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August 2015

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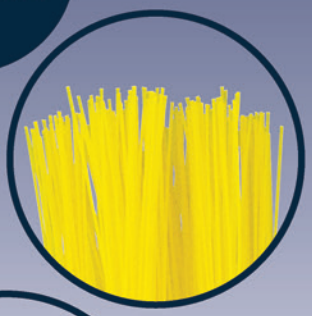

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STARTING LINEUP

August 2015 | Volume 31 | Number 8

FEATURES

DEPARTMENTS

On the cover:

See the results on page 8 from our asking turf managers: Do you incorporate hollow-tine, solid-tine, or both? When do you conduct these practices? What are the biggest benefits you observe in turf health with this practice? Are there any problems or challenges associated with these practices? Cover photo courtesy of Scott Stevens, CSFM, Sports Turf Manager, Elon University, Elon, NC.

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LAZY THOUGHTS FROM MID-SUMMER

Eric Schroder
Editorial Director
eschroder@specialtyim.com
717-805-4197

Things that cross a 55-year-old dad's mind before he naps on a breezy, shady back porch in summertime:

What exactly are the rules now for a catcher's blocking the plate? Can he block it if he has the ball? Can he block it until the runner begins his slide and then move? If he has the ball and is waiting for the runner, is that runner's only option to try and elude him and touch the plate via sliding or can he barrel into the catcher in hopes he'll drop the ball? Whatever it is, the rule should be posted in dugouts alongside the sign "No gum or seeds."

World Cup hero Carli Lloyd says that to be the best at anything you need to "empty the tank every day." No doubt that working hard day in and day out most often leads to success but, from my prone position, I wonder about the possibility of running out of gas. Imagine how much happier (and healthier) we would be if everyone took 1 day a week to fill up their tanks via a favorite activity or (gasp!) simply hangin' with the family. If you're never at "ease" then you might get a "dis-ease" brought on by stress. America, just chill!

The summer I turned 16 John Lennon and Muhammad Ali were really famous. This summer my oldest son turned 16 and Donald Trump and Caitlyn Jenner are really famous. Sheesh.

Speaking of famous, Taylor Swift is terrific! Sure hope she doesn't take a Bieber Boulevard or Lohan Lane exit ramp.

"Jaws" premiered that summer I turned 16 and its release is regarded as a watershed moment in the history of motion pictures as the first "summer blockbuster." Forty years later real sharks are attacking swimmers (or standers, as some attacks are in thigh-high water) off the Carolina coasts, a dozen this season by the July 4th weekend. Wonder if in 2055 genetically engineered dinosaurs will be taking over theme parks?

I cannot wait until there's technology sophisticated enough to know through GPS and eyeball recognition when you are driving while simultaneously looking at your phone, the program automatically shows on your screen an image of you bleeding and unconscious beside the road.

There are never slow news days any more. Social media and 24/7 television news channels can make anything "news." And then beat to death the topic of the day so you never want to hear about it again, which you most likely won't because tomorrow brings a new topic. Just once I would like to see TV news stick with an important story that has no violence or sex involved. Like for example our country's aging infrastructure—if only a bridge collapsed every day and there was cell phone videos of cars falling off them, every day! Then maybe the finger-pointing in government might turn into handshakes. But I must have fallen asleep; that's a dream. ST

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THERE'S NOTHING COOLER THAN NATURAL GRASS

Allen Johnson, CSFM.
johnsona@packers.com

August brings some of our nation's hottest temperatures. With that in mind, I thought it would be appropriate to write about the one thing that brings so much job satisfaction to us in the sports field management profession: growing natural grass.

If you are like me, the sight of newly emerging seedlings evokes a feeling of excitement. Through a combination of Mother Nature and your expert management decisions, eventually those young, fragile plants will form a dense natural playing surface. When maintained to your high standards and the final touches are applied, it will resemble everything you have put into it. It will be a reflection of you and your crew. When you've performed your job, and remember the struggles you've overcome, you'll feel the sense of satisfaction that many jobs in our society can't provide.

There are many careers that pay a higher salary, carry a higher social standing, and offer a climate-controlled office, but not many provide the sense of accomplishment that we in this profession receive from growing and creating the perfect playing surface on which athletes of all ages compete.

Many spectators of sports played on natural grass surfaces incorrectly view tufts of grass being torn away and coming loose as a negative aspect of these playing surfaces. What many fail to realize, however, is that the ability of a natural grass field to give and flex under the stress of the athletes is exactly what makes a good natural grass surface one of the safest to play on. Throughout my career I can recount the many times I've heard comments on television from the broadcast booth: "It looks like the field is tearing up." My first thought is always, "So what, that is what is supposed to happen." It presents another opportunity for us to educate on this issue. I often say, "Would you rather have the field give and tear a little or the athlete's knees break?" The ability of a natural grass field to give way to a certain point is what makes having a well cared for natural grass field one of the safest choices.

Another benefit of a natural grass playing surface is the effect is has on the micro-climate the athletes are competing in. Do you remember playing sports as a kid, wiping the sweat from your eyes, anxiously awaiting the coach to call everyone in for a water break? Athletic performance elevates our body heat. The harder we push ourselves, the more we heat up, but if we are performing our sport on a natural grass field, we will experience much cooler temperatures than if we were not. Who wouldn't want their child to have the best possible environment to perform in? Aren't sports about pushing ourselves to be the best that we can be?

For all of the job satisfaction it provides, for the safety it brings, and the positive climatic impact it has on the athletic experience, there's nothing cooler than natural grass. ST

AERATION: HOLLOW-TINE, SOLID-TINE, OR BOTH? WHEN AND WHERE?

PART 1

We recently asked turf manag- ers four questions about their aerification practices:

- Do you incorporate hollow-tine, solid-tine, or both?
- When do you conduct these practices?
- What are the biggest benefits you observe in turf health with these practices?
- Are there any problems or challenges associated with these practices?

We also asked aerator machine manufacturers two questions:

- For what turf conditions do you recommend using hollow tines and when for solid tines?
- How can sports turf managers avoid problems or challenges when aerating?

The response was so good that we were forced to divide it into two parts; the 2nd installment will appear in our September issue.

SCOTT MACVICAR,
University of Washington

We have 150,000 sq. ft. of natural, sand-based sports turf at the UW and another 130,000 sq. ft. of natural, native soil landscape turf. On the game fields (track, soccer and softball) we core aerify with 2" x 3" spacing 3 times per year and 2" x 4" spacing 3 times per year. We also solid tine these fields once each at 2" x 3" and 2" x 4". Core and solid tines are both 7" long by 7/8" diameter, producing a hole about 5" deep. These fields also get sliced with a 3-point hitch rolling slicer to a depth of about 5 inches approximately 3 times per year. We have also begun using the AIR2G2 on all of these fields and we air inject all of our fields about 3 times per year. We also spot aerify with a walk behind machine called a PLUG'R, which produces a 2" deep hole and is propelled by the tines going in at an angle and moving it forward, so the operator can hold the machine back to produce numerous holes in a small space. We use this around irrigation heads and along concrete or rubber track field edges. All of the above does not include the times that we will spot aerify certain areas of compaction, usually with the slicer or solid tines.

The benefits of this amount of aerification is overall plant health, relieving compaction and increased drainage because our biggest challenges that we have to deal with is the amount of use our fields get during that same 8.5 month window of time that we have to work on them. Most sports in college have spring and fall seasons; one is the regular season that you see on TV but the other one always includes practice and games that don't make that much difference to groundskeepers because we still have to have it set up optimally, whether it is a drizzly practice during the spring for a soccer game or hosting an NCAA tournament game on that field in November. The main challenge is scheduling our grounds practices around the teams wants for field use. Luckily we at the UW have a very understanding group of coaches that want our fields to be in great condition at tournament time so they have learned to listen to some of our suggestions with regards to how much use they put on those field earlier in the season, so that they still have something left toward the end.

All of our aerification happens from March 1 through November 15 because the plant is not repairing itself during those winter months here at 47 degrees latitude.

We also use the PLUG'R machine on our landscape turf areas about 3 times per year at a spacing of 3" x 6".

One of the aerification tricks I learned at a previous job (minimum crown baseball field) was to solid tine aerify about 3 passes (the width of the trap), in advance of the rain, along the back edge of the infield skin, right where the tarp will be dumped, to help that large mass of water to percolate faster and not flow back onto the infield skin.

BRUCE SUDDETH,
University of South Carolina Upstate

We use only hollow tines with various pieces of equipment: a Toro 687 3point hitch with ¾" hollow tines, a Deere AerCore 1500 with ½" tines, and an AerCore 800 with 3/8" tines. We also contract out some of our deep tine aerification and that is done with 13/16" tines. What we consider our solid tine type method is using a Ryan TracAire 3-point hitch unit with slicing tines and a SISIS MaxiSlit with slicing blades.

Beginning in early May we aerify any field not overseeded with perennial rye with the Toro 687 with ¾" tines.

One of the aerification tricks I learned at a previous job (minimum crown baseball field) was to solid tine aerify about 3 passes (the width of the trap), in advance of the rain...

Depending on when softball and baseball, which is overseeded, complete their schedules, it could be late May when we begin aerifying with the Toro 687 with ¾" tines.

In June and July we deep tine with either the JD AerCore 1500 with ½" tines or contract some deep tining with 13/16" tines.

The Deere 800 with 3/8" tines is used on our baseball infield, practice area, and Mini Verde golf green in late June, then again in late July while the turf is actively growing.

We don't do much deep tining after the end of July or first of August due to the teams coming back on campus for practice and games.

We do use our TracAire slicer and MaxiSlit a good bit. The TracAire is used on all fields beginning in May on a 2 to 3 week interval. We try to alternate in the MaxiSlit about once a month during the growing season of the hybrid bermuda.

The TracAire is also used on our baseball grass base paths to help with compaction during the season whether the bermuda is overseeded or not. It's not obtrusive and doesn't impact play.

Any cultural practice to help open up the soil for better gas exchange and relieve some compaction is a benefit. I don't think you can beat up hybrid bermuda enough with an aerifier. It's pretty obvious when you see the turf around each aerification hole greener than where not aerified. Coupled with frequent topdressing and correct nutrients and water management the bermuda responds to aerification well.

The only challenges with aerification, and this mainly pertains to our fields with installed drainage and sand channels, is that we like to remove the cores so it doesn't contaminate the sand channels as much. Being in the Upstate of South Carolina we have a heavy clay content. The other challenge is being able to perform the aerification during activities on the fields whether it is practice, games, camps, weather, etc. You have to be flexible and get it done when you can.

KEN TANNER, AerWay

For what turf conditions do you recommend using hollow tines and when for solid tines?

The #1 enemy of turfgrass is compaction and the only way to relieve it is with mechanical aerate. Period. This one soil condition is the root cause (no pun intended) of so many turfgrass challenges...

The style of tine really depends on what are you trying to accomplish with your turf maintenance: compaction relief, alter soil profile, rejuvenation, material removal, thatch control, standing water control, nutrient incorporation, etc. All of these may require different tine styles, different depths of penetration and repetition while being cognizant of the turf use requirements.

Any tines, whether core, round solid or slicer style, have their place but all are most effective if used during a period of plant growth because it allows the plant to recover faster from the mechanical intrusion. The three key variable factors to be aware of are the plant type, soil type and soil moisture content.

How can sports turf managers avoid problems or challenges when aerating?

The #1 enemy of turfgrass is compaction and the only way to relieve it is with mechanical aerate. Period. This one soil condition is the root cause (no pun intended) of so many turfgrass challenges so a sports turf manager needs to do whatever he can to relieve that problem and restore air /water percolation in the soil as often as necessary.

The biggest problems to avoid are: 1) aerating during hot, dry conditions. This can severely dry the soil allowing plant burn around the surface openings. Recommended only if irrigation is immediately available; 2) trying to aerate when the soil is too wet. This only compounds the compaction problem; 3) not varying the tine penetration depth. Continual operation at the same depth can actually contribute to hard pan (compaction layer); 4) forgetting to get back to the basics, e.g., physically looking at your soil profile and recording the cause and effect of the various procedures. Only then will you be able to decide the correct actions beneficial for your operation.

Taking and recording compaction readings regularly in different areas will significantly improve your knowledge of what is happening sub-surface. As an added bonus those records will provide legacy proof of your compaction relief protocol for insurance purposes should they be necessary or eventually become mandatory.

RANDY M. HAFFLING,
Moravian College (PA)

We hollow tine (4") all of our fields (baseball, field hockey, soccer/LAX, softball and a practice field) immediately following our fall sports season and again immediately following our spring sports season. We use deep (10") soiltines on our fields in early August before our fall sports pre-seasons start.

We couldn't ask for better turf cover. Our aeration program has contributed toward thickening the turf and when we take samples it is not uncommon to find the roots extending 8" or more into the soil. Our soccer field held water to the point that it was almost unplayable 6 years ago, now for approximately 4 years because of aerating the field drains and is playable after 1 1/2" of rain.

The challenges for us have been scheduling the aerations. We used to deep solid-tine the baseball and softball fields in the spring, before the start of their seasons. However the coaches didn't like that because they felt that it disturbed to surface of the field too much even though I always followed up with rolling the fields. The only other thing we face is making sure that the cores that we pull with the hallow-tine aerator are broken up enough as to not cause damage to turf because soil is left on top of the grass.

WILL WOLVERTON,
Wiedenmann North America

With the use of coring tines, soil profiles can be exchanged deep into the surface. Also, coring tines offer some elimination of thatch and a reduction in soil compaction. Solid tines do a good job of fracturing the soil, especially when adjusting the angle of entry, without the mess of cleaning up the cores. Another valuable tool is a variety of needle tines and hole spacing with multi-tine holders. Superintendents and managers are partial to these tines because needle tines offer minimal surface disruption and minimal effects on ball roll. Needle

tines open the surface, which can become sealed by irrigation practices, while providing all the benefits associated with decompacting the soil.

Preparation is the key to a successful aerification process. Below are some items to consider:

- Should the surface be heavily irrigated prior to aerification to ensure maximum penetration?
- Do I have enough tines to finish the job?
- Do I need any extra springs, belts, etc.?
- Have I checked the condition of the aerifier and tractor for proper workmanship?
- Do my operators know how to properly operate the aerifier?
- What will be the weather conditions? Will I have to alter my aerification practices depending on the weather?
- Do I have a backup plan if something goes awry?

Unlike cultural practices that occur daily or weekly, aerification is usually only performed 2 to 3 times a year. Because of this, the condition of the machinery should be inspected far enough in advance to resolve any problems well before the aerification process begins. Re-training of operators should also be part of this process.

PAUL HOLLIS, Redexim North America

We recommend hollow tines for several conditions which include soil exchange, thatch control, and helping new sod get established. The disadvantage of a coding time is a longer heal time, which increases the opportunity for poa annua to get established. Soils times are preferable for decompaction, increasing water infiltration and gas exchange, and giving roots room to grow.

In the end all aeration is good.

Consider the application and decide what is trying to be achieved. Choose the right machine and tine selection for the job. Do the homework—is the playing field irrigated? What are the soil conditions? What is the root depth? How quickly does the field need to be playable? How frequently has the field been aerated? Don't expect too much from the machine and make sure that the machine is setup properly and that operator is properly trained.

ALLISON MOYER, Collegiate School (VA)

We are very aggressive on aeration at Collegiate and we hollow tine. This year we sliced our fields for one of our aerations, using a piece of equipment called a ShockWave. We were able to get down 15"!

We like to aerify at least 1x/month in the growing seasons (May, June, July, August, Sept). If we can fit more in, we will try.

Aeration improves our fields' health. Overall, it helps reduce compaction from all the use and gets air to the roots. It also helps keep our fields "soft."

Scheduling and clean up are the biggest challenges we face with aeration.

RICHARD CAMPEY, Campey Imants

Hollow tines were originally designed for soil exchange; removing a tube of soil around ½" diameter and up to 3 to 4" deep. The aperture created is filled with new rootzone. Hence we have a much disrupted playing surface, which leads to unhappy players, but we have aerated only 5 to 9% of the surface area.

Over the past 15 years we have seen micro hollow tines being used on fine turf; these cause less disruption, and they soon heal up. They seem to be used extensively for organic matter removal, only aerating to around 2" deep at close canter's (up to 1" x 1").

Solid tines were originally developed for summer aeration, initially ½" diameter and again 3" to 4" deep. They were noted for causing side wall compaction in certain soils, since they push the rootzone sideways. However, they do create holes on the surface that allow water and nutrients to penetrate the root systems of the grass plant.

Again over the past 10 years we have seen an increase in micro solid tining for the summer aeration on most sport surfaces.

Over the past 30 years deep tining gained popularity with machines developed with solid tines able to penetrate up to 16" deep and 1" diameter, and were able to relieve compaction provided the machine was set with maximum heave. Literally we seem to see these machines set to go in and out vertically, like banging an iron bar into the ground.

There are other forms of aeration/techniques that are common practice over in the UK and Europe, like the ShockWave and RotoKnife from Dutch manufacturer Imants BV, which are rotor linear decompactors/aerators. These have proven to be very simple robust machines that leave minimum disturbance. ST

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Results & Benefits

Oxgen is the most important element of all to turfgrass. Yet, traffic and intensive use on golf courses and sports fields creates compacted soil and often makes oxygen the most deficient element. A reference guide published by the University of Kentucky, "Chemical Control of Turfgrass Diseases 2015" highlights the importance of oxygen to turf.

Oxygen is the catalyst for all beneficial plant and soil.

"Systems that force air movement through the root zone of the green can improve turf health during summer by removing CO_2 and excess water from the root zone, thereby increasing oxygen content as well as possibly lowering soil temperatures."

Traditional aeration methods cause a significant amount of disruption to the playing surface while impacting just a small percentage of the soil profile. The Air2G2 causes very little surface disruption - about 7,000 holes per acre - while loosening the soil 4 to 5 feet horizontally. The Air2G2 is like having a portable sub-air unit at a fraction of the cost!

UNIVERSITY TEST RESULTS

Tests conducted at the University of Tennessee during the Summer of 2014 proved how the Air2G2 improves soil conditions.

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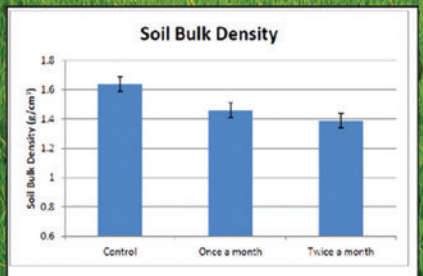
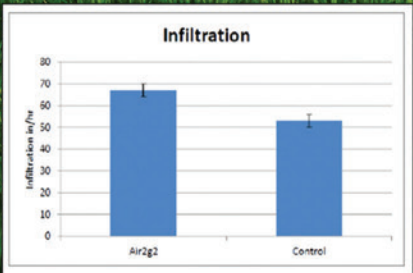
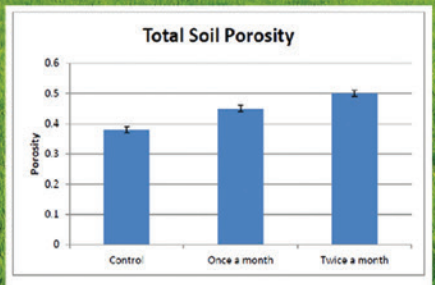


Conclusion: REDUCES SOIL COMPACTION



Conclusion: IMPROVES DRAINAGE



Conclusion: INCREASES AIR PORES

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SportsTurf 2015 STMA Innovative Award WINNER

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STUDY: FIELD BENCHMARKING AND PERMITTING HOURS

BY **PAM CHARBONNEAU AND EMILY HARTWIG**

This project was initiated to attempt to verify the guideline for the permitting hours of five categories of athletic fields (**Table 1**). The information in this table was developed with input from municipal sports turf managers based on their experiences from their respective municipalities. Field performance characteristics (percent cover and surface hardness) data were to be collected three times throughout the field season in 2013 and 2014. Information on permitted hours of play and maintenance practices would also be obtained from all municipalities for all of the fields at the end of each field season and the field performance would be correlated with the permitted hours of play.

In addition, at the end of each field season a group of experts would rate the overall conditions of each of the fields and these ratings would also be correlated with the permitted use to determine what the permitted use should be to maintain a soccer field with an acceptable or passable quality rating. This project could provide municipalities and user groups with information on the impact of the hours of permitted play on sports field conditions and enable them to make better decisions to optimize permitted hours without compromising field performance. The aim of this project was also to supply information to modify the guidelines of the permitting use of the different field categories if needed.

Sports field managers in three municipalities were contacted in May 2013 and meetings were held to discuss possible fields for use in this project. Soil samples were taken from six to eight fields in each municipality and soil texture was determined. Samples were taken from the sidelines as these areas were less likely to have been modified by topdressing compared to the goal mouths or centre circles. In addition, inventories of irrigation, sub-surface drainage and lights were also taken to categorize each of the fields.

This information was combined to accurately categorize each of the fields and then choose fields in the category ranges of 1-5. Once this inventory was completed, it was clear that the three participating municipalities only had category 3-5 fields. Municipalities that participated in this project classified fields according to three classes – Class A, Class B and Class C. This system of classification seems to have more to do with overall facilities at the fields such as lighting, washrooms, fencing, etc. than the field itself, the rootzone and sub-surface drainage. The scope of the project was modified to focus on field categories 3-5 soccer and multi-use fields. Within each of the three municipalities, the goal then was to obtain two fields of each of the three categories. In total, twelve fields from three municipalities were included in this project.

During the initial visit, 4x4 m plots were flagged in six areas of the soccer fields, two each in the goal mouths, centre circle and side lines. At each visit percent species cover (individual turf species, individual weeds species and bare) was measured using four randomized point quadrant drops. All fields were visited three times in each season. In 2013, the field visits did not begin until mid-June and early August. This was because of the time it took to find cooperating municipalities, take soil samples and have them analyzed. Site visits in 2014 began in late May and better reflect the field performance in early, mid and late season.

Sports turf managers in each municipality were asked to supply information on the following for each of the fields in the project: fertility (total N); cultivation frequency; topdressing frequency; and overseeding (frequency and species). Permitting departments in each municipality were asked to supply information on the total permitted hours for each field for the season as part of this project.

Table 1. A summary of the design requirements for the five field categories*

Design Requirements	Category 1	Category 2	Category 3	Category 4	Category 5
Soil (% silt plus clay)	<8.0	<25	25-35	36-45	All soils
Sub-surface drainage system	Yes	Yes	Yes	Yes	No
Irrigation	Yes	Yes	Optional	Optional	No
Lights	Yes	Yes	Optional	Optional	No

***From Sheard, 2012.**

At the end of each season experts (four in 2013 and three in 2014) visited all of the fields and rated them using a scale of 1-9 where 1 is bare or dead and 9 is the equivalent to the quality of turf at a sod farm. A score of 6 and higher was considered a passing score and anything below 6 was a failing score. Goal mouths and the centre circle were rated separately and then the entire field was rated for uniformity and density. The uniformity rating was based on the amount of weedy grasses (mostly annual bluegrass) and broadleaf weeds in the field, with a lower score given to fields that had high weed infestation. The density rating was based on the thickness of the turf stand with a lower score given to fields with bare areas. The ratings for the goal mouths, centre circle, uniformity and density were averaged to give an overall score. It should be mentioned that the rating date for Municipality C in 2013 and 2014 occurred the week following a weekend long soccer tournament and the ratings reflect the heavy field use the previous weekend and do not necessarily reflect the conditions of the fields earlier in the season.

Percent cover was broken down by % broadleaf weeds (BLW), % Kentucky bluegrass (KB), % perennial ryegrass (PR), % bare and % annual bluegrass (AB). Not surprising, the percent bare in the goal mouths increased over the season and was generally highest on the fields with the highest use. **Figure 4** shows goal mouths of a category 3 field with moderate permitted hours (442) and **Figure 5** shows a category 5 field with high permitted hours (1349). The exception was Municipality B, Field 2 which was a multi-use field with rugby and football during most of the summer. The wear patterns caused by these sports are different from the wear patterns caused by soccer. Municipality A had the highest number of booked hours and also had the highest percent bare in goal mouths with the two fields with the highest use in this study (1136 hours and 1349 hours) with 91.5 and 98% bare in the goal mouths by the end of the season. The soccer field in Municipality B with the highest use (B4) had 95% bare ground in the goal mouths by the end of the season. Conditions in the goal mouths were much better for Municipality C, but the hours of use were also one half to one third of Municipality A.

As mentioned, Municipality A, Field 2 was sodded in the middle of the summer so the goal mouth at the end of the season only had 40% bare and the hours of use were down because of the one month field closure. Field use for Municipality A, Field 1 was up, probably because this field was in the same complex as Field 2 and games were probably increased on that field to compensate for the closure of Field 2. Even though the use hours were up for Field 1 the percent

▲ **Figure 4.** Goal mouth of category 3 field: Top, July 8, 2013; Middle, Aug. 8, 2013; Bottom, Sept. 12, 2013..

▲ **Figure 5.** Goal mouth of Category 5 field. Top, June 18; Middle, July 23; Bottom, Aug. 14.

bare in the goal mouth was substantially better than the previous season. Municipality A, Field 4 had the most hours of use in 2014 again and had 100% bare ground by the end of the season.

Municipality B, Field 4 performed similarly from 2013 to 2014 and had 758.5 hours and 699 hours of use and 95% and 88.5% bare ground in the goal mouths. For the amount of use, Municipality B, Field 5 (500 hours and 42.5% bare) maintained turfgrass cover well. There were two fields with low numbers of booked hours, Field 1 and Field 6, which had the lowest percent bare (30 and 40.5%) at the end of the season.

Municipality C fields performed similarly in 2013 and 2014. Field 1 had more games but less bare in 2014. There was an increase in PR during the season suggesting that they had a successful overseeding program for their goal mouths on this field.

Data from the centre circle represents a medium wear area on the soccer fields. Municipality A has had success with their perennial ryegrass overseeding program as indicated by the increase in % PR in the centre circles of all of their fields from the beginning of the season to the end of the season in 2013. As indicated earlier, in 2014 Field 2 centre circle was sodded and the field was closed for one month. The PR overseeding program was less successful in 2014 in Municipality A. Municipality B; Field 4 also had a successful overseeding program, increasing the PR in the centre circle from 43.5 to 60.5 % over the season with 699 booked hours.

Municipality C had a successful PR overseeding program for Fields 1 and 2, but had less success in 2013 than 2014.

Due to the different systems of field classifications many municipality Class A fields are actually Category 5 fields. The amount of play that is scheduled on these fields in particular is far above what should be scheduled for that category of field.

Overall, there were very few weeds in most of the fields that were part of this project in spite of the Cosmetic Pesticides Ban. Most of the weeds were in the lower wear areas and by far clover was the most prominent weed. In a few of

Table 2. Recommendations for modification of permitted hours for Category 3-5 soccer fields

Category	Booked hours of fields with a passing score	Avg. booked hours	Recommendation of permitted hours
3	442 570 570	527	450-600
4	500	500	450
5	470 198 180 147	230	200-450

the goal mouths, those with heavy use, there was invasion of prostrate knotweed. In general, Municipality C had the most broadleaf weeds.

There were high percentages of AB in many fields indicating that those fields received too much irrigation. At many of the site visits there was standing water on some of the fields. It would be prudent to perform irrigation audits on those fields to improve the overall quality of the turfgrass.

Sodding of goal mouths with Kentucky bluegrass sod was common at the end of the playing season on heavily worn goal mouths. By the mid-season visit and especially by the end of the playing season, most of the Kentucky bluegrass sod was worn leaving the majority of the goal mouth areas bare. This is clearly a band-aid solution that only provides turfgrass cover for a short period into the playing season.

Based on this two year project, it is recommended that the guidelines for permitting hours of the three categories of athletic fields be modified. It is also more realistic to have a range of hours than one number.

Category 3, 4 and 5 fields that had passing scores in 2013 and 2014 with their respective hours of permitted use are shown in **Table 2** with the exception of Field A2 which was sodded mid-season. Based on this, it is suggested that the permitted hours be modified as in **Table 2** to 450 – 600 hours for category 3 fields. For category 4 fields, there is only one data point so there is not sufficient information on which to change this category and it should remain at 450 until there is more information available. Category 5 fields are the poorest quality fields and play should be limited to 200-450 hours per season to provide fields that have a passing standard of quality.

We would like to thank Sports Turf Canada and OMAFRA for the opportunity to carry out this project. I learned an enormous amount and I hope the information is helpful for municipal sports turfmanagers. I would also like to thank our "experts": Ken Pavely, Lawn Life; Ben Tymchyshyn, MMM Group; Paul Turner, G.C. Duke Equipment; Bob Kennedy, Niagara College; David Smith, DSC Agronomics; and Gord Dol, Dol Turf Restoration. ST

Pam Charbonneau is retired from the Ontario Ministry of Agriculture Food & Rural Affairs; Emily Hartwig was an OMAFRA Summer Experience student. This article reprinted with permission from Sports Turf Manager, *Vol 28, No 1, Spring 2015. Thanks to Lee Huether and Sports Turf Canada.*

MASTERING THE FIELD TURNAROUND

Editor's note: *Jimmy Fox and Jeff Nettleton are co-owners of Evergreen Turf, Inc., Chandler, AZ. Fox is a member of the Sports Turf Managers Association.*

BY **JIMMY FOX**

Super Bowl Sunday, February 1, 2015 put the eyes of the world on the football field of the University of Phoenix in Glendale, AZ, again. Super Bowl XLIX, 2015, was a follow up to Super Bowl XLII played at the same site in 2008. Evergreen Turf, Inc., Chandler, AZ, played a key role in the preparation of both events, having become the masters of turnaround in sodding that field.

The story starts before the stadium opened in 2006. The entire movable field system was a new concept and quite a feat of engineering. Evergreen Turf collaborated on the development of the original turf technology still in use today. The soil profile is USGA spec sand combined with StaLok synthetic fibers that help the grass roots bind tightly together. The irrigation system uses Hunter I-40s and I-25s.

The base turf is Tifway 419 bermudagrass known for its resilience to wear and tear as well as fluctuations in temperature. We overseed it with grasses selected through our own seed trials: Paragon and Pangea perennial ryegrasses from Turf Merchants, Inc. and Jump Start bluegrass from Pure-Seed Testing, Inc. We chose those varieties for their good wear tolerance, fine texture and dark color. We overseed at the rate of 100 pounds of bluegrass to 600 pounds of perennial rye per acre. That density ratio of the bluegrass to the rye improves the footing a bit for the players. The typical height of cut is one-half inch.

▲ **Reverse rolling** and removing a perfectly good Fiesta Bowl field, with only two games played on it.

The relationship between Evergreen Turf and the Arizona Cardinals, started during the field design and construction, has continued strong over the years as well. Few sod growers have the opportunity to work with a professional sports team. We know that we're blessed, because for us, it's a true partnership. We now make the decisions together on how to maintain the stadium field and the field we grow specifically for the Cardinals on the sod farm—an exact match of same turfgrasses grown on the same USGA spec sand with the StaLok fibers mixed in at the same ratio.

The stadium field sod starts its work in August, when the Cardinals' training camp begins. In 2014, that consisted of

18 practices and two preseason home games by August 24. The Cardinals are dedicated to a field that not only plays well but looks good, so they may resod before other teams do. When we do resod, we go from sideline to sideline and goal line to goal line, to avoid the unsightly look of a sod job between the hash marks, and to insure consistent footing across the field. It takes between 50,000 to 60,000 square feet of sod.

New sod is always scheduled to be installed on the field in December shortly after the state's two high school playoff games. The pro players warm up at about 75%. The high school players are pumped up and thrilled to be on the field. They warm up and play at 100% plus and put almost double the number of players on the field as the pros. The turf gets trampled and pretty worn between the hashes. The Fiesta Bowl takes place in late December. The contract with them stipulates that only one pro game can be played on the newly resodded field before the Fiesta Bowl game.

When a stadium hosts the Super Bowl, the NFL takes over. They take over operations of the stadium facilities. And they take over the field. Ed Mangan, NFL field director, runs the field-related operations from the point of take over through the post-Super Bowl celebration. At his right hand is the legendary George Toma, who has provided his expertise on field preparation for every Super Bowl game. They bring in their own crew of sports field managers from across the US and around the world. Andy Levy, turf manager for the Arizona Cardinals, and his top notch crew are on hand to assist in any capacity they can, but until after the final Super Bowl event, they do not make the field decisions.

It's the NFL's facility, the NFL's field, the NFL's decisions, the NFL's responsibility, and the NFL's liability should anything go wrong. While it's tough for those involved with the facility and field full-time to observe, it's a fact of life for every Super Bowl host.

The Fiesta Bowl field must be removed to make way for the Super Bowl field, with the timing of the removal based on how well the Cardinals did regarding the playoffs. Had they continued playing after the Fiesta Bowl, we'd have resodded the end zones for that game or games. Unfortunately, the Cardinals didn't make the playoffs this year, so the NFL got the field 2 weeks earlier than originally anticipated.

That meant we needed to find a home for the post-Fiesta Bowl field on fairly short notice. Typically, a useable field that will be removed goes to a local high school that can qualify to take it. They should have a field that needs renovation with at least a little bit of money budgeted to do that. Buckeye Union High School, Buckeye, AZ fit the criteria. The Cardinals and school district covered most of the costs and we kicked in some, too.

Their field, like most of those selected, had worn out turf and fairly-rutted, poor soil. Our crews, along with a local contractor, went in and removed about 1.5 to 1.75 inches of the existing soil to accommodate the thick-cut sod and prepared the soil surface. That's usually a couple days of prep work.

After the Fiesta Bowl, it takes a day for the stadium staff to take down the south end zone bleachers and then roll the field outside. The day after that, we reverse rolled the sod, took it to the high school and installed it there. That process took 2 days for the rollup and 2 days for the installation.

At that point, the NFL took over and brought in the sod from the same Foley, AL source they've used for the past several Super Bowls.

It's tough to swallow that after being the top-rated field in the NFL for 7 years, the NFL didn't select our sod for the Super Bowl. Yet, we realize there's a tremendous amount of pressure on that game and there have been field failures in the past. There is a certain degree of comfort in working with what you know.

Bringing in the two top teams and coordinating everything for the championship game is complex enough. But they also must coordinate all the media's pre-game hype, the pre-game show and half time. The half time show takes almost as much precision as the game. They're moving in thousands of pounds of stage that takes up a good portion of the field. They have people running across the field to connect the electricity, sound systems and such. Then nearly 3,000 people move out on the field to perform. Just minutes later, all the people and staging move off again.

▲ **Laser leveling** took place right on schedule following an overnight rototilling of the field.

If the grass or subsurface is not strong enough, the field will rut. That's the last thing anyone wants when those 320-pound lineman and super swift pass receivers get back into the game.

The Super Bowl is the biggest on-field sports event of the year, watched on television around the world. It's not surprising the NFL feels the need to be in control. And they once again selected Evergreen Turf to handle the sod installation.

For the Super Bowl, the entire tray of turf is replaced, 93,000 square feet. While some of our crews installed the high school field, other crews brought in a KORO FieldTopMaker machine and picked up the remainder of the grass around the perimeter of the field that we hadn't removed. Then we tilled the field, so it would be ready for laser leveling the next morning.

The Super Bowl sod showed up one-half day early. We started working on installation in the south side end zone Thursday night and finished the installation on Friday and Saturday.

Resodding the entire tray brings some unique challenges. We have very limited access on how to lay out the sod. We must be extremely careful not to create ruts or put traffic on it, so we need to be strategic in how we lay out the plywood. There's also the issue of elevation as we work around the edges of the tray. There's a 39-inch drop off to the concrete with only one entry ramp for the entire field. Laying the last four lines can take 4 or 5 hours. It took approximately a week, from the start of the Fiesta Bowl sod removal to the wrap up of the Pro Bowl/Super Bowl sod installation.

Our crews are always seeking input from other sod producers, sports field managers and players, seeking ways to do things better. It's a pleasure to be around people who push you and share your drive for continual improvement. We've fine-tuned our installation processes, incorporating what we've learned from those interactions, working with the Cardinals, doing a bunch of bowl games, and the 2008 Super Bowl. Our seams are the tightest. We've never had a failure or seam pop in 7 years. That's one of the reasons that the NFL chose to use us for the Super Bowl field; we did bring that expertise to the table. The second go round was far better and much easier than the first one.

We take a lot of pride in the fact, that when the resodding is completed, most people don't realize that it's been done. Still, we don't relax until after the first quarter, when there's been no slip, no problem. The best compliment we can get is when nobody says anything about the field.

The NFL brought in 100,000 square feet of new grass, in expectation of the need to resod at least the end zones and perhaps other sections following the Pro Bowl. We had three extra truckloads of sod. We had it trucked to our farm and laid it out on plastic, where we maintained it for the next week.

The Pro Bowl field rolled into the stadium on Friday. It rolled back out on Monday morning. That's the same timing generally used for a Sunday afternoon Cardinal's game.

Field crews like to cover all the variables, making sure the field maintains even color and the lines pop for pre-game festivities. Paint is cheap insurance. If it's used for Cardinal's games with our sod on the field, a typical rate would be about 7.5 gallons of paint. The NFL field crew put 112 gallons of paint on the field for the Pro Bowl.

We had installed the sod so we could take up the end zones after the Pro Bowl. We reverse rolled the end zones and replaced them with the sod we'd brought back from our farm. By afternoon, the NFL grounds crew was rolling it and prepping it for the Super Bowl.

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▲ **The Pro Bowl pre-game show** puts an incredible amount of traffic on and off the field, to be repeated plus stages and props at half time.

On Wednesday, the Super Bowl field rolled into the stadium where it would stay throughout the remainder of the Super Bowl festivities. By the end of the game, it had been indoors for 7 days out of the 10-day span.

The field goes into shock each time it's rolled in or out of the stadium, with temperatures dropping from more than 105 degrees in full sunlight to 65 degrees in the shade. It grows slower indoors, just as it does during the winter time. It takes 3 or 4 days for the turf to start growing again once it's rolled back into the heat.

Once all the Super Bowl festivities are wrapped, the NFL facility and field crews pack up their things and go home. The Cardinal's organization takes back the stadium and Andy Levy and his crew take back the field.

One more event was held on that field 10 days after the Super Bowl. That gave us a little more time to select a high school, which this year was Tolleson Union High School, Tolleson, AZ. It also allowed a little more time to prepare their field to receive it. We were also working with more sod, nearly 100,000 square feet of it, to reverse roll, transport and install.

The Super Bowl sod had been grown on plastic, so it was fairly root-bound. It creates a very dense and stable surface that is great for that game. But it's not so good long term, especially if the field has a USGA sand profile. It will slow the percolation rate and slow up the system over time. So we'll follow up with the high school crew, making sure they do enough aerification during the first year to break up the rootzone to keep the field strong and performing well in the years to follow. It's a point of pride for a high school to have their teams play on a former Super Bowl field.

After the sod removal, we tilled the Cardinal's field, laser leveled it and brought in the sod we'd been growing just for them, getting everything ready for next season.

While all the Super Bowl work was taking place, we had a bit to do for another high profile event. We also custom-grow the sod used for repairs by TPC Scottsdale, the golf course that hosted the 2015 Waste Management Phoenix Open January 29 through February 1. It's the highest attended sporting event in the world, with over 600,000 people on-site during that week and up to 160,000 people at the course on the Saturday alone. It's televised, too.

Putting that all into perspective, with a Super Bowl, Pro Bowl, and the Phoenix Open in the same week, it's been a very good showcase for all natural turfgrass. It could even be called super. ST

Thanks to Turfgrass Producers International and its publication, Turf News, *for permission to reprint this article.*

Crews are replacing the end zone with fresh sod for the Super Bowl under the supervision of George Toma (in the white hat).

John Mascaro's Photo Quiz

John Mascaro is President of Turf-Tec International

Can you identify this sports turf problem?

Problem: Dark green square surrounded by lighter green turf
Turfgrass area: Football practice fields
Location: Lexington, Kentucky
Grass Variety: Patriot Bermudagrass and Tifway 419

Answer to John Mascaro's Photo Quiz on Page 31

Background illustration courtesy of istockphoto.com

WHITE GRUB CONTROL ON SPORTS TURF

BY **DANNY KLINE**

White grubs are the larval stage of many common beetles. These grubs feed on the turfgrass roots, destroying connective tissue and killing the grass plants themselves. Most white grub damage appears in the fall of the year. The grubs causing this damage hatch from their eggs in early to mid- July and begin to feed on the turf roots almost immediately.

Damage to the roots of the turf will cause large areas of turf to become unstable. With no roots connecting the turf to the soil, these areas of turf slide and move around like carpet that is not connected to the floor. Injuries to players can occur in this situation. Imagine a big linebacker running full speed, then suddenly planting his feet for a quick stop to change direction, only to have the turf come out from under him. Ankles can be turned, and knees can be injured. Also, birds, skunks and even raccoons will dig up the turf, looking for grubs to eat and causing further damage.

One of the biggest challenges the athletic turf manager faces in dealing with

Northern Masked chafer larvae

The *easiest* and *surest* way to take care of your grub problem is by **using preventive controls**.

Typical damage from skunks digging for white grubs.

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white grubs are the lights found around athletic fields. Most of the adult beetles are night flyers that are strongly attracted to lights. Of all of the species of white grubs that we deal with in turf, only two of the adults are active during the day: Japanese beetle and green June beetle. All of the other species are active at night and are attracted to lights. Northern masked chafer, Southern masked chafer, European chafer, oriental beetle, Asiatic garden beetle, black turfgrass atenius and May June beetle are all attracted to the lights, and they will then find the well-maintained turf below, where they will then lay their eggs.

Using a black light trap, you can easily observe the populations of these night-flying adults as they appear in mid- to late June. You can then watch their numbers begin to climb and, eventually, peak. When peak populations are reached, you know that the most adults are out, mating and laying eggs.

The labels of preventive grub controls recommend that you apply them prior to egg hatch. So, when these adults peak in your light traps, this is a good indicator that they are laying eggs, and now is the perfect time to apply, ensuring that you are making your application prior to egg hatch.

You can also catch the day-flying Japanese beetles. For trapping Japanese beetles, you use a pheromone trap. These traps use two different baits: a floral lure for attracting females and a sex pheromone lure for attracting males. These traps attract a lot of adult beetles each day, and you can destroy these adults, which can help reduce your grub populations. But you really want to use these traps to watch the numbers peak.

Japanese beetle adult.

Green June beetles are much larger than their Japanese beetle cousins. You can easily spot these erratic day flyers. You find them out and about on warm, sunny late June through early July days. The larval stage of this species causes damage not so much from feeding but from tunneling. The tunnels allow air into the turf roots, drying them out and causing damage. The larvae also leave large mounds of soil when they dig their way to the surface. These casts could cause players to trip and could cause damage to mowing equipment. All of these larvae or grubs have a series of spines, hairs and open spaces on their posterior ends. These raster patterns allow you to identify one species from another when they are in the larval stage. For example, a Japanese beetle has a V-shaped raster pattern, while a northern masked chafer has a random raster pattern. These grubs go through three molts or instars. You can determine what instar the grub happens to be in by measuring the width of its head capsule. These clues become important when making control decisions.

The easiest and surest way to take care of your grub problem is by using preventive controls. Preventive controls include the neonicotinoids, like Merit, Arena and Meridian, as well as anthranillic diamides, such as Acelepryn, and insect growth regulators, like Mach 2. Neonicotinoids and anthranillic diamides are systemic products. The plant takes up these products, so that any insect that feeds on the plant will also ingest the product. These products need to be irrigated in. Please follow the label recommendations when deciding on how much irrigation water to put on after an application. These products also have long residuals and, when applied at the proper timing, will give you good control from mid- summer through fall, when the remaining white grubs begin to dig down into the soil to survive winter.

The insect growth regulator Mach 2 can also be applied prior to egg hatch. Mach 2 mimics the hormone ecdysone, which causes an insect to molt. Mach 2 causes the insect to molt continuously until it dies of exhaustion.

All of these products will give control well into the 90% range. Mach 2 can be put down somewhat later, up until grubs reach 2nd instar size. And Acelepryn can be put down from early April till early September. Since black turfgrass atenius grubs appear in April, you would need to treat much earlier for this grub than for the other species.

If you have a breakout in late summer or early fall, and you need to apply a curative or rescue treatment, you can use Dylox or Sevin. These can be spot sprayed to stop the damage and allow the turf to begin to heal. Please refer to the label before applying any product.

By paying attention to the emergence of the adult beetles during the summer, and using that knowledge to time your preventive applications, you can effectively control white grub populations in your athletic turf. ST

Danny Kline is a research technologist in turfgrass entomology at Penn State. This article was originally published in Pennsylvania Turfgrass, *the publication of the Pennsylvania Turfgrass Council, www.paturf.org.*

NOTES FROM WEBINAR ON DROUGHT-TOLERANT TURFGRASS

Editor's note: *Thanks to Turfgrass Producers International and its publication,* Turf News*, for permission to reprint this article.*

The Alliance for Water Efficiency (AWE) is a non-profit organization that is dedicated to the efficient and sustainable use of water in the US and beyond.

On April 1, 2015, the AWE presented a webinar that addressed the topic of drought tolerant turfgrasses and their use in ornamental landscapes. Webinar authors were Dr. Kelly Kopp, Utah State University; Dr. Mike Richardson and Dr. Doug Karcher, University of Arkansas; and Jack Karlin, Turfgrass Water Conservation Alliance (TWCA).

FUNCTIONAL BENEFITS OF TURFGRASS

The webinar began with Dr. Kelly Kopp framing the question of turfgrass use in the landscape with an emphasis on the functional benefits of turfgrasses. She noted that throughout her career working in landscape water conservation and turfgrass management, the functional benefits of grasses are rarely, if ever, mentioned during landscape water use discussions. But grasses do, in fact, have many functional benefits in the landscape including controlling soil erosion, reduction of storm runoff, dust suppression, and carbon sequestration, to name just a few.

Dr. Kopp spent time emphasizing the atmospheric cooling benefits of turfgrass noting the large temperature discrepancies that have been measured between actively growing turfgrass areas, bare soil, and synthetic turf surfaces. In the studies mentioned, actively growing bermudagrass turf surface temperatures were as much as 60 F cooler than synthetic turf surfaces.

▲ **Seeding** a new test of Kentucky bluegrass cultivars in Logan, UT. Photo courtesy of TWCA.

The audience was also interested to learn about the role that turfgrasses have to play in carbon sequestration. This functional benefit of turfgrasses is of particular note, given the role that carbon plays in current climate change effects. Dr. Kopp stated that one study conducted at Ohio State comparing landscape plant materials found that lawn areas sequestered more carbon than trees and shrubs, ranging from 81 to 90% of the total, depending on landscape configuration. Considering the number of single family homes in the US, these findings represent enormous potential for the sequestration of carbon by lawns and turfgrasses.

Despite these functional benefits, Dr. Kopp noted that turfgrass removal programs around the country continue to gain traction in water-stressed communities. The fact is that the western U.S., and California in particular, are facing historic drought conditions and an enormous amount of per capita water use in the municipal sector is being spent on landscape irrigation. However, Dr. Kopp emphasized that by selecting and promoting drought tolerant turfgrass species and cultivars, water savings could be achieved even as the functional benefits of grasses in the landscape are maintained.

Research has shown that turfgrasses have large ranges of drought tolerance and of the commonly used species, warm season grasses such as bermudagrass and buffalograss are more drought tolerant than the cool season species. However, even within the broad categories of warm and cool season grasses, there are ranges of drought tolerance. Experiments may be conducted to evaluate the drought responses of turfgrass cultivars in a systematic way.

Dr. Kopp then described the work of the Turfgrass Water Conservation Alliance (TWCA). Formed in 2010 by direct competitors in the turfgrass seed industry, the TWCA developed a science-based approach to water conservation. The non-profit cooperates with academic institutions across the US and Canada to qualify turfgrass varieties that demonstrate significant water savings potential over conventional varieties of the same species. A wide range of species and cultivars are evaluated for response to both acute and chronic drought stress and drought tolerant cultivars are identified. Digital image analysis of cultivars allows measurement of leaf firing, or browning, as a function of green cover.

Once identified, the superior cultivars are then branded and sold by the participating seed companies. To date, more than 50 products have qualified to use the TWCA label. tgwca.org/qualified-products/

◀ **Experiments** imposing drought on different varieties within a given turfgrass species have exposed very clear differences. Photo courtesy of TWCA.

SUMMARY

Dr. Kopp summarized the webinar by reiterating that improved turfgrass varieties have enormous potential for water savings in outdoor landscapes. She emphasized the TWCA protocol that has been implemented for identifying and testing the improved varieties and the geographic distribution of the test sites. She also stated her hopes that the information presented would contribute to ongoing discussions of the appropriateness of turfgrass removal programs.

She emphasized the effects of turfgrass on surface air temperature and stated that when grasses are removed, the increased temperature can result in increased energy costs to cool homes and other buildings. Since water is embedded in the energy required for cooling, potential increases in overall water use should be considered when landscape changes are recommended.

Finally, Dr. Kopp shared some of the findings that she has made during a long-term landscape irrigation evaluation program in the state of Utah. "Most homeowners over-irrigate their existing landscapes two times or more beyond what the landscapes actually require. Our top priority is helping them to irrigate those landscapes efficiently. If we are able to do that, we'll reduce landscape irrigation amounts by at least 50%."

A copy of the webinar presentation and recording may be requested from the Alliance for Water Efficiency http://www.allianceforwaterefficiency.org/webinars.asp. ST

Digital Image Analysis (DIA) – How It Works*

"Using an outside standardized rolling 'photo studio' with a consistent light source inside, a digital photograph is taken of individual turfgrass plots. These photos are then uploaded into a computer where they are evaluated with a proprietary software program that can identify, measure, and objectively quantify results. Scientists of the TWCA are currently using this technology in turf plots and rain out shelters to evaluate the percentage of green cover under acute and chronic drought stress. DIA technology eliminates subjective visual ratings and provides scientists with accurate and repeatable information that can be stored and compared at a later date, or shared instantly with other scientists across the country."

**Source: TWCA brochure: We Can Help You Conserve Valuable Water Resources in Your Greenscape:*

Note: A page in this same brochure listing the positive attributes of turfgrass ends with The Lawn Institute logo and this statement: You'll find more information on the features and benefits of healthy turfgrass from our associates at www.thelawninstitute.org.

John Mascaro's Photo Quiz

Answers from page 23

John Mascaro is President of Turf-Tec International

This dark green square surrounded by lighter green turf is not the result of something being left on the turf causing the area around the green square to be a lighter green as you may have guessed. If you read the clue, it says that the grass variety is Patriot Bermudagrass AND Tifway 419. The color difference is actually caused by the different varieties of turf, or to be more precise, it's a Tifway 419 sod square that appears greener than the Patriot. These practice football fields in Kentucky use 419 on the playing surface and the Patriot is the "picture frame" that surrounds all of the sidelines and the back of the end zones. These practice fields have the ability to be laid out east to west and north to south to spread out the wear caused by football practice and drills. In this photograph, the Sports Turf Manager had just rotated the fields back to east to west and the goalposts plates are right along the sideline for their east to west orientation. They used a piece of Patriot Bermudagrass to sod over top of the goalposts plates, causing the square in the photo.

Photo submitted by Bob Campbell, CSFM, Carolina Green Corp. Marcus Dean, CSFM is Sports Turf Manager at the University of Kentucky in Lexington.

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.

THE *SPORTSTURF* INTERVIEW: ALLEN REED, CSFM

Editor's note: *This month in "The* SportsTurf *Interview," we visit with Allen Reed, CSFM, director of stadium grounds for FC Dallas of Major League Soccer.*

◀ **Allen Reed,** CSFM

SPORTSTURF: You know a lot of sports turf managers. What are they saying are the biggest obstacles to overcome for them to be successful today?

REED: Number of events with no down time seems to always come up in conversation. We host around 115 events a year and have adapted and adjusted our management techniques that has taken us from resodding every year to just completing our first full field renovation in 7 years. We have accomplished this through proper mainte-

nance and fertility practices. We do some form of aeration weekly. Our fertility plan is low in nitrogen and high in potassium to focus on strengthening the plant without have excessive growth.

SPORTSTURF: You are one of most high-profile sports turf managers to fraze mow. Why did you decide to try that and how has it worked out? Any advice for others who are considering trying it?

REED: The thought process started about 4 years ago. Eight years of thatch build up and poa were a couple of the major issues we needed to correct. We were also having issues with our bermudagrass sheering off due to the players' cleats not being able to make soil contact because of thatch. We always want to be up to date on new technology and find new ways to improve our fields. Bermudagrass is tough; the more you beat it up the better it comes back. We knew it would recover, just didn't know the time frame. We universe fraze mowed the training field for the first time in March 2013. We were able to move the team's training to one of our many complex fields while the field recovered. The field was shut down for 7 weeks that year and we have since gotten our recovery time down to 3 weeks with the right growing conditions. Over the past 2 years we have removed 1.5 inches of thatch/organic layer and almost completely eliminated our poa problem. This has become the new normal for us and will continue to implement universe fraze mowing into our management practices. My advice for anyone wanting to try it would be to not get taken advantage of by imitators; use the correct equipment to get maximum results.

SPORTSTURF: Every soccer pitch in the USA has wear in the goalmouths. Any advice for those at park & rec or school levels on keeping turf growing there?

REED: Our fertility and aeration programs are pretty aggressive. Our fertility focuses on low N and high K. Our goal is to make the plant as strong as we can without excessive growth to hold up to the amount of events we have. Our high traffic areas, like our goal mouths, do get a little extra attention each week. We do some form of aeration to some if not all of the field weekly. It is very important to be proactive in your management practices, not reactive.

SPORTSTURF: What's your favorite on-field maintenance task that you still enjoy performing?

REED: I still love to get on the mower. This is my time to inspect the entire pitch to get a good look and feel for any trouble areas.

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

REED: STMA has always been a great networking opportunity. I have met many new colleagues from around the world within the turfgrass industry that have helped shape me into the turf manager I am today.

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

REED: New technology and management practices will be a game changer for the future of turf management. As turf managers we need to be willing to change our management approach as the demand for more events continue to rise. I believe that you will start seeing more and more turf managers using grow lights and aerating their fields more. Some managers are already using lights with great success on both warm- and cool-season grasses. Stadiums are only getting bigger which decreases the natural light the plant receives. Players want to play on grass, and we need to be willing to do whatever it takes to provide them best playing surface no matter the growing conditions. Because of this I believe you will start to see a shift from artificial back to natural grass fields at all levels of play. I am a huge believer that grass can take more.

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

REED: I love to spend time with my family and friends, travel with my wife, and play golf. ST

RENEWING YOUR VOWS: understanding the customer/ vendor relationship

Editor's note: *Joe Churchill is branch manager/sports turf specialist, for independent turf product distributor Reinders, Inc., in Plymouth, MN. He makes his living consulting and selling turf care products, and is a member of the Sports Turf Managers Association's Editorial Committee.*

BY **JOE CHURCHILL**

Great effort has been spent addressing the dynamics between employer and employees in an effort to improve this relationship. The desired goal is to make for a better work environment between the "coach" and the "players." This important dynamic is no different in our business. The sports turf manager is a "middleman" having to answer to an administrator of some kind while also being required to provide direction to assistants, laborers, spray techs, irrigation specialists, etc. When the roles are well defined and implemented, the work gets done, most everyone is happy and morale is high. It's all good.

There's another relationship in most every industry, certainly in ours, which oftentimes gets overlooked. This relationship is the one between the sports turf manager and the distributor sales rep or other vendors. There have been articles, columns and books written on the basics of the typical customer/ vendor dynamics. It exists in daily life at your local fast food place, the dentist's office, department store or auto repair shop.

If you grow grass for a living, you can't do it alone. Not only do you have co-workers, boards, committees and bosses, you also work with government agencies, public relations groups, patrons and, ah yes, suppliers.

What sort of relationship do you have with your suppliers? What sort of relationship do your suppliers have with you? What does a good relationship with a supplier look like to you? What do you suppose a good relationship with a customer looks like to your supplier? Do you align yourself with vendors with similar values as yours?

For 35 years I have worked for either a manufacturer or a turf distributor. I have never grown grass for a living. Having come clean on that, I will also tell you this: I have studied "the dance" between professional turf managers and their suppliers during these 3+ decades. It has given me an intimate understanding of the different types of relationships that exist between the two.

Professional turf managers have their own needs, their own style of doing business and their own understanding and priorities of what is

important to them when choosing a supplier. Similarly, supplier reps each have their own style, selling methods and values.

If you are married or are in a relationship, you know that things don't work well between you unless both sides are willing to give a little. It's the old "for better, for worse" and "in sickness and in health" fine print we all know about.

There's a good book titled *The 5 Love Languages: The Secret to Love That Lasts* by Gary Chapman about how to sustain wonderful relationships. I know many of you might not engage in "touchy, feely" stuff, but trust me, you'll find this interesting. Chapman claims that people, regardless of gender, are wired to need different things. Here are his five love languages:

- Words of Affirmation
- Quality Time
- Receiving Gifts
- Acts of Service
- Physical Touch

In a nutshell, the message is simple. When we do nice things for our significant other, we most often come from a place of good intentions. We offer them the sort of love we would like to receive ourselves. The problem with this mindset is that your loved one's Love Language may not be the same as yours. To sustain a healthy relationship, you must determine what your partner's Love Languages are and then act upon them. You may like chocolate ice cream and she may like strawberry; if you buy her a chocolate ice cream cone (because that's what you like), she will appreciate your kind act, but deep down inside, she would have rather had strawberry! Put in another way, you're speaking English and she's speaking Chinese. You both love each other, yet the love would be so much more enriched if you could speak each other's language.

WHAT THE HECK DOES THAT HAVE TO DO WITH ANYTHING!?

Let's frame Gary Chapman's message a bit differently. Do you think maybe you, as a professional turf manager, may have specific ways in which you like to buy things? I bet you could give me three criteria that are most important to you when it comes to buying something or deciding from whom to buy it. Is it the brand? Is it the price? Is it the sales rep? Is it speed of delivery? Is it the supplier's location and ease of convenience?

Do you think maybe your suppliers have their own Love Languages? Do they value and respect the customer relationship? Are they more comfortable selling on price? Do they place value on research & product knowledge? How important is it to them that they believe in the product or service they sell? Do they prefer face-to-face visits or would they rather reach out via social media?

Both the customer and the supplier need to know what language each other speaks. If you're on the same wavelength, you can expect to strike a chord with each other. If you don't seem to be getting along, you're probably not communicating in a way that will satisfy either of your needs. You're not being heard. Frustration sets in and the buy/sell process fails.

Can you find yourself and your product/service providers in the lists below?

CUSTOMER TYPES

Lone Wolf: Introvert or reclusive; wants to "go it alone"; doesn't look for help or see the need for it; been doing it this way forever and it works just fine for me; limited or no trade association involvement.

Transactional: Their only need is for a reliable product source; researches product and service features/benefits on their own; knows what they want and just needs a place to buy; first cousin to the Lone Wolf

Mad Scientist: Likes to try new methods and new products; always reads up on latest technology and trends; embraces the cause/effect concept; wants to know why things happen; likes to ask lots of technical questions and review university data.

Ben & Jerry: Carefully builds a relationship with someone that is like-minded; looks for someone who will be their partner in growing turf; understands that a successful relationship works for both parties; is inquisitive and open to new ideas from their supplier partner; neighbor to the Mad Scientist.

Penny Pincher: Thinks lowest price is highest value; spends money like it is their own; no interest in product features/benefits; embraces "what's my price" philosophy; friends with the Lone Wolf

SUPPLIER TYPES

Schmoozer: Likes to stop by and talk about the weather or last night's ball game; may get around to asking you if you need anything; seldom comes prepared to talk about your needs or challenges; approaches a sales call as if you're simply a name on a list.

Mr. Know-It-All: Fancies himself as an expert; has an ego the size of Texas; my way is the right way; questions customer's skills or ability via innuendo and ill-thought questions; doesn't bother to ask what your needs or challenges are.

Bargain Bob: Will beat anyone's price; sees his value as being the lowest price in the market; doesn't bother to ask what your needs or challenges are; places limited value on product quality or performance; plays golf with the Schmoozer.

Mad Scientist: Thrives by the science behind the product; makes everything a science experiment; overthinks every turf challenge; creates a lot of extra steps when attempting to fill a customer need; have you met his best friend, Mr. Know-It-All?

Mr. Q & A: Asks probing questions to determine customer's needs; determines quickly what is important to his customer and responds accordingly; looks at his role as a problem solver and service provider; uses his expertise and product knowledge to create a professional partnership with his customer; provides relationship value.

Like the beginning of any good relationship, both sides need to get to know each other. You have your needs, know what is important to you and have a unique way of doing your job. Your suppliers have the same. No one type of buyer or seller is right or wrong. The key to a successful relationship is to learn each other's Love Languages. If they mesh, you're in for a long, beautiful relationship. If they don't, that's perfectly fine. Keep searching for Mr. Right! He or she is out there!

WHAT CUSTOMERS SAY

We asked some turf managers these four questions about their relationships with their vendors; to get the most honest responses, we are not sharing the respondents' names:

1 Why do you buy from your supplier?

2 What do you like about your favorite sales representative?

3 What do you dislike about your least favorite sales representative?

4 What could your sales rep do to make your relationship with him/her better?

Customer #1: They are easy to reach, knowledgeable about what they sell, and the can deliver within the timetable I need.

They have a sense of humor and understand my stresses and needs.

They try and sell me on things I don't need or am not interested in. Also, if I can't hold a conversation with them then it is usually over for them.

Listen to what my program needs are, and sell to what I am comfortable with. Don't expect for me to try everything that comes out each year.

Customer #2: Because they have what I need at the best price with the best customer service

They are there when we need them…they solve problems…responsive

They only care about making money and selling and don't care about us

Don't bug us…just be there when we need you…get the product to us when we need it…be on time. (Please feel free to us my name; I always say this stuff!)

Customer #3: I use several different suppliers. I choose them based on several different factors. First I have some products that I prefer to use so I obviously choose a supplier that carries those products. Second I base my decision on some unknown matrix that

involves price, customer service, convenience and reliability. All four are very important; however I feel customer service and reliability are must haves. A low cost is not actually realized if the supplier is not reliable and/ or hard to work with. A way for a supplier to get extra brownie points with me is to support the STMA and our local chapter.

My favorite salesperson will call me when they are in town and stop by if I have time. They will keep me posted of new chemicals and/or materials they have available and at least pretend to have an interest in what I have going on, but not linger. They will work with me to accommodate my needs if I get in a pinch, or need something immediately.

I can't stand a guy that just sends me email updates on his/her products. If I don't know you, you haven't stopped by, or I haven't even heard your voice on the phone you're probably not going to get any of my business. All I get out of it is frustration from having to delete an extra email every month. A personal relationship isn't all it is worth to me, but if A has the time to say "hi" and B doesn't, then A is probably going to get my business.

Knowing that I am not high volume or big $$ I know that our account doesn't carry that much weight. I feel lucky to have found a very strong group of suppliers that I rely on and they don't reflect the fact that I am not one of the big guys. I honestly don't know what the guys that I use could do to make our relationship better… besides lowering their prices of course!

Customer #4: Great service is what primarily drives my supplier selection. Whether it's a routine fertilizer or supply order, or emergency fungicide and equipment repairs, I have a great appreciation for and loyalty toward the suppliers that I know will exhaust their resources to have us operational as soon as possible. Also, an understanding and knowledge of athletic field agronomics is helpful, while an understanding and knowledge of their products is a must.

My favorite sales reps are reliable, especially during unexpected times of need, and arrive wanting to talk turfgrass, athletic field management, and product/equipment selection.

My least favorite sales reps do not respond and/or carry through in a timely manner, do not know their products/equipment, want to gossip instead of talk turf, and call me once a week when, ironically, I never call them.

Know your products and competitors', deliver expectations in a timely manner, provide a product list and cost sheet, schedule appointments, and come ready to talk turf.

Customer #5: Well there are a number of reasons, but perhaps the biggest reason is probably comfort and familiarity with the sales rep. A long-standing relationship with a company rep can be more important than price. It is important to have a good relationship with the company sales rep so as to trust what they are telling you about a product. I'll admit I'm disappointed when a sales rep. that I've dealt with for years either retires or moves on, and then I must build a new relationship with a new rep. Companies should realize how important a good sales rep is for both business and customer relations, and work hard to retain those quality reps.

I like that you are treated as an important customer whenever you need to call them. That's why it's important to have built a good relationship with a sales rep. I have known several reps over the years, and I appreciate a rep that makes my question or order a priority. I understand that they are busy with other customers and can put me off for a bit, but they value me as a customer and a friend.

I don't appreciate pushy and over-eager sales people. I know what I want and when I want it, I don't need to be told what I need.

Nothing really, just to keep doing what they have been doing. I just hope my favorite reps. continue to be in their current positions until I retire.

Customer #6: Because I like the successful products that they sell.

I like when they call to check in, to see if we need anything, doesn't try to sell me something I don't need, is informative about all products they sell and doesn't show up unannounced.

Doesn't call to check in every once in a while, or comes in unannounced.

Don't call and say "Hey I'm in town, can I stop by?" If you knew that you were going to be in town the day before or a few days, call ahead and see if I'm available.

Customer #7: Most of my suppliers have high quality and proven product(s), dependable service, as well as a knowledgeable and friendly sales representative(s).

Some of the best people I've worked with from the sales side have been dependable, understanding, and willing to help out even if it doesn't benefit them in the short term. They tend to be focused

on the personal relationship and getting to know the customer instead of relentlessly pushing a product or service. They also understand that the decision is not always up to me. Working for a state entity, we order through a department purchaser who tries to find the best price for the product requested. Sometimes quality is sacrificed for price.

Those who cannot or do not understand that the product they represent is not practical for each and every customer.

I have always appreciated the occasional phone call, text, or email just to check in and see how things are going. For me this usually sparks a thought on what if anything needs to be ordered, or it may shed light on something new that the company may be offering. I find this much better than someone dropping by unannounced and having to adjust an already tight daily task schedule.

Customer #8: I buy from our supplier because they are local, and have the necessary products I need.

I have no issues with any of the sales representatives I deal with.

There is nothing I dislike about any of the sales representatives I buy from.

It would be nice if they would periodically stop by to see how their products are working.

Customer #9: I buy based on convenience and customer service.

I like ease of conversation, someone I can talk to more as a friend or colleague.

I dislike monotone talking; [it means the person] doesn't truly show interest or believe in what he is selling.

Do some more research on products before answering questions. With the Internet today I can find out what I need to know and always call around for suppliers and lowest price. Don't discard my thoughts about my maintenance plan without knowing all the facts.

WHAT VENDORS SAY

We asked some STMA commercial members about their relationships with their customers; to get the most honest responses, we are not sharing the respondents' names:

1 Imagine you are one of your customers and finish this statement: The 3 most important things to me when it comes to working with my vendors are:

2 What part of your relationship with customers is the most rewarding?

3 What part of your relationship with customers is most frustrating?

Vendor #1: Experience and an understanding of the customer's job and needs. Especially knowledge in the vendor's specific field that the customer can lean on when need be to help provide solutions to problems. Reliability in all aspects from inventory, delivery times, and pricing. Trust in knowing that the vendor has the customer's best interests in mind. Knowing that the vendor will not just sell you something and walk away. The vendor will stand behind the product no matter what.

When our customers succeed, we feel like we succeed in our own small way. Even when there are issues on a field, if we can help the customer find a solution, it is quite rewarding. When you have these interactions trust is built, not only trust in the vendor, but trust in the customer as well. Over time, that trust usually grows into a mutual respect, which can grow further into an enjoyable social relationship. Vendors and customers see each other on a regular basis, being around people you like really makes your job (and life in general) so much more rewarding.

When you have a great relationship with the customer who uses the products, but ordering and payment are done by procurement staff that can sometimes cause more headaches in the process.

Vendor #2: The 3 most important things: 1) Response to inquiries and order service is painless, reliable and readily available; 2) delivered product and/or service performs as promised, when promised; and 3) follow-up service after the sale is as prompt, professional and timely as service before the sale.

Relationships that reflect a partnership in achieving a goal, more than simply a buyer-seller relationship.

Last minute orders, with all the emphasis on price rather than quality of product and service.

Vendor #3: The 3 most important things: 1) Can I rely on my vendor to get me what I need, when I need it? 2) When there is a problem with the product or the delivery, do they own the problem and do they have a high sense of urgency to fix the problem?

3) I want to be sure that the vendor values the long-term relationship more than the short-term profit.

Working with educated, passionate sports turf managers to create new solutions to unique challenges under tight deadlines.

Working with educated, passionate sports turf managers who are completely handcuffed by uneducated, indifferent purchasing agents.

Vendor #4: The most rewarding part of a customer relationship for me is when a customer calls to seek out my opinion or advice on a particular project. This might be which piece of equipment do I need, to what kind of material would I recommend to handle this job. Since it's generally over the phone, you have a customer that has gained respect and trust in me enough to go on my word without my even being on site.

The most frustrating part is when a customer is not satisfied with the product, even though you have jumped through hoops to make sure they received it. We import most of our products, which adds another layer of difficulty in the equation, so just the logistics alone can be a nightmare. After all the hard work and organization, you receive a phone call that the product isn't working properly or has broken down. This is very heartbreaking and frustrating, but part of our business! ST

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FROM THE GROUND UP: MLS Groundskeeper starts from scratch in Orlando

Editor's note: *This article was supplied by Jacobsen*

For proof of soccer's continued growth in the US, sport aficionados need to look no further than the success of Major League Soccer's bright new expansion team, the Orlando City Soccer Club. The club is playing their inaugural year home games in the famed Citrus Bowl while a massive new stadium is completed in downtown Orlando.

The team and its lion-crested purple imagery, led by international superstar Kaká, has quickly become the hottest ticket in Central Florida. The team has already set US soccer attendance records, with more than 60,000 fans attending the first home match against fellow expansion team New York City FC. The game was televised in more than 100 countries. The team currently ranks #2 in MLS attendance.

Team President Phil Rawlins founded the team in 2010 in Austin, TX, where the fledgling team won a championship in the United Soccer League. A few years later, Rawlins partnered with Brazilian businessman Flavio Augusto da Silva, joined MLS and moved the team to Orlando.

When the team arrived in Orlando, Sports Turf Managers Association member Matt Bruderek was working as a grounds crew assistant at the University of Central Florida, maintaining fields for the school's baseball, football and soccer teams.

"When I first saw the job opening at Orlando City, I was reluctant to apply because I didn't even think they would consider me," said Bruderek.

But the young field manager got the nod and quickly found himself in Orlando, starting a turfgrass program from scratch.

"When I started in July 2014, we had no equipment, facilities or fields," recalls Bruderek. "It was perfect actually because I was able to sit down and plan everything that I wanted to do before practices and games started."

By August, the team secured two practice fields and a building in just outside of Orlando in Seminole County. Bruderek's immediate responsibility was tending to the slate of events the facility had already scheduled.

"As I continued to plan for Orlando City during the fall, we had recreation league games out here, the Canadian men's national team, and 2 days after Christmas we hosted a 3-day soccer tournament that had 15 games on each field. After that, we had just 1 month until Orlando City's first practice. During that first fall, I wasn't able to do much but spray weeds, overseed and use a recycle dresser machine, which pulled up the sand to topdress the surface."

Bruderek used just 200 lbs. per acre with the ryegrass, half of what a field manager would normally use.

"At the time, the Bermuda was just not healthy enough to put a thick layer of ryegrass on top of it," said Bruderek. "It was a good decision because the Bermuda is popping now and growing like crazy. The coaches want the grass as low as possible, so I've been nudging it down, little by little. I want to get it to ½ inch, but I'm not rushing it."

"When the team arrived for their first practice in January of this year, it was awesome," said Bruderek. "From the very beginning, they were supportive of me and noticed even the small improvements that had started to take shape in the grass. If I ask them to stay off a certain part of the field, they comply with no issues. They have a complete understanding of what we're trying to do out here, which is incredibly helpful."

Bruderek also got to know the team better, including its most well-known player.

"I had heard a lot about Kaká and what a great player he is. Even at 33 years of age, he is still the most skilled player on the field at any given time," said Bruderek. "But he is also an incredibly down-to-earth guy who will go out of his way for his fans. His fans will show up here at the practice facility and he always finds time to sign autographs and talk to them. He's a big reason that this team took off so fast in such a short period of time."

Bruderek uses a small fleet of Jacobsen equipment to maintain his practice fields.

"Just getting good quality equipment out here made all the difference," said Bruderek. "I absolutely love the quality-of-cut I get from the LF550 large-area reel mower. What I love even more is how easy it is to change the height-of-cut, which I can easily do in less than 10 minutes without a lift. That's so critical when it's just me out here."

▶ **Matt Bruderek,** head groundskeeper, Orlando City Soccer Club.

The left photo shows what Bruderek started with in August 2014. **The right photo** was taken just 7 months later in spring 2015.

While continuing to improve his practice fields, Bruderek is also working closely with the team on the new downtown stadium. The most pressing item now is sod selection.

"Right now, I'm between Tifway 419 bermudagrass and Celebration bermudagrass. I've heard a lot of great things about Celebration's wear, shade and sun tolerance plus its darker color," said Bruderek. "But the new stadium planners did extensive sun testing through computer simulation and we know the grass will get good hours of sun every day."

The new stadium, which will seat between 25-28,000 fans, is planned to open in the summer of 2016.

As the downtown stadium takes shape this summer, Bruderek will continue to enhance his practice fields, verticutting, topdressing and aerifying as much as he can.

"Once the new stadium is done, I'll be running back and forth quite a bit and I hope to have some help by that time," he says. "But until then, my plan is to get these fields in top shape for the team." ST

Machine to fight Chafer grubs

Peter Wisbey is an independent greenskeeping consultant with over 48 years of hands-on experience in the UK and across Europe. The problem of Chafer grubs is not a new one and the usual approach is to consider the application of insecticides. However this option is becoming increasingly difficult to justify and an alternative sustainable solution is needed.

"The first indication that there is a problem is usually damage from foraging birds and mammals eager to reach the chafer larvae lurking in the soil." explains Peter

"Insecticides that will control Chafer larvae are few, and in mainland Europe are almost non-existent. So while I was working with a golf course in Northern Germany it became apparent that we needed to 'think outside the box' and come up with a way to deal with these damaging pests."

After studying data Peter established that the grubs are closest to the surface between August and October. "The Club suggested shooting the crows;" joked Peter "But as I explained this was addressing the effect and not the cause. The larvae feed on the grass roots; sometimes to such an extent that large areas of turf can be rolled up like a carpet and the larvae will be found just below the interface."

What was needed was a machine that could crush the larvae during those months when they were closest to the surface.

The answer came in the form of the Imants Rotoknife.

In 2011 Windlesham golf club in Surrey, UK had consulted Peter and had purchased an Imants Rotoknife to carry out the increased aeration program that he had recommended.

"It occurred to me that this piece of equipment could be just what we needed in Germany to help with the Chafer problem," said Peter.

The Imants Rotoknife is fitted with two sets of blades that penetrate at different depths and spacings.

A machine was duly purchased and put to work on the worst effected fairway. The smaller blades were used and set at 5 cm spacing and at a similar depth of penetration. Passes in three different directions were taken to achieve as much cover as possible.

The combination of weight and sharp blades had the desired effect killing the bugs just below the surface. It would appear that birds listen to the activity of the bugs to locate them under the surface. Dead bugs hold no appeal! Within one day damage from birds ceased. ST

NORTH AREA ATHLETIC COMPLEX SOCCER FIELD

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

Category of Submission: Schools/Parks Soccer
Sports Turf Manager: Sun Roesslein
Title: Sports Stadium Manager
Education: Master's Degree, Sports Administration, Eastern Kentucky University
Experience: I have been the Stadium Manager at the North Area Athletic Complex for 9 ½ years, managing all aspects of the stadium. My job duties include all aspects of maintaining the turf, as well as managing the games, rentals and other events happening on site. I got my start in turf working on the grounds crew for the Lexington Legends while I was finishing my Master's Degree. I worked there for 2 years, then moved to Colorado where I worked for the City of Thornton before hiring on with Jeffco Schools. In 2005, I was lucky enough to get to work with the Detroit Tigers grounds crew during the MLB All-Star game.
Full-time staff: Christi Clay, stadium manager, and (formerly) Don Frantz
Original construction: 2002
Renovation: In 2014, the south half of the soccer field was scraped, re-graded, topdressed and grown back in from seed. The North half of the field was fraze mowed, recycle dressed and re-seeded. We have extremely expansive clay soil in the foothills of the Rocky Mountains. A geotechnical engineering company was brought in to do core soil samples on site and their original recommendation was for us to excavate 4 feet deep and start over with the field construction. That was not feasible for us, and our best option was to scrape the south half to get rid of the ridges from the expanding clay "ribbons" and re-grade the surface. The renovation didn't fix the problem, and it wasn't the goal of the work. Our budget does not allow us to be able to completely fix the issues. We have been dealing with the soil expansion since I started there, almost 10 years ago. We are hoping to be able to manage the movement over the next 10 years or so, until we have to re-grade the surface again.
Rootzone: Sand base with expansive clay ribbons, before and after the renovation but now not affecting the surface grade.
Turfgrass variety: Kentucky Bluegrass- Barrari, Full Moon, Barduke, Moonlight SLT, Barvette, Everglade, and Regenerating Perennial Rye (RPR)- Barbeta RPR, Barlennium.
Overseeding: We overseed multiple times a year. This year was a little different because of our regrading project. During the schools' spring break, we core aerated and overseeded lightly with regenerating perennial ryegrass. After our soccer field project, we seeded with RPR and HGT, followed by another rye overseed in early June and twice since the fall season started. Lightly topdressing follows each seeding.
Drainage: 4-inch perforated drain pipe on 20-foot centers. The drainage was partially scoped during a stadium project, and we discovered that most of the drainage was crushed at some point down the line.

WHY STMA SHOULD CONSIDER YOUR FIELD A WINNER?

The North Area Athletic Complex Soccer Field is the home field for six area high schools, and the stadium seats 2,500 fans. Three are 5A and three are 4A schools.

During the spring, we host all the home games for those high schools girls' soccer teams. We hosted 54 games in 11 weeks, beginning in early March. The intensity of our schedule means we could host up to 10 games a week, or double headers Monday through Friday. The field is dormant when we begin play and we do not have irrigation on until about the third week of games. We do get a break from games during the school district's spring break, which is when we are able to aerate, seed and topdress. The fall season is very similar for the boys' season, hosting roughly the same number of games without the "spring break" renovation week. During both seasons we do our best not to postpone any games during season because there aren't many open game times to move games around. That might mean coming in at 5 am to plow in order to get the games in that evening.

This year has been unique because of the renovation from the spring. After the geotechnical engineering group came in and did the core samples, they told us we needed to excavate 4 feet deep to fix the issues with the "deeply steeping bedrock."

These ribbons of expansive clay needed to be addressed in a budget conscious manner. GreenOne Industries came up with a couple of options for us to choose from. We opted for stripping only the south half of the field, which is where the expansive clay was the issue. They matched the grade of the existing north half of the field, including a new 2-inch sand topdressing to match existing soil profile sand. Then the north half was fraze mowed, which was a new process for us to see and manage. We were then challenged to grow the south half back from seed, with less than 3 months until our first game! We seeded, fertilized, irrigated, and babied the field through the summer, and opening day for the fall season was August 21. We have hosted 43 games since then, several in rainy conditions. The field is stronger today than it was to begin the season. We have enough space to be able to shift the field to help the goal mouths rest and recover from the intense play. This fall, we shifted the field during week six of games.

Our full time staff consists of two people, who manage not only the soccer stadium, but also a football stadium, a rubberized track and roughly 9 more acres of turf.

Our responsibilities include all aspects of turf management, all stadium duties including cleaning the stadium, restrooms and locker rooms, to fixing light bulbs, to snow removal, as well as overseeing the management of the games much like a general manager would.

SPORTSTURF: What changes if any are you making or have you made to your maintenance plan for 2015?
ROESSLEIN: Culturally, our plan will remain pretty similar to what we have done in the past. The schedule on the field determines our windows of opportunity to perform any cultural practices. We are going to try a couple new products in place of others we typi-

cally use in our fertilizer program this fall. We also will be using a granular wetting agent that is supposed to last 150 days, to help get us through the heat of summer and into the fall. I am hoping to apply that again before the winter, to help combat winter desiccation and help our field start off the spring season in the best shape possible. We have already overseeded with a new blend of bluegrasses and are looking forward to seeing how the field performs this fall as a result.

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

ROESSLEIN: I have several mentors in the industry, (whether they know it or not) and continue to learn so much from each of them. I think asking "why?" is a great motivator to keep learning and looking for better solutions to any issues that may arise. There are also so many great examples of true professionals in the industry whom I am lucky to get to call my friends, and I keep their examples in the front of my mind daily.

ST: What are your specific job responsibilities? What do find most enjoyable? What task is your least favorite and why?

ROESSLEIN: As stadium managers, we are the first people in the stadium and the last people out every day. Our responsibilities include all aspects of turf and stadium management during the day, preparing the fields and facility for every game, event or rental. We are then responsible for managing the events. This includes overseeing ticket sales and game workers, crowd management, greeting and assisting teams as they prepare for their game, enforcing school district policies and assisting school administrators, dealing with parents and the public who are in attendance, and all around stadium operations management. I really enjoy having the responsibility of planning what needs to be accomplished every day, and seeing those efforts pay off that evening during the games.

One thing I dislike is the clean-up the next day, because who really likes scrubbing toilets? I have noticed a change in how disrespectful some fans can be toward coaches, officials and game workers. It is shocking to me, to hear how some people will treat another person. Often, I have to address those situations and that is a tough time to try to calm someone's emotions and excitement about their student athletes and the game.

ST: How do you balance your work and personal time?

ROESSLEIN: Balance is a tough thing to learn! During our busy seasons, we are at work more than we are home. Honestly, it has taken a long time to start to learn how to balance feeling so tied to the responsibility of what has to get done at work, and feeling able to take time to refresh and renew my well-being. One thing I love about my job is that our busy seasons are really only about 3 months at a time. So just about the time I start to get worn down, the crazy hours are over and I can reconnect with the people and activities that re-energize me!

ST: What's your most valued piece of equipment and why?

ROESSLEIN: Our Pro Core aerator is easily one of our most important pieces of equipment. We have the ability to use different types of tines to help alleviate the compaction that occurs with our intense game schedule. We don't have any bye weeks during our season, and typically play up to ten games per week for the 8 weeks of regular season. We use super cross tines during the season, because they don't disturb the playing surface much. I also think that my network of colleagues is just as important as any piece of equipment we use.

ST: How do you see your job changing in the future?

ROESSLEIN: We are going to have to figure out how to fit more into our schedules. Lacrosse is growing quickly in our area and the teams are going to have to play somewhere! We get calls from different teams and leagues wanting to rent the stadium almost weekly. We will always make sure our high schools are taken care of first and foremost, but we are also available to help our community when it is possible. ST

San Diego Conference details nearly complete

The 2016 STMA Annual Conference and events program is nearly set. Committees have finished developing the educational program, the off-site tours, and the SAFE golf tournament.

OPENING SESSION

A focus on injury research and prevention will be presented at the beginning of the conference. Three highly respected researchers will address sports injuries during the Opening Session on Wednesday, January 20, at 8 am. They will give detailed follow-up presentations based on their introductory remarks later in the conference.

Richard Kent, PhD, University of Virginia, will speak on injury biomechanics. Dr. Kent is a Professor of Mechanical & Aerospace Engineering, Biomedical Engineering, and Emergency Medicine at the University of Virginia and Deputy Director of the UVA Center for Applied Biomechanics. He is also Principal Scientist of Biomechanics Consulting and Research and President of the Partnership for Athletic Shoes and Surfaces. He has worked on the NFL Foot and Ankle Committee since 2008 and chaired the Taskforce to develop the NFL's Recommended Practices for Gameday Fields. He will present "Shoes and Surfaces: Partners in the Reduction of Injury Risk for Elite Athletes" that will review the ongoing research and evaluation studies being performed by the NFL Foot & Ankle Committee, including shoe traction and bending behaviors, turf mechanics, and the fundamental biomechanics of foot and ankle injuries.

Dan Russell, PhD, The Pennsylvania State University, will address the physics and acoustics of baseball bats. He holds a BS in Physics, B.Mus. in Piano Performance, MS in Applied Physics, and a PhD in Acoustics (Penn State, 1995). Russell spent 16 years on the physics faculty at Kettering University, teaching undergraduate physics and acoustics and developing an active undergraduate acoustics laboratory and research group. He is currently Professor of Acoustics and the Director of Distance Education for the Graduate Program in Acoustics at Penn State. His primary research area involves the acoustics and vibration of sports equipment and he has provided testing and vibration consulting services for several sporting goods manufacturers, including the testing and development of vibration absorbers used by Marucci Sports and STX to minimize sting in baseball bats and field hockey sticks. His presentation, "At the Crack of the Bat - The Science of Wood Baseball Bats" will trace the history and use of different types of wood baseball bats used by MLB players. High speed video will be used to discuss the bat-ball collision and the reasons bats break.

Joel Stitzel, PhD, Professor, Biomedical Engineering, Wake Forest School of Medicine, is the Department chair of the Biomedical Engineering department, which is a department whose research and educational programs reside within the Virginia Tech - Wake Forest University School of Biomedical Engineering and Sciences. He received a BS from Virginia Poly Technical Institute, an MS at Virginia Commonwealth University, and a PhD also from Virginia Poly Technical Institute. Stitzel's current research interests involve crash injury research and engineering biomechanics of trauma, automotive safety, and sports and military biomechanics. A major project he has been involved in is the creation of a new generation of human body models to represent live humans with precision and detail not known in research "dummies" before. His presentation will focus on sports injury related research and biomechanics.

SEMINAR-ON-WHEELS TOURS SET

This always-popular event is sponsored by Green One and Bush Sports Turf. The STMA Seminar on Wheels subcommittee, chaired by Mike Tarantino, CSFM, has created a day and a half of tours to sports venues around the city. Registration for the tours will be open October 1 at STMA.org.

Full day, 4-stop tour, Tuesday, January 19.

SoCal Sports Complex. Located in Oceanside, the complex is approximately 100 acres with 23 full-size soccer fields. Its largest events will attract more than 200-250 teams from all over the nation and some international teams. These events draw approximately 10,000-15,000 people on site each day. This facility is managed by sports field manager Zach Dobek.

Del Mar Racetrack. One of the nation's leading racetracks offering first-rate Thoroughbred competition has a capacity of 44,000. It is located in the seaside city of Del Mar, 20 miles north of San Diego. Owned by the State of California and leased by the Del Mar Thoroughbred Club, it was built through a partnership including actors Bing Crosby, Pat O'Brien, Gary Cooper, Joe E. Brown, Charles Howard and Oliver Hardy in 1937. The facility is managed by sports field manager Laef Dickerson.

The San Diego Jewish Academy. This private school for preschool through high school is located on a 56-acre campus with a thriving athletics program. Its soccer field won the 2009 STMA Field of the Year. Manny Dias manages the athletic fields for the Academy.

Petco Park. The home of the San Diego Padres was built in 2004 in downtown San Diego and is within walking distance to the conference host hotel, the Manchester Grand Hyatt. Petco has many unique features and amenities and is known as "The World's Best Ballpark in America's Finest City." Petco has been selected to host the 2016 MLB All Star Game. Sports

SoCal Sports Complex. Oceanside, CA part of the full day Seminar-on-Wheels at the upcoming San Diego STMA Conference.

field manager Matt Balough oversees the field maintenance at Petco Park.

HALF-DAY, 2-STOP TOUR, FRIDAY, JANUARY 22

Qualcomm Stadium. With a seating capacity of 70,561 Qualcomm Stadium is located in the heart of Mission Valley, minutes from downtown San Diego. The Stadium is host to the San Diego Chargers and San Diego State Aztec football, the Holiday Bowl, the Poinsettia Bowl, Street Scene and more. Bill Gibbs is the sports field manager for Qualcomm.

San Diego State University (SDSU). Participants will tour Tony Gwynn Stadium with a bermudagrass baseball field, the SDSU Sport Deck, which is another bermudagrass field built on top of a parking structure. The SDSU Men's and Women's Soccer teams train and compete on this surface. The tour will also include SDSU Football/Lacrosse Synthetic Field; football uses this synthetic field for practice and lacrosse practice and games. Joshua Koss manages the sports facilities at SDSU.

DIAMOND PRO/SAFE GOLF TOURNAMENT, TUESDAY, JANUARY 19

Sponsored by Diamond Pro, with supporting drink sponsor Carolina Green, this year's event will have golfers playing on two courses, the Presidio and Mission, at the Riverwalk Golf Club. The 4-person scramble will feature a hole-in-one contest and additional competitions. The fee is $135 per person, if registered before December 15. Fees include lunch, range balls, cart and green fees. Rental clubs will be available. Registration opens for the tournament October 1 at STMA.org. The proceeds support the SAFE Foundation's scholarships and grants, and funds educational outreach. Its most recent projects include five videos that help non-sports turf managers assess sports fields and facilities for safety. ST

This soccer field on top of a parking structure is part of San Diego State's campus and will be a stop on the Seminar-on-Wheels program next January.

Nominations for Board service are now open

STMA's election process for 2016 is underway. The Nominating Committee is seeking candidates for board service. Four Director positions are up for election:

Academic Director (2-year term): A voting member who is engaged in research, education or in extension outreach programs related to sports fields.

Parks & Recreation Director (2-year term): A voting member who manages sports fields for a parks and recreational facility, municipality, city or other non-profit entity.

Higher Education Director (2-year term) – A voting member who manages sports fields for institutions that provide education beyond the secondary level.

At Large Director (1-year term): A voting member from any membership category.

To indicate interest, go to STMA.org and click on the Board Interest link under Recent News. STMA also has a board handbook that outlines the responsibilities of board members. To request a copy of the handbook, email kheck@stma.org.

The **process to submit interest ends August 14**, after which each candidate will be contacted. The Nominating Committee will review each candidate's qualifications and research other information before determining the slate of candidates who will be placed on the ballot. They will present the slate and ballot to voting members in mid-November. The election will close December 15, and the 2016 Board of Directors will take office at the STMA Annual Meeting in San Diego. 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, Dale Croft, dale.croft@ocps.net

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

Georgia Sports Turf Managers Association: www.gstma.org.

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

Illinois Chapter STMA: www.ILSTMA.org.

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

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

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

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

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

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

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

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

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

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

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

North Carolina Chapter of STMA: www.ncsportsturf.org.
Northern California STMA: www.norcalstma.org.

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

Oklahoma Chapter STMA: 405-744-5729; Contact: Dr. Justin Moss okstma@gmail.com
Oregon STMA Chapter: www.oregonsportsturfmanagers.org oregonstma@gmail.com

Ozarks STMA: www.ozarksstma.org.

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

Southern California Chapter: www.socalstma.com.

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

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

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

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

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1 What is your company's primary business? (*check **ONLY ONE***)

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

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

A ❑ EXECUTIVE/ADMINISTRATOR — President, Owner, Partner, Director, General Manager, Chairman of the Board, Purchasing Agent, Athletic Director
B ❑ MANAGER/SUPERINTENDENT — Superintendent, Landscape/Ground Maintenance Manager, Foreman, Supervisor
C ❑ GOVERNMENT OFFICIAL — Government Commissioner, Agent, Other Government Official
D ❑ SPECIALIST — Architect, Designer, Consultant, Agronomist, Horticulturist, Certified Specialist
F ❑ COACH
E ❑ Other (please specify)_____

3 Do you have the authority to buy, specify or recommend products and/or services for your business or organization? Y ❑ Yes N ❑ No

4 Yearly operating expenditures (excluding salaries)

F ❑ Over $1 million C ❑ $50,001 - $100,000
E ❑ $500,001 - $1 million B ❑ $25,001 - $50,000
D ❑ $100,001 - $500,000 A ❑ $25,000 and under

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AUGUST 2015

SportsTurf Magazine ADVERTISERS' INDEX

Q&A with Pamela Sherratt

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

Don't make a change too complicated, just begin

I visited park and rec soccer fields recently to evaluate the condition of the fields. When I enquired about the percent of generated funds used to maintain the fields I was told that 0% of field income was earmarked for maintenance and that the parks division mowed weekly, with no other cultural practices carried out. The opinion of the facility administration is that it is impossible to grow grass in a high-use park and rec situation, and so there really wasn't anything they could do.

My immediate response to this was that it isn't impossible to grow grass on high traffic fields, if you have someone who knows how to do it. I have come across this scenario many times, where budget and renovation timing isn't actually the issue. The issue is that no one knows what to do, or how to get started, and so it becomes easier to ignore in the hope that no one notices.

The good news is that they are open to suggestion and have asked for a maintenance plan so that they can earmark the funds needed to fix the fields.

So how do they get started? The fields are in bad shape, with holes everywhere and very little grass cover. Most of the playing surface is composed of prostrate knotweed, clover and crabgrass and the soil is hard as a rock. The fields are not irrigated and never fertilized and the mowing quality is poor. If I try to tackle all of these problems straight away I'm probably going to overwhelm everybody and alienate them, so it has to be done gingerly. Using terminology like aeration, thatch, topdressing, late season fertilization, and overseeding are commonplace words in the sports turf industry but mean nothing to those outside of it. So with this in mind, the approach will be to take "baby steps," since doing *something* is better than doing nothing.

As a priority, they need to address the safety issue on the field by filling in holes and undulations. An inconsistent surface, full of holes, is going to create a scenario for breaks, sprains and other athlete injuries, as well as negatively impacting ball roll and bounce. According to the National Institutes of Health, "it is imperative to provide a safe environment for sports. A poor playing field can cause serious injury to children. Use the softest exercise surface available, and avoid running on hard surfaces … run on flat surfaces." Simply put, the NIH is recommending a flat surface, but in turf management the terms "surface evenness" and "consistency" are commonly used because we are not dealing with flat fields, but instead are dealing with grades, slopes and crowns. The Sports Turf Research Institute (STRI) and ASTM International originally determined surface evenness standards for athletic fields. The standard called for a maximum surface evenness deviation of 20mm, measured with a profile gauge (there is no minimum, since a field cannot be too flat). An easy way of evaluating surface evenness is to lay a straight edge or string line across high-wear areas and measure deviations (holes, raised areas etc.) across the length of the line. This measurement is helpful as it is a quantitative assessment that generates numbers. It is also a good idea to make a visual, qualitative assessment. This type of assessment also is described in STMA's Playing Conditions Index. Having numbers and written documentation can be a helpful tool for planning surface renovation work and tracking improvements over time.

In this particular scenario, holes on the soccer fields need to be filled with good quality, sandy loam topsoil or a soil and compost blend, since the fields are comprised of native soil. For sand based fields the topdressing material should match the existing rootzone. At the same time that holes are filled and the field topdressed, bare soil or thin spots on the field should ideally be seeded, since the soil material will help to conserve moisture. After the holes have been filled (probably by hand) and the fields have been topdressed and dragged to establish at least a certain level of evenness, then it will be time to talk about other cultural practices. Filling the holes may seem like an easy task but it will involve justification for funds, approval of internal order forms, then organizing manpower, equipment and timing of application.

This first important task on the fields will show immediate results, not just in making the fields safer and helping to get some grass established, but also showing field users that the people who care for these fields also care about the community that uses them. This is turn will hopefully motivate everybody involved to invest in further improvements. ST

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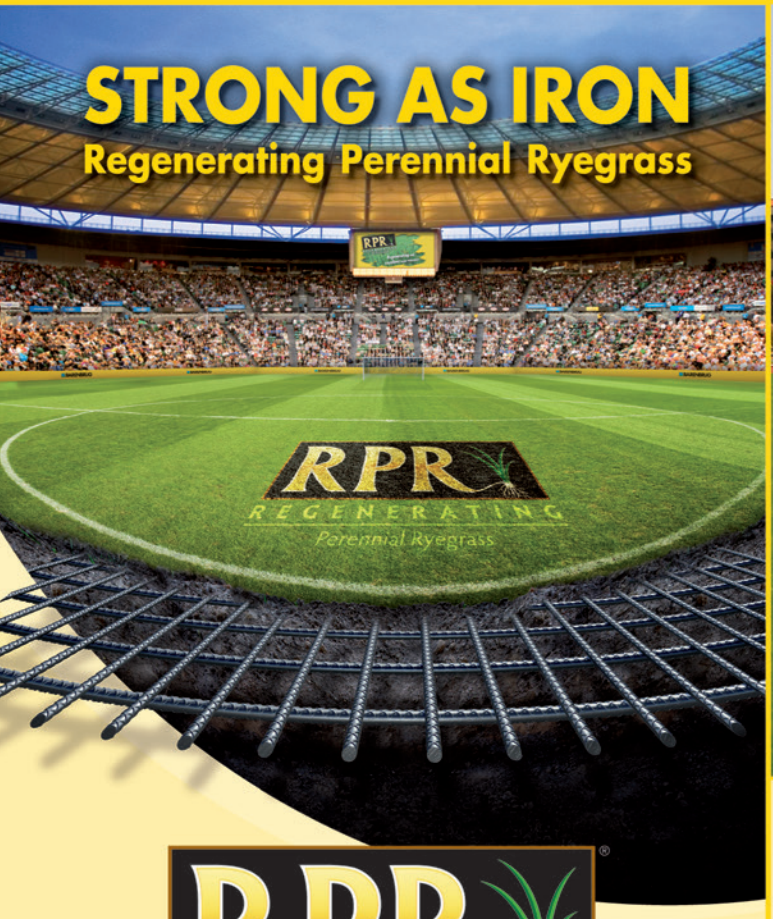

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