morgan, CO

Thick-cut sod is a great tool when a sports turf manager is against the clock. However, there are additional costs associated with thick cut turfgrass. The added expense is directly related to time and weight. It takes the producer more time to harvest, the install process is slower, and less turfgrass can be loaded on the trucks, so consequently, additional freight expense is accrued.

It is our opinion that a standard harvest turfgrass, established in a reasonable amount of time, produces a better rooted field and more easily managed. Often times, the need for thick-cut sod isn't a choice. What put the customer in this predicament? Something controllable or uncontrollable? A schedule issue or weather?

Playing surfaces are programmed more heavily than ever before and the expectations are high for the sports turf manger to deliver a safe and aesthetically pleasing field regardless of what is humanly possible or what Mother Nature is up to.

To answer the question, "Is it normally a simple 'How soon can we play on it?' issue?"—absolutely, this is the million dollar question. Sports have become a "time is money" type game. The more time the field is available, the more revenue the venue can be realized in concerts, events, band competitions, you name it. Can it be done? We have some amazing men and women in the business of sports turf management, so with their talents, abilities and knowledge, I say yes, it can be accomplished. And field safety will still be the top priority of the sports turf manager.

A close second to this question is, "How long will it last?" The answer to that depends more on the schedule for the remainder of the season, the sports turf manager, and the budget. Oh yes, and the weather.

Typically, thick-cut grass does not root as well as a standard harvest as it doesn't need to. Think of it like a potted plant: it has no reason to jump in the ground when the roots are shipped in adequate sand or soil. It will last the season, but the uncertainty is, does the thick-cut turf best serve the field in the next season? While thick-cut sod may be used as a tool to survive the season, it is not the standard for a new install with adequate grow-in time. So after the season is over, often the thick cut turfgrass comes out and a field replacement at standard thickness is installed for the next season.

For turf managers to have success after a sod installation, they must start by communicating clear and realistic expectations to the decision makers and facility schedulers. Then hope and pray they listen. No doubt we want to see natural playing fields have success in the future. A field needs adequate time to root in and those timelines look much different depending on turf thickness. The expectations must be set, a plan must be made, and a schedule must be followed. Above all, the attitude of "what is best for the field" must be adopted. We know this is not an easy road. Some managers are just trying to get enough in their budget for fertilizer and staff, let alone request to have input on the programming of a field.

Communicating and coordinating with your turfgrass supplier ahead of time can give you the best product when you need it. This may allow for custom applications, and if the scenario is such that the new turfgrass must match up with the existing, this ensures a high success rate. Also, whenever possible, have someone from your organization at the farm, confirming and verifying the thickness of harvest. We know how we define the thickness of the turf at harvest. Make certain that your expectations are being met also. If this is not possible, ask for a sample test cut to be sent ahead of the delivery date so removal, ground prep and grading will precise when the turf arrives.

JOHN MARMAN,
West Coast Turf, Capistrano Beach, CA

"We often try to talk customers out of buying thick-cut sod," says Marman. "If you can stay off a field for 3-4 weeks you can get away without thick-cut. But if you have an application where there's a real need to get on the field right away, for example the area in front of a pitcher's mound or a soccer goalmouth in mid-season, that's a different situation and you need a Band-Aid.

"If you are considering thick-cut sod be aware that putting it over a coarse sand base is inviting the creation of a perched water table. At West Coast Turf, in the Coachella Valley, we grow our turf on anywhere from 78-94% sand, so this isn't as big a deal for our customers, since it's a finer material underneath the sod," Marman said. "Of course most sod has more peat or clay, which holds more water, and if you don't work the repaired area by aerifying, you might end up with root rot or black layer in that section of your field.

"So while putting down thick-cut will get you through the season, as soon as you have the chance you need to core aerify with ½ inch hollow tines. You want to remove as much material as possible then backfill with sand, to get the sand down into the soil layer and create sand channels," says Marman. "This area must be managed well if you want this 'Band-Aid' to work long term. Many times these areas wear out anyway despite turf managers' best efforts and you will have to totally renovate. You have to get in after the season and harvest out a layer then backfill with native material, and then go to a thin sod to get the roots going, assuming your soil isn't too heavy with clay or silt.

"Another application for thick-cut sod is in specific applications such as one-time events on a synthetic turf field, when for example a World Cup or MLS soccer match is scheduled. You put in a barrier and place the sod on top of it. Of course the event must generate enough revenue to cover this cost but the money is well spent in protecting the highly paid athletes," says Marman.

For these one-time or several games only situations, you can get away with 1 inch of soil profile; bigger is better, especially for football I recommend 1 ¼ or 1 ½ inch but we've done Fiesta Bowls and Rose Bowls with only 1 inch [soil profile only, not including the thatch layer or the grass itself].

"Ideally customers will let us know where their fields will be at a certain time in the future so we can have what they want ready but most of the time it's more of a '911 fire drill' where the field was failing on a Sunday and they are calling on Monday asking how fast we can get sod on their field. We are highly reactive to disaster situations," says Marman.

"Grant Trenbeath of the Arizona Diamondbacks has the opposite situation. We maintain an entire second field's worth of sod for Chase Field on Grant's spec sand and custom grow it to match perfectly to what's on his field. Mature plants guarantee we will have the product he wants," he says.

"After rollout there are air pockets or other incomplete uniformity is most cases. Lots of customers like us to use a solid 42-inch blade on a Bucyrus machine to cut the turf and this length combined with the vibrations from cutting creates a flex in the middle of the blade, and the roll becomes convex or concave," Marman

JOHN MASCARO'S PHOTO QUIZ

John Mascaro is President of Turf-Tec International

Can you identify this sports turf problem?

Problem: Green sports field with two brown lines across field
Turfgrass area: Private boarding high School
Location: Dedham, Massachusetts
Grass Variety: 50% Bluegrass/50% Ryegrass

Answer to John Mascaro's Photo Quiz on Page 33

Background illustration courtesy of istockphoto.com

The biggest issue from a growers' side between thick- and regular-cut is the cost of shipping because of the extra weight and of having to regrade a field if you have to cut an extra inch of soil in some places. The benefit of thick-cut to the customer is being able to play on it sooner. We have shipped sod with 2 inches of dirt on it on a Thursday and they played soccer on it 3 days later. If there is no rush to play on it then there isn't an advantage to getting thick-cut.

—Mark Woodard, Cane Creek Sod, Poplar Bluff, MO

says. "So after rolling out thick-cut sod, you need to use a 2-ton vibratory roller to mash down and even out the high and low spots for a nice surface. One minor issue with sand-based sod is losing sand during transport. Every road bump can cause a bit of sand to fall and you lose more with a sandier base.

"While silt/clay profiles can make for better maintained edges during a short-term fix, if you get rain right after the installation you can have a very soggy field with little to no short-term percolation," Marman says.

JAMES BETTS,
Tuckahoe Turf Farms, Hammonton, NJ

Our standard cut big roll is ¼ inch soil below thatch layer. From past experiences, we strongly feel the thinner you cut turf without scalping (1/4 inch soil +-) the sooner it will root.

Thick-cut sod does have its place, however. We would recommend these guidelines for any sodding project:

- Any athletic field—¼ inch soil for any sod done in the fall and will be able to winter over for play the next spring.
- Any athletic field—¼ inch soil for any sod done in the spring and play in the fall.

Baseball, Softball, Soccer, & Field Hockey—1 inch soil for play 3-4 weeks after sodding.

- Football 1¼ inch soil for play 3-4 weeks after sodding.
- Baseball, Softball, Soccer, & Field Hockey—1½ inch soil for play 1-2 days after sodding.
- Football—1¾ inch soil for play 1-2 days after sodding.

After thick cut sod is used we suggest topdressing lightly and deep-core aerating to promote root growth when 3-4 weeks of recovery time is allowed. Please note that when sodding in the summer all new turf shuts down and the rooting process slows down. If summer sodding, you might want to look into a thick-cut sod.

Cost justifications for thick cut sod: If you purchased 1-inch thick cut sod your cost would be more than our standard cut be-

cause of the increased trucking costs, more rolls, and our soil loss. The cost can be outweighed by the benefits.

What's the price value of faster playability? Our native soil is around 90% sand; if you purchase high quality sand soil and placed an inch over a football field, the cost would be around $6,000.

TOM KEEVEN,
Heartland Turf Farms, Columbia, IL

From our perspective, you are spot-on with your first question. It is really just a matter of "how soon." I believe that if one has the time to wait, they should opt for regular-cut sod. On a proper sod installation, done during the right growing season for that particular grass, the field should be usable in 3 to 4 weeks. I have seen it done in as little as 2 weeks—regular-cut, bermuda sod on a sand-based professional field.

You are correct in identifying the major issues with thick-cut sod. It is difficult to perfectly match the rootzones of your sod vs. your field. With thick-cut sod, you are increasing the chances of "sod interfacing," where the roots tend to stay in the sod layer. Especially on sand-based fields, which are often quite nutrient-deprived, you probably have better nutrition in the sod layer. While the thick-cut sod allows you to get by in the short term, you may be replacing it again soon due to improper rooting.

Here's our perspective as a sod farmer: We'd like to be farmers, not miners. Thick-cut sod depletes the soil on the farm, and farmers need to charge for that. Thick-cut sod should be priced significantly higher. Plus, you are going to require extra trucking, up to three times as much, to carry the extra weight.

That being said, we realize that there are many instances where there is not time to wait. In these instances, thick-cut sod is a great tool to keep a field playable at a high level. Many high school fields see a high amount of events from multiple sports. Often these campuses also lack the land area to spread out the traffic. In recent years, many schools have turned to artificial turf as the answer. Instead, they could keep a top-level natural grass field by budgeting a partial replacement of thick-cut sod during the season. If you plan ahead with a local sod grower, the replacement could take place in as little as a day, keeping your downtime at a minimum. Even with the added cost of thick-cut sod, you should still spend less than you would on artificial turf, and have a natural surface that the players would appreciate. ■

How to get the equipment you need

THE BUDGET CHALLENGES facing grounds and turf managers today require skills and knowledge beyond those found in most of our job descriptions. In order to meet fiscal challenges and justify funding needed for new equipment and resources, we must use personal attributes, professional knowledge and business relationships.

For many of us, gone are the days when a manager could simply go to his or her boss, banker, or CFO and state the need for equipment and expect the request to be fully funded. Today we are held accountable for every dollar and even the most necessary or justifiable expenditures are often denied. We are presented with a professional and personal challenge: How do we continue to meet our customer expectations and our own desire to succeed and perform at a high level when faced with likely rejection of capital purchase requests?

> It's important to remember that you are competing for a slice of your organization's budget pie and the others are hungry for it, too.

Purchasing equipment requires a well-thought-out plan and process. It's important to remember that you are competing for a slice of your organization's budget pie and the others are hungry for it, too. Developing a plan, solid talking points based on demonstrable needs, and an effective sales pitch are critical to success. Here are the steps to help achieve your goals.

DEFINE THE PROBLEM

Make a list of your equipment needs and what these tools are needed for. For example, if you have sand-based fields and no topdresser, a host of problems will result that can affect turf health, quality, playability and player safety. If you have old equipment, or difficult-to-

10 TIPS ON HOW TO JUSTIFY NEW EQUIPMENT

1. **DEMONSTRATE A RETURN ON INVESTMENT.** Show that the new equipment will somehow pay for the investment within 1 year. This is a key item.

2. **LOBBY FOR NEW EQUIPMENT** on the basis that it will eliminate the need to hire additional help. Be careful though, a shrewd boss may use this against you later when you are trying to fill a vacancy.

3. **USE CONCRETE FACTS AS EVIDENCE** in support of any expensive expenditure request. Show how the equipment will (1) cut costs, (2) raise revenues, (3) increase efficiency, (4) improve customer service, or (5) meet some other basic goal.

4. **MAKE YOUR APPEAL** on the basis that the purchase will help employees to do their jobs better by eliminating errors, thus creating a savings.

5. **SHOW HOW THE PURCHASE WILL IMPROVE PRODUCT QUALITY.** In this instance, as well as others, it will help if you get other department heads to support your request. In this case, the head of quality would be a key figure.

6. **PROVE THAT THE NEW EQUIPMENT WILL REDUCE REPAIR AND MAINTENANCE COSTS.** Include all costs associated with down time.

7. **SHOW THAT THE NEW EQUIPMENT WILL BE EASIER TO OPERATE,** can be used by less skilled workers and/or will result in fewer mistakes.

8. **SHOW HOW THE NEW EQUIPMENT WILL MAKE THE COMPANY MORE COMPETITIVE IN THE MARKET PLACE**—price, cycle time, quality, etc. Identify a competitor who is using new equipment to be more competitive.

9. **DEMONSTRATE HOW THE EQUIPMENT WILL OVERCOME A PERSISTENT PROBLEM.**

10. **NO MATTER HOW THE JUSTIFICATION IS MADE,** the merits of your request will be greatly enhanced when your boss supports the request. Get your boss to adopt the idea as his/her own idea and request.

maintain equipment, and no regularly scheduled maintenance, your costs, downtime, crew moral and ability to meet customer expectations will be greatly diminished. Be as specific as possible as to condition, cost, and long-term consequences for continuing to use these items. Remember that you are building a case to ask for funding from stakeholders who must make difficult but sound decisions.

EVALUATE

The next important step is to gather information from the people who know your equipment needs best, your crew. Ask them for feedback. Observe their work habits and assess their knowledge, skills and use of equipment. This is particularly important if you are new to the organization. Observe current cultural and maintenance practices as well. Establish rapport with the people you work with and supervise. This demonstrates that you value their opinions and experience, and that you respect their input in making important decisions about equipment purchases. Whenever possible, operate the equipment yourself for an accurate assessment of how things work. At times there is no substitute for a hands-on assessment.

KEY QUESTIONS

Ask yourself and your crew the following questions. You will be asked these same questions when you make your sales pitch for new equipment: Will repairs solve the problem? Are maintenance, personnel, tools and shop facilities adequate? Will used equipment do the job? Is service and parts available? Would leasing be more cost-effective? If purchased, can the equipment be used to benefit other areas or groups in your organization? Those who will be asking you these questions need to justify approval of capital expenditures and need to have clear answers before making financial decisions.

Another important point to consider is one that many groundskeepers and turf professionals are truly gifted at: Can you innovate and create in a way that will reduce cost and still achieve your goals? For example, at Marietta College we were fortunate to be able to purchase much needed equipment using these steps, but we still wanted to stripe our baseball field and did not have a reel mower we could dedicate to the job. However, by purchasing simple stripping kit attachments at little cost, which we attached to our rotary mowers, we were able to creatively pattern our field.

BUDGET AND COST

Grounds and turf manages are also budget managers. Although you may not make the final decision on purchasing equipment, it's vital to have an understanding of your role in the budget process. This begins with tracking and recording maintenance costs, especially deferred maintenance. Good records can show that pouring money into old equipment is less cost-effective than purchasing new or good-quality used equipment. This is one of the most effective tools you have. Be sure you under-

stand your budget and its place in the organization's overall budget picture. Demonstrating a good working knowledge of the budget is important.

The path to purchasing can be smoothed if you partner with another division within your organization. For example, if equipment can be used by the athletics department and general grounds, two budget sources can partner to make the purchase. If the purchase must be delayed, another strategy is to work to have the funding built into the next fiscal year budget. It may be worth the wait. Remember, too, you will likely be required to seek competitive pricing. Make sure your vendors have accurate information for proper costing and fairness. You don't want to lose a good business relationship by appearing to shop prices while favoring one vendor over another.

DEMONSTRATE RETURN ON INVESTMENT

The final step before making your sales pitch is to list the specific ways your organization will directly benefit from the equipment. Key talking points are: (1) increased productivity, (2) reduced maintenance costs, (3) improved user safety and playability, (4) increased profits, (5) reduced subcontractor costs, (6) more customer referrals, and (7) enhancement of turf grounds to aid in student, staff and faculty retention. It's important to remember we are in the business of creating attractive environments that lead to positive experiences for all our customers.

THE SALES PITCH

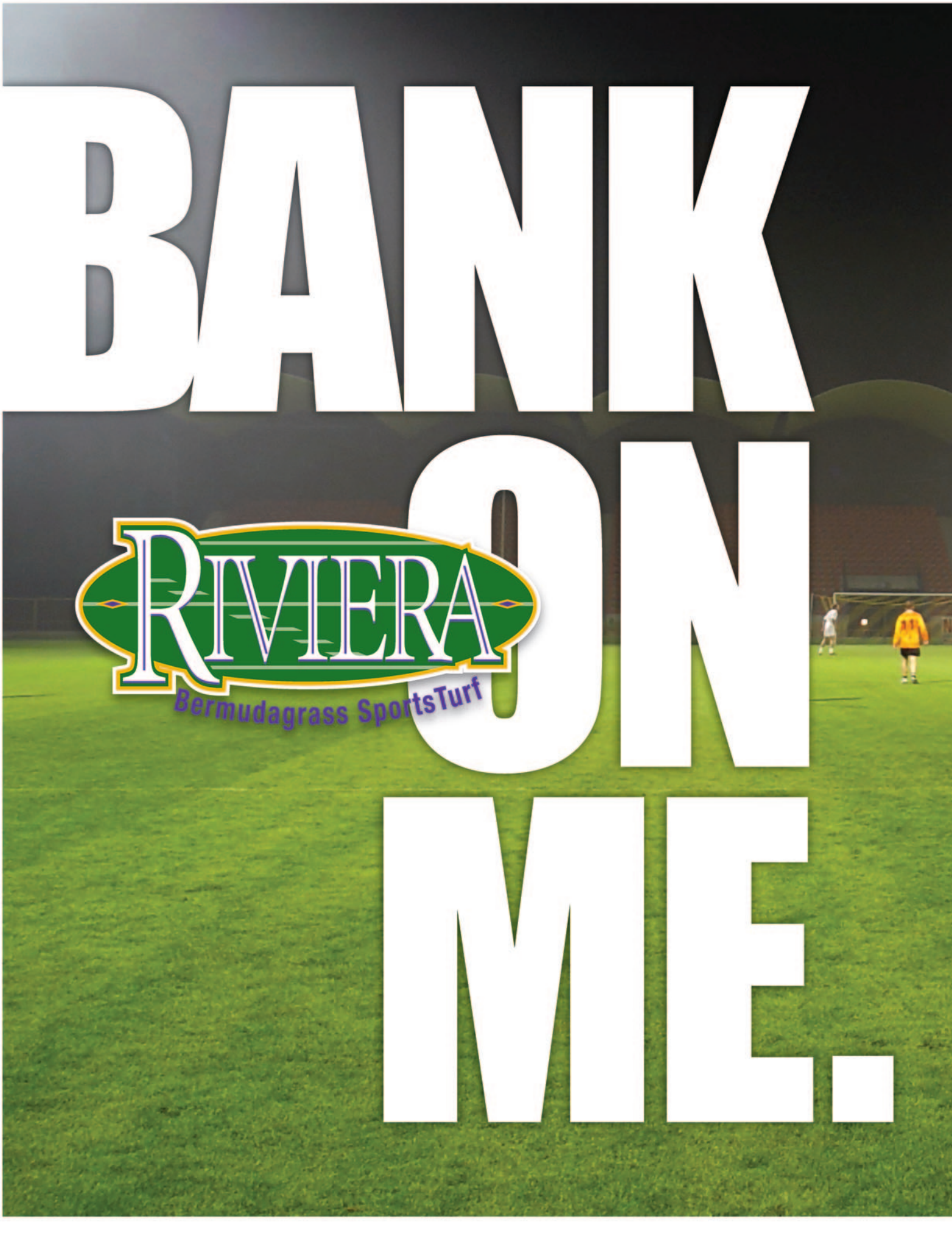
After gathering information and taking the above steps, a meeting should be scheduled with stakeholders. Understanding and using chain of command is important when engaging decision makers. If you have one or more direct reports, be sure to have them on board before a group meeting. They can be your best advocates. Other key players who should be at the table are the CFO or VP for finance, the athletic director, the facilities director, coaches, board members and field managers.

One of the critical components in our success at Marietta College was to engage a sports turf specialist from The Ohio State University Sports Turf Extension program, Pamela Sherratt. With an analysis of our sports fields in hand and an expert at the table, we were able to explain why the proper equipment was needed to maintain our athletic fields. Stakeholders understood that if equipment needs were not addressed, the investment made in our athletic fields, player safety and player performance could be adversely affected. Being well prepared, demonstrating return on investment, and having an advocate were keys to success. Be sure to thank all those involved for their support, too. Expressing gratitude will pave the way for future success.

EDUCATION

Finally, it is important to demonstrate professionalism by continuing to educate yourself, your staff and those who use your fields and grounds. Ours is an ever-changing business. New technologies, science, techniques and information are constantly coming into play. As an old hand at grounds management, I can attest that the school of hard knocks is a touch teacher. The knowledge gained from being actively involved in KAFMO and the STMA and the many excellent educational opportunities provided by Penn State and others can make all the difference to you. As professionals it is our responsibility to use all of our resources to build a team of people committed to the vision of great fields and grounds. ■

Jeff White is former supervisor of grounds at Marietta College, Marietta, OH who now resides in Maryland.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Tips on tarps

BROCK PHIPPS, Springfield Cardinals

I'm sure with a lot of minor league teams when it comes to dealing with the tarp, safety has to be the biggest priority. I always try to stress to our new employees how to handle the tarp with care yet respect what can happen in severe weather conditions. We have all been in that situation when the wind takes control and it's either protecting the field or protecting someone from getting hurt. I let my staff know that if you don't feel in control and your feet is coming off the ground it's probably time to let go.

At Hammons Field we have both the Missouri State Bears and the Springfield Cardinals using the facility. When the Bears are playing I use their players to cover the field with the tarp. On game day it's my staff, which consists of 6-7 members, along with the players and coaching staff. To pull the tarp during the Cardinals season, I use my staff along with the office staff. Communication is the key when dealing with both teams. When rain is approaching I will send out a text message or email just to let them know they will be needed. I have found that it's helpful to send out a notice before the season to all staff to have extra clothes on hand. There is nothing like working in the office with soggy clothes all day. Another key is to have the office staff stagger their lunch schedule; it's not a good feeling when bodies are needed and no one is around.

With minimal staff in the minor leagues one of the first things I ever did was to roll a rope into the tarp. Talk about saving time and some energy—when it's crunch time to place the tarp on the field during the game. To roll the tarp out we simply hook on with our utility vehicle and proceed to roll the tarp out. The tarp is positioned on the right field warning track. I like to have the tube positioned on the wall that when the tarp is rolled out it's one fold and go. This also enables half of the skin to be covered from the first fold. It's very important to pull the tarp with the seams.

Here at Hammons Field we have four tarp drains in shallow right field. This enables us to remove a lot of water in a short amount of time. It's always nice to have a little breeze in the right direction when it's time to remove the water. The air movement under the tarp makes it like adding 10 staff members to the tarp crew. After dumping the tarp in right field we then pull back across the infield and begin the folding process. We fold the tarp twice and then roll it up. It's very important to keep all the seams and

>> **Above: PULLING THE TARP AT HAMMONS FIELD**, home to the Missouri State Bears and Springfield Cardinals, maintained by Brock Phipps.

>> **Below: A SHELF CLOUD** looms over Hammond Field in Springfield, Missouri.

With minimal staff in the minor leagues one of the first things I ever did was to roll a rope into the tarp. ***Talk about saving time and some energy***—when it's crunch time to place the tarp on the field during the game.

edges straight to enable the next pull to go smoothly.

If we expect high wind I make sure the tarp is pulled tight in every direction. We surround the tarp and pull in every direction to accomplish this. Metal stakes anchor the tarp down and then equipment is placed on the four corners. I found that using stakes is the best and easiest way to anchor the tarp. Sand bags seem to drag along on the top of the tarp when wind begins to pick up and they are time consuming to put in place. If no wind is expected we then place two carpet drying fans on the first and third base side of the tarp and inflate the bottom side to the tarp. This has really helped with two problems: the first is this allows air movement and cuts down on disease; the other is it will help to shed some water off of the tarp. It's amazing what these can do with the short amount of time it takes to set them in place. Take care of your tarp and it will definitely save you time and labor when used correctly.

COREY RUSSELL,
Myrtle Beach Pelicans

Last year in Myrtle Beach we had a total of 55 tarp pulls. These were either overnight, in game, during the day, etc. We only had to pull twice in-game for a short delay. For those in-game pulls we try to aim for 60-90 seconds to get the field covered and then worry about getting it bagged down.

Here at the beach with the coastal weather, we see a lot of our wet conditions as pop up thunderstorms off the water between 2 pm and 6 pm. So a lot of our concerns are whether or not to cancel batting practice and trying to get as much of our pre-game routine done before the tarp goes on if it looks like it we won't be able to get it off until closer to game time. We've put it out with 6 people and that is the BARE minimum. About 10 are what we shoot for. We actually had some bad rips in our tarp, some that got to be more than 100 feet long by the end of the

>> **COREY RUSSELL** leads his crew in repairing a torn tarp last summer in Myrtle Beach.

>> WITH ANOTHER COASTAL STORM CLEARED, fans at a Myrtle Beach Pelicans game are treated to a rainbow.

season. This led to us going and retrieving the local high school's tarp for the last two home stands of the year.

I think the best way to handle your tarp is to just try and convey what you're trying to do to everyone as loudly and early as possible. The fewer people trying to lead the better. Usually my assistant and I are on each end of the tarp and we're the only ones giving out directions. No matter how many times you do it however, someone always forgets what the routine is, which is the downfall of not having an actual "tarp crew." It's everyone on deck here from the GM to the front office interns.

JOEY STEVENSON,
Indianapolis Indians

To get it on in a timely manner, at the least we need 8-10 people, but when all front office interns are able to make it

>> **VICTORY FIELD**, home to the Indianapolis Indians, maintained by Joey Stevenson

down we have approximately 17-20. At full-tilt, I believe one of our best tarp times was 1 minute, 7 seconds. On average we are probably right around 90 seconds. We use 140 foot straps rolled up in the tarp, pulled by two people, with the remaining people pushing tarp. It really helps get the tarp off the wall and you don't have to "flip" the end of the tarp over the tube on the rollout. The BEST way to get the tarp out we found, is to tell the crew work hard for 90 seconds and then the pain is over! During non-game tarp pulls, we use a Gator to pull the tarp, which helps keep the crew fresh.

OPIE CHEEK,
Clearwater Threshers

With our office staff and crew we have 12 people who can help with our tarp and we can get it on the field in 2 minutes. If there is water on the tarp, we just get a run-

>> **BRIGHT HOUSE FIELD,** home to the Clearwater Threshers, maintained by Opie Cheek.

ning start on pulling off the tarp, which gets the water moving and we dump it in the outfield. Then we put it back on the infield before folding it up.

KEITH WINTER,
Fort Wayne Tincaps

Game day management—when in doubt, pull it! Compile the best and most trusted weather information you have at your disposal, then trust your instincts. The longer you are in this business, the more you learn that your instincts are one of your greatest assets. On game days, when hundreds of thousands of dollars may be at stake, it is always better to be safe than sorry. The worst thing that can happen is you take a dry tarp off a field if it doesn't rain. Also, as you get closer to game time, be prepared! If BP is going on, talk to both teams about your tarp pull contingency plan so the field can be cleared as quickly as possible. Minutes equal dollars when it comes to protecting a game-day field.

We wrap a rope in our tarp and pull out the roll with a utility vehicle. This is faster than pushing the roll out by hand and doesn't necessitate having to get people in place to push. Once the tarp is rolled out, we can get it in position with 6-8 strong armed bodies, but I prefer 12-15 so that placement is perfect and time is saved. Our record from pull out to placement is about 90 seconds for an in-game pull.

Once the tarp is rolled out, we can get it in position with 6-8 strong armed bodies, but I prefer 12-15 so that placement is perfect and time is saved. ***Our record from pull out to placement is about 90 seconds for an in-game pull.***

OTHER TARP MANAGEMENT IDEAS FROM KEITH WINTER

We inflate our tarp EVERYTIME with two large fans to keep air circulating under the tarp. Not only is this a turf disease prevention step, but the water also runs off the inflated tarp to the edges, making it quicker and easier to get the tarp back off the field. When the rain stops, we move excess water off with roller squeegees, and in most cases, don't have to take the time and drag all that infield conditioner

>> **PARKVIEW FIELD**, home to the Fort Wayne Tincaps, maintained by Keith Winter

around by draining the tarp in another direction.

When we take the tarp off the field, I try to have enough front office personnel on hand to "hold up" the opposite side to keep from dragging so much conditioner off the baselines and skin. There will always be some piles after the fold, but lifting the folded edge helps. When rolling the tarp back on the roll, we have a narrow window in the visitor's bullpen to place the tarp, so I make sure myself or one of my grounds crew is "aligning" the roll. A "bad roll" isn't worth hurrying, because you know it always has to come back out again.

Finally, if you are inflating the tarp and the weather is threatening, make sure it is ultra-secure. We have foot-long tarp stakes at every grommet and put a piece of equipment on three corners. In the center field corner, we roll the tarp up in the roll almost to the edge of the skin, because I like Mother Nature to water as much grass as possible. ■

To water or not to water, that is the question

TODAY, WE LIVE IN A WORLD POWERED BY TECHNOLOGY. It's hard to imagine how people survived without the technology we take for granted every day. Our cell phones, computers, and laptops, what we would do without them? Even the advances in technology within the turfgrass industry have improved dramatically from just 10 years ago. Technological improvements in our equipment, genetically improved turfgrass species, chemicals, fertilizers, and improved irrigation systems. Just think what the future may hold for our industry.

One piece of technology growing in popularity in the turfgrass industry is the use of soil moisture sensors. This type of technology has caught our attention in regards to improving our Environmental Stewardship of our areas, maintenance practices, playability of our varsity athletic fields, and communication between administrators, coaches, and staff at Michigan State University. Through field testing with Toro Turf Guard wireless sensors and daily use of Spectrum Technologies' TDR (time domain reflectometry), this technology is improving the management of our irrigation applications and consistency of the playability of our fields.

Our approach to using the sensors and TDR is establishing optimum moisture content in correlation to our fields playing conditions, during the varsity seasons and off seasons. Through constant monitoring over the years, specific moisture percentages have been established for each of our fields. Daily readings with the TDR tell us if we need to adjust our irrigation for an event or upcoming weather conditions.

This technology takes the guess work out of the age old question of "to water or not to water"? We are able to teach students and staff to access the readings online or take field readings to assist in hand watering, irrigation set up, etc. The first year we used the TDR in Spartan Stadium we reduced our irrigation by one-third. This in turn will reduce the expense of inputs such as fertilizer, chemical applications, and labor. We also have shared this data with administrators and coaches as a tool to communicate field conditions through the four seasons and what expectations are for safety concerns and playability.

In spring 2010, 175 points of data were collected with our TDR at 5-yard spacings to determine distribution uniformity of Spartan Stadiums soil moisture content. With the assistance of software provided by Spectrum Technologies, the data was used to develop a visual representation of Spartan Stadium's moisture content following irrigation. With a 1% crown, the driest part of the field is down the middle, and then increases in moisture content as you get to the edge of

> The first year we used the TDR in Spartan Stadium we reduced our irrigation by one-third.

Continued from page 45

JOHN MASCARO'S PHOTO QUIZ

Answers from page 17

These brown lines were the result of a wild good chase... literally. During the first week of October 2009, this high school field experianced an early frost. This field is near a river and migratory Canadian Geese have this nice green area on their list of favorite places to visit on their way to Florida for the winter. Many different techniques for transient goose relocation have been tried including fake Coyotes, radio controlled cars (fun but frustrating), repellent sprays, chasing with gators, golf carts and even dogs. On this occasion, 60 or so geese were performing their grass pulling and drop fertilizing techniques on the sports field when the Sports Turf Manager, assuming that the frost had completely broken that morning, took off in a utility vehicle to scare them off. As you can tell the frost was still on the turf in this shaded area and the brown tire marks appeared the following day. Since it was still in the growing season, the area recovered quickly and the Sports Turf Manager vowed to never get that frustrated with the geese again! He is now using a handheld green laser aimed at the turf or water when the flock comes around and is having good results in keeping them off the property.

Photo submitted by Peter Thibeault CSFM, Sports Turf Manager at Noble and Greenough School in Dedham, MA.. ■

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.

F.O.Y.
Field of the Year

FLUOR FIELD
at the West End, Greenville, SC

- **Level of Submission:** Professional
- **Category of Submission:** Baseball
- **Head Sports Turf Manager:** Greg Burgess
- **Title:** Head Groundskeeper
- **Education:** Bachelor's Degree in Turfgrass Management
- **Experience:** Four seasons in Triple A Charlotte; 3 years grounds crew for Clemson Univserity; student field manager for Clemson baseball/football. Interned for Greenville Drive in their inaugural season (2006) and have been head groundskeeper 2008-present.
- **Full-time staff:** Greg Burgess & Ross Groenevelt
- **Other crew to recognize:** Chris Rinebold, Christopher Grove, Kevin Donahoo, Barry and Josh Cole, Matthew Yochum, and Kyle Carter
- **Original construction:** 2006
- **Renovation:** 2012.
- **Reason for renovation:** To remove the accumulated organic layer that was slowing down drainage and contributing to winterkill in our shaded areas. Large areas of this 22,000 sq. ft. have been sodded in the past years resulting in layering issues in several spots giving a weak root zone. Also, it gave this area a uniform Tifway 419 surface opposed to the preexisting surface mixed with 419, Princess 77, and Riviera bermudagrass.
- **What was done:** We excavated the top 4" out of the infield and foul territory grass (approx. 22,000 sq. ft.) down to clean USGA spec sand. 300 tons of organic material removed and 300 tons of100% USGA spec sand brought back in to the void. Laser-graded everything in fair territory flat and graded foul territory to its existing clay-warning track edges to give approx. 1-1.5% fall. Sodded everything with Tifway 419 in solid big rolls. Turf blanketed for first 12 days to help promote root growth. Re-established all clay and warning track edges. Replaced leaky, poor functioning irrigation heads with new heads. With obtaining turf blankets for the sod establish, they give us the tool to use them whenever we want to help combat bermuda winterkill and promote overseed establishment.
- **Turfgrass variety:** Predominantly Tifway 419 bermudagrass, with seeded variety bermudagrasses Riviera and Princess 77 in the outfield. Infield and foul territory is all Tifway 419
- **Rootzone compostion:** 100% USGA sand
- **Overseeding:** October 3, 2011 overseeded the field in five directions at 8lbs/1000 sq. ft. with a 3-way perennial ryegrass blend (Majesty, Citation Fore, Quicksilver, Charger II). This year, we seeded Oct. 5 in four directions at 6 lbs/1000 sq.ft. (Grand Slam 2, Home Run, Flash II). All seed was topdressed and dragged in thoroughly. Seed began to germinate 5 days later. Drainage: Roger Bossard patented drainage system. 10-inch 100% USGA spec sand with 15 foot drain lines feeding into a main line bordering the warning track.

CHALLENGES

The theme of this year was rain. We as an organization had an advertised goal of getting 350,000 fans through the season this year. We wound up with 347,400 fans, due to a season high rainouts of three this year. We also set a new, year long record for tarp pulls with 72, a lot of which were dry pulls. The first half of the season, huge storms dropping inches of rain would get within .25 miles away but not ever reach the field, so the tarp was on a lot. The second half of the season these storms would form very close to the field and rain .5+ inches, but .25 mile away from the field stayed dry, so the tarp

was on a lot. We had to reschedule events or put them on the concourse because we would get .75-1.5 inches of rain the morning of the event, when only a 10-20% chance of rain was forecasted. Many overnight tarpings were precautionary more than anything. It is a lot easier and cost effective to take off a dry tarp in the morning than to dry out the infield.

Toward the beginning of our transition mid-late June, we had 6 days straight of 100-110 degree days which checked out 90% of what ryegrass we still had. This left huge voids in the grass in the infield and foul territory mainly. The outfield definitely struggled as well but not as much as an eyesore. Giving the timing of this heat wave, we did not have enough time to resod the much of these voids, resulting in very poor appearance for a very big July 4th five-game homestand. The playability did not suffer too much. Players kept their footing fine, but we did see a few bad hops. The lack of grass made the field play a lot faster, which the infielders did not like. At this time, we knew that were completely renovating all of the infield and foul mid-Sept., so we juggled trying to grow in these areas versus resodding much of it (ultimately sodding the same 6,000 twice in a 2-month span).

The 10-day break after this homestand was perfect to do any necessary sodding, but had to hold off until the 5th day of the break to sod due to two professional fast pitch softball games scheduled in the middle of this break. We ripped out and sodded 5,500 sq. ft on day 6 of the break, only allowing 5 days until our next game. We honestly could have resodded twice the much if the time and resources allowed. All other areas not resodded were pushed hard with .5 lb/1000 ammonium nitrate/weekly with our normal .5 lb 14-14-14 biweekly, until suitable conditions and coverage were met.

SportsTurf: What channels of communication do you use to reach coaches, administrators and user of your facility?

Burgess: The best way I communicate with coaches, new and old, are face-to-face meetings. This gives the coaches a good idea of the person and groundskeeper I am, as well as my intentions of maintaining the surface to a high standard. It always helps to have a good rapport with each coach. There will be coaches that will to come to me to tell me their plans and there are coaches that will never tell me unless I ask them. Some coaches will write their practice schedule for the next day on a dry erase board in the clubhouse following the night's game. This helps, but frequently changes overnight, so I make a point to speak with the coaching staff as they arrive to the ball field to double check their plans. This includes the home and away team because at this level, we have roving coaches in town often and they need to get work in with their players. Their workouts vary from day-to-day so communication is the key to making sure we have the field prepared for whatever drill they are planning.

The front office staff is the same way. I prefer face-to-face meetings, but it is very tough as we all are very busy throughout the day. The front office will have homestand meetings as well as game day meetings. I make a good effort to attend all homestand meetings to note any pre-game, in-game, or post-game activities going on that would affect the field. Game day meetings are hit or miss depending on the teams' practice schedules. We also have a web-based calendar with all games and special events on it, along with the point person's name. This calendar is updated frequently and helps me have a heads up of games and events through the year to better plan staff, projects, etc.

Once our game schedule is set I will plan out my year for when I'm planning to aerify (solid or coring), topdress, resod, etc. As the year plays out, the gaps in the schedule where I plan these projects often get filled with either more games or special events. I communicate my plans to all front office staff to stress which gaps in the schedule are crucial to keep clear so I can do these management projects with the maximum amount of recovery time.

For any users of the facility, I try my best to be involved in the planning process as early as possible. Most of the staff knows to include me with information. In my opinion, having input early on in planning on-field events and games only helps the event run smoother and any dilemmas can be minimized. I can give input that most event planners do not think of at first as it pertains to the ball field.

SportsTurf: Any tips on communicating well?

Burgess: The "my way or the highway attitude" does not work as I have found out. In some cases it can be black or white and you can argue that, but it's best I have found to stay open-minded with anything presented to you. Games and events will get thrown on you at last minute, so instead of getting frustrated, I quickly begin to think of what my staff and I need to do to make things happen. I make sure the schedulers know of any limitations they have and what needs to take place for their event to happen, as well as how it's going to affect my plans for the field. Nine times out of ten, my plans for managing the turf are what usually have to change. Understanding that and dealing with it are important to know. Also, I make sure my entire grounds crew is familiar with where everything is stored and up to speed with the grounds crew "lingo" in case a scenario arises which requires immediate attention.

The most important tip I can give besides these is to stay in contact with those who have helped and those you have met. These individuals are people I can call anytime of the day or night with any kind of question. There are countless times, I feel like I have no clue what I'm doing or what the next step should be. It's great to get someone else's perspective on situations.

SportsTurf: What are your specific job responsibilities?

Burgess: My responsibilities pertain to almost everything that's growing on our property. This includes everything on the ball field, two off-field bullpens, a large grass berm seating area in left foul territory, all surrounding grounds of the stadium, and numerous plantings and pots throughout the inside and outside of the stadium. Each bullpen has approx. 750 sq. ft. of grass that is maintain exactly like the field to use as sod farms. This has worked out great for me to use as test plots and for when we need to do some small patches after our college tournament in late May. The outside grounds include general maintenance of mowing, fertilizing, pruning, and summer and winter annual installations. The outside grounds can be challenging to keep up sometimes with a small day staff during our minor league season. We have normal work to be done on-field each game day, so staying on schedule with our other responsibilities can be tricky.

SportsTurf: What do find most enjoyable?

Burgess: The most enjoyable part for me is working with my grounds crew. From game-timers to interns to my assistant, I have had some fantastic people working for me. I had a professor in Clemson that always said, "Surround yourself with great people." That's the mentality I keep when hiring new staff and the potential I look for in them. I enjoy seeing them grow and taking pride in the finished product come first pitch. We have developed a great team dynamic that shows when we are out on the field.

SportsTurf: What task is your least favorite and why?

Burgess: Probably the task I like the least is tarping the field. It is easy to tarp the field…in most cases, when I have enough help. But there are times when the tarp goes on or comes off with very little help. I'll do whatever I have to do to make sure we get a game in and we are not drying an infield before game time. The 2012 season had its fair share of tarping and even set Fluor Field records. We had countless storms that dumped buckets of rain either right beside the stadium and we didn't get any rain, or we got dumped on and the other side of the street didn't get a drop. On those days, the tarp was more than likely on the field. I am never opposed to the task of rolling tarp, but when it is on the field in our hot and humid climate, it was bound to play a role in our transition and the turf's performance. I'll give it up to the tarp crews; I worked their tails off rolling the tarp on and off the field. The amount of unfortunately timed rain played its part in our 2012 campaign of getting 350,000 fans through the stadium during the Drive season. Our record of three rainouts kept us just short at 347,700 fans.

SportsTurf: How did you get started in turf management?

Burgess: I grew up around turf management on the commercial end of it, as my father was an equipment sales representative. I worked for his landscaping company and was able to ride along with him when he would call on golf courses throughout the Southeast. In high school, I started as a seasonal game timer on the grounds crew for the Charlotte Knights. All I did for the first year was run a chalk-box, drag the infield during the game, and clean dugouts post game. But from the beginning I enjoyed working on the crew and seeing professional baseball. I came back each season and was able to do more and more on the crew. This experience influenced me to go to Clemson University for turfgrass management. While at Clemson, I worked on the grounds crew for the athletic department under the guidance of Mike Echols. I was given the chance to see turfgrass on a year round collegiate level. I progressed to a student turf manager of baseball and had the opportunity and privilege to mow the (real) Death Valley on game day mornings. My last summer in college I was an intern for the Greenville Drive in their 2006 inaugural season under head groundskeeper Ray Sayre. I had a blast that summer and was able to work on a freshly built state-of-the-art baseball field and was able to see first-hand some of the challenges with a new sand-based field.

SportsTurf: What was your first sports turf job?

Burgess: I was an assistant groundskeeper for the Triple A Charlotte Knights under head groundskeeper Eddie Busque. Eddie has continued to mentor me through all facets of minor league baseball. I was able to work a regular home game schedule, get my first taste of special events, and know the work required throughout the off-season and especially leading into the next season. Eddie has been in the business for quite a while and he is very knowledgeable about the building of new ball fields. Through application, I began to understand the design and components of a ball field that take place under the turfgrass. I'm very grateful for the experience I had in Charlotte. That is where I began to discover what kind of groundskeeper I'd like to be.

One year later, the Greenville Drive head groundskeeper position came available and I was lucky enough to get it. The relationships I made with the staff during my internship season proved to be extremely advantageous. Fluor Field at the West End is a 100% sand-based field with a state-of-the-art gravitational drainage system patented by White Sox head groundskeeper Roger Bossard. The sand profile percolates at over 26"/hour into 2 miles of 4", 6", and 8" drain tile. It also has flipper valves installed in case the nearby Reedy River was to ever backup, so the field would not turn into a bathtub. I have learned a great deal about this field and am still learning every day.

SportsTurf:What changes if any are you considering or implementing for the winning field in 2012?

Burgess: After our 2012 season, we were able to renovate our infield and foul territory turf. We pulled out everything down to the original sand profile to help solve issues we had with uniformity, drainage, and rooting. While keeping my normal fertility program simple, I plan to keep a much closer watch on my nutrient levels on this renovated area, as nutrients will leach out more quickly than rest of the field. And as usual, I'm always trying to think of new ways to become more efficient with any projects in the future. Eventually I'd like to renovate the rest of the field.

SportsTurf: How do you see the sports turf manager's job changing in the future?

Burgess: What I see changing in the future for turf managers is more of everything. For example, when I first took this position we had 70 Drive home games and a handful of special events ranging from early April to mid-September. This has progressed to this year's schedule of 110 games and roughly 30 special events ranging from mid-February to mid-November. With the effect of the economy, I understand the need for the extra games and events. There is no longer just a 70-game schedule anymore. Managing this extra work load and wear on the field while maintaining our normal cultural practices and keeping the expected high standards I want is the way my job is changing. This is not necessarily a bad thing. I see it as more experience and knowledge I'm gaining, which will be invaluable to me in my next step in my sports turf career. ■

The STMA Field of the Year Awards began in 1988 and are given annually in baseball, football, softball, soccer and sporting grounds in three levels: professional, collegiate and schools/parks. A panel of 11 judges independently scores the applications and the winners are announced at the STMA Annual Conference and Exhibition. Winners receive signature clothing, complimentary conference registration, three night's accommodations and a trophy for display. The Field of the Year Program is made possible through the generous donations of Carolina Green Corporation, Ewing Irrigation Products, Hunter Industries, and World Class Athletic Surfaces, Inc.

WIEDENMANN'S WILL WOLVERTON ON AERIFICATION

A healthy field is goal of every sports turf manager. To get that superior field, one very important requirement is a high number of plants per square inch. To achieve this you need soil conditions of approximately 45% minerals, 25% air pores, 25% water pores, and 5% organic matter. Quite often the number of air pores is reduced due to compaction and poor water infiltration, which causes saturation, meaning that the roots of the grass cannot breathe as they are literally drowned in water.

Aerification, especially at deeper depths, can resolve this issue by punching through any "black layer or hard pan," thus reducing compaction which increases water, air, and nutrient exchange to the roots. As a result, root depth will increase causing healthier leaf production and improved resistance during stress conditions. This can be accomplished with either solid tines or coring tines. One advantage of using coring tines is the ability to reduce thatch while reducing decompaction. The downside is the mess that is left on the field from the cores.

There are some new machines on the market that help with this clean-up process. One particular machine collects the cores and transfers them into four rotating screens that separate the sand from the organic material (thatch). The sand is then returned to the field and the thatch is collected. This saves time, labor, and the cost of sand or topdressing material. Aerifiers and complementary machines continue to advance to make the aerification process easier and faster while creating great results.

GreenSlicer for aeration

GreensGroomer WorldWide, Inc. presents the GreenSlicer for cost-effective aeration needs. Developed and launched in 2006 for the golf course market, it provides the ability to spike or aerate without all of the complex machinery. The GreensSlicer is an affordable alternative to motorized methods, a ground-driven, well-engineered performer that satisfies the needs of sports turf professionals. It's a low disruption tool that opens up the upper turf profile, allowing for improved water and oxygen infiltration. Strictly a tow-behind unit, the GreensSlicer doesn't require hydraulics, PTO, or separate power source. It's easy to adjust cutting depth with its simple water tank ballast and the split-tine shafts prevent turf tearing when cornering.

GreensGroomer WorldWide, Inc.

Redexim's Verti-Drain "Bullet"

The new model Verti-Drain "Bullet" has working widths of 60" and 80" and can be used with tractors of 35-50 hp. It has working speeds near 3 mph hence making it easily the highest production aerator ever built. All models are equipped with maintenance free, self lubricated sealed bearings on all pivot points, three speed gearbox, and the patented parallelogram action. These Verti-Drain models are fast and strong, penetrating nine inches into the soil. Depth adjustments are done from the tractor seat as adjustments of the front and rear rollers are done hydraulically.

Redexim North America

Toro's ProCore 648

Toro's ProCore 648 is the most productive walk greens aerator with a 48" coring swath. Its innovative wheels-behind design eliminates crushed cores and hole damage. The TrueCore ground following system maintains consistent coring depth and consistently round holes are achieved through elastomer RotaLink geometry. The ProCore 648 is also easy and safe to operate: a single switch on the handle controls the tine head and a handle ball engages forward and reverse.

The Toro Company

Turfco expands TurnAer XT5 product line

Turfco revolutionized aeration with the patented and patent-pending TurnAer™ XT5 steerable and reversible aerator. Now with engine options, increased speed and a new weight system, the XT5 is more efficient and performs better on hills. The XT5 aerator is now available with an optional one-gallon-tank Subaru engine or a Briggs & Stratton engine. With a new gear ratio system, the aeration speed is increased by 14%. More ground can be covered in less time without sacrificing quality or the ability to turn while aerating. The new weight system allows operators to adjust the weight in the back of the aerator, improving hill performance and control on hills. Operators can take advantage of the enhanced speed on hills, while still maintaining control.

Turfco Direct

John Deere Aercores

The Aercore 1500 is tractor-mounted with a heavy-duty frame, tine rams and adjustable hole spacing and increases productivity while providing flexibility needed on the job. The 1500 can pull as many as 30 cores per square foot, depending on the ground speed of the tractor, and is compatible with the John Deere Twenty Series compact utility tractors. The Aercore 2000 has an 80-inch coring swath, produces good quality coring holes up to 4 inches deep, and can cover 100,066 square feet per hour. Operators have a choice of two coring patterns, a 2.4-inch pattern or a 3.2-inch pattern, depending on the speed of movement.

John Deere

Turf Time Equipment aeration options

TurfTime Equipment offers a number of tools that provide flexible and cost effective solutions for an efficient aeration program. The TurfTime Advantage aerator can be fitted with interchangeable coring, solid, or slicing tines. Precision chisel point solid tines promote quick recovery, allowing frequent aeration without disruption of play. For removal of excess organic matter, the Thatch Master verticutter and dethatcher, with its thin blades, and choices of spacing and depth of cut becomes an integral part of any aeration plan. TurfTime Eq. topdressers, for heavy seasonal applications, or frequent light treatments, maintain and enhance the effects of the complete aeration program. Used together these machines maintain ideal conditions for healthy and beautiful turf, suit current restrained budgets, and increase the income stream by keeping facilities in play.

TurfTime Equipment

AerWay soil aeration equipment

AerWay by SAF-HOLLAND is an innovative world leader in the manufacture of soil aeration equipment for agriculture, golf courses, sports fields, orchards and vineyards. The AerWay ground driven design provides the utmost in durability, flexibility with high speed performance.

AerWay has a variety of tine options available to help you tailor your sports field turf maintenance activities. Quickly replaceable complete tined roller assemblies and attachments will let you use the same AerWay platform. Do all of your aeration or soil preparation for sanding and overseeding at higher speeds without the costly breakdowns of mechanically driven equipment. For compaction relief and the stimulation of subsurface air/water percolation without disrupting play nothing beats an AerWay.

AerWay

Jacobsen Quick Aerator

Convert your Cushman Turf-Truckster into a productive aerator with the Quick Aerator attachment from Jacobsen. It easily attaches to your Truckster in minutes and offers a variety of tine styles to choose from including slicing, coring and spoon. Lift or lower the unit from the driver's seat with the Truckster's standard hydraulics. The Quick Aerator is ideal for any turf areas, including sports fields and recreational areas.

Jacobsen

AERA-Vator

Since 1991 the AERA-Vator manufactured by First Products Inc., has established a reputation of providing soil aeration and cultivation in the hardest dry conditions. Different aeration methods are used to open the soil surface to introduce oxygen and allow nutrients to reach the turf root zone enhancing root development. Aerification techniques have evolved over the years and "as with everything else" advancement in equipment technology has significantly simplified the process. First Products uses the only "patented" PTO-powered vibrating rotor to fracture the soil. This method is sometimes called shatter tine aeration and works best in dry conditions.

First Products Inc.

Wider Shockwave relieves sports surfaces

Launched at the STMA Exhibition, the new Shockwave 275 by Imants is a new wider model has a working width of 109" suitable for 100hp+ tractors. The Shockwave is a linear decompactor, designed to totally decompact heavy wear areas by relieving soil compaction, improving aeration and removing surface water. They have proved exceptionally effective in these extremely wet weather conditions. Whether working in isolation or in conjunction with existing pipe drainage schemes, the Shockwave is the perfect method of draining water quickly and unhindered to the existing sub-surface systems. The Shockwave also leaves a continuous slit allowing the operator to slit back to drains, ditches or other water collection systems.

Campey Turf Systems

Z-Plug zero-turn aerator

The Z-Plug zero-turn aerator addresses the slow and labor-intensive job of aeration. The first stand on zero-turn aerator of its kind, the Z-Plug has capabilities of adding attachments such as a slice seeder, snow blade, de-thatch rake, sprayer system and spreader. Powered by a 23 hp Vanguard Commercial engine, the Z-Plug can aerate over 80,000 square feet per hour (at 8 mph), and produces core depths up to 3 1/2". The unique floating tine head with hydraulic down pressure can maneuver around trees and beds while engaged. The tine head can be lifted up in 2.5 seconds for quicker turns. Quick release attach points make mounting and removing attachments simple without tools.

L.T. Rich

PLUGR's variable speed PL845 Pro VS

PLUGR's PL845 Pro VS is the first reciprocating turf aerator on the market to allow the operator to select various speeds to maximize productivity or core density, and to adjust for complexity, area, and operator preference. With the sleek unibody design and 30" effective aeration width, the PL845 variable speed aerator is the perfect machine for situations involving multiple lawn sizes and types and multiple operators. Like all PLUGR aerators from SourceOne Outdoor Power Equipment, the new Pro VS is designed for easy operation, low maintenance, excellent aeration results, repeat customers, and profitable productivity.

SourceOne

Soil remediation tool from Earth & Turf

The one-pass design of the Earth & Turf Linear aerator changes and improves the structure of soils for healthier turf. Soil and thatch restriction are permanently modified. Used after the area has been topdressed with calcined clay, compost or sand, the Linear Aerator conditions a 58-inch swath by cutting grooves in the turf 3" deep, approximately one half inch wide and 3.5" apart. Aggressive, reverse-spiral-mounted teeth cut the grooves and bring both soil and topdressing material up over the rotor. The blended materials are then brushed back into the grooves by steel fingers on a filler bar, which reciprocates side to side.

The 1,035 Lb. Linear Aerator is designed to fit the Category I 3-point hitches of tractors with 35 to 45 PTO horsepower. Standard, 540 RPM power take off drives the unit's rotor at 168 RPM through a strong, 100H chain.

Earth & Turf Products, LLC

Broyhill's AccuAire

Broyhill's AccuAire core aerator is one of the most flexible aerators on the market, able to penetrate the toughest terrain. The FlexWin design allows the AccuAire to follow the contour of the ground, providing even penetration. Solid steel frame and extra-wide racks add weight to maximize core depth. Core spoons rotate on new sealed roller ball bearings for years of heavy-duty service. Water tanks are optional for extra weight on compact turf. Available in 3 point and trailered. Equipped to use slicer blades or core spoons, widths 69 inches or 93 inches. The trailered AccuAire is equipped with a hydraulic cylinder or electric actuator lift.

Broyhill

Millcreek core aerators

Millcreek's simple, rugged core plug aerators give turf roots the air and water they need, especially in high traffic areas such as around soccer goals and other heavily used areas on natural grass fields. Millcreek aerators feature independently mounted spoon wheels with rear discharge, enclosed in a heavy gauge steel safety cage. Millcreek aerators are tractor mounted on a three-point hitch (500 pound capacity). Weights are added to tow behind units for penetrating dry or compacted soil.

Millcreek Manufacturing

Core aerators from Land Pride

Land Pride's 25 Series Core Aerators are available in 60" and 72" widths to relieve soil compaction and allow air circulation in sports turf. These aerators use replaceable case hardened closed spoons mounted on weighted rotating discs, and the spoons pull cores up to 3" in length from the soil profile every 7" of forward travel. Pulled cores are deposited on the surface for subsequent drying, pulverization, or removal. Optional poly water tanks fit in the top mounted weight trays in order to achieve maximum penetration. When filled with water, these tanks provide significantly increased down pressure on the spoons.

Land Pride

Exmark 30-inch stand-on aerator

Designed to deliver maximum productivity and durability turf professionals demand, the Exmark 30-inch stand-on aerator features a split-tine design to allow easier turning with tines engaged. The compact design heightens maneuverability while the 30-inch aeration width and 7.5-mph top speed deliver maximum productivity. Mass is centralized directly over the tines for maximum core depth consistency, and core depth is adjustable, from 2- to 5-inches. The self-cleaning tines are easy-to-replace. Tine down-force is hydraulic-actuated, and adjustable by the operator. An electric-start Kawasaki V-Twin powerplant delivers professional-grade power, reliability and durability. The Exmark 30-inch stand-on aerator is covered by a 1-year limited warranty.

Exmark Manufacturing

Creating a healthier turf

Aerate and loosen compacted soil in less time with less labor compared to walk-behind or pull-behind aerators, even in the tightest of spaces, with a Grasshopper AERA-vator coreless lawn aerator. The PTO-driven AERA-vator works without slicing or cutting, improving turf development and water absorption with little surface disruption. The patented vibrating tines deep-fracture soil instead of plugging cores, which means turf areas are immediately available for use. The AERA-vator attaches in place of the out-front mower deck for zero-turn maneuverability.

Grasshopper

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
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Kansas City, MO 64141

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Signature _____

Direct Supervisor Name _____

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

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Chapter name) _____ $_____

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Total Amount Enclosed: $_____

"I know I am a better sports turf manager because of this association. As sports turf managers, we take the challenge seriously to make our fields the best possible for the next game. The resources I have access to through STMA helps me do it."

— Bob Campbell, CSFM
Higher Education
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*There must already be a national sports turf manager 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**

Take advantage of recorded Conference Education sessions!

STMA PARTNERED WITH PEACH NEW MEDIA again this year to bring you recorded education sessions. Log on to the STMA website to access the recordings in the Knowledge Center under Conference Education. The 2013 Conference had an exciting lineup of speakers and topics. Twenty different sessions of varying topics were recorded in their entirety to meet the diverse needs of Sports Turf Managers. The presentations available for purchase include:

Environmental Issues:
- Strategies for Maintaining Turfgrass in Response to "No Pesticide" Legislation
- Phosphorus - Environmental Issues
- Maintaining Sports Fields the Natural Way

Synthetic Turfgrass Surfaces:
- Tackling the Issues with Synthetic Turf - What Does the Research Say?
- Tale of Two Fields; Synthetic vs. Natural

Facility and Field Management:
- Athletic Field Use and Maintenance Planning
- 3 Keys to Providing High Quality, High Traffic Athletic Fields
- Building it Right ..... for all the Right Reasons
- Converting from Cool Season to Warm Season Grass
- Managing Turfgrass Soil Physical Properties
- Turf Equipment Care and Maintenance

Cultural Practices:
- Making Plant Growth Regulators Work for You
- Back to Basics: Getting the Most from Your Granular Fertilizers
- Fertility Management for Sand-based Systems
- Water Management to Improve Turf Performance

Pest Control:
- New Strategies for Annual Bluegrass Control in Cool-Season Turfgrass
- New Options for Weed Control in Athletic Field Turf
- Common Diseases of Sports Turf

Baseball:
- Applying MLB Practices to Low Budget Facilities
- K-16 Baseball Field Maintenance & Renovation with Limited Resources

Professional Development:
- New Challenges, Take Risks, and Achieve Goals
- Communication and the Art of Conflict Resolution

In addition, nine quick tips for success in sports field management are also available for FREE! All recordings are available online only. These recordings benefit conference attendees unable to make it to concurrent sessions and sports turf managers unable to make it to the conference. The recordings are also valuable as a refresher throughout the year for sports turf managers to stay current and educated in the industry.

2013 Conference attendees receive a special discounted price of $10 to purchase all of the recordings from this year's conference. But hurry this special pricing only lasts 60 days! Select "Full 2013 STMA Conference," click purchase, and select "Conference Attendee" to apply the discount. Regular prices apply to non-conference attendees. Make sure to take advantage of this valuable opportunity to enhance your education and stay current with industry trends and research!

Join STMA for a webinar on fertility management

STMA WILL BE FEATURING one of the most popular education sessions from the 2013 Conference. On Thursday, March 21 from 11 am – 12 pm EST, Dr. Nick Christian's presentation "Fertility Management for Sand-based Systems" will be rebroadcasted online. The presentation includes basic information on the soil chemistry of sand-based sports fields and a discussion on how to manage these areas most effectively. The session will provide attendees with an expanded knowledge of soil chemistry, the ability to relate basic concepts to sand-based soil media, and options to manage sand-based sports fields. This session will be available to anyone for one low price of $10. Registration will be available on the STMA website (www.stma.org) starting in March. STMA is committed to providing relevant educational content to help take you and your facility to the next level.

Are your bases covered

YOUR HEAD GROUNDSKEEPER and crew need to negotiate rigorous and often unpredictable issues regarding the playing surface at your stadium.

That's where the Sports Turf Managers Association comes in. STMA members are expertly equipped to deal with these issues and are up-to-date on all the latest information in the industry. Their expertise in resource utilization, operations management, and agronomics allow you to protect your players on the field and reduce your expenses while doing it.

Support your grounds crew's STMA membership for access to the latest information, education, and industry developments. For more than 30 years, STMA members have ensured their fields are among the safest, most playable and most beautiful around.

Are your bases covered? Is there an STMA member on your grounds crew?

To become a member, go online to www.stma.org or call 800-323-3875.

SportsTurf MANAGERS ASSOCIATION

Correction

Last month we mistakenly ran the wrong photo of SAFE Scholarship winner Andrew Wilhelm of Purdue University. Here is Andrew, right, being congratulated by Boyd Montgomery of Toro at the STMA Conference Awards Banquet. We regret the error.

STMA Affiliated Chapters Contact Information

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

Colorado Sports Turf Managers Association: www.cstma.org

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

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

Florida #3 Chapter (Central): 407-518-2347, Scott Grace, scott@sundome.org

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: www.imstma.org.

Indiana -FORMING - Contact Clayton Dame, Claytondame@hotmail.com or Brian Bornino, bornino@purdue.edu

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.

Nebraska Sports Turf Managers Association: sphillips4@unlnotes.unl.edu

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.

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F ❑ Sports Complex
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G ❑ Athletic Field and/or Park Architect/Designer
P ❑ Park
H ❑ Other (please specify)_____

2 Which of the following best describes your title? *(check ONLY ONE)*

A ❑ EXECUTIVE/ADMINISTRATOR — President, Owner, Partner, Director, General Manager, Chairman of the Board, Purchasing Agent, Athletic Director

B ❑ MANAGER/SUPERINTENDENT — Superintendent, Landscape/Ground Maintenance Manager, Foreman, Supervisor

C ❑ GOVERNMENT OFFICIAL — Government Commissioner, Agent, Other Government Official

D ❑ SPECIALIST — Architect, Designer, Consultant, Agronomist, Horticulturist, Certified Specialist

F ❑ COACH E ❑ Other (please specify)_____

3 Do you have the authority to buy, specify or recommend products and/or services for your business or organization?

Y ❑ Yes N ❑ No

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the field. By collecting this data we can use the information to concentrate cultural practices, such as aeration if needed and watch how the soil changes over time with traffic and organic matter build up, i.e., be most efficient with our time and resources.

Another area of interest in regards to the use of moisture sensors would be in our softball and baseball infield skins. Is it really necessary to flood your infields before a game or to apply smaller amounts building up to game day? Is it possible to obtain optimum playing conditions for your infield while maintaining consistent moisture content? This consistent moisture content would be based around infield materials, evaporation rates, weather and the optimum conditions you've established for your infield.

We have always felt it was important to continue to use as many "tools in the tool box" as possible. Expectations for field use go up each year and finding balance between usage time and down time becomes more challenging each season. Any edge we can find to become more efficient with time, resources, and staff is needed for use to continue to be successful in our business.

We have been very fortunate in the Midwest to have an ample supply of fresh irrigation water through lakes, river, and groundwater supplies. Many areas of the country have not been so fortunate, and over the next 2 decades fresh water will inevitably become a precious resource. As professionals we must prepare for the future by incorporating the technology available to us today in our best management practices. Though these programs and equipment can be a little intimidating at first, it will save you money, time, and resources in the long run if we take the time to use them. Whether it is a home yard, fairway, tee, green, or athletic field the investment in the future should be made today. ■

Brian McDougal is the Athletic Fields Manager for the Fisher County Park District, Fisher, IN and 4-year graduate of the turfgrass management program at Michigan State University, mcdougalb@fishers.in.us. Amy J. Fouty, CSFM, is Athletic Turf Manager for the Department of Intercollegiate Athletics at Michigan State University, fouty@ath.msu.edu.

Q&A

Making better decisions

BY 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 David Minner at Iowa State University, 106 Horticulture Hall, Ames, IA 50011 or email dminner@iastate.edu.

Q: One of our more common reasons to close a field is because it is too wet. Do you have any experience with the Lincoln Moisture Meter? I'm thinking it would be a good tool for me to use for making "field use" decisions and someone else could also use it if I am not on site at the time. What do you think?

Tommy Walston, East Carolina University

A: Sports turf managers are often innovators . . . and Tommy is one that is always thinking of ways to do things better . . . and asking the hard-to-answer questions! First, let talk about soil moisture meters. I have spent the past 10 years doing irrigation research so I have needed to use soil moisture meters on numerous occasions. But I have not specifically used the Lincoln Moisture Meter. That does not mean it would not be good for Tommy's proposed application.

Portable soil moisture devices that are commonly used in turf applications typically measure water content in the soil using a volumetric basis. Most of the meter types work based on the dielectric constant of the soil. Or in other terms, how easily an electrical charge can pass through the soil profile.

Soil is a composite material consisting of water, air, and minerals. Each of these affect the dielectric constant in the soil, but water in the soil is generally the most significant factor of influence. The best sensors use volumetric estimation via time domain reflectometry (TDR), time domain transmission (TDT), amplitude domain reflectometry (ADR), and frequency domain reflectometry (FDR). These technologies are usually stated in the descriptions for high-end soil moisture sensors.

I did a little searching around the internet looking for more information on the Lincoln Soil Moisture Meter. It is readily available for under $100, simple to use, requires only one AA battery, and is compact in size. According to the product information it can be adjusted to soil type. But I could not find any information related to what technology it uses. Since it has only one probe it is not using one of the high-end estimation technologies, but with a metallic probe it surely uses some type of conductivity resistance measurement. To quote from the ads, "the meter reads in a scale of 1 to 10, with 1 being completely dry and 10 indicating full saturation."

I have seen other soil moisture testers also use a scale rather than actual percentage soil moisture. Those devices that use scales tend to be lower cost, lower accuracy devices. The question then becomes do they work well enough? And I do not know the answer to that question.

As a researcher, I strive for accuracy in measurements. But accuracy is not always important, particularly when it comes at a high cost. For example, in a sand-based soil, the difference between dead and living turf may occur over a 5% soil moisture range. In a clay-based soil the difference in field capacity and permanent wilting could be over a 15% range. So, the heavier your soil, the more margin of error you have in evaluating soil moisture. Why spend $1,000 on an accurate soil moisture device if an $85 device is accurate enough?

Second, can the device be used to suggest a field closure due to excess moisture as Tommy proposed? Using a device that can repeatedly give an indication of soil moisture can be a very valuable management tool. Soil moisture meters are frequently used to help manage irrigation events. By finding a turf's lower soil moisture threshold (just before wilt), then one could easily monitor the soil moisture status and determine when to add additional water. If the device will allow it, then one could just as easily evaluate saturated soils that would be too wet for activities. The literature on the Lincoln device suggests that a 4 to 6 range on their scale is sufficient water for average plants, implying that anything over a 6 could be excess.

We know that playing on a wet field is more likely to cause damage to the turf and the soil surface. The field may also provide less surface traction to the athlete and therefore increase the risk of injury to the athlete. So, knowing that the soil is saturated with water could be very beneficial. And since the information is coming from a device, not from just one person's opinion, many people may not be as skeptical with the decision to close a field.

While a seasoned turf professional usually has no problem making that call, a less experienced assistant, student worker, referee, etc., may appreciate a device that can provide additional information, and in some respects re-enforce decisions. Some of the human judgment has been removed or at least deferred to the turf manager's soil moisture experience calibration with a soil moisture device.

So, the work will be on turf manager to field test the device over soil moisture conditions to get comfortable with correlating the values on the device's scale to saturated soil conditions. It also may be helpful to test the accuracy of one of these simpler devices with a more sophisticated model. That may provide assurance to the field manager that the device is reliable and has suitable accuracy to evaluate a field. ■

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