UNDERSTANDING SOILS, SOIL MOISTURE, AND SOIL TESTS

CREATING FACILITY PARTNERSHIPS

SPORTSFIELD AND FACILITIES MANAGEMENT

SportsTurf

January 2015

2014 Pro Soccer Field of the Year:

MARYLAND SOCCERPLEX

PLUS:

GROWING SEEDED BERMUDAGRASS FIELDS WITHOUT IRRIGATION

IMPORTANCE OF DRAINAGE FOR SALT REDUCTION

TO FERTILIZE. OR NOT.

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What's Online:

SportsTurf conducted an online "Mowing Pattern" contest on behalf of STMA at the end of last year. More than 2,000 people viewed the 26 entries; **the winner was Ben Young of MiLB's Altoona Curve** for his four patterns, one field design.

On the cover:

A photo from the Maryland SoccerPlex, Boyds, MD. Ryan Bjorn, Sports Field Director for the SoccerPlex, won the 2014 Sports Turf Managers Association Field of the Year Award in the Professional division (see page 44 for full list of 2014 winners.

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THANK YOU, DR. MINNER

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Next month Dr. Dave Minner's final "Q&A" column will appear facing the inside back cover of this magazine. For nearly 20 years, Dave has shared his research, experience, and plain old know-how with our readers through his answers to questions about maintaining cool-season grass fields. While we'll leave his final words up to him next month, here are some comments he shared with us via email near the end of last year:

What exactly are you doing now?

I am still a professor in the Horticulture Department at Iowa State University but for the past few years and for the foreseeable future I will be the EARTH Program Coordinator (Education And Resiliency Through Horticulture) located at Gifft Hill School on the island of St. John in the US Virgin Islands. Check us out at http://giffthillschool.org. Basically I run a K-12 garden program to complement our culinary program. We are teaching kids how to produce food in the garden and then prepare it in our kitchen as part of the school lunch program. More than 30 Iowa State interns have spent a semester with me teaching, gardening, and learning about the island as part of a global learning experience.

What are the most significant changes in sports turf management you've seen in your career?

Big-roll sod was one of the truly remarkable changes that occurred during my career and when it was combined with a thick cut, it provided a field that could be played on immediately after sodding. My first exposure to this came in 1993 when Vince Patterozzi sent me to Cygnet Sod in Ohio with these simple instructions: cut every piece of sod the same and make sure it is all 2 inches thick. There used to be an NFL rule that 14 days after the last baseball game was played the infield skin must be replaced with grass and big-roll sod was the reason for that ruling. I arrived in Cleveland with the first load of sod just in time to hear Bob Hope sing "Thanks for the Memories" as he and the Cleveland Indian fans bid farewell to the old Municipal Stadium. The sod laying equipment had not advanced to the degree of the sod harvesting equipment so it took quite a bit of finagling to get it laid. I caught a few winks of sleep somewhere behind the home dugout and woke to see the steam rising from the hot rolls under the dimmed stadium lights. We still had 14 days to grow in the sod but Vince looked at it and said, "We could paint it now and play football if we wanted" and that is indeed what still goes on today.

What are you most proud of accomplishing when you look back at your career?

There's no better feeling than helping people solve problems and *SportsTurf* gave me a great opportunity to directly connect with a truly innovative group of professionals. Many of your questions over the years have clearly shaped my research efforts to make grass athletic fields more traffic tolerant, and we also made progress in seeding rates and strategies.

What are you most disappointed about in regards to today's sports turf management industry?

Along the same line, I wish we could make a substantial advance in the area of specifically breeding grasses primarily for traffic tolerance. Perennial ryegrass on the cool-season side and bermudagrass on the warm-season side have carried us for a long time in dealing with extreme traffic; we need to look for new species and new varieties that first have far superior traffic tolerance/recovery. Forget about how attractive they are, let's make them survive in the center of a high traffic field and then we can talk about giving them curb appeal with color, texture, density, mowing and striping appearance. ST

SportsTurf
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TIME DOES FLY BY SO MAKE IT COUNT

David J. Pinsonneault, CSFM, CPRP
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It is hard to believe that a year ago I stood before you to accept the position as President of STMA. Where did the year go? Your Board and headquarters staff sure tried to make it a productive year. Through dedication, hard work, passion and cooperation I believe we have accomplished much this past year.

To help all members achieve success we have worked on the following: we have a new 3-year Strategic Plan to help guide the organization and concentrate our efforts on things to help you do your jobs; we have made gains on the environmental front with the continuing development of a certification program; we have made inroads to extoll the benefits of natural grass; and we have formed new partnerships to better position STMA moving forward.

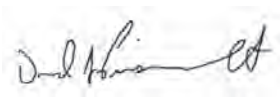
And, hopefully, we have enhanced your membership along the way through new mission and vison statements, by promoting your professionalism, by providing more educational offerings, and by providing more networking opportunities. Keeping busy and productive sure does make time fly by.

A new year is here and the journey continues. Don't let time pass you by. Make it count in your professional and personal life. Get involved, be a leader, be a friend, develop a plan and make it happen. Each day we have to put a stake in the ground to say, "Hey, We are professional;" "Hey, We value the environment;" "Hey, Give us the resources and we will deliver quality playing fields;" "Hey, We are people, too, who have feelings and are spouses, parents, and friends;" "Hey, We should both give and get respect;" and "Hey, We are an important part of our user group's success." Oh yeah, and "Hey, We love what we do."

It has been a gratifying journey to serve as your president this past year. I was able to see first-hand the great work you all do and the passion you bring to the industry as you strive to deliver safe, playable fields for those you serve.

The successes we had this year were made possible by the dedicated members who served on committees and task forces or who just gave ideas and opinions, the dedicated staff we have, the dedicated board I serve with and the buy-in of our commercial members. THANK YOU!

Your new board is committed to delivering the resources you need to be successful. Your membership counts so get behind STMA and at the end of 2015 sit back and see the strides we have made to better the profession. Thanks for being part of my journey and allowing me to be a part of yours. ST



GROWING SEEDED BERMUDAGRASS FIELDS WITHOUT IRRIGATION

BY **MICHAEL A. SKELTON**

The constant, number one chal-lenge faced by managers of youth sports complexes is maintaining a sufficient number of fields for the tremendous number of both games and practices played every season. A general rule of thumb is for every scheduled game event there are at least two practice events; for 200 scheduled youth soccer games, there are almost 400 practice events for a total of 600 events. The demand for fields is unrelenting. In an environment of fiscal restraint the possibility of purchasing more park space and constructing new fields is not realistic for most of us.

One very simple and inexpensive answer is to maximize the space available by capturing, for instance, small common ground areas for practice fields. At the Culpeper County (VA) Sports Complex there were several fairly level, un-irrigated common ground areas roughly .75 acres in size. Unfortunately, they were full of weeds and clumpy cool season turf. So the question became how to transform these small, weedy areas into quality practice fields at relatively low cost? The surprising answer is yes, by way of dormant seeding and manipulating Mother Nature.

Field 2 before:
Practice field 2 area before conversion to bermuda

GROWTH BLANKETS

The key to our success in establishing bermudagrass fields without irrigation while manipulating Mother Nature is to use growth blankets in conjunction with dormant seeding. Under normal circumstances the time to plant bermudagrass seed is when the soil temperature reaches 68 degrees. In central Virginia this normally means seeding in late May to early June. However, summers are hot and dry and the chance of establishment success without irrigation is quite small. Dormant seeding of bermudagrass without growth blankets has also been shown to work in research at the University of Arkansas. We felt this strategy could fit our needs as well, but we wanted even more assurance of success. So what to do? After a lot of research and brainstorming, our solution was to use growth blankets to ensure appropriate temperatures and moisture.

Step one: Use the fall and wintertime to prep the area. In late October/early November spray out the vegetation with glyphosate and 2-4D (two applications) and then mow the area as low as the mower will go. Next is soil preparation: in areas that are relatively level use a tow-behind aerator and aerate in multiple directions. It's not a plowed field but close; the objective is to establish good seed to soil contact. In situations where grade is in need of adjustment then a full plow grind and grade may be required. This is also a good time to get your soil sample and adjust your pH, phosphorus, and potassium needs as recommended. Hold off on any nitrogen fertilization for now, waiting instead the grow-in phase next spring.

Step Two (based on frost dates): Five to 6 weeks before the last average frost date for your area, plant the bermudagrass seed. Riviera bermudagrass, one of the top seeded varieties, is planted at a seed rate of 1.0–1.5 lbs. per thousand square feet (.5-.75 lbs. pure live seed). It is critical then to apply quinclorac at a rate of 1lb per acre right over the top of the seed. This is a must to control crabgrass and some broadleaf weeds that will also be enhanced by the growth blanket. If possible, follow the quinclorac treatment with ¼ inch of compost, applied directly over the seed. This will further hold moisture, heat and stimulate young seedlings. Finally, install the blankets.

Step Three: Over the next few weeks monitor the area. Check after high winds for blanket security. Take a peek under the blankets to see what is happening; this is fun when you see that first bermuda seed germination. Also look for weeds and disease, and the formation of algae mats during high moisture times. If you see algae

Seeding:
Spreading seed 1.12 lbs. per 1000 sq. ft.

Install blankets:
Covering field with growth blankets

Under blanket: Greenhouse effect, 24 April 2014

starting to appear, get air under the blanket using a backpack blower (it works). There will be weeds that are not controlled by quinclorac that grow faster and taller than the bermudagrass. If this happens you will have to temporarily remove the blankets, mow the weeds, and then reinstall the blankets back after mowing.

Step Four: Remove the blankets 2 weeks after the last anticipated frost date. For Culpeper County, this is the first week in May. It's important to wait until after the last frost date because the seedlings are very young and vulnerable to frost damage.

Day blanket removed: 3 inch tall bermuda, 6 May 2014

Step Five (grow-in phase): Frequent mowing is critical because it stimulates lateral bermudagrass growth. Immediately began mowing twice a week at 1 inch height of cut. This is also when you should start your nutrient management program according to soil sample testing applying fertilizer as needed. Survey the area to identify weeds and implement an integrated pest management program. In Culpeper the biggest weed issues have always been crabgrass, goosegrass, nutsedge and a few broadleaf weeds in that order. A good rule of thumb is to wait 3-4 days to allow turf to harden off after the blanket removal before you make any pesticide applications. For yellow nutsedge and broadleaf weeds, we have successfully used trifloxysulfron as a postemergent herbicide with desirable safety on young bermudagrass. For crabgrass, you can do a split application of quinclorac at 1/3 rate (1/3 lb. per acre) 10-14 days apart. There is currently no product for postemergent goosegrass control on bermudagrass so, unfortunately, you are going to have to walk the area and remove them by hand. The good news is next spring you can start a preemergent program that will take care of both crabgrass and goosegrass.

Step Six: Finalize when fields are ready for use. 2014 was one of driest summers in Culpeper County; activity on the fields could have begun by mid-July but was held until first week in August. This allowed time for stolon and rhizome development and enough growth to protect the turf crowns from user damage. The fields were ready for the both fall youth football and soccer practices.

If funding is truly limited the following process will work but with one difference, you will only achieve about 75% bermudagrass coverage the first year. Soil preparation is that you make one application of glyphosate in the late fall to early winter

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then mow the area at the mower's lowest setting. Five to 6 weeks before the last frost date, seed right into the low mowed area with a seeder that has some soil disruption and install blankets. Then follow the above instructions starting at step three. With no application of quinclorac anticipate that weeds will be a big issue. Blankets will have to be pulled back to mow the weeds. Elevation of the blankets will be a sure sign of weed growth. Next year with preemergent use 100% bermudagrass coverage will be achieved.

IMPORTANT TEST INFORMATION

A test was run to evaluate the best overall process for the dormant seeding strategy. For all situations a seed bed prepared with a Harley Rake and a blanket was used.

1. Control: Seed, cover with blanket
   a. Weeds: heavy pressure of crabgrass, broadleaf (90% controlled by end of season)
   b. Bermuda: 90% coverage by end of season, low to medium density
   c. Ready: 1 August
2. Compost: Seed, cover with ¼ inch compost, cover with blanket
   a. Weeds: crabgrass on steroids, broadleaf (90% controlled by end of season)
   b. Bermudagrass: 90% coverage by end of season, medium density
   c. Ready: 1 August
3. Apply quinclorac: Seed, spray quinclorac over the top, cover with blanket
   a. Weeds: very low, 100% control by end of season
   b. Bermudagrass: 100% coverage by end of season, high density
   c. Ready: 1 August
4. Apply quinclorac and compost: seed, spray quinclorac over the top, cover ¼ inch compost, cover with blanket
   a. Weeds: very low, 100% control by end of season
   b. Bermudagrass: very high density
   c. Ready: 1 July

Field 2 after: Practice field 2 after bermuda conversion

Recommendation: All will work so in the end it comes down to your budget. Use of both compost and quinclorac is the best option but if you have to choose one over the other choose quinclorac.

For the past 5 years we have established a bermudagrass practice field every. All were seeded in March without irrigation and then in full use by our soccer or football teams in August. Our plan this year is to convert a 1.2 acre, little-used field space in a remote park into a bermudagrass soccer/football practice field. We all know the phrase "If you build it they will come."

Converting areas to bermudagrass without irrigation has been extremely successful in many ways. As soon as the signs for new fields are seen by the users they will want their name on the list for its use. The goal of diverting practices from the game fields has been achieved; this past year there were 337 practice events on these four practice fields. ST

Michael A. Skelton is parks superintendent for Culpeper County, VA and president of the Virginia Sports Turf Managers Association Virginia Chapter.

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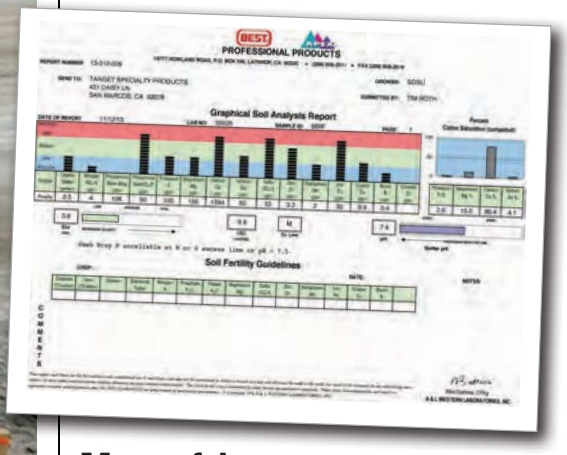

THE IMPORTANCE OF DRAINAGE FOR SALT REDUCTION

BY **RON HOSTICK CSFM, CGM**

In 2011 we were drying our bermudagrass outfield down to eliminate overseeded ryegrass from the winter season and noticed large areas of turf had declined. Many of the areas were virtually void of turf showing a whitish cast to the soil. Not surprisingly when tested the soil our salinity was extremely high. The field built, in 1999, is 12 to 18 inches of medium fine sand over clay native soil with fabric covered perforated plastic drains on 40-foot centers. We had been lobbying for an improved drainage system for several years, discussing and tracking the increasing salinity with administration. This year showed we couldn't wait any longer. It took 2 years to get everything in place but in the summer of 2013 we installed a complete drainage system. It consisted of a 2-inch drain line every 10 feet oriented parallel to the slope and 2-inch slits perpendicular to the slope every 20 inches both filled with a slightly coarser sand than the existing field's soil.

The process started with a request for proposal (RFP) where we stated what we were looking to install, the qualifications any installer would be expected to meet, and the University's requirements a company must meet to perform work on State property. As is usual, we were not given the go-ahead soon enough to get all the bidding completed in time to meet our schedule and the contract was performed as a job order contract (JOC). As a change order to the original contract we decided to include drainage for the infield as well.

Many of the areas were virtually void of turf showing a whitish cast to the soil. Not surprisingly when tested the soil our salinity was extremely high.

Once the contract was awarded delivery of sand and pea gravel began, and our contractor used a local company to reduce transportation costs. Then identification of elevation and location at the point of connection to our existing storm drain, behind first and third, which dictated the depth of the entire system. Digging of the 6-inch ABS perforated main collection drain was completed around the arc of the skin and down both foul lines; our outfield drains toward the infield, so this was the most disruptive portion of the process.

A 24-inch wide, 36-inch deep trench was completed with backhoes while working around existing irrigation and other utilities. The contractor then started

the trenching process for the 2-inch perforated drain pipe covered by pea gravel then about 1 foot of coarse sand to the existing grade of the field, once compacted. All of the existing soil was removed to an offsite location and replaced by the new pea gravel and sand.

Once the 2-inch drains were connected to the main trunk line, the process began of installing the 2-inch slit drains perpendicular to the newly installed perforated lines and the field's natural slope, consisting of 2-inch slits, 8 inches deep on 20-inch centers, filled with the same coarse sand as covering the pipe. All back filling of sand was completed in lifts and the addition of water while compacting was a key element in reducing settling after construction.

Once installation was completed we ran irrigation for several days to flush the system, then soil tests from the outfield were compared to tests from a little more than 2 years earlier. Key factors of soil chemistry and nutrient availability are ECe (a direct measure of salinity through electrical conductivity), levels of sodium in parts per million and Cat ion percent saturation.

As a result of being able to flush the soil water system into drainage, even with what by potable standards is high sodium irrigation water:

- The relative salinity was reduced by 88%.
- Sodium is high in our water and has three detrimental effects. One being it dominates the Cat ion sites so aggressively other nutrients aren't available to the plant; second it can cause the soil to lose a desirable structure effecting water movement resulting in poor root structure; and third its dissolution into the water reduces root uptake of moisture. Sodium concentrations after one summer of flushing were reduced by 78%.
- Finally, Cat ion saturation percentage measures plant nutrients with similar charges relative to one another and it requires a healthy balance of nutrients. Cations such as potassium, magnesium and calcium are necessary for healthy plant growth and sodium competes for the same soil nutrient holding sites. The sodium percentage relative to 2 years ago was reduced by 50%.

In aggregate, very positive signs the soil chemistry system is moving in a beneficial direction as a result of leaching the undesirable elements from the soil into the new drainage system.

It would preferable to have good drainage installed at installation and here are key thoughts on drainage construction: Have all soil partials reviewed to make sure they work well together so the sand doesn't infiltrate into the gravel or the gravel doesn't clog the perforated pipe. Sock, a fabric covering for perforated pipe, is not recommended. The distance between pipe and sizing of main drain pipe should be well thought out; if you are going to go to this expense and field down time don't try to save a few dollars by stretching the distances between lateral drains or under sizing pipe.

If you must wait for drainage or are thinking of installing into an existing field, plan on 3 months of having the field out of commission and know that the field likely will need seed or sod, so take that into consideration during the budgeting process. This was very disruptive and the loss of field use was painful for our program but due to years of intensive fertilizer use, poor quality irrigation water due to evapotranspiration left behind increasing levels of sodium, a poorly functioning drainage system, and virtually no percolation into the underlying native soil our challenges in poor physical and chemical properties of the soil preve nted us from growing a healthy turf. ST

Ron Hostick CSFM, CGM is the Manager of Landscape Services at California Polytechnic State University San Luis Obispo. The project described in this article was completed while he was the lead groundsworker for athletic areas at San Diego State University, on Smith Field at Tony Gwynn Stadium. The installation was completed during June 2013; the contractor was Green One Industries.

BACK TO BASICS: UNDERSTANDING SOILS, SOIL MOISTURE, AND SOIL TESTS

BY **BRAD JAKUBOWSKI**

Webster's dictionary defines soil as the upper layer of earth that may be dug or plowed and a medium in which something takes hold and develops. As sports turf managers, that holds true for us. We dig in it, plow it, plant in it, roll it, and expect the soil to serve as a medium to exchange water, air, and nutrients for turfgrass, all to provide the best playing surfaces possible.

The type and quality of the soil influences everything we do as turfgrass managers. It can dictate which species of turfgrass we grow and maintain, how often and how much we fertilize and irrigate, and influence how we modify the soil through our various cultivation techniques.

Although there are days the soil appears to be one large "hunk of stuff" as we attempt to dig through it with a shovel, it is essentially one-half mineral and organic matter and another one-half pore space. Maintaining a balance between the two becomes crucial to the performance of the turf. The solid materials provide stability and a storehouse for nutrients, while the pore spaces provide air for root health and places for water to percolate and be stored.

Texture	(meq/100g)
Sand	1-10
Silt Loam	14-20
Clay Loam Soil	25-30
Clay	80-120
Organic Matter	150-500

Figure 1

Years ago I had a discussion with Mike Andresen, facilities & grounds director at Iowa State University. He stressed how important it was for him to maintain vertical air and water movement as a key to maximizing the performance of his turf. This is so true. Our key to success is to develop and maintain positive air and water movement throughout our soils. This includes water moving in all directions; up, down, and laterally throughout the soil (**figure 1**). With native soil fields this may be a difficult task, however, the key is maximizing the potential each soil has.

SOIL TEXTURE

Knowing your soil's texture (the relative percentages of sand, silt and clay) becomes very important. How water moves throughout a clay textured soil will differ considerably from a sandy loam soil (**figure 2**).

It is often stressed to water your turf deeply and infrequently, which may be interpreted as applying 1 inch of water or more per application, waiting a number of days and then doing it again. With most of our soils, this may not be possible. Interestingly, you may irrigate a clay soil and a sandy soil similarly, but for different reasons. As you irrigate a clay soil, the pores fill with water and seal the surface, allowing no more water to infiltrate and runoff like concrete. As you apply water to a sandy soil, a larger volume of water applied may percolate through and beyond the rootzone and not benefit the plant. So, in each case, you may be required to apply smaller amounts in repeat applications. If your goal was to apply 1 inch of water, you may be required to apply three 1/3 inch applications of water sequentially to maximize your irrigation efforts.

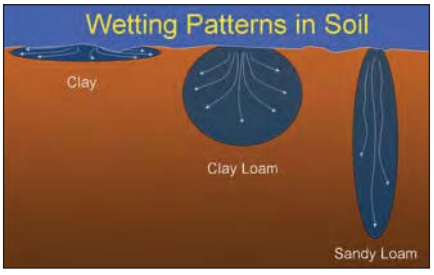

Figure 2

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Soil texture also influences fertilizer application amounts and timings. Heavier soils like clays will have a higher cation exchange capacity (CEC) or greater capacity to hold onto nutrients. This means that you can apply larger amounts of fertilizers per application (1 lb of nutrient per 1000 sq ft or greater) without a higher risk of leaching nutrients beyond the plants rootzone as you would with lighter, sand-based soils. Lighter soils also have a higher degree of natural aeration because they have a larger percentage of macropores than heavier soils. Because of this, heavier soils require more cultivation events like slicing or aerification to maintain what macropores they have throughout a sporting season.

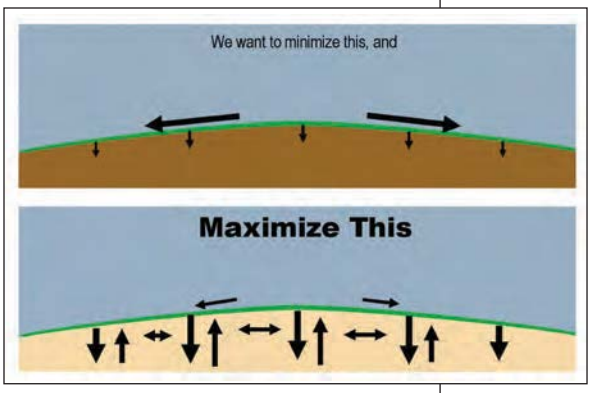

Figure 3

SOIL STRUCTURE

Soil structure is the arrangement of soil particles into clusters known as aggregates. Aggregates are formed in soils by mechanical means such as freezing and thawing, wetting and drying, or by the penetration of roots. Soil aggregates also form when microbes and plants release exudates and essentially "glue" the particles together. These glued particles have the ability to resist deformation better than particles that are simply pressed together and can help maintain valuable macropore space within the rootzone. Because of this, organic matter levels in native-soil fields become very important.

One of the best methods to make heavy soils more manageable can be to incorporate forms of organic matter, such as compost. The least disruptive method would be to topdress compost in concert with aerification events. Maintaining or improving soil structure will, in turn, aid in positive air and water movement.

SOIL TESTS

Soils tests should be used as a regular tool just as any others in your toolbox. In addition to helping you diagnose turf problems, they will provide you with guidance on how to manage your fields over the long-term. It is especially important to test your soils if the fields you are managing are new to you. One of the first sections to review on your soil test would be the CEC or Cation Exchange Capacity section. In addition to telling you about your soils ability to hold nutrients, CEC (listed in meq/100g) will help describe your soil's texture (**figure 3**). Remember, this influences irrigation, fertilization and cultivation practices.

Another important section would be soil pH. Sports turf species prefer a slightly acidic pH (6.0 to 6.5) because overall nutrient availability is at a maximum within this range. In most of the eastern US, the soils are acidic, while Midwest and Western soils tend to be neutral to alkaline. If your soils test pH results are far more acidic or alkaline than the preferred range you may be required to amend your soil with lime if the soil is too acidic or with sulfur if too alkaline.

Knowing your CEC and pH will give you an idea of the buffering capacity of a soil. Buffering capacity is essentially the resistance a soil will have to a change in pH. The higher the CEC the more resistant the soil will be to a pH change. A high soil buffering capacity may require multiple applications of an amendment or you may need to adopt a long-term management plan which includes amending soils on an annual basis.

Additional sections to review are the Soluble Salts and Sodium (Na). If either of these are in the high range this may indicate potential drainage problems in the areas tested. Poorly draining fields result in water sitting at or near the surface which can be "wicked" up through the soil and lost to the atmosphere via evaporation. When this happens, any dissolved materials in the soil water are deposited and concentrated on the soil surface. You may see white deposits developing in bare areas. If you have a sodium problem you will most likely have a high pH result of 8.5 or greater. If this occurs, establishing drainage by some method, including deep tine aerification or installing a drain tile system, may be required. Correcting sodium problems also requires amending your soil with gypsum to remove excess sodium from your soil system. Whenever you are in the process of amending soils, monitoring the soil status through soil testing will be very important. Once you start the amendment process, annual or semi-annual soil retesting will help you determine if your amendments are helping you reach your objective.

Once you get through those initial sections on your soil test, you can evaluate your organic matter levels and relative nutrient concentrations. The best thing to do with these results is to use them as your baseline, especially if your turfgrass appears fairly healthy. If you later experience problems with specific areas, you can make more informed choices as to what nutrients your soils may be lacking. If you are unsure of making an application throughout your facility, you can always do a "plywood" test. Apply a particular nutrient or active ingredient to a relatively small section of your turf, but have a piece of plywood covering a portion of the treated area. If you see a definite difference in the two areas, you know it would be a worthwhile application and expense. It is important to remember that any steps you can take to improve your soil characteristics, however insignificant, can result in significant differences with your turfgrass and your fields. ST

Brad Jakubowski is an adjunct professor for environmental sciences at Doane College in Lincoln, NE. He is an elected at-large member of the Sports Turf Managers Association Board of Directors and chair of the board's Editorial Committ

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MAINTENANCE PRACTICES IN PARKS AND RECREATION

BY **JOSHUA BERTRAND**

Sports turf managers in Parks and Recreation are some of the most knowledgeable, innovative and collaborative people I have met. In the sports turf industry, the basics of turfgrass maintenance (good design, fertility, irrigation and cultural practices) are well understood and practiced. But in parks and recreation two key aspects of the management program often are missing: good timing and having a plan.

Noel Harryman and Christina Clay clean up Infinity Park after a water main break.

The one key element missing from many maintenance processes in park and recreation is timing. The idea of timing isn't new to sports; players train and prepare year round for the last 2 minutes of the 4th quarter, game 7, or the last mile. It's what the "prime time" athletes work so hard for and as turf managers in Parks and Rec, our maintenance processes shouldn't be any different. We need to be prepared for the prime time.

Timely fertilizer application, seeding, irrigation repairs and other cultural practices are what separate the good surfaces from the mediocre ones. Along the Front Range of Colorado our growing season lasts from approximately April 15 to October 15 or about 183 days. I define a growing season as the time when the plant is actively conducting photosynthesis, respiration and transpiration. The growing season is the basis for the turf manager and field relationship, and it is important to know and respect the prime time for growing grass.

There are a couple time periods each year that the grass just seems to jump out of the ground. We may continue with our inputs, and the grass responds well almost completely naturally, making us all look good. The prime growing season is the natural cycle where the plant actively grows faster and stronger than it does any other time during the year. Along the Colorado Front Range this occurs usually from May 10 to June 25 (46 days) and August 25 to September 20 (26 days), hence the prime growing season along the Front Range is about 72 days, less than half of the traditional growing season.

Turf managers know during the growing season the inevitable will happen: a lateral zone breaks and a whole section of turf lacks proper irrigation; wet weather delays a fertilizer application a week or more; or the administration adds an extra 2 weeks of makeup games at the end of the season. As turf managers we have

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a good understanding of how long it takes for grass to respond. While it might take 4 days for the wilted plants to show drought stress from the lateral zone break, it will take an additional 14 days for the plant to reverse going into dormancy and bounce back. With a missed fertilizer application is another 2-week setback for grass health. Finally with the extra games during playing season, another 2-3 weeks of time are needed for the plant to recover to a desired growth state. These three events impact the time of the desired growing season—18 days represents approximately 10% of the 183-day growing season and reduce the active growing season by as much as 30%. If these same events occur during the precious 72 days of prime growing conditions, the best time to grow grass is reduced by more than 50%. Not being prepared during the prime growing season is the biggest contributor to mediocre fields.

When I worked for a local school district, we would cobble the fields together during the spring, focusing on preparing the fields for games, but do very little cultural practices. Colorado in the spring can be warm and forgiving, but more often than not spring is cold and cruel. The spring sports would end mid-May, at which point my supervisor would pull us off the athletic fields, go on 2 weeks' vacation and generally neglect the grass. Why? His logic was fall sports would start in August, so he had the whole month of July to get the fields ready. So during the high 90 degree temperatures days in July we would aerate and overseed our cool season Kentucky bluegrass full of hope and prayers, but not much else. This logic was terribly flawed as it didn't take into account the natural process of cool season grasses. We would have been much better off to have had a plan in place to capture the prime time of growing grass. It would have been beneficial to work on the fields in April and May, so the plants would be ready to actively grow and repair the damage from the preceding year.

Joshua Bertrand

For turf managers, preparing for the prime time is similar to athletes preparing for their big events. Long distance runners often plan each specific run for several months in advance of a big race. The keys to having a successful maintenance practices are similar to the runner: have a plan; apply it consistency; trust yourself, have confidence; and after it is over review the result and adjust accordingly next time. A good plan a runner would use includes the date the run will take place; the goal run time and even the route. As turf managers in park and rec, our planning process should be no different. We should know when our big events are and when the prime times are for growing grass.

PUTTING YOUR PLAN IN PLACE

How do you put a plan in place? My visionary leadership professor recommended charting goals in some fashion; he had us use a timeline, a sort of a to-do list while forecasting milestones. It can be done any way you like. I have seen people make to-do lists, place motivational phrases on the bathroom mirror (or computer monitor) or keep personal diaries. As the turf manager at Infinity Park my maintenance plan ran from July 1 one year to July 1 the following year. For example, I lobbied for 2 weeks of no activities in May. I lobbied to administration, coaches, athletes, the marketing staff, and my family. Knowing the stadium would host the National Championship game the first weekend in June and knowing the prime time to grow grass in Colorado, I would accept non-stop games and practices in March and April (often quite damaging to the turf), knowing the prime time growth in May would make up the difference.

Coaches typically would ask me in August about my timing of certain cultural practices, and I would respond, "I'm not trying to get the field ready for the next game or this fall, I am getting the field ready for next June and the National Championships!" The plan worked each year for the 5 years I was turf manager. Yes, I had challenges, unforgiving weather, broken irrigation (recommendation: do not deep tine at a 10-inch depth when the irrigation laterals are installed at a 9-inch depth!) and extra/unforeseen uses on the field. However, during previous the fall, winter and then spring seasons, we fertilized, aerated, overseeded and performed all maintenance processes following a plan to get the field ready for the May prime growth time, and the field always looked and played great for the National Championship in June.

Applying the plan with consistency throughout the growing season is another challenge. The best tool to achieve consistency is to trust yourself and have confidence in your plan. Dealing with coaches, administration and sales people confidently and trusting the plan will increase your chances of being successful during the prime time.

For example, throughout the year, sales people will visit your fields. Some sales people will call; others will just drop in. Either way, sales people will present you a myriad of tools and products to make your field better. Like a strength and agility coach working with an athlete, the strength coach is there to make sure the athlete achieves their physical goals and can help the athlete recover from unforeseen events like sickness or injury faster. With good sales people and turf managers, it should be no different. However some sale people aren't there to help you achieve your goals or recover from unforeseen events. They find the

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weakness in your plan or your field and exploit it. My biggest frustration is the consulting/insulting sales people telling you when things aren't going right; "Field's a bit sparse, don't you think?", or "Is the color where you want it for this time of year?" These are questions I was asked as a turf manager. After hearing that, you want to hear the solution and fall into the mindset that you have to do something, anything to fix the problem!

Often we don't need the latest and greatest wetting agent or a calcium supplement, nor will getting a shiny new utility cart that carries 150 pounds more make that fundamental change needed to have a successful field. Often it leads to frustration, as the plan has suddenly changed, spending $$$ and putting great products on the field with mediocre results. In this fast-paced world of work, not planning the specific actions we need to take to be successful often leads to poor outcomes and setbacks. I have met many good sales people in this industry who understand their role and products and are a great resource to achieving goals. Find them and build that relationship. Confidently dealing with coaches, administration and sales people and trusting your plan will increase your chances of being successful during "prime time."

The final process to have a successful maintenance program is when it is over, review and adjust your plan. If the plan ends with the prime growing season, you will most likely start on the next plan during the traditional growing season. It's a great time to start a plan, if you have carefully implemented your previous plan, you will able to review it and make changes to it while your work is still fresh in your head. Why do players play on Sunday and watch film on Monday? Because the sooner they can review their recent performance and develop a plan for their next performance, the better. Often we wait until we are deep into the off-season to review our previous work. If you plan is based on the prime time of growing grass, then a plan review and implementing the new plan should occur right away.

By keeping to key aspects of using plant timing and having a plan which embraces this timing you will improve your maintenance, fertility, irrigation and cultural practices. Soon your fields will be sought after for "prime time" events! ST

Joshua Bertrand is director of public works for the City of Glendale, CO; previously he was manager of turf operations, which included Infinity Park, a municipally owned sports, entertainment and event venue.

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CREATING FACILITY PARTNERSHIPS:
reduce costs & maximize resource availability

BY **BRANDON PUTMAN, CSFM**

Many times in the turfgrass management profession, we are asked to hold more games or events without increasing our operational expenses. We are tasked with being creative in accomplishing the cultural practices that are required for safe, playable fields, but sometimes without the necessary equipment. Capital purchases of equipment are not typically budgeted for unless we can justify them. Turfgrass managers must act as a mechanic or plumber or meteorologist, but are rarely an expert in each specialty. We must allow time for hiring processes and safety training, which deter from work in the field. We do not always reach the quantity amounts required to take advantage of discounted pricing when purchasing yearly supplies. Many of these financial operating and resource availability challenges that athletic field managers

Specialty equipment being loaded onto tow truck in Peoria.

face can be reduced or solved by creating partnerships between local facilities or facilities within the same organization.

In the City of Peoria, AZ, we have developed several strategies in coordinating the operations between our three sports facilities: the Peoria Sports Complex, Rio Vista Community Park and Pioneer Community Park. Each of our three facilities has select specialty equipment, for example aerators, a verticutter, turf vacuums and tractors, which are rotated between the locations in order to maximize use of these seasonal equipment pieces. For instance, each of our facilities has turf vacuums, but during overseeding operations the Peoria Sports Complex uses all the vacuums for this process.

A few times throughout the year we want to complete cultural practices at the same time, which takes dedicated supervisors and some internal customer service between them to schedule the units appropriately. Aerification is one of those cultural practices, but because aerification has several steps to it, we are able to space the equipment pieces out, so that each location can be working on one of those steps. Rotating and scheduling of our specialty equipment is made easier by a city contract with a towing company that was initiated and created by our police department. Not all partnerships are with other turf entities like athletic facilities or golf courses. Since the police department relies heavily on towing services for traffic operations, the towing company provides free towing of city vehicles and equipment as part of the contract. Previously, as an operation manager with the Brickman Group Sports Turf Services (STS), in which I coordinated the maintenance efforts between several Atlantic League stadiums, we would also do the same sharing of specialty equipment between stadiums. In this instance, we were able to find an independent flatbed tow truck operator that would transport our equipment units in exchange for tickets to games or previous year's merchandise.

Equipment sharing in York, PA with Brickman Group Sports Turf Services.

REDUCE CAPITAL EXPENDITURES

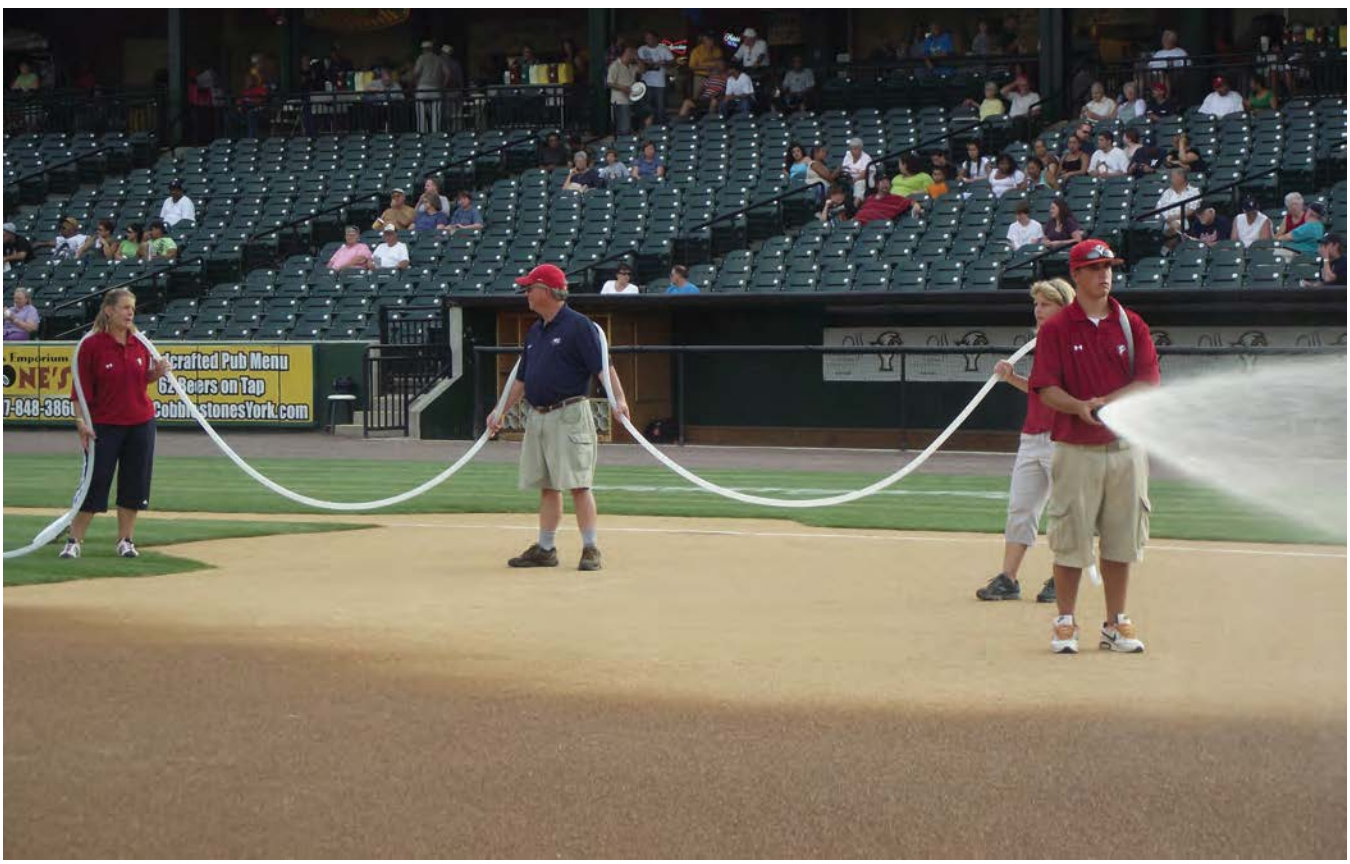
Sharing of equipment has enabled the Peoria Sports Facilities division to reduce capital expenditures on equipment. We have an aerator that was purchased using Rio Vista's budget, the verticutter and large turf vacuum was purchased with Pioneer's budget and laser grading equipment was purchased by the Sports Complex. Since all the facilities are collectively part of the same organization, we are able to save on having to purchase units for each site. Not purchasing those specialty units has saved our divisional organization in excess of $127,000. This was also true with Brickman STS, and even more so, we pooled together savings from operational budgets to purchase these types of equipment, since there was not a capital budget for them. Also, with Brickman we did friendly borrowing from the local branch or area golf courses for single uses, many times just for tickets to a game. Aside from the operational savings by foregoing specialty equipment, the Peoria Sports Facilities division was able to realize collective capital purchase incentives for our regular use equipment purchases. By collectively buying mowers and 3-wheelers, we earned a $12,000 incentive in the form of preventative maintenance kits from the vendor.

In an effort to align the replacement of older equipment between the three complexes, a depreciation schedule is used to determine a threshold of maintenance costs that will be put into a particular piece of equipment to keep it running. It is anticipated that the de-fleeted equipment will be traded to the local school district where the automotive shop at the high school will keep the mowers and utility carts going for the agricultural department to use on the high school's athletic fields. This opportunity with the school district should allow the agricultural department to thrive and thus continue providing our facilities with part time internship students.

By collectively buying mowers and 3-wheelers, we earned a $12,000 incentive in the form of preventative maintenance kits from the vendor.

The City of Peoria has a unique situation of having a high school with a strong Career and Technical Education (CTE) program in agriculture. Students have the opportunity to gain exposure and experience to nursery production, biotech, livestock science and of course turfgrass management. The Sports Facilities division has partnered with the school as an opportunity to be a guest lecturer in the class and for students to tour our operations. We have also made several site visits to the schools athletic fields to consult with coaches and school representatives on turf management best maintenance practices. In turn, the

Continued on page 34



High school science teachers shadowing operations in York, PA with Brickman Group STS.

John Mascaro's Photo Quiz

John Mascaro is President of Turf-Tec International

Can you identify this sports turf problem?

Problem: Irregular green shape on turf
Turfgrass area: Football practice fields
Location: Cincinnati, Ohio
Grass Variety: Patriot bermudagrass

Answer to John Mascaro's Photo Quiz on Page 32

Background illustration courtesy of istockphoto.com

John Mascaro's Photo Quiz

Answers from page 31

John Mascaro is President of Turf-Tec International

This area of turf on one of the three practice football fields for the Cincinnati Bengals is located in Southern Ohio and has Patriot bermudagrass for the turf cultivar. Since this area of the country experiences frost, overseeding is done on two of the three fields. Most of the late fall and early winter practice is limited to the two overseeded fields and the non-overseeded field is used sparingly on an as-needed basis. This allows the non-overseeded field to be stronger and in good condition of the spring practice. This photo is from the non-overseeded field after a frost; the Sports Turf Manager saw this irregular pattern and immediately recognized it as the footprint of the five-man sled practice equipment. Apparently, when the area received the frost, the sled had protected the grass from the frost and left this unique pattern. This is similar to the effects a turf cover has on the turf, however not quite as uniform. The following week another frost occurred and evened out the design.

Photo Submitted by Darian Daily, Head Groundskeeper at Paul Brown Stadium in Cincinnati, OH.

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

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Continued from page 30

CTE program has made us a preferred employer for their students, and we employ many interested and motivated students in our part-time staff. By working with coaches we have also created open communication when it comes to hiring student athletes as a way to show young athletes respect for the playing field. In many cases the training we provide to these students at the Sports Facilities is taken back to the fields on which they play.

HIRING PROCEDURES

Hiring procedures are time-consuming to the operations of our facilities, which is why we have combined those efforts as well. When we post part-time positions, they are for all three locations so that staffing demands are met in one large recruitment versus several small recruitments. This requires less staff sitting on interview panels, conducting reference checks and processing hiring packets thus having more time spent on the fields. Combined hiring also creates the best fit for employees to be successful by assigning them to the facility that suits them. The development and implementation of training programs for both new and existing employees at all locations has created consistency between them, where seasonal or event related peaks in staffing demands are met with staff normally assigned to other locations.

In terms of full-time employees, we have created specialty positions that rotate between the facilities. So, just as specialty equipment is rotated based on need, also are the full and part time staffs. We employ an irrigation technician that flexes his schedule to provide coverage at three locations including emergency fixes. The equipment mechanic is setup on a rotational schedule at three locations to conduct equipment checks and preventative maintenance as well as repairs. These floating specialty positions allow for coverage using one employee between our three complexes, which allows us to offer more competitive wages using the three labor budgets. At the same time the organization saves between $77,000 and $103,000 annually by not having an irrigation tech and mechanic at each facility, and those figures do not include the savings from benefit packages. This floating employee model has proved to be so successful that we are now evaluating our costs of contracted spray applications, both structural and landscape, with internal spraying demands and applicator's license fees. If the cost numbers work out right, then we will begin the process of creating a spray technician to meet the demands of the three facilities.

STMA information table at a Career and Technical Education Student Fair.

In coordinating efforts between the complexes, it is important to have a consistent safety program, which includes compliance with OSHA and labor laws. All of our staff undergoes the same training, using the same learning materials, which provides necessary information to keep everyone on the same page when it comes to safety.

BULK PURCHASING

Another strategy to combine efforts is in the bulk purchasing of fertilizers and pesticides. When working for Brickman STS, our facilities were all single stadium fields in a relatively similar climate of the mid-Atlantic region. Because of this region's high disease pressure, fungicides are a critical element to an agronomic plan. Since I was purchasing for only one baseball field, I did not reach the thresholds required by vendors to qualify for early ordering programs.

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

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pre season at a discount. By getting our mid-Atlantic stadiums on similar agronomic plans, we were able to meet some of these purchasing amounts in order to capitalize on the early order programs and bulk ordering discounts. This concept also worked with infield conditioner selection and mound clay use, once the groundskeepers got past personal preferences. Putting these stadiums on the same products also helped if one complex's supplies ran out, say due to a poorly timed thunderstorm, other stadiums could meet the needs without the delay of purchasing processes.

Partnerships and sharing is also about the exchanging of ideas. By getting turf managers together to determine agronomic programs the opportunity to learn from others increases. There are many different nuances to the cultural practices of verticutting and aerification. When we schedule the rotation of equipment, sharing of different cultural practice experiences are discussed. The conversation naturally transitions into comparing the differences or similarities in the procedures soon to be undertaken. We ask ourselves, "What practices are proving to be successful at another location that can be implemented here?"

An inclement weather comparison between locations is another instance when information is shared. As with Brickman STS, if one of the stadiums was in the midst of a storm, that information of severity and timing was relayed to the groundskeeper downwind to be prepared for it. If one stadium is playing their game and another is not, why? Was it the weather patterns or is field drainage of concern? This is true in the City of Peoria holding multiple tournaments concurrently, and also the weather station ET data collected is shared over the network with the complexes to control their irrigation scheduling. This sharing of information across the facilities aids in keeping operations and maintenance practices efficient.

These are just some of the examples of developing partnerships between facilities to maximize resources by sharing equipment or employees, bulk purchasing, and exchanging of ideas for best management practices. Being creative with the resources that your organization has and integrating the resources of others can provide the means to improve your fields' quality. Remember, to avoid creating a situation or an impression of taking advantage of other facilities, sharing and cooperation should be more about the exchanging of ideas and helping others rather than forced expectations. ST

Brandon Putman, CSFM, is the maintenance coordinator for the City of Peoria (AZ) sports facilities.

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Sources: Centers for Disease Control and Prevention (www.cdc.gov) & The American Academy of Orthopaedic Surgeons (www.aaos.org)

SO, YOU WANT TO BE A FACILITIES MANAGER?

Editor's note: We asked two veteran turf managers who now work managing multiple facilities off the field for recommendations on how others might prepare for similar positions.

BY **MIKE TARANTINO, CSFM, AND MIKE ANDRESEN, CSFM**

MIKE TARANTINO, CSFM

Director, Maintenance & Operations
Poway (CA) Unified School District

During this time of "downsizing," "doing more with less" and "streamlining the organization" (all euphemisms I have grown to dislike), you want (or have been asked to consider) becoming a Facilities Manager.

There are many things to consider, too many to put in one article; however there are some that will be critical for you to succeed. The first is, knowing what the job actually entails and then fitting your personal and professional skills to perform that job.

My top four are: Seeing the "big picture," developing your team, managing projects and using feedback.

Seeing the "big picture" is critical for success. As a turf manager we all can see the "big picture" when it came to safety and playability of our fields but do we see where our fields fit into the overall plan of our organization? Facilities managers must be able to see this, weigh options, make the best decision based on the plan, and implement the plan and budget to achieve the plan. This can only happen with your willingness to be involved with the plan from early on or "buying in." This is often a conflict for new facilities managers especially if we have come from the turf management side of the house. Our love of turf management often skews our perception as we have to make a decision that will affect our turf. For example: an unexpected repair needs to be made to a building under your management or maybe needs a new roof; at the same time, a field needs to be re-sodded but there is only money for one of the projects…which wins? Remember the "big picture" but . . .

You aren't alone when having to make these decisions. Developing your team is crucial to your success. You should have a team of experts working with you from all sides of the organization, from turf management to building repair. Use them! As the facilities manager it is no longer them vs. us. The team you inherited or selected need to be involved with every aspect that affects how you respond to situations.

Collaboratively work with your team to achieve desired outcomes because their involvement in the decision making process is crucial to the success of the big picture. Their voices need to be heard in budgeting, project planning and their experience in their chosen field will help you weigh options, some of which you may never have considered.

Don't be afraid to ask your "customers" their thoughts, you might be surprised by their answers. I have managed by my own philosophy—sweat the small stuff. As managers we are all very good at handling the big projects; however, it is the little things that if left unattended soon become the hot project, i.e., the coach asking for an additional line to be painted for practice. They won't remember the re-sodding or the laser grading but they will remember that additional practice line not getting painted.

Always remember that you are the responsible one so don't pass on the responsibility. Make the best decision possible with the information you have at the time. Don't pass the buck!

Become a juggler. You now have multiple projects to manage; from building maintenance to turf projects and the always unex-

pected emergencies. You must know how to prioritize. This is often a conflict for new facilities managers because their passion for pleasing everyone gets in the way. Keep the big picture in mind; know what is best for the organization. Never say no, always give options even if it is about money to get the project or work done. A life or death emergency will always take priority regardless of the project's priority. The word "no" should only be in your vocabulary if what you are being asked is unethical, immoral or illegal. Know what is critical for your organization.

So what do you need to become to be a successful facilities manager? A collaborative, juggling psychologist who can handle many different items in the air at the same time while keeping an eye on the objective. Happy juggling!

MIKE ANDRESEN, CSFM
Manager of Facilities & Grounds
Iowa State University

Mike Tarantino is a brilliant manager and a good friend to many of us; his wisdom on leadership is rock solid. Because of this I'll try to offer tidbits of advice different than his. When my position shifted to include facilities management I was apprehensive due to the fact I knew little about mechanical systems. But it became obvious very quickly that successfully making this shift depended on people management skills more than mechanical skills or mechanical systems knowledge.

I concur wholeheartedly with Mike's point on *developing your team*. Facilities management means you now lead crews in differing disciplines, each of which has a culture and a collective vision. Your role now is to identify and leverage strengths of each unit you supervise and find a way to blend them into a team that has clear understanding of your chief administrator's vision. We're all motivated to produce. We also have a need to feel appreciated. Your role now is to package the vision so it challenges each staff person. Great employees will rise to the top and become leaders in defining your workplace culture. The better we lead the less we need to supervise.

Mike writes of being a juggler. The analogy I use here is "keep the plates spinning." Those familiar with the old "Ed Sullivan Show" may remember an act where someone frantically worked to keep dinner plates spinning on dozens of long sticks. In the end, plates would crash to the floor as the entertainer was unable to keep them all simultaneously spinning. As we attempt to keep event management, custodial services, construction, renovation, field or facility management plates (or priorities) spinning, one of those entities inevitably falls or get trumped by one or more of the other entities.

A common example is having an external event on our soccer field or in our coliseum. Hosting this may be critical to enhancing our department's public image but it will at the very least cause our field crew or facilities crews to work extra hours, probably doing tasks that have nothing to do with our intercollegiate teams. We've all watched non-sporting events come in and compromise work we've done on playing surfaces. Be transparent as a facilities manager and illustrate to your team how the department benefits from events like these. Also realize there will be instances when you're left scratching your head, questioning the true value of some events you host. Your challenge is to be a team player and continue striving to become important in scheduling and programming, rather than being the grumpy turf manager saying "no" to every idea. Every workplace has a culture. Our jobs depend on the public spending discretionary income enjoying themselves in our venues so make yours an embracing culture. Minor league baseball team owner Mike Veeck wrote a wonderful book titled "Fun is Good." I highly encourage you to read it.

It's also a fact that as hard as you work to get each person on your team to buy in to a vision, you'll have employees who resist. This is a fact of life for facilities managers. Every employee has motivations that drive them at work, and to succeed

Continued on page 47

Town of Cary (NC) is home to Wake Med Soccer Park; the main stadium boasts 7,000 seats and can expand to 10,000, making it an obvious choice for marquee events.

Maryland SoccerPlex MD reported tournament visitors spent more than $20 million on food, lodging, entertainment, local transportation and retail purchases in 2012.

THE CHALLENGES OF MANAGING A MULTI-FIELD SPORTS COMPLEX

Editor's note: This article was written by Steve Perry, a PR Associate for Buffalo Brand Invigoration Group, the Washington, DC-area public relations firm that works on behalf of the Sports Turf Managers Association. We thought it would be interesting to share with you an example of how STMA and Buffalo are working to inform the public of the work turf managers do as well as its potential impact on localities around the country. This same article has been made available to media outlets around the country.

Waukegan Park District (WPD) in Waukegan, IL generated more than $10 million for the county last year. Sports complexes similar to this one can be found throughout the country and the economic impact on surrounding communities is monumental. Here's a look at what it takes to create high-quality fields at these facilities.

Youth sports complexes are highly coveted institutions in local communities and have a proven impact on the economy. To put this in perspective, Maryland SoccerPlex, Boyds, MD reported tournament visitors spent more than $20 million on food, lodging, entertainment, local transportation and retail purchases in 2012. Nationally regarded, Maryland SoccerPlex is home to the Washington Spirit of the National Women's Soccer League. The complex also hosts elite lacrosse and rugby tournaments throughout the year.

Another development largely impacting the economy is located in Cary, NC. Jimmy Simpson, a facility work expeditor for the Town of Cary Parks and Recreation Department, is responsible for grooming one of the premier US soccer complexes, Wake Med Soccer Park. Home to the North American Soccer League Carolina Railhawks, the facility consists of a soccer-specific stadium, two lighted practice fields and four additional natural grass fields. The main stadium boasts 7,000 seats and can expand to 10,000 with temporary seating, making it an obvious choice for marquee events such as the men's and women's Atlantic Coast Conference soccer tournaments.

Each year, a large amount of revenue is generated via sporting events, concessions and brand visibility at Wake Med Soccer Park. The Town of Cary also benefits from the tourism uptick generated by spectators attending national events. Hotels, shopping, dining and entertainment all see an increase in revenue due to these high-profile tournaments.

While these sports complexes create large economic impacts, they tend to operate with small staffs. This creates added pressure for the sports turf managers.

Ryan Bjorn, Sports Field Director for Maryland SoccerPlex, is also a recent winner of the Sports Turf Managers Association (STMA) prestigious "Field of the Year" award in the professional division. He manages a staff of three full-time employees yet is still able to create top notch, safe and playable fields. The SoccerPlex has about 50 acres of sports fields. "On an average weekend, 250 youth soccer games are played at the complex," says Bjorn. "It is a challenge to keep the fields up to our high standards, but our crew works around-the-clock to make sure we are delivering the best playing surfaces possible for athletes."

Field rotation is a key factor to the equation but, as Bjorn high-

lights, sports turf field management is truly a science.

"Maximizing playability while minimizing wear is like a math equation, a constantly changing math equation," says Bjorn.

Sports turf managers always have to be prepared for wet conditions when managing natural grass fields. A tactic Bjorn uses is to kindly request coaches stay away from "danger zones," or heavy traffic areas such as the 18-yard box on a soccer field. Another method sports turf managers employ is to mandate youth teams to train and compete on artificial turf when natural grass fields are saturated to reduce wear-and-tear. Although the challenges of maximizing playability are important, the safety level of a field can't be overlooked.

Safety in contemporary sport has been a hot topic and is a fundamental priority with field use. The moderate temperature of grass cools the air, which makes it less hot during games. Furthermore, grass also absorbs carbon dioxide, which reduces global warming.

The cleanliness of natural grass is also beneficial because liquids and bodily fluids can absorb into the grass, preventing stagnant areas. When collisions occur, falling on natural grass provides more "give" which creates a cushion for joints. In turn, this reduces the chance of injury. Safety is a constant that remains steadfast amongst all sports fields, despite which sport they were built for.

There are many similarities and differences between managing natural grass soccer and baseball/softball fields. Inherently, soccer receives more wear because of the pace of the sport. Slide tackling and high rate of play, among other factors, typically lead to more field damage.

Baseball groundskeepers often know the spots which outfielders run to, thus offering a moderate level of comfort and predictability. By developing an understanding of a player's habits, it helps to shrink the size and scope of the field for maintenance purposes.

Noel Brusius, WPD's Sports Turf Manager, is a prime example. He currently manages both soccer and softball fields and knows first-hand how to craft fields built to host national tournaments.

He was also recently recognized as a STMA "Field of the Year" winner, a testament to his endless hours of producing safe and playable sports surfaces that are also visually appealing.

Weather also presents a large challenge when preserving quality and appearance at multi-field sports complexes. Protecting sports turf in grueling weather conditions is one of the many obstacles that sports turf managers seek to overcome.

Kristen Althouse, STMA Education Manager, outlines a few practical guidelines to help.

■ Hollow tine aerify on cool-season field. It is important to remember to aerate after the fall sports season is completed.

■ Overseed and sod to repair bare or thin areas. Over seeding proves to be useful because of the wear in heavy traffic areas of fields, such as the center of a football field. Planting seed well in advance speeds up the germination process so that when spring approaches, seed begins to grow.

■ Apply topdressing. Applying top-dressing is also beneficial to ward off winter woes. This top-layer of compost or sand, depending on the composition of the field, serves to improve field conditions in the spring.

■ Lower your mowing height. Mowing height is also a crucial factor. Significantly lowering mowing height often reduces snow mold and damage.

■ Use growth covers when you can. They create a greenhouse effect that promotes seed germination during the winter. Specifically placing them in high wear areas that have recently been seeded is a recommended practice.

Arid conditions in the summer months also prove difficult to manage. Droughts combined with untimely storms deplete oxygen from roots, resulting in undesirable conditions. Excessive heat, humidity and soil moisture is detrimental to grass growth. To combat this, it's recommended to select a cool-season species of turf grass, time plantings accurately and prepare soil well.

Ultimately, sports fields play a large role in the success of the local economy and have evolved into a demanding job with increased responsibilities, 365 days per year.

Some of the most state-of-the-art facilities wouldn't be here today if it weren't for "grass guys" who have dedicated themselves to achieving an immaculate pitch. If a local economy can prosper from a sports complex, such as Maryland SoccerPlex or WPD, imagine how much sports fields are benefiting the economy on a national level.

Next time you visit a multi-field sports complex, take a minute to admire the masterpiece in front of you and all of the hard work poured into it. ST

EP MINERALS LAUNCHES AXIS SOIL AMENDMENT

EP Minerals, LLC, has launched AXIS, an all-natural premium soil amendment. AXIS is available in a lightweight diatomaceous earth version, exclusive to EP Minerals, and in a calcined clay version. Both product lines are 100% natural, environmentally friendly, and are USGA approved. "We've found that you can decrease your water use by up to 30% with AXIS. It increases water and air infiltration to the rootzone, making for healthier, greener turf" said Jeff Kitchens, vice president of performance aggregate products for EP Minerals. "AXIS actually improves the soil, reducing compaction and improving drainage, even with frequent freeze and thaw cycles because of its large internal pore space. It gives more water back to the roots," he added.

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ECO 150 COMPOST SPREADER

The ECO 150 compost spreader takes compost topdressing to a whole new level of easiness, maneuverability, and efficiency. Ecolawn's new generation applicator is a self-propelled, forward broadcast compost spreader. At 34 inches wide, it is designed for tight places where other applicators find it problematic but will also do larger spaces with ease. Other features are the new conveyor belt that's 2 full inches wider, the Vanguard 6.5 Briggs & Stratton engine that offers a 3 year warranty, lightweight heft (290 lbs), and ergonomically redesigned controls for ease and comfort while operating. Lastly, this new generation spreader boasts an all-new improved polyurethane hopper designed to eliminate bridging.

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STMA'S COLLEGIAL CULTURE ADVANCES A GLOBAL OUTREACH INITIATIVE

The top reason for joining STMA has remained unchanged since 2004: networking to share information and learn from peers. That approach has helped STMA to further its mission of advancing professionalism in sports field management and safety through education, awareness programs and industry development. It has also helped STMA reach out to an international audience.

"STMA's culture is one of sharing," says STMA Past President and current International Committee Chair Abby McNeal, CSFM. "Reaching out to those who are managing fields in other countries to offer our educational resources, and in turn learn from them, is a natural process for STMA."

STMA has had a focus on international outreach since 2010, when a new task group was formed by then-President Chris Calcaterra, M.Ed, CSFM, CPRP. It was quickly expanded to a committee in 2011, and has been a staple in the association's strategic plan since that time.

The International Committee has made great strides in exposing STMA to international audiences. One outcome of this outreach has been an increase in the number of international attendees at the annual conference. "We drew participants from eight countries last year," says McNeal, "more than STMA has ever had at the conference." STMA communicated specifically with those attendees in advance of the conference, but realized it could do more to make them feel welcome. "This year our Committee is staffing an international networking area on the trade show floor," says McNeal. "In addition to continuing our early communication efforts, we feel that this face-to-face interaction will help engage them in the entire conference experience." This networking area will be open to all conference attendees.

STMA has reached out to academics at universities and higher education institutions in other countries to offer its informational and educational resources. Academics are the go-to resource for those who manage sports fields outside of the US. These academics were also extended an invitation to speak at the annual conference through the call-for-presentations process and to provide articles for this magazine. Additionally, US academics have been asked to be ambassadors for STMA as they travel internationally. This same strategy was implemented with commercial members. "Many commercial members work internationally. They have a great opportunity to share information about STMA," says McNeal, "and they do."

Very few countries have membership organizations like the STMA. Sports Turf Canada and the Institute of Groundsmanship (UK) are two exceptions. STMA has developed very good relationships with each organization and both are International Affiliate Organizations (IAO) of STMA. Being an IAO means that we collaborate on initiatives, share information and provide education and programs at member costs to the members of these organizations. STMA has spoken at their educational conferences and vice-versa. A long-term goal of the International Committee is to help to facilitate the formation of international groups like the STMA, and it has succeeded in adding one in Brazil. The Associacao Brasileira das Empresas e Profissionais de Gramados Esportivos (ABGE) was established in 2011.

Another area that STMA has made progress internationally is in translating educational materials to languages other than English. McNeal says that language is still a barrier, but we are making slow and steady progress. Five resources are offered in Spanish, and STMA has its website "Welcome" page in seven languages. "We are very pleased to have a personal touch for our international visitors who come to our website. This hopefully tells them that we are an organization that truly wants to connect with them," says McNeal. Providing content to international publications is also underway. STMA is working with TGM Latin America to provide content in English for that online publication, which will then be translated to Spanish.

One future initiative involves STMA working with international "green" and "golf" organizations to encourage them to expand their conference education by adding a sports turf track. A certification program internationally is also desired. Although it is unlikely that the Certified Sports Field Manager (CSFM) program will undergo sweeping to address international sports field managers, other certification options are being explored. Also for the future is further outreach with ministers of sport and other international sports governing agencies. "We feel that if we can build a relationship with these international organizations, we will be able to help those who are maintaining sports fields. Having these agencies understand the resources needed, such as equipment, and how field use and other factors affect maintenance, helps to bring credibility to those who are on the front line," says McNeal.

STMA's public relations firm has also helped these efforts by leveraging international high-profile events. Most recently, STMA received quite a bit of coverage pre-World Cup on the pitch preparation and post-World Cup with articles that highlight why natural grass surfaces are preferred by soccer players.

"The International Committee members are making great efforts to promote the value of STMA to other areas of the world," says McNeal. The committee members include Tab Buckner (Canada), Murray Cook (US), Ken Curry (Canada), Paul Gillen (Canada), Simon Gumbrill, (UK), Roberto Gurgel (US), Marcela Munoz (Chile & UK), Massimillian del Viva (Italy), Don Scholl, CSFM (US), Paula Sliefert (US), Gerard Van't Klooster (Netherlands), Andy Yeaman (US), and Doron Zur (Israel). When these members travel they are equipped with STMA business cards and letters of introduction.

Although STMA has made progress with its international initiative, McNeal knows there is much left to do. "We've started the process and have learned a lot along the way," she says. "We'll continue to focus and adjust our strategies, but I never see this initiative as having a 'checkmark' of completion." ST

STMA'S 2014 FIELD OF THE YEAR AWARD WINNERS

Sports Turf Managers Association (STMA) – the professional association for 2,600 men and women who manage sports fields worldwide – today announces its 2014 "Field of the Year Award" winners.

The 2014 winners of STMA's Field of the Year Awards were announced late last year. Since 1992, STMA's Field of the Year Award is given to members who manage baseball, football, soccer, softball and other sporting grounds at the professional, collegiate or schools (K-12) and parks and recreation level. The 2014 winners:

Professional:

Soccer - Maryland SoccerPlex Stadium Field (Boyds, Md.): Ryan Bjorn, Sports Field Director

College and University:

- Baseball - Russ Chandler Stadium at Georgia Tech (Atlanta, Ga.): Jon DeWitt, CSFM, Sports Turf Manager; Chris May, Baseball Field Manager
- Football – "The Swamp" at Ben Hill Griffin Stadium - University of Florida (Gainesville, Fla.): Jason Smith, Turf Coordinator
- Softball - John Cropp Stadium at University of Kentucky (Lexington, Ky.): Eric Harshman, Sports Turf Assistant Manager
- Soccer - Georgia State Soccer Complex at Georgia State University (Atlanta, Ga.): Kyle Slaton, CSFM, Director of Sports Turf & Grounds

Schools and Parks

- Baseball - Don Dunker Field at Noblesville Schools (Noblesville, Ind.): Joshua Weigel, Superintendent of Grounds
- Football - Clover Memorial Stadium at Clover School District (Clover, S.C.): Will Rogers, Sports Turf Manager
- Softball - Waukegan Park District (Waukegan, Ill.): Noel Brusius, CSFM, Sports Turf Manager
- Soccer - North Area Athletic Complex Soccer Field at Jefferson County School District (Golden, Colo.): Sun Roesslein, Stadium Manager; Christi Clay, Stadium Manager
- Sporting Grounds - Championship Field at Pleasant View Sports Complex (Boulder, Colo.): Don McGhee, Head Maintenance Professional

"The Field of the Year Award is a testament to the personal and professional contributions by a select group of sports turf industry leaders," says Kim Heck, CEO of STMA. "The process of selecting winners each year becomes more difficult as the candidate pool grows and the industry continues to progress with innovative technologies, state-of-the-art equipment and best practices."

A panel of 11 judges independently scored entries based on playability, appearance of surfaces, utilization of innovative solutions, effective use of budget and implementation of a comprehensive agronomic program. Judges may not award a field in each category. Winning fields will be featured in a 2015 issue of this magazine.

Awards will be presented at the 26th STMA Conference & Exhibition in Denver January 13-16, 2015. Nearly 1,200 leaders in the sports turf industry will converge on the Colorado Convention Center for more than 75 hours of leading-edge educational seminars, exhibitor demonstrations, and networking opportunities. ST

STMA SOCIAL MEDIA HIGHLIGHT

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Schools in Cleveland suburbs sticking to natural grass. Full story: http://bit.ly/1rn0nTV . #SportsTurf
27 Sep 2014

CHAPTER SPOTLIGHT: CENTRAL FLORIDA CHAPTER #3

STMA will be highlighting accomplishments from select chapters in every issue of *SportsTurf*. If you have new developments or success stories in your chapter, please email Sales & Marketing Manager Shant Thomas at sthomas@stma.org. We look forward to highlighting your chapter!

From Chapter Secretary Mark Miller, CPRP & CA:

As the Central Florida Chapter #3 starts winding down for the year 2014, I wanted to update National on some important changes and strives we are making.

1. Our President Dale Croft has been diligently working with both the North and South chapters to help unify but still keep separate the Florida Chapter. To that end, we have created a new Florida Membership Form representing all three of the Florida Chapters

2. Dale has also accomplished a unified Florida Map that notes the individual Chapter areas.

3. Central Florida has been putting out a quality quarterly newsletter but in 2015 we are steering toward a small, state-wide magazine called "On The TURF" to benefit and encourage our members statewide, which will be a huge compliment to the national magazine

4. We have provided the opportunity to have shirts done through a vendor, provided membership certificates with other items, brochure and anticipated having a CFSTMA pin available for membership renewal for 2015.

5. We are pursuing a website and will continue to offer quality educational programs for our members (as with our annual meeting).

As our President notes ... the Key to our success is the Key to your (our members) success! ST

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: http://imstma.blogspot.com/

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

Iowa Sports Turf Managers Association: www.iowaturfgrass.org.

Kentucky Sports Turf Managers Association: www.kystma.org.

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

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

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

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

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

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

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

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

Northern California STMA: www.norcalstma.org.

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

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

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

Ozarks STMA: www.ozarksstma.org.

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

Southern California Chapter: www.socalstma.com.

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

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

Texas Sports Turf Managers Association: www.txstma.org

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

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

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H ❑ Other (please specify)_____

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C ❑ GOVERNMENT OFFICIAL — Government Commissioner, Agent, Other Government Official
D ❑ SPECIALIST — Architect, Designer, Consultant, Agronomist, Horticulturist, Certified Specialist
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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

4 Yearly operating expenditures (excluding salaries)

F ❑ Over $1 million C ❑ $50,001 - $100,000
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at work. For a few, the motivation is simply a paycheck. Working just for a paycheck is not a trait we desire in an employee since it's a given this person will at some point become convinced they're underpaid. When that happens, the next step is that employee's thinking, "I'm going to only do as much work as I think is equal to my paycheck." When you've exhausted all efforts to get an employee to buy in to the department vision and to accept their role in that vision—and you've met resistance with every attempt—it's time to start down the dreaded path of discipline.

Many of us work in union shops. I'm a proponent of unions, what they stand for, and how they are beneficial both to employees and the workplace. This environment has helped me become a better manager. I'm also aware of how a few employees can choose to take advantage of the structure. Playing strictly by the rules set by your employer and going through the process of disciplining any employee is stressful. You must be aware that you may be dragged down that road mainly because the employee is banking on the belief you'll choose to put up with poor performance rather than accept the stress of dealing with it. Be fair and supportive, be consistent but also know your job is to advocate for those on your team working hard to help the department's vision become reality. Your workplace team is watching how you respond to challenges from fellow workers. Disgruntled or underachieving employees are parasitic and will negatively affect your team's morale and performance.

I got into turf management somewhat because I enjoyed the solitude of the job. It's much easier dealing with turf than it is dealing with people! If you do not have strong people skills, facilities management might not be for you.

Lastly, trust your employees. Be transparent with them and learn to rely not only on their physical work but on their expertise and professionalism. To many people they cross paths with each day your staff may be the face of your department. Help staff in any way you can to be proud of the work they do and the role they play on your team. To steal a line from one of STMA's giants, remember: "Happy cows give good milk." ST

Q&A with Dr. Grady Miller

Professor, North Carolina State University

Questions? Send them to Grady Miller at North Carolina State University, Box 7620, Raleigh, NC 27695-7620, or email grady_miller@ncsu.edu
Or, send your question to David Minner at Iowa State University, 106 Horticulture Hall, Ames, IA 50011 or email dminner@iastate.edu.

TO FERTILIZE. OR NOT.

We have typically overseeded our bermudagrass sports fields but this year we have "painted" them green. So far we like this approach since we have not needed to mow or fertilize as much and the fields are holding up pretty well. My question is related to fertilization. In the past we fertilized the perennial ryegrass with light rates a couple of times in the fall and then a couple of times in the early spring. Do we need to fertilize the semi-dormant to dormant bermudagrass this fall?

Georgia

This is a very good question, one that has been popping up in meetings the past few years as turf colorant use (as a replacement for overseeding) has grown in the sports and golf turf markets. Before answering, let's first consider typical overseeding fertilization practices.

Fall overseeding usually involves some level of cultivation toward the end of the warm-season growth period. For some it may be scalping the bermudagrass. For others the preparation may include verticutting to remove soil thatch and reduce canopy density for good seed-to-soil contact. Many turf managers also may add core aerification toward the end of summer in anticipation of fall overseeding and more concentrated field use. These practices are stressful to the bermudagrass, so readily available nutrients should be available to provide nutrients to the plant for healthy regrowth.

Once the cool-season grass has been sown, irrigation is often applied to ensure even germination. A starter fertilizer may be distributed to supply readily available phosphorus and some additional nitrogen for more rapid shoot growth. If overdone, irrigation can leach nutrients down past the turfgrass roots. To speed up growth and enhance tillering of the cool-season grass, light applications of nitrogen fertilizer may be made through mid-fall. Depending on location and climate conditions, spoon feeding nutrients through warmer winter periods may continue until spring when the rates may be increased to promote an even thicker turf density.

Due to cool soil temperatures, there is less efficient plant uptake. Cool-season turfgrasses also accumulate nutrients at a greater concentration than the bermudagrass. Considering these two factors, the total nutrient needs of cool-season grasses growing under cooler conditions are much lower than what is normally applied to bermudagrass during its primary growing season. In addition, during the cooler months most of the applied nutrients would be absorbed by the more active cool-season grass roots rather than the less active bermudagrass roots.

So, what would happen to the nitrogen fertilizer applied during the cooler months if there was no overseed grass to absorb most of it? Well, if not utilized by soil microbes (later released for plant uptake) or absorbed into plants, then the nutrient could be leached and lost for plant use. So, amounts beyond what can be readily used would not be advised. This is why soluble nitrogen fertilizer rates during the cooler months are generally low (less than half a pound of nitrogen per 1000 square feet per application). An alternative management strategy may be to use slightly higher rates of slow- or controlled-release fertilizer products.

But cool-season grasses are not the only grasses that can take up nutrients in the fall. Semi-dormant bermudagrass can still take up available nutrients. But if it is taken up by the bermudagrass, will it cause winterkill? Research work conducted in Alabama, Arkansas, Mississippi, North Carolina, and Virginia over the past 20 years suggests that nitrogen fertilization does not predispose bermudagrass to winter injury as much as was previously thought. Three of those five locations included nitrogen fertilization through October. The one negative to fall fertilization was a potential increase in spring dead spot, but not increased winter injury.

Another noted benefit from fall fertilization was a longer green period in the fall. The green color translates into a plant that can continue photosynthesizing and the darker color helps absorb more radiant energy. This encourages re-greening after mild frost events and can aid in greater total carbohydrate production. This active growth translates into increased wear tolerance as well as the aesthetic benefits of extended green color.

The other surprise was that in addition to extending fall color, fall-fertilized bermudagrass typically translated to a quicker and greater amount of spring greenup. This was in the absence of any additional winter or early spring fertilization. So, fall fertilization also gave spring benefits.

There was a time when southern extension specialists did not recommend fertilizing bermudagrass after August. But most do not believe that is good advice anymore. The research and experiences of many turfgrass managers suggest that low rates of nitrogen in the fall will benefit the turf in fall and spring. In essence you were doing that when you fertilized the perennial ryegrass. I would suggest rates of about half what you once used on cool-season overseed. Fertilization after dormancy would not be suggested, nor would pre-greenup fertilization in the spring. But a little bit may go a long way. ST

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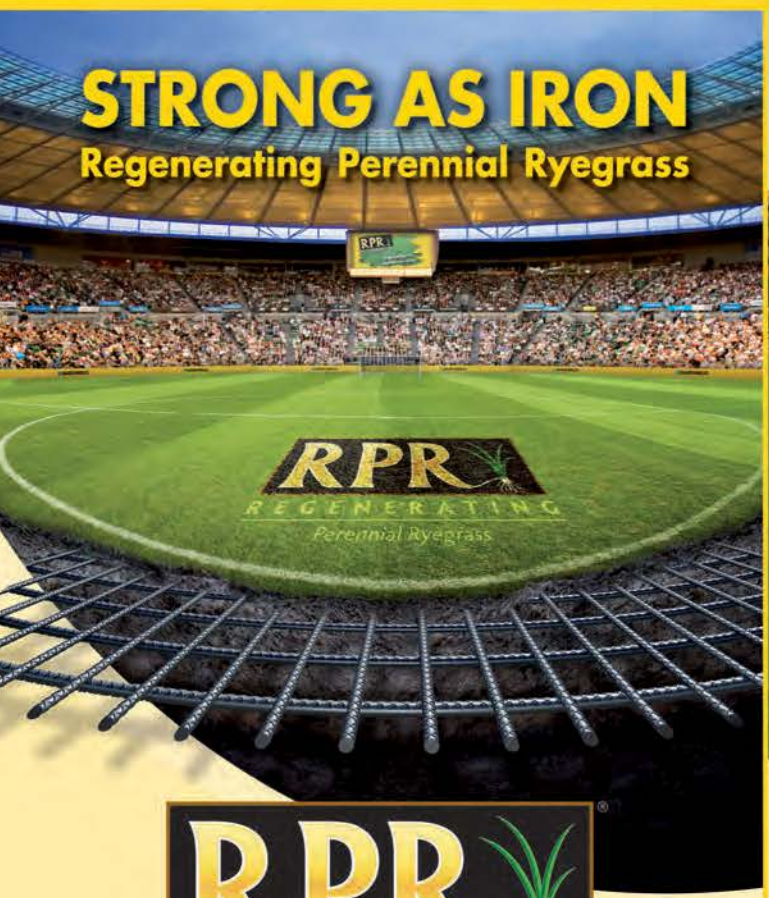

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