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March 2015

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PITCHING MOUNDS

CONTROLLING POA ANNUA

PREPARING
BASEBALL FIELDS FOR PLAY

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STARTING LINEUP

March 2015 | Volume 31 | Number 3

FEATURES

Field Science

- 8** Advice on building and maintaining pitching mounds
- 14** Controlling *Poa annua* in sports turf
- 20** Preparing your baseball fields for play this spring

The Interview

- 24** Our first installment of this new series:
Mike Schiller, CSFM

Facilities & Operations

- 30** Snow vs. baseball: one turf manager's story
- 32** Warning tracks: material selection, construction and maintenance

Irrigation & Drainage

- 34** Soccer field partnership pays off
- 36** Update on irrigation controllers

Field of the Year

- 38** STMA 2014 College Baseball Field of the Year: Georgia Tech

Tools & Equipment

- 42** STMA Innovative Award winner: GT Air Inject/Air2G2

DEPARTMENTS

- 6** From the Sidelines
- 7** STMA President's Message
- 23** John Mascaro's Photo Quiz
- 45** STMA in Action
- 47** STMA Chapter Contacts
- 48** Marketplace
- 49** Advertisers' Index
- 50** Q&A

What's Online:

SportsTurf is also available digitally, for more information on how to get the digital edition, see www.sportsturfonline.com.

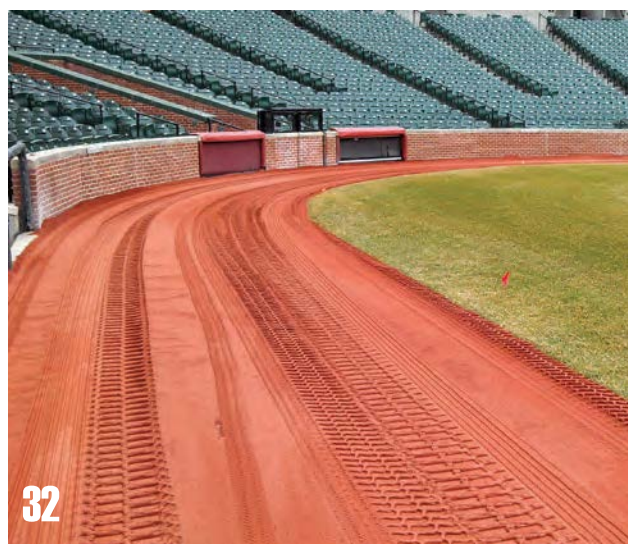


On the cover:

2014 Sports Turf Managers Association's College Baseball Field of the Year is Chandler Stadium at Georgia Tech. Sports turf managers Jon DeWitt, CSFM, and Chris May overcame severe weather challenges to produce one of the nation's best playing surfaces in Atlanta.



14



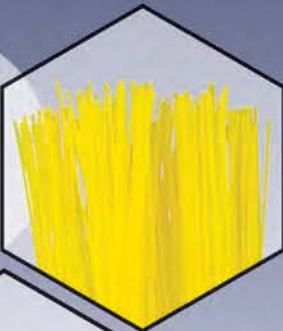
32



34

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Josh McPherson, CSFM, the director of sports turf management at the University of Missouri, recently filmed a video (not yet released to the public) on Positive Coaching. Mizzou has started a Positive Coaching Institute and offers summer seminars and graduate degrees in the subject. McPherson says Positive Coaching doesn't just apply to athletes. "The principles can be applied to the management of any employee as well. Since I started managing with the principles of Positive Coaching we have seen an improvement in employee morale, work ethic and we have even influenced improved performance on the field with the student athletes we interact with," he says.

Positive Coaching's objectives include learning how to create a positive work environment where employees will thrive, become independent and more productive. I asked McPherson to tell us more:

Can you describe some of the techniques you learned at the seminar and how you have implemented them?

"Celebrate the positive things that happen and don't dwell on the negative. We will make corrections but we do not get down on anybody when a mistake happens. When someone does something right we celebrate it and talk about what a great job they did.

"When complimenting someone we use specific examples of what they did right. We don't just say 'great job,' we say 'great job on how you mowed the infield' or 'great job on how clean the edges of the field look'.

"Everyone has different things that motivate them and you must realize that you

cannot manage everyone the same way. Find out what each individual's motivation is and use that to your advantage to help find a purpose in each day that they work."

How does positive coaching affect your relationship with your full-time staff?

"I have total buy-in from my two full time employees, Jerry Cummings and Philip Dierker, and they help support the mission of providing a Positive Coaching environment."

Can you expand on the idea that you have become more important in students' lives beyond teaching them about turf management?

"I don't believe that it is a badge of honor to miss a birthday party or a wedding or important life event to grow grass for a living. I am trying to teach the students how to work hard and play hard. Work is a very important part of life but having a life is also important. I am trying to show them what it means to be a parent and how I treat my wife and kids. I like having my family around at work so they can see that interaction.

"My son Axel took his first steps at a soccer game and three of the students were there when it happened. I work many hours and many weekends but I will trust them to be in charge if the opportunity presents itself. They get the feeling of being in charge and making decisions but they also get to see that I can go away and things will be fine with the grass. I want them to see that you don't need to yell at someone to get them to work, and I hope that they remember the way they were treated and will treat people they manage similarly once they are in charge." **ST**

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PROFESSIONALISM IS MORE THAN DRESSING WELL



Allen Johnson, CSFM.
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It's March. I'm not sure what that means for many of my peers who live in the warmer parts of the world and what you are doing, but in Green Bay, Wisconsin we are still hibernating. Perhaps we peek outside here and there and begin to think about outside work, but mostly in my world we are still spending the time planning for the upcoming year, performing annual equipment maintenance, reviewing budgets, and doing employee reviews.


Yes, reviews. We all get them in some sort of fashion, whether formally or informally. We are all being judged all the time by everyone. Sounds scary, doesn't it? It's the truth. Why does this matter to the Sports Turf Manager? It's important to know because we want to be viewed as true professionals in our industry.

So what does it mean to be viewed as a professional? It's a much talked about theme within our association. You can see it in big bold letters: **PROFESSIONALISM**. One dictionary definition defines it as "the skill, good judgment, and polite behavior that is expected from a person who is trained to do a job well."

I think for our purposes it means more or at least it should. If we want to truly be viewed differently, we must make the definition of professionalism, for our purposes, go further. It must go deeper than improving one's self image by wearing dress slacks in the appropriate setting. Not to minimize first impressions and the importance of

presenting ones self in a classy manner, but it needs to mean to go beyond what is expected, to anticipate the unexpected and have a plan for it, to have researched possible solutions and scenarios for unexpected events, to not act surprised when your boss comes to you with a "situation," to be proactive.

It should mean that you will remain positive and work cooperatively with other departments that sometimes have a natural competing conflict with your goals. I think it means that we should listen to George Toma and give the "and then some" effort, especially when we don't feel like it or it would be convenient not to. It should mean that when you see something that needs to be done you do it without being asked. It should mean that you are knowledgeable about new technologies in our industry and that you can articulate the pros and cons to your management team.

When should we do these things? We should do them all the time because we are being judged all the time. If we truly want to be viewed as more than the people who just sit on lawn mowers we need to do more. We need to expand the definition of professionalism. I challenge every member of the STMA to expand their own definition of professionalism and to hold yourself accountable to that definition throughout the year. By doing so, you will offer more value to your employer and you will gain more respect. We will achieve our goals. 



ADVICE ON BUILDING AND MAINTAINING PITCHING MOUNDS

Editor's note: We asked several MLB and MiLB groundskeepers for their thoughts on building and maintaining baseball pitching mounds. Here is their advice:

LARRY DIVITO, Minnesota Twins

When you are building a mound from scratch or doing a substantial renovation, it is vital that you first consider your infield turfgrass. If it is a new construction, make sure to set your home plate and pitching rubber locations and elevations well in advance of any finish work on the rootzone. You

will want to transport all of the material to the mound efficiently without causing changes in your field grade or contaminating your rootzone material with spilled mound clay.

If doing a renovation, think about how to get material off of and to the mound without wearing a traffic path on your turfgrass. This may entail pick-

Packing a softball mound at Troy University, Troy, AL. Photo courtesy of Glenn Lucas, Southern Athletic Fields.

ing up and rotating flooring to vary the route to and from the mound. Finally, buy some bender board to use as a temporary border around the mound circle. This will keep clay from migrating into the rootzone during your project.

While you can build and compact the base of the mound out of your stock of infield mix, it is important to not skimp on mound clay in the critical areas around the pitching rubber and in the landing area. Generally, if mounds are maintained regularly and tarped when not in use, a solid 4 inches of mound clay will be adequate to build up these areas. Personally, I like to set the landing area with about 6 inches of clay for stability at the professional level.

If the product you choose to use is not ready to go out of the bag, it is better to blend and moisturize the clay in another area first, then bring it to the mound with wheelbarrows. Always tamp and compact in lifts, no more than 2 inches of depth at a time. To ensure stability in the mound right away, you want to avoid any air pockets as you pack the clay.

Ideally, you would work the clay in two or three lifts and then finish with a quarter-inch top layer as you hand grade your slope to the rulebook specifications. If you have good clay, good people, and well-built, 8-inch square tamps, you can renovate a mound without a plate compactor. The most important factor is seeing that you have the moisture right with your clay. As you add material, be sure the base clay is slightly moister than the product you are adding. Also, before each layer I like to scarify the base material with a sharp rake or hand tool so the new clay will bond to it.


Clay mix selection will depend on various factors. You will need to check with your local vendors to find what is available and will continue to be around for you in the future. While bagged material may cost a bit more than bulk product, you can expect much less waste

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and easier storage with bagged clay. There are many quality mound clay products on the market today for sports turf managers. Keep in mind that the product you use will generally not be 100% clay. There may be some silt and sand in it as well.

The materials I enjoy using pack well, but have a small bit of grit to them as well. This can help reduce slickness of the clay product on wet or dewy nights. Use clean infield conditioner as topdressing on your mound consistently. Make sure it all gets swept out of the area around the pitching rubber and in the landing spots after every game. Your goal each game day is to add fresh mound clay out of the bag to stress spots on the mound. Please buy some mound tarps and use them. Use them all the time. Use the mound tarp on a rainy day or a sunny day... just use them every day, so the mound keeps consistent moisture. Finally, when going into winter, insulate the top of the mound and the landing area with some pink or blue housing insulation and then tarp the mound before the first freeze. This will minimize heaving of the clay during winter and have it ready to go earlier in the spring.

**JOEY STEVENSON,
Indianapolis Indians**

Mound maintenance and construction is a crucial part to any successful sports field operation. Our assistant groundskeeper, Joey Gerking, oversees the mounds to ensure they are consistent from bullpen to game mound.

Choosing the right products saves us issues down the road. The majority of our mounds are composed of our infield mix. Our infield mix is around 60% sand, 18% silt, and 22% clay. From there the “bell,” the landing area and the area around the pitching rubber, is 3-4 inch layers of gumbo clay. This clay is >95% clay and is considered a high impact/durable clay.

Moisture management is the most important aspect of mound maintenance. Gumbo clay is high

BUILDING A MOUND

By Michael Boettcher, Milwaukee Brewers

Every play in baseball starts with a pitch. That pitch starts on the mound. The mound starts with us groundskeepers. The steps we take to build our mounds, no matter the level, plays such an important role in the game of baseball. Here is a step-by-step process to help build that quality mound:

- 1.** Confirm grades/elevations/position of your mound as it relates to home plate and the rest of the field. Establish your 18-foot diameter, providing a great starting point for your build. Place forms for positioning of rubber or plateau, if available.
- 2.** Select a clay material that best suits your field, location, level of play, ability to maintain it, etc. You need to make sure that the mound will hold up under the constant digging, landing and traffic. Clay products are generally your best choice since they become firm when compacted, allowing pitchers great footing for leverage/stability, while providing a cushion for landing. There are several types of mound clay available. In Milwaukee, we have found success using a gumbo clay.
- 3.** Begin the build with bagged clay. Add clay in 1-inch increments. Compact by using hand tamps (ideal) or vibrating compactor after each inch of material is added, ensuring your mound won't settle after you complete your construction. Once within a ½ inch of grade, dig out the location for your rubber, place it and confirm measurements. Use smaller hand tools and pack clay all the way around the rubber to set it and eliminate shift.
- 4.** Once you have your rubber set, start to shape and determine the sizes of your plateau and landing. The use of string line, forms, levels, gauges, etc., will help with the establishment and confirmation of measurements from initial build, all the way to finish product. The use of a sand/silt/clay blend material for the transitions of the mound to the grass edges can help with edge integrity.
- 5.** Once built, confirm all measurements are correct. Adjust as needed. After you are set, you can begin with the management of your mound. With precision application of water and use of a conditioner to manage that moisture, a quality mound should be yours.
- 6.** Dress it to your liking and Play Ball!
- 7.** Don't forget the Maintenance! Every quality mound needs it. Patch after every use, if possible. Do yourself a favor and tarp it... your mound depends on it!



1. Starting the process.



4. Almost there.



2. Building the mound.



5. Putting on the final touches.



3. Reaching the plateau.



6. Stars and stripes in Milwaukee.

PHOTOS COURTESY OF MICHAEL BOETTCHER, MILWAUKEE BREWERS.

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maintenance clay and must be covered with a mat or tarp when not in use. If left uncovered this clay will crack and chip out very easily. So this clay can only be used at facilities with a mound tarp and access to moisture. There are other clays more suitable for extended use periods or facilities without tarps and access to water.

A schedule of our mound maintenance is as follows: Each morning the tarp is removed and the moisture is checked. If the clay has good moisture, a hitting mat will be placed over the gumbo clay and the sides will be left exposed to allow them to “firm” up. Around noon we will tarp the entire mound and this mound stays in place until 30 minutes before each game. After each game the conditioner is removed and a light coat of moisture is added and the mound is packed with fresh clay. We then cover up the gumbo clay with a light layer of infield mix and new conditioner. A light coat of water

is added to the entire mound and then tarped...repeat 72+ times.

CHAD LAURIE, Buffalo Bison

During baseball season, the pitching mound requires daily maintenance and regular renovations. After every game, the damage that pitchers do is repaired using black gumbo packing clay. This clay has a very high clay content and is only installed on the table top and front slope. The rest of the mound is constructed of our infield mix because there is considerably less traffic on it.

As soon as the game is over, the damage is swept clean of any loose material and conditioner, then watered and repacked with clay. The entire table top and front slope are watered at this time with a light fan nozzle so that the moisture in this high clay area can be controlled better. After the repacking is complete, the remaining parts of the mound are cleaned of clay chunks and

fresh conditioner is added to the mound. The mound is then covered with a tarp to maintain moisture and stays covered until after lunch the following day. Once the tarp is removed, an Astroturf mat is placed on the front slope to keep the moisture in the clay. This Astroturf cover will stay in place until we are ready to prepare for the game. Keeping the packing clay covered once it has proper moisture is essential to a well-performing mound.

Along with daily maintenance, the pitching mound goes through a number of minor renovations through the season. About three to four times year, all the conditioner is stripped from our mounds and packing clay is added anywhere the front slope and table top are low. Then the rest of the mound is scratched up with a small garden cultivator and infield mix is added to maintain the shape of the mound. This also gives us the opportunity to add fresh conditioner to the entire mound surface. **ST**

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CONTROLLING *POA ANNUA* IN SPORTS TURF

■ BY DR. NICK CHRISTIANS

Much of my career has been spent on trying to kill annual bluegrass, better known as *Poa annua* in golf course turf. While it does occur in other turf areas, such as lawns, it has always been on the golf course where this species has presented the biggest problem.

The very low mowing height and intense management regimes used on golf courses provide an ecological advantage to *Poa annua* and it easily outcompetes other preferred grass species.

This weed could always be found in sports turf areas, but the less-extreme management conditions that predominated on most sports turf through the 1900's meant that *Poa annua* was usually not a major problem in athletic

fields in most climatic zones. This has changed in the 2000's, and the greater intensity with which modern fields are managed is resulting in *Poa annua* becoming a common complaint among sports turf managers. **Figure 1** is from the Burlington Bees baseball field in Burlington, IA. The Burlington field sits in a low area along the Mississippi River and is surrounded by trees and a fence that results in a microclimate that is very

conducive to *Poa annua* infestation. Add to that the high level of maintenance initiated by Certified Sports Field Manager T.J. Brewer, and *Poa* has become an increasing problem in recent years.

Once it gets a foothold in cool-wet weather, *Poa* does what it does best in stress periods; it simply dies. **Figure 2** is from a sports field at Iowa State University. The clear outline of the *Poa annua* can be seen as lighter colored patches in the darker colored Kentucky bluegrass (*Poa pratensis*). So, now that it is here, how do you kill it?



Fig.2. *Poa annua* in a sports field at Iowa State University. Courtesy of Tim Van Loo, CSFM, Iowa State.

Fig.1. *Poa annua* is becoming more common in sports fields each year as management levels of these areas intensifies. Courtesy of T.J. Brewer, CSFM, Burlington Bees, Burlington, IA.





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This is a subject that I have often written about for the golf industry, but this is a first specifically for sports turf managers. A recent article appeared in *Canadian Groundskeeper* (<http://www.kenilworth.com/publications/cg/de/201411/files/6.html>) and parts of the basic information in this article also appear in the Canadian article.

To understand *Poa annua*, it is best to begin with its biology. This species appears in the botanic literature as a winter annual, which means that it germinates late in the summer and into the fall, lives through the winter as a mature plant, and in the spring it produces a seed crop and simply dies. It is better adapted to low mowing heights than most of our turf species and tends to crowd them out at low mowing heights. It thrives under an intense management system. Lots of fertilizer and water helps it get a



Fig.3. What happens to *Poa annua* in sports fields when it gets hot. Courtesy of Tim Van Loo, CSFM, Iowa State.



Fig.4. Baseball field with dead *Poa annua* in summer. Courtesy of T.J. Brewer, CSFM, Burlington Bees, Burlington, IA.

foothold, whereas turf that is subjected to moisture stress and lower fertility levels rarely develops a problem. It can produce a quality stand of turf in cool and wet conditions, but the fact that it dies in mid-season can be a real problem for summer sports, such as baseball (**Fig.3**).

It can also produce seed at any time of year when it is actively growing, even at the lowest mowing heights. Most of the other grasses that are used in sports turf cannot do this. This ability to produce seed gives *Poa* an ecological advantage over other grasses and it slowly takes over intensely managed turf.

If all *Poa annua* were a true winter annual, we could control it with preemergence herbicides, but much of it is a weak perennial that can survive the summer. Even where it survives, it is still an annoyance in sports turf because of its difference in color and texture from other grasses. Patches are easily picked up on high definition TV signals, even if it still healthy. It really stands out when it is dead (**Fig.4**).

I began my career 40 years ago as an optimist concerning the control of this species. Each turf show launched a new herbicide for *Poa annua* control and it appeared that it would only be a matter of time until this species would no longer be a problem. That turned out to be incorrect. Four decades later, we are still searching for that herbicide or management strategy that will provide a solution. My years of experience have left me less

confident that we will ever find an answer to the problem. It is likely that we will never see a completely effective “magic bullet” that will eliminate it.

The earliest attempts to control *Poa annua* was to simply cut it out when it appears. This still works, but it is very labor intensive and only those with the highest budgets can generally follow this procedure. Preemergence herbicides have long been proposed as the solution and they can provide some control. However, the seed for *Poa* can live for years in soil and plants will emerge every time there is an opportunity for germination, such as in a cleat mark on a sports field. If it were a true winter annual, preemergence herbicides could work, but there are also many perennial biotypes in most areas, and the living plants are not affected by preemergence materials.

Plant growth regulators (PGR) have also been promoted as possible controls. The first attempt was to use the Type I materials, like Embark (mefluidide) to inhibit seedhead formation. No seedheads, no *Poa* was the concept. While Embark was an excellent seedhead inhibitor, this strategy was not effective. Again, seed can live in the soil for years, and while Embark will inhibit seed production for a while, *Poa* can produce seedheads under nearly all conditions throughout the season. Embark was also highly variable and could result in phytotoxicity to the desirable grass.

The next phase was the use of Type II PGR's, or gibberellic acid (GA) inhibitors, such as Trimmit (pachybutrazon), and Cutless (flurprimidol). These products are effective in selectively slowing the growth of the *Poa* in creeping bentgrass fairways. Their use can be an effective as part of an integrated management program designed to discriminate against the *Poa annua*. The Type II PGR's do provide some relief in creeping bentgrass turf on golf courses, but this is usually not a sports turf grass and their effectiveness is more limited in sports turf situations.

Many experimental and commercially available postemergence, selective herbicides have been developed over the

years. I have conducted research on most of these. While some appeared promising, and I occasionally got excited about the results, every one of them has had the same problem. They work on some biotypes of *Poa annua* and not on others. There are literally thousands of biotypes of this species. While these biotypes are all genetically classed as *Poa*, they vary widely in their response to postemergence herbicides. It's not unusual to see multiple types on the same golf course and it is assumed that this is also the case on sports turf. This is *Poa annua*'s strength and our downfall. It always has a way of getting around us. If a product is found that controls 99% on a given site (I rarely see more than 80% control) the remaining *Poa* that is resistant to the herbicide will produce seed and simply turn over the population.

This is the primary reason why I wrote earlier that I do not think that we will ever see the "magic bullet" herbicide that will completely take out *Poa*. This genetic variability is the best guarantee of survival that a weed can have.

These postemergence herbicides can also be quite variable in their effect on desirable turf species. One of the most effective postemergence herbicide that I worked with has been Prograss (ethofumesate). This product is very effective at killing most *Poa* biotypes from perennial ryegrass. The catch is the perennial ryegrass. It easily damages Kentucky bluegrass and other species commonly used in sports turf areas. If your field is perennial ryegrass only, Prograss may be the product that you need, but this is rare.

Tenacity (mesotrione), a recent postemergence material from Syngenta, can also be effective in some situations. This product, though, is limited to use in Kentucky bluegrass. It will kill bentgrass and can damage perennial ryegrass and tall fescue. This product does hold some promise for Kentucky bluegrass sports fields, but again, the biotype problem with the *Poa* is a concern. I have seen some promising trials and some that were less promising (Fig. 5). With Tenacity, persistence is important and more than one applica-



Fig. 5. Tenacity (mesotrione) turning *Poa annua* white in Kentucky bluegrass turf. Courtesy of Tim Van Loo CSFM, Iowa State.

tion within the limits of the label will be necessary.

Xonerate (amicarbaxone) is an herbicide used primarily for the removal of *Poa annua* from both cool- and warm-season perennial grasses. While the golf market was the primary thrust of its development, it is labeled in many states for other turf areas, including sports fields. Its use in the golf market has been somewhat limited because of phytotoxicity problems with creeping bentgrass. For use on sports fields, follow the label very carefully. It should not be applied to Kentucky bluegrass when air temperatures are expected to exceed 85 F within 3 weeks of its application. It can also damage seedling Kentucky bluegrass and should not be applied to Kentucky bluegrass areas that are less than 12 months from establishment. It also should not be applied to turf that has been treated with Embark within the past 3 months. It is best applied for *Poa annua* control in the spring, when it can be applied at 2 oz/acre in 14 to 21 day intervals, or split into 4 one oz/acre applications separated by 7 day intervals.

Dr. Shawn Askew of Virginia Tech reports that a combination of Tenacity at 4-5 oz/A in a tank mix with Xonerate at 1 to 1.5 oz/A is proving to be a good combination for control of *Poa annua* in Kentucky bluegrass sports fields.

Velocity (bispyribic-sodium) is another postemergence herbicide that shows promise for *Poa annua* control in creeping bentgrass turf on golf courses. It can cause discoloration of creeping bentgrass and there are clearly biotype differences in the response of *Poa*. It

is generally limited to use on creeping bentgrass, or on perennial ryegrass. It can also be used on bermudagrass turf overseeded with perennial rye. These are very limited situations in athletic fields, and its use in sports turf is quite limited.

The newest postemergence, selective product is PoaCure (methiozolin). This product is also known in the industry in the US as the "Korean product" because it comes from Moghu Research Center in South Korea. PoaCure has a new mode of action and works by inhibiting cell wall formation. This product has been very promising in early testing in golf course turf. It has been used under an experimental use permit (EUP) for limited testing in 34 states this year in the US. They hope to begin marketing in 2016. It has provided the best results of any new product that I have seen for many years. However, as more results are being reported, it is evident that there is variability in its control of various *Poa* biotypes. This product is generally more effective in fall than in spring. It can be used for control in Kentucky bluegrass turf, although Dr. Askew reports variations in phytotoxicity among different cultivars of Kentucky bluegrass in tests conducted in Virginia. Research on sports fields will be an important issue once it has reached the market for golf course use. The company has not tested it in the US on sports turf, but they report that it is widely used in Korea to take *Poa* from Kentucky bluegrass soccer fields.

To this day, the most effective solution to the problem has been the development of Roundup (glyphosate) Ready creeping bentgrass. This method involves the genetic manipulation of creeping bentgrass. Scientists from O.M. Scotts Co., Marysville, OH, and Monsanto, St. Louis, have successfully inserted a gene into creeping bentgrass that makes the grass tolerant of glyphosate. Creeping bentgrass is normally susceptible to glyphosate, as are most weeds found in bentgrass turf. The susceptible species include *Poa annua*, and this makes it possible to remove the *Poa* without damaging the bentgrass. My students and I did a lot of work at Iowa State on

the concept and found it to be highly effective. The sale of glyphosate tolerant creeping bentgrass is still under review by regulators in the US federal government and to date, it has not been released. This process is not without draw backs. For instance, *Poa annua* could develop resistance to the glyphosate over time.

However, this remains the most promising technology that I have worked with in my career and hopefully it will be released in the future.

Scotts is currently developing glyphosate tolerant Kentucky bluegrass. These cultivars are still under development, but they may provide one of the



Fig. 6. Fraze mower used to remove grass and the upper layer of soil from practice sports field at Iowa State.

best opportunities for the selective control of *Poa* in Kentucky bluegrass sports turf areas that have been available to date. It is likely to be a few years before these cultivars are ready for the market.

A potential 'non-chemical' method that can offer some relief to the problem in Kentucky bluegrass fields is fraze mowing, which quickly removes the upper layer of soil, including *Poa annua* seed, followed by reestablishment with Kentucky bluegrass seed (Fig. 6). In 2014, CSFM Tim Van Loo performed a successful test of this procedure on one of Iowa State's practice fields. While the objective of this was not to control *Poa*, it is apparent that this procedure can potentially be used on older *Poa*-infested fields.

It is apparent that the removal of *Poa annua* from any turf area is a very complex issue. The solution varies with a series of factors, including the primary grass species on the field, climate, weather, soil type, and location. There is no single solution. The solution may require some experimentation by the sports turf manager to find the right solution for their particular situation. ^{SI}

Dr. Nick Christians is a professor of horticulture at Iowa State University. His area of research interest is in the development of naturally occurring herbicides for the turf industry. He also conducts research on reducing the pesticide and fertilizer input for the management of quality turf in sportsturf, golf and lawn care industries. For a list of citations for this article, visit www.sportsturfonline.com.

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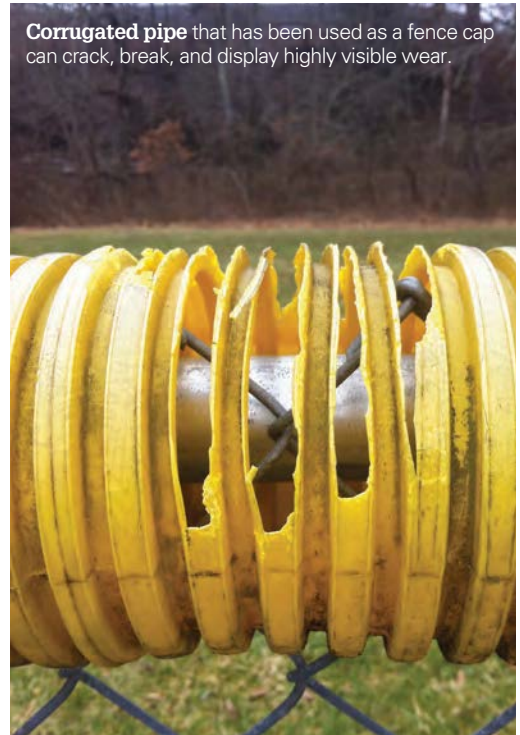
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Laser grading can save money later on materials and maintenance.



Standing water or saturated soils will most certainly delay practice and play.



Corrugated pipe that has been used as a fence cap can crack, break, and display highly visible wear.

PREPARING YOUR BASEBALL FIELDS FOR PLAY THIS SPRING

■ BY STEVE PEELER, CSFM

Preparing fields for the spring each year is a challenge in a lot of regions within the United States. Several things can affect preparation for many teams in the northern regions as well as southern regions. Each year, baseball season comes around and is upon us before we realize it.

Several things should be inspected and prepared at all facilities for all ages before conducting practices and games. The following is a checklist that has been used with much success in the past that covers all aspects of the facility:

Field tarps: Infield tarps are made to protect the field from rain and excessive moisture lying directly on the infield skin. Sometimes, a tarp with a hole is worse than not tarp at all. Large holes can be repaired, but small, pinholes take time to locate in the lightweight tarps. In early spring, you can almost bet that you will be rolling out the tube and placing the tarp on the field. Inspect your tarp weeks before the season begins so there are no surprises of a large puddle on the skin before opening day.

Field drainage: Standing water or saturated soils will most certainly delay practice and play. It is important that the field has sufficient internal drainage or surface runoff so the field can be

made playable in a reasonable amount of time for spring and summer play. Internal drainage issues take careful consideration to what corrective action can be taken and still be ready to play in spring. Therefore, opening the area and applying drying agent with deep tine aeration and topdressing will relieve the problem to some degree, but must be addressed immediately following the season so recuperative time is allowed for a safe playing field.

Perimeter conditions: Beautification of your facility is usually one of the first impressions that will be made by spectators, coaches, players, and your own team. Having the surrounding areas groomed, maintained, and appealing will go a long way for the home team and give yourself and supporters pride in your job and facility.

Irrigation systems and water supply lines: Many facilities throughout the Northeast, Midwest, and the upper Northwest drain the irrigation system lines due to the cold temperatures. Charging the irrigation system must be done slowly over a period of time so there is not so much force on the joints of the main line and lateral lines. A sudden increase of water volume and pressure can rupture water lines. In addition, any water that was remaining within the heads throughout the winter can sometimes freeze and crack the irrigation head bodies. Each zone

should be opened and checked to relieve the air and to also check for possible leaks that might have occurred. Once all zones have been opened and the correct operating pressure has been accomplished with no air remaining in the lines, the system can be fully charged. PSI should be monitored during the charging operation so no major fluctuation is witnessed. Once the system has been shut down, the static pressure should be consistent.

Safety: The biggest concern of all sports field managers is safety. Accidents can occur even when proper steps have been taken to minimize all injury risks to the players. However, the main goal is to produce a field that is safe, playable, and injury free. Before play, the entire field and facility should be inspected via a checklist that itemizes each area of the facility. Infield skins, base anchors, bases, pitching rubbers, home plates, grass edge and lips, warning track, fencing, backstop netting, field screens, dugouts, and spectator bleachers should all be included in this pre-season checklist.

Playability: A field that is playable is a field that is safe. Not only does playability refer to safety, but it also can refer to a fundamentally sound playing surface. Each player on the field must be made comfortable in each position and have confidence in the sports turf managers ability to provide a superior playing field. Talking to the coaches and players before the season and in the season can help improve the facility and develop a player's ability.

Maintenance: All facilities must have a designed, routine maintenance program for all aspects and sections of the playing field that are beyond turfgrass maintenance or infield skin maintenance. Cleaning, pressure washing, painting, and cosmetic repair are areas that are beyond regular maintenance of the playing surface.

Grading: Regardless of how many times a sports turf manager grooms their infield or edges the turf, leveling and using a laser grading device is recommended to save money on materials, increase surface runoff and drainage, and maintaining safety.

Soil amendments: Adding soil amendments to the infield skin, home plate, and pitching mounds is an industry standard. Depending on the composition of your infield skin, additional soil amendments could be needed. Before the season and after hard freezes in the soil, it is recommended that a sample of your infield skin be taken and tested to see what percentage of material is actually required for optimum performance.

Backstop: Different materials have been used over the years to construct backstop structures. Chain-link fencing was most popular in the past, and still in use today. Fencing fabric has a tendency to bend and curl after repeated use and ball strikes. Panels of the fencing could become sharp and pointed. Returning the fencing fabric back to original form is most difficult. Inspecting this potential safety issue should be performed

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Safety netting, wing netting, backstop netting, and field screen netting can weather when not in use.

several times during the season. Backstop support post should also be inspected to ensure there is no corrosion, cracking, bending, or other structural concerns.

Netting: Safety netting, wing netting, backstop netting, and field screen netting can weather when not in use. Visual inspection and tension test should be performed to ensure there are no holes, tears, or loose connections. Excessive moisture and freezing temperatures can stretch netting that is left to the outdoor elements. Batting cages that are left outside through the winter can stress the support post with the increase of weight from snow and ice. Therefore, inspect the poles to make sure they have not been bent or loose in the ground.

Windscreens: All fence coverings and windscreens must be inspected before, during, and after the season. There should be no rips or tears that would get worse over time. Fading of the windscreen can occur if not UV protected. Therefore, it is important to take images immediately after the installation of new windscreens. This will give you a color comparison at present to the original color. Any irregularities must be repaired as soon as they are noticed.

Fence caps: Corrugated pipe that has been used as a fence cap can crack, break, and display highly visible wear. A plan and budget must be considered to replace fence caps because they do not last forever. Depending on the region where your facility is located, the wear may be more or less of the overall life expectancy of fence cap materials.

Dugouts: Depending on what type of dugout is present at a facility, they must be cleaned and maintained regularly to remain presentable to your team and visiting teams. Pressure washing, filling concrete where required, opening and cleaning the floor drains, and painting should be performed before the teams use the facility. Weather can play a role in this type of maintenance. Allow enough time for all tasks to be completed.

Batting cages: Indoor batting cages normally will last longer than those that are outside. Netting left outside to the winter elements can wear with moisture, snow, ice, and cold temperatures. In addition to netting, the support poles can bend and sway if there is a lot of weight on the netting from snow and ice. Some

cases have even resulted in total collapse from the excess weight. Therefore, if possible, netting that is outdoors should be taken down and stored once the winter months approach. Holes, broken knots, fraying, and all over signs of wear should be repaired or replaced.

Electricity: Although electricity is normally not an item that is left for a sports turf manager to deal with, it is something that should be checked and repaired by a qualified professional.

Electrical outlets in dugouts, behind pitching mounds (if applicable), scoreboard, and PA systems have to be operational for opening day.

Protective padding: Sports turf managers have the option to remove all protective padding at the conclusion of every season if manpower and storage space is available. Padding on dugout rails, backstop walls, and outfield fencing go through extreme weather conditions and wear. Cold temperatures in the winter months and very hot temperatures due to direct UV rays on the vinyl covering can cause the pads to breakdown. Therefore, removal and storage after each season will extend the life of protective padding. During the season, pads can become ripped and require repair with a patch kit.

Bleachers: Winter can take its toll on spectator seating. Wood, metal, support beams, fasteners should all be inspected.

Concessions: Depending on the size and playing level of your facility, concessions stands may or may not be the responsibility of the sports turf manager. In some instances, these types of areas are included in the job description duties. Should you be responsible for this area or other structures within the facility, preseason start up is required to check the operation of all components that are within for full operational status. Certified professionals with experience should inspect utilities such as gas, water, electricity, and special containers.

Restrooms: As with all other structures that are required for spectators, players, coaches, and staff, restroom operation is one of the most important. Restrooms that are clean and inspected regularly leave a good impression about your facility.

Maintenance sheds: Sports turf managers must have a maintenance facility that is well organized and accessible. Equipment is very sensitive to the outdoor elements if not enclosed within the storage facility. Season supplies should be new at the beginning of the season so proper operation can be expected. Aerosol paints, chemicals, and other items must be stored properly in accordance with State and Federal regulations. [SI](#)

Steve Peeler, CSFM, is field operations manager & sports turf consultant, All Star Fields.

John Mascaro's Photo Quiz

John Mascaro is President of Turf-Tec International

Can you identify this sports turf problem?

Problem: Line void of turf

Turfgrass area: Apartment complex lawn

Location: Northern California

Grass Variety: Fescue blend

Answer to John Mascaro's Photo Quiz on Page 29



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THE SPORTSTURF INTERVIEW: MIKE SCHILLER, CSFM

Editor's note: This month marks the debut of a new monthly feature, called "The SportsTurf Interview." Leading us off is now-retired Mike Schiller, CSFM, a long-time STMA member and former protégé of association founder Harry C. Gill. Mike was president of STMA in 1996-97 and was named the Harry C. Gill Memorial Founders Award by the association in 1993.



The Schiller family: front left, youngest son, Johnathan; behind him younger daughter, Jennifer; at top is oldest son, Matthew. Mike stands behind his bride of 43 years, Char, with older daughter Elizabeth at front right.

SPORTSTURF: No member has more passion for the STMA than you; why are you such a believer in the association?

SCHILLER: How could I not be so passionate and such a believer in the association? As a young man just out of the military, I was a "newbie" sports turf manager in search of answers. At just the right time, I had the opportunity to attend some sessions at which I got to meet Doc Daniel and Harry Gill, which led to my meeting Dick Ericson and George Toma. I was lucky because these four men took me in, answered questions, and surrounded me with their energy and passion for field maintenance. I was blessed to call them friends as well as mentors. So I did whatever I could to repay their kindness and help them spread the word and be active in the movement.

I also will be eternally grateful to Roger Bossard; whenever I called him, he would gladly answer questions and always had great suggestions. He quietly has been another leader in our industry that never sought recognition, but he and his family were really involved with the sports field management industry in the early days.

ST: You were President of STMA nearly 20 years ago. What are the biggest changes you have seen in the association over that time?

SCHILLER: The last 30+ years since I met Harry have flown by much too quickly. I have watched my family grow and I have worked with so many wonderful people in my career. In the early days our board met only once a year at conference, with an occasional phone poll to vote on an issue or program idea. Everyone was a volunteer; a lot of work took place over a barbecue at our home in Chicago. We put many mailings together in our basement with the help of my kids and later with Dr. Kent Kurtz and his daughter.

The fact we now have a full time Chief Executive Officer and full-time staff is testament to how far we have come. Along the way many of the pioneers gave their own money and time to help keep the dream alive. There were times that we hardly had two nickels in the bank, but hard work on the part of many kept things alive and growing.

And just like a family, we argued and disagreed, but after attending this past conference in Denver, it is really a dream come true. The idea has grown to such an alive and vibrant organization, and I am honored to have been a small part of it.

ST: Do you think the founders envisioned what STMA has become today?

SCHILLER: Yes I do, I think they all had a feeling; they understood the need for safe fields and playing surfaces. And I think as good as things are now; I do believe the best is yet to come!

ST: What are the most important changes you have seen in sports turf management over those 20 years?

SCHILLER: The largest change I have seen is that we no longer have to cull all our turf information from the research done for golf course management. We now have sports field-specific research at major universities. Drs. Daniel and Kurtz saw this future and were way ahead of the curve, and thanks to them and their fellow educators we now have numerous educational opportunities.

Equipment-wise, the first AERA-vator with seed box was a big help to me. It could loosen and prepare and seed all at once. It drastically improved seed germination for those of us who couldn't use sod to repair surfaces. Speaking of aerification, the improvement and variety of equipment has been great, for

example the development of deep tine machines to help improve rootzones. For those who could afford sod repairs, the wide roll sod harvesters and installers immensely changed sodding.

Following closely was the breeding of more wear tolerant grass plants; improved means of fertilization, and the improvements to irrigations programmers, valves and heads. Many of these improvements I believe came about because of the growth in the sports turf management industry and better educated turf managers.

STMA developed our Certification Program, which Dr. Henry Indyk pushed for as we grew. Certification is the chance to show your commitment and pride in yourself and your trade and I am so proud to see the numbers grow. And the growth of our chapters has been incredible. This growth has led to some many outstanding men and women coming out of the chapters to take positions as volunteers to the organization and also as board members. The continuing growth of our SAFE Foundation and its scholarships to the future leaders of our industry make me proud.

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

SCHILLER: Technology is going to help us improve our communications in the field, with peers, employees, supervisors, and, importantly, our vendors. I also foresee a great change in irrigation; several parts of our country are already seeing these changes. I do believe in the very near future we all will see limitations on our use of potable water.

However I believe our industry will see improvements in wetting agents and rooting agents that will help make our irrigation water more productive, as well as help make our rainfalls less likely to run off. I also believe new and more cost-efficient means of retaining and reusing rainfall and irrigation water will come about.

My hope is someone who will develop a cool-season grass that will have the aggressiveness and wear ability of bermudagrass in a bluegrass plant, or the spread ability of bentgrass in bluegrasses and ryegrasses.

The future also lies in the students; we

need to be welcoming and kind to all who ask a question, or welcoming to a student looking for an internship. I was mentored by some pretty terrific people, and I always tried to share all I had learned with those who want to learn; we need to make sure we continue to do that for our future leaders.

ST: How do you think the STMA should approach the increasing number of synthetic turf fields being built?

SCHILLER: I fought synthetics in the beginning but as I matured I learned there is a use and need for them. Research must continue to insure that they do not create illness or injury; we must continue to work with manufacturers to develop new means of managing and maintaining these carpets to keep them as safe.

I think our organization needs to let the world know that whether you have a natural or synthetic surface they are going to require hard work, dedication and proper maintenance to keep them safe and play-

able. And those who care for them will need equipment, staff and financial support to help keep those surfaces safe and playable.

I think our organization can and should be the catalyst to get both sides of the industry working together to supply the safest playing surface available to all levels of participants.

ST: How are you keeping busy now?

SCHILLER: I have been doing things I enjoy. I help out friends, and for a couple seasons I helped mow the playing surfaces at Northwestern University. I have been using my military and recreation training to help my nephew run the pro shop at the golf course he manages. I also try and play golf as much as my old back will allow.

But my best job is being a husband, father and grandfather. Char has been my best friend and wife for going on 44 years, our children are now all grown and thank God all have wonderful partners in their lives and I cannot be prouder of them.

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I have had some really terrific jobs during my career and worked with so many incredible people and have learned so much. I have gotten to do some pretty incredible things during my military and post-military careers. I can truly say I loved going to work. My dad always asked: "When are you going to get a real job and quit playing in the dirt?" Well I enjoyed almost 45 years of playing in the dirt, made a living, made great friends and had fun, so dad I hope you are proud.

But, one of the best jobs I have ever had is being Grampa; we have two beautiful little granddaughters and one handsome little grandson. I love every minute that I get to be in their presence. I have three great brothers and their spouses, children and grandchildren. I love the time I get to join my brothers for a round of golf, or spend time together with all of them. I have been blessed with great friends that I love as well, so my job is to fill whatever time I can, doing things I love to do with the people I love.

ST: What wisdom can you share with the younger turf managers about being successful in the profession?

SCHILLER: What is success? Is it winning awards; it's always great to be acknowledged by your peers, but I think if you can wake up in the morning, look forward to what lies ahead, and do something you really love to do, then I think you are successful.

I would study and continue to learn something new each and every day. One of my early mentors and bosses once told me, "If you do not learn something each and every day, then you wasted the day!" So find a niche that you enjoy. As Karl Mecklenburg said at our luncheon in Denver this year, "Reach!" Don't ever stop improving, don't stop learning. Don't be afraid to say you don't know, but always be willing to say you will find out.

Do things you enjoy doing and it will not be work. Make time for you, make sure there is something you enjoy doing away from work so you can relax and let off steam. And always make sure you have time for your family and friends because none of us knows how much time we have on this earth.

Get involved, help others, become an active member of STMA because you will get so much more out of it. And make sure you develop friendships within STMA because those friends will be there for you always.

I have been so lucky in my life, I have gotten to meet so many great people, I have seen facilities of every type all over our country, and I have made great friends and have enjoyed oh so much my other family and the times we spent together. There are so many of you in STMA who have played an important part in my life; too many to name you all but you know who you are. Thanks from the bottom of my heart! **ST**

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John Mascaro's Photo Quiz

Answers from page 23

John Mascaro is President of Turf-Tec International

This line void of turf is not a cow path for the owner of the red SUV parked in the background as I guessed when I saw the photo. The line in the turf is actually earthquake damage. As this part of the country suffers from shake rattle and roll syndrome from time to time, minor things are often overlooked. This particular lawn was subjected to an earthquake that caused this crack in the soil. The buildings and parking lot were spared any major damage so a little turf repair is all in a day's work for this landscape maintenance company.

Photo submitted by Bob Mann, Agronomist for Lawn Dawg Inc of Nashua, New Hampshire. Source of photo is unknown.



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

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SNOW VS. BASEBALL: ONE TURF MANAGER'S STORY

■ BY BRAD MACKEY

"If you don't like the weather then wait a day" is a common statement in Missouri. That must have been the thinking for scheduling conference baseball games here in February several years ago. Unfortunately this cannot be helped; in the Mid-America Intercollegiate Athletic Association (MIAA) with our 14 teams, and many other Midwest and northern conferences, it is standard. The question is, what do we do when it's Baseball vs. Snow?

Here at the University of Central Missouri much of the time we are just far enough south that we will be able to pull off games in February but 2012 was not one of those years. Home games were scheduled for a February 20 doubleheader followed by another doubleheader on February 23 and a single game on the 24th.

The tarp was put on the field on the 19th as 2 inches of rain fell into the 20th. The next day the snow started. Over the 21st and 22nd we got 11 inches of snow and then on the 23rd and 24th another 13+ plus came (after that much you just quit measuring). So though the games were of course cancelled, another was scheduled for March 7 and we had a team really wanting to practice on their field.

NO FROZEN TUNDRA

Several days later we had main campus cleared and safe so our attention could turn back to the field. The amount was no longer 2 feet due to the snow compacting and some melting from the bottom. Many people had told me to blade the snow to the warning track and scoop it over the fence. But the problem



with that idea was the field was not frozen. Remember, we had 2 inches of rain right before the snow started. All that snow was a great blanket that kept the field from freezing. Had we taken a tractor out there we would have had some serious ruts to fix.

Our only answer for the outfield was to let it melt. We tried to help it along by spreading crumb rubber by hand on top of the snow. We would have liked to do this with the topdresser but again we were worried about creating ruts. The crumb rubber actually seemed to help; the thought was that the rubber would heat up and help melt the snow. In the areas it was thickest it did melt 3-4 days sooner than areas not as thick.

DIFFERENT STORY FOR INFIELD

The infield was a different story. If they could practice on the infield soon that was what they wanted; they would wait on the outfield. We are blessed with great coaches and players that will help do anything to help. The first idea was to melt the snow with water (the tarp was under the snow) and pump off the water. Maybe it will work somewhere at some time but we won't try it again!

The next thought from the coach was what if we used shotgun-style heaters and scoop snow in front of them to melt the snow and then pump the water off? It worked but not fast at all; strike 2.

The last idea we knew would work but had its perils. Get the shovels! We borrowed two Toro Workmans with dump beds from our golf course and got as many shovels as we could. Our crew of four, all the coaches and players (when not in class!) started scooping into the Workmans and hauling it off the field. Under the tarp it was dry and firm so in the beginning there was no issue with rutting except outside of the playing surface, on the apron, as we pulled on and off. As with measuring snow depth, after a while we quit counting how many loads of snow we took off. In 2 days we had most of the snow off the tarp but had to fight ice forming overnight. We used brooms to push the melting ice off in the afternoon and finally got the tarp up.

The biggest problem we had in doing this was that as careful as we wanted to be and stay just above the tarp with every scoop, after a while every scoop dropped lower and put a small tear in the tarp. The dryness went away under the tarp we were driving on and so ruts began to form. As soon as we realized this we carried snow to the carts and kept the rut in one spot. We did get our games in March 7, no worse for wear.


NEXT TIME

What will we do next time; what did we learn? As far as the outfield I really did feel that the crumb rubber helped although we did not get near enough down. If the field were frozen under the snow I would definitely use the topdresser and try to get a much more uniform coating.

For the infield, now that we have an extra tarp (with a lot of small slits in it) we have used it with the gray side up to melt the snow. If the sun is shining you can melt a lot of snow in a day and then move it over to the next area. Using the old tarp has kept us

The crumb rubber actually seemed to help; the thought was that the rubber would heat up and help melt the snow.

from having to scoop. (An expensive lesson I don't recommend but...). I have since changed positions here at the University and am now the Grounds Manager; the person I hired comes to us from Michigan and already has some great ideas for removing the snow from the field. I will have him do the next article.

I don't know if what we did was right or wrong (probably mostly wrong) but it's what we did. In hindsight we might have been ahead of the game to do nothing and let nature take her course. But I doubt there any too many of us that would do nothing. Our jobs are to do everything we can to fix a problem, right or wrong. And that's how we learn. 

Brad Mackey is now grounds manager at the University of Central Missouri; he previously was athletic fields coordinator. The University of Central Missouri in Warrensburg is a Division II school and has a student population of more than 14,000.

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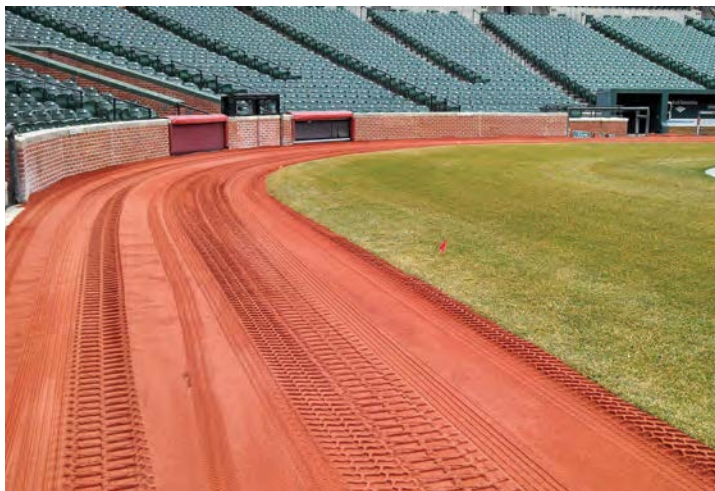
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WARNING TRACKS: MATERIAL SELECTION, CONSTRUCTION AND MAINTENANCE



BY PAUL SCHINNER

We've all heard the story: a warning track on a baseball field is designed to give the players two to three steps "notice" at full stride, before crashing into the wall. Right? Well, partially right anyway, in my opinion. There are other good reasons that warning tracks exist. Aesthetically, a red warning track can be a stunning contrast to a lush field of green grass. Throw in a nice mowing pattern and a baseball field is as much a work of art as a playing surface and the track is an important part of the canvas.

The track also serves as a roadway for tractors, utility vehicles, mowers and other equipment to keep them off the grass. I have seen and been part of 5K and 10k races that finish on a MLB warning track. I can imagine the horrified look on a groundskeeper's face if 3,000 runners were hitting the finish line on their grass infield. Occasionally, cars, floats, fire trucks or horses use the track to deliver team mas-

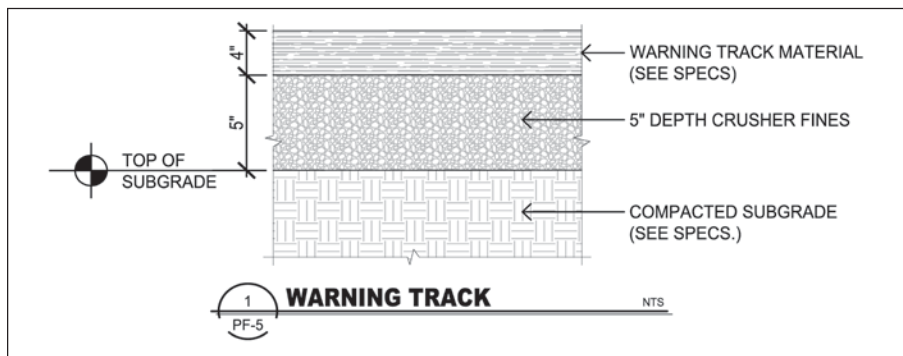
cots and celebrities to the field for events and ceremonies. So, while player safety may have been the invention of the warning track, there are many other reasons to understand and care for them.

PROFESSIONAL HELP RECOMMENDED

Whether starting from scratch on a new field construction or renovating an existing field I recommend hiring a design professional. There are numerous highly qualified landscape architect/civil

engineers that specialize in sports field specifications and design. A good designer will take into account the local weather conditions, field use, maintenance capabilities, budget and the overall performance expectation of the owner.

A good warning track design will drain water. This can be done several ways. A material that is designed to drain through may be built over a free draining stone base with drainage pipes underneath to carry water away, while a tighter, more compactable material may need to slope one direction or another and sheet the water away to a trench drain. If budget is a



limiting factor, as in a youth, park or rec field situation, find a local contractor that specializes in this type of work and give them a call. There are many professional contractors and groundskeepers in the industry that volunteer their time to help local groups keep up their fields. See the Sports Turf Managers Association (www.stma.org) or American Sports Builders Association (www.sportsbuilders.org) websites for more information.

Build a good base. Whether your track will be flat or sloped, it is vital to have a good base to build on. Subgrades are typically 4 to 10 inches below the finished grade. Make sure your subgrade is compacted and graded to match the finished grade of the surface. Over the years I have found that a good proof roll will tell me more than some expensive compaction testing; all it requires is a Bobcat with a loaded bucket driving back and forth. As you find any soft areas, go around and excavate the area until you get to solid ground; then fill in the hole with good compactable soil or stone in 3 to 4 inch lifts and compact in between each lift.

Once you have filled in any soft spots, repeat the proof roll again to be sure you have fixed the problem. Some subgrades are deeper and have a layer of crushed stone under the warning track material, but the same principle applies. You also want to make sure that the subgrade matches the finished grade, or in the case of a track with a stone base, that the top of the stone matches the surface grades.

If your grades do not match, you will end up with areas that have more or less of your warning track material and this will cause problems. It can also lead to having to use more material, which will cost you money. Most of the warning track products available today are not inexpensive, so you will not want to waste it.

Maintenance of a warning track can vary based on material, use, budget and staff availability. Most high profile venues will treat the track similar to the infield clay by dragging and rolling regularly. You have to use the same care not to drag the material into the grass as you would on your infield. Regularly clean up any trash, grass clippings, peanut shells or sunflower seed that tend to end up on the track. This trash can end up turning to a fine powder and can affect the drainage through the track.

Try to vary your path when driving rubber tired equipment on the track to try to minimize compaction. When compaction and slower drainage rates become an issue after a few years, scrape off the top 1/2 to 3/4 inch and remove, then scarify the next 1 inch and add new material to the top. This can extend the life of the track and help keep it functioning as designed. **SI**

Paul Schinner, CFB, is vice president of operations, The Motz Group, LLC, and a Certified Field Builder member of the American Sports Builders Association. He can be reached at pschinner@themotzgroup.com. Typical detail courtesy of Millennium Sports.

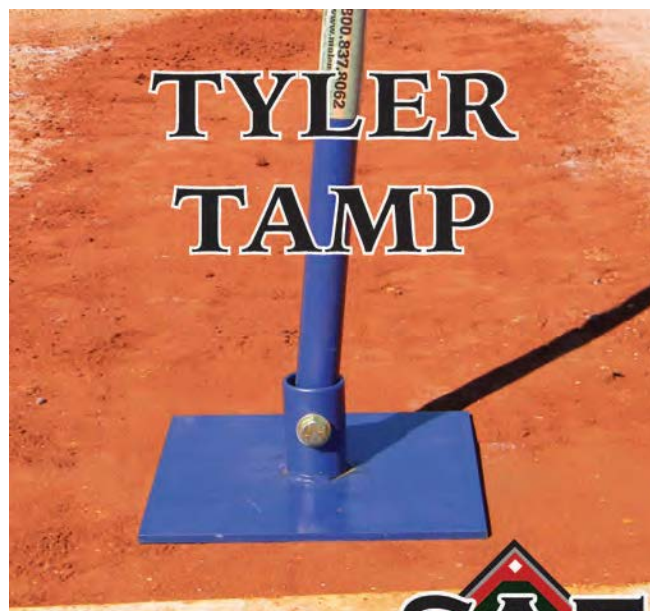
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SOCCER FIELD PARTNERSHIP PAYS OFF

Editor's note: This article was supplied by Hardwick Creative Services, Encinitas, CA on behalf of their client, Underhill International.



No surprise: Soccer is the most popular youth sport in the US, attracting more participants than all other sports combined... more than 3 million!

Again, no surprise: Municipal field managers can't keep up with the demand for playing time on soccer fields.

In Modesto, CA however, the city has found an innovative solution that has delighted the soccer community while receiving applause from city and business leaders.

More than
400,000 people
attended soccer
events in Modesto the
first year of operation.

Located in the Central Valley, Modesto has more than 3,500 young people on soccer teams. In 2012 the parks department formed a partnership with the non-profit Modesto Youth Soccer Association (MYSA) in which the city built Mary Grogan Park, an \$11 million state-of-the-art soccer complex. Upon completion in June 2013, the facility was turned over to MYSA to operate.

The first phase of a three-phase project, the park has seven soccer fields with each field averaging 40 to 50 hours of play a week.

Created by Verde Design, a landscape architecture firm headquartered in Santa Clara, CA, Grogan Park features four natural turf fields and three Sprinturf synthetic fields.

"People in the soccer world love this park," says Dennis O'Brien, facility manager. "Grogan Park is a showplace for

great youth soccer. We have leagues from throughout the state booking tournaments here."

AN INNOVATIVE IDEA

The partnership between Modesto and MYSA is one of the most interesting aspects of the project, reports Modesto Parks Project Coordinator Nathan Houx.

"MYSA pays the city about \$169,000 per year for park maintenance. MYSA then oversees the operation of the facility and receives revenue from a number of sources, including facility rental to soccer leagues, parking fees and concessions," he said.

"MYSA also receives 4,000 free hours of use at the facility in exchange for the payment of maintenance."

O'Brien explains that MYSA was involved in the design and planning of the park from day one. The facility has a special Championship Field, which is set about 3 feet below ground level for better viewing. Night lighting was installed and bleachers are on the plans.

The revenue that the fields generate comes from several sources: soccer training camps; competitive leagues that travel around the state (Modesto alone has 30 competitive teams); recreational leagues; plus adult leagues. Senior leagues are in discussion and may soon be joining the roster. More than 400,000 people attended soccer events in Modesto the first year of operation.

"Bookings run six to eight months in advance," says O'Brien. "The Northern California Soccer League, for example, with 3,000 teams, has booked Grogan Park for their quarter-, semi- and tournament finals for 2015."

This activity has generated revenue far beyond the soccer field. Businesses in

town report healthy hotel and restaurant bookings as a result of the soccer events.

What does it take to keep this high-demand park in great condition?

The synthetic fields feature Sprinturf CoolFill infill, which reduces surface temperatures up to 30 percent when used with green granules. CoolFill provides an alternative to traditional black crumb rubber infill and comes in a variety of colors that “feel” cooler while also complementing the color of the turf system fibers.

The safer playing surface and green colorant provides a realistic and aesthetically pleasing field that is UV-resistant, while reducing the temperature on the playing surface.

“By specifying CoolFill, we anticipate the green coating will knock a few degrees off the field temperature during games played in the heat of July, August and September,” said Houx.

“The grass blades were specified to be 3/8” between tufts and 3/8” between rows, which is more densely packed than standard 3/4” blades, and this helps to lower the field temperature and make the grass look more real.”

The synthetic fields are groomed once or twice a week, depending on use, with a Greens Groomer Litter Kat synthetic turf sweeper and Spring Tine rake.

An important part of the maintenance is a weekly wash down by Mirage M-160 sprinklers from Underhill International. The M-160 sprinklers have a 174-foot throwing radius. At Grogan Park the M-160s run for five minutes per station, or 30 minutes to wash down the entire field.

Known as “piston-driven water cannons,” M-160s are installed at grade and disappear when retracted. They provide full or part-circle coverage.

“At Grogan Park, six heads were installed on the sidelines of each synthetic field,” said Derek McKee, principal at Verde Design. “They were placed completely out of the area of play for safety reasons. Four heads on each field are set for 90° of coverage and two heads are set for 180° of coverage.

“The high volume of water does a good job of scrubbing down the fields.”

Underhill’s M-160 measures 23.7 inches high and has an above-grade pop-up height of 2 3/4 inches. The arc of coverage can be adjusted from 30° to 360° and the rotation speed from 100 to 240 seconds. The head has a 23° trajectory, and a range of nozzles from 16 mm to 26 mm is available for efficient water distribution. The M-160 operates at 60 to 120 psi and handles from 96 to 300 gallons per minute.

Grogan Park draws water from an on-site well. Because the M-160s run at 140 psi, a booster pump was installed to maintain consistent water pressure. When the park first opened, facility staff found that well water particulates were clogging the filters. By stepping up the maintenance program and cleaning the filters about every six months, the problem was easily resolved.


“Another plus is that the M-160s help reduce static on the fields,” said Houx. “Polyethylene turf can create static, especially when it is hot and dry. Once the fields are wetted down, the static disappears



and players don’t experience ‘shocking’ during the games.”

O’Brien says that last year’s World Cup generated huge interest in soccer among youngsters and parents.

“It’s a wonderful sport that doesn’t require a lot of equipment or expense to play . . . and enthusiasts of all ages have a chance to participate.

“The city found it fitting to name the park after Mary Grogan, who was director of the Parks and Recreation Department in Modesto for 29 years. She was a driving force in creating 75 parks in the city and largely responsible for Modesto’s reputation as the ‘City of Trees’ with more than 300,000 trees. She was also a leader in the California Parks and Recreation Society and served as president. Mary passed away in 2010 . . . I think she would have been very pleased with her new park.” 



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UPDATE ON IRRIGATION CONTROLLERS

Editor's note: Many turf managers are or soon will be facing water use restrictions. We asked irrigation equipment manufacturers to send us information on their newest ET-based and/or soil-moisture controllers for use in sports turf, as well as updates on any recent research on controller technology and any news regarding new apps that are now available that relate to irrigation control. Here are the responses we received:

HUNTER INDUSTRIES: SENSOR TECHNOLOGY FOR SPORTS TURF MANAGERS

Managing sports turf irrigation is not the same as managing landscape irrigation. Looking good is only a part of the game and the “game” is what it’s all about. The bounce of a ball, the set of cleats, and the other elements of game play are all affected by irrigation applications.

The pressure has been on to demonstrate water savings, while providing safe and effective playing fields for athletes.

Modern irrigation controllers have been getting smarter, many through optional plug-in devices that improve efficiency and automate application amounts. While no one device is a total solution for an athletic field superintendent, each may provide a unique benefit.

Consider some of the following options for improving irrigation efficiency:

Climate sensors. Sensors that monitor atmospheric conditions have the ability to shut off the sprinklers when it rains, which we hope is standard in any irrigation installation. Now, relatively inexpensive and simple sensors also have the ability to contribute far more to wise irrigation management.

Evapo-transpiration (ET) is what’s driving the plants need for water, so monitoring ET is the key to keeping plants healthy without waste. Some atmospheric sensors monitor solar radiation (in addition to rainfall) as a key component for irrigation adjustment, as well as other factors. The simplest arrangements use the controller’s Seasonal Adjustment factor to raise and lower the sprinkler run times by a

percentage, corresponding to the percent change in daily ET.

Atmospheric sensors offer ease of placement, service, and general reliability. A single sensor in the air (with direct exposure to sunlight and rainfall) is able to make an accurate estimate about the moisture loss in the landscape, and assist the controller in adjusting applications on a daily basis. This is the principle behind Hunter’s Solar Sync sensor.

It’s also possible to use the ET sensor as a reference tool, so that the irrigation manager can refer to the percentages before manually increasing or decreasing run times on the actual playing surface. Hunter’s ACC and I-Core controller have selectable adjustment by program, if the most critical watering must be done manually.

Some ET sensors are available with wireless options, so that the distance from the controller to the optimum sensor location is not a limiting factor.

Soil moisture sensors. Soil moisture sensors offer the ability to make precise measurements in the actual root zones of the irrigated plants. While this is better than the “educated guess” an atmospheric sensor can make about soil conditions, it may require more sensors spread throughout the installation, to give an accurate picture of the total area.

Since by definition soil moisture sensors are in-ground, wiring, communication, and maintenance needs may be higher to keep the information flowing to the controller. It’s still a significant advantage to know what’s actually happening in the root zone.

Combinations: climate & soil. At least

one solution incorporates both sensor technologies. The inexpensive Solar Sync atmospheric sensor can be combined with a Soil-Clik soil moisture sensor, to provide a more complete picture with a minimum of extra hardware.

The Solar Sync provides general irrigation adjustment for climate conditions, and the Soil-Clik prevents unnecessary irrigation with a single, carefully-placed soil probe, with user-adjustable shut off levels. Both can be connected to the full range of Hunter controllers at the same time.

Flow meters. Meters that measure actual water use and feed this information directly to the controller are a valuable component of the water-conscious sports irrigation system.

“What can be measured, can be managed” is an industrial proverb that is just as important in the sports irrigation scenario. We can’t know how effective our efforts have been without monitoring usage, and comparing current results to the past.

Flow monitoring can also be used to prevent expensive damage to valuable surfaces, by detecting line breaks and other malfunctions and using a master valve to halt undesirable flow. Hunter’s Flow-Sync can be added to any ACC or I-Core controller for advanced flow monitoring.

Wireless remote controls. Many controllers are now equipped for simple, convenient remote controls. These handy devices allow the manager or maintenance crew to start or top irrigation, by station or program, for a variety of uses.



Some sport scenarios require watering during intermission periods, as do some weather conditions. The wireless remotes enable this without the distraction of a crew member racing to the controller panel. They also greatly reduce maintenance time when a valve or sprinkler head is in need of repair, because the maintenance tech can immediately test the fix without hiking back to the controller to turn it on.

The Hunter ROAM-XL remote control is a license-free add-on with ample wireless coverage for any sports field application.

**UNDERHILL INTERNATIONAL:
CONVERT MULTI-WIRE TO TWO-WIRE**

Novo, a compact two-wire converter from Underhill International, is designed to quickly transform any standard multi-wire controller to two-wire operation by using a “plug and play” feature. Controllers from companies such as Hunter, Rain Bird, Irritrol, Toro, and other popular brands, can be converted to total two-wire or hybrid two-wire/multi-wire systems when connected to Novo.

The new Underhill converter is a practical solution for irrigation installers who plan to use two-wire technology in a new installation or a system expansion because they can still use their favorite controller. Novo installs alongside the host controller


and handles up to 32 two-wire zones. It is a practical solution when retrofitting existing projects when the host controller has open or unused stations.

The host multi-wire controller continues to run all scheduling programs and “talks” to the new two-wire valves and decoders via the Novo converter. The technology allows Novo to use existing field wire and requires grounding only at the converter.

The device is especially useful in irrigation system expansions where it is more practical to add two-wire connections, rather than run new multi-wire to additional valves on parks or sports fields. Two-wire is also useful on projects with new external devices, such as soil moisture sensors and hydrometers.


Measuring just 6.3” high x 7.33” wide x 1.78” deep, Novo features a back-lit graphical display with easy step-by-step LightTouch buttons and built-in electrical diagnostics/fault finding. Novo plastic wall mount cabinets and external transformers are also available.

Novo has the capability of handling up to a 63-zone system if the host controller has the station capacity by using Underhill senders.

Two-wire installations require less labor and materials because the 24 VAC power and address signals are sent over the same pair of wires. Novo uses standard underground irrigation wire and it is not necessary to ground field decoders. 


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RUSS CHANDLER STADIUM

Georgia Tech

Category of Submission: College Baseball

Sports Turf Managers: Jon DeWitt, CSFM, & Chris May

Titles: Sports Turf Manager and Baseball Field Manager

Education: DeWitt has a BA in English

Experience: DeWitt says, "I had a unique opportunity to move to Atlanta and work at Wesleyan School as both an English teacher and grounds keeper (they were really looking for a groundskeeper and kindly created a teaching position for me). I quickly discovered

that Turf was my calling and moved to managing that campus of 75 acres (12 turf) full-time after my first year. After 7 years at Wesleyan, the sports turf manager position at Georgia Tech opened up. They were a little apprehensive about hiring me because of my lack of D1 experience, but ultimately the grounds I maintained at Wesleyan won them over. I have been here since 2007. During that time I earned my CSFM and was president of the GA chapter of STMA."

Full-time staff: 2

Part-time staff: 4

Original construction: 2001

Rootzone: 100% sand

Turfgrass variety: TifSport (outfield) & Tifway 419 (infield)

Overseed: 17 lbs. perennial ryegrass Champion GQ treated & 10 lbs. perennial ryegrass Sunrise, Primo treated (Pennington)

Drainage: Field is its own drainage system essentially, with a ½% cone grade; high point is mound transitioning to flat in outfield and foul territory. Also, 10 inches of sand over 4 inches pea gravel, with drain tiles on 20-foot centers in gravel layer.



WHY STMA SHOULD CONSIDER YOUR FIELD A WINNER?

I think the STMA should consider the baseball field at Russ Chandler Stadium for FOY because of the very unusual winter weather we experienced in 2014. We had two major winter storms, one of which made national news due to the way it absolutely paralyzed Atlanta. We also had two separate occasions of record-breaking lows. Obviously, dealing with snow and ice is standard operating procedure for many of my colleagues around the country, but here in Atlanta it is quite unusual. Consequently, we do not have a lot of experience in snow/ice removal, nor do we have any specialized equipment for it. One of the reasons I believe we should be considered for FOY is how we not only overcame many obstacles to keep the baseball field usable, but also how we chipped in at all the other athletic facilities to help get things back to normal.

One of the best examples of this is how we hosted a softball tournament on the fly because our team got stranded in Atlanta, as they could not fly to Arizona due to road closures and flight cancellations. Our six-game baseball tournament season opener had been on the schedule for months. So with the exception of snow and ice removal, field preparations were business as usual. However, when the AD for Facilities walked up and said, "Hey, what do guys think about hosting four softball games tomorrow and Sunday?" We were all in a little bit of shock, but my crew rose to the challenge, and I am very proud of them (Georgia State had a tournament scheduled that weekend and we partnered with them last minute).

However, that was not the only area in which we were thrown a curveball. It was also basketball season and UNC made it in on the last plane into Atlanta. UNC had to take Marta (our public transit system) and then walk the remaining distance to their hotel. Grounds pitched in and helped clear all the areas around the basketball arena. They then proceeded to work the game in any capacity needed: security, concessions, facilities as a large percentage of the support personnel could not get to the arena. For example, the game was to be televised, but never aired because not enough broadcast personnel could report. We actually came under fire for continuing on with that game when the city around us was in shambles, e.g., people still sleeping in lawn furniture at



Uptown Outfield

STMA 2014 Field of the Year
Russ Chandler Stadium
Georgia Tech - Atlanta GA



Georgia Tech's field staff is headed by seven year veteran Sports Turf Manager Jon DeWitt while Chris Mays handles the day to day management of Russ Chandler Stadium and is assisted by Brandon Thrower. If you're looking for a winning sports turf that can handle non-stop action, a transition zone climate and heavy overseeding, TifSport's your answer. It's ideal for intramural fields, practice fields and game-day venues, where everything has to be perfect. Coaches and players love the way it looks and plays and you and your crew will appreciate how easy it is to manage. TifSport can only be sold as certified sod or sprigs and only by licensed members of the TifSport Growers Assoc. For more information call 706 552-4525 or visit us on the web at www.tifsport.com. Go Ramblin Wreck!

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Home Depot and the like. Ultimately, both teams and the facility were ready to play the game, so the ACC determined that it made the most sense to soldier on under the circumstances.

After another cozy night in my office, which I called home for three days, it was back to work on the fields. The FOY board is filled with sports turf professionals so they know what it takes to produce a quality surface. This is why I have not spent that much time on the grounds work specifically. Bottom line, my crew did an exceptional job keeping things running as close to normal as possible in very abnormal times and not without a lot of personal sacrifice.

SportsTurf: How did you get started in turf management?

Jon DeWitt: First by working for my dad's lawn care company, so I entered the green industry from the ornamental/commercial side. Later I worked at my high school maintaining their general grounds and then fields; eventually I really developed a passion for fields. I worked my way through college maintaining that same facility (oddly enough my degree is in English, not agriculture). Then I went on to get a full-time job maintaining school grounds and fields.

ST: What was your first turf-related job?

DeWitt: Briarwood Christian School in Birmingham, AL.

ST: How do you balance family life with work demands?

DeWitt: Basically, I don't. I've haven't been great in this area; day to day I'm fairly absentee; however, I try to make it up by doing big events, usually sports related, where industry contacts and such affords us superior access. I do my best to get up for big special occasions. Next year is going to be a challenge because my twin daughters are going to be seniors and I've got the whole college thing to do. I am quite concerned about juggling that and work.

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

DeWitt: More, more, more all the time. I see this at all levels, from

peewees to the pros; more camps, more practices, more outside events—things are on the verge of out of control now and only going to get worse. More social media and what not behind the scenes, which I find rather annoying, it is just another obstacle or delay in trying to get your work done.

ST: What are your specific job responsibilities?

Chris May: I manage the baseball field at Russ Chandler Stadium with the assistance of Brandon Thrower. My main focus is the turf, infield skin, and edges. Brandon concentrates on the mound and plate. We share the mowing and bullpen work. Our crew only has six employees to maintain 13+ acres and we all have to help out on other fields. We try and concentrate on the sports in season. This is very challenging at times to switch gears from sport to sport.


ST: What do you find most enjoyable?

May: I love this question because everyone always expects me to say mowing. For me, nothing is better than working edges. Making sure you maintain smooth, level transitions is an art. Mowing patterns are for the fans. The edges are for the game.

ST: What task is your least favorite and why?

May: I absolutely cannot stand aerifying. I love the practice and the results we get from it, but I hate sitting on a noisy tractor for 4 hours moving at 1.2 mph.

ST: What changes if any are you considering or implementing for Russ Chandler Stadium in 2015?

May: We won't change much up for the 2015 season. We will be using a new infield conditioner from Turface and are experimenting with some new mound clays. The more I mature in this industry I realize there are no magic products. The success of your playing surface comes down to how much time you're willing to put in to it. 

The Sports Turf Managers Association Industry **SOURCEBOOK**

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SportsTurf
MANAGERS ASSOCIATION

STMA INNOVATIVE AWARD WINNER: GT AIR INJECT/AIR2G2



GT Air Inject is a company with aspirations of supplying the world with the most innovative concept of turf aerification machines. Much pride is taken in the quality of the Air2G2 machine. This machine will revolutionize the turf care and maintenance industry.

Through many years of service in Florida, the process of non-disruptive turf aerification has been perfected by the owner and inventor, Glen Black. Early in his college days, Black envisioned a machine that would alleviate soil compaction, while causing no disruption to the playing surface. He honed the concept into

an efficient and practical application by servicing numerous golf courses and athletic fields, while observing the impact of the process on the turf over a long period of time.

The immediate impact of the Air2G2 aerification process is the relief of surface hardness and increase in soil porosity. This, in turn, promotes the health and safety of the athletes. Ultimately, the increased porosity enables deeper root growth, good microbial activity, and better gas exchange. The long term benefit is better plant health.

The Air2G2 is a self-propelled pedestrian machine on a three-wheel platform with smooth, flotation type tires. All components of the Air2G2 process are pneumatically powered and controlled by a PLC unit that enables the entire process to be activated by pressing two trigger switches simultaneously.

The Air2G2 is a quiet and efficient machine that is easily operated and maintained. The only wear items are the injection probes that enter the soil. These probes are inserted into the soil profile to a depth as shallow as 6 inches and as deep as 12 inches. Compressed air is then injected through the probes, first at the pan layer, then at full depth. This causes a lateral, multi-layer fracturing effect, which creates numerous fissures in the soil profile.

The unique results of the Air2G2 are achieved with little or no surface disruption.

At GT Air Inject, a dedicated team of people manufacture the Air2G2. These people take pride in the fact that the machine is hand-crafted. Every nut, bolt, wire, etc. is touched by a human hand. **SI**



ECO 150 COMPOST SPREADER

The ECO 150 compost spreader takes compost topdressing to a whole new level of easiness, maneuverability, and

efficiency. Ecolawn's new generation applicator is a self-propelled, forward broadcast compost spreader. At 34 inches wide, it is designed for tight places where other applicators find it problematic but will also do larger spaces with ease. Other features are the new conveyor belt that's 2 full inches wider, the Vanguard 6.5 Briggs & Stratton engine that offers a 3 year warranty, lightweight heft (290 lbs), and ergonomically redesigned controls for ease and comfort while

operating. Lastly, this new generation spreader boasts an all-new improved polyurethane hopper designed to eliminate bridging.

Ecolawn



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is designed for. Even with standing water, the center-mounted scarifier turns over clay, spreading out the water, allowing air and wind to dry out the area. And only the ZEE offers an optional front-mounted plow. Plus the ZEE's patented Flex Brush Rear Drag implement can be used in a variety of conditions, from fully raised to fully lowered or anywhere in between to create solutions for almost any issue. All the while the Flex Brush levels and grooms your field. Plus the ZEE uses a large 22 hp commercial grade engine designed specifically for ZTRs allowing it to run at a lower rpm for peak torque. The Smithco Sand Star ZEE offers you all these solutions to the problems you face every day at a very affordable price.

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For more information on these and other products, please visit www.greenmediaonline.com/productportal.

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

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

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Facility name:

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

Membership Category:

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

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- Professional Sports Higher Education Schools K-12 Parks and Recreation
- Academic \$95
- Student (verification of enrollment) \$25
- Commercial \$295
- Commercial Associate* (Additional member(s) from the same commercial company) \$75
- Affiliate (Person who is indirectly or on a part-time basis, involved in the maintenance/management of sports fields) \$50
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*There must already be a national sports turf member from your facility or commercial member from your company before you may sign up in the Associate category.

Phone: 800-323-3875

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SPAIN, NEW PAINT TURF COLORANT

Grigg Brothers has introduced SPAIN, a paint turf colorant, to its colorant portfolio including pigments GreenPIG and GreenPIG Ultra. SPAIN effectively provides a natural green color to any sports turf surface, is durable and long lasting, and designed for use on all turfgrasses. Custom engineered with an eco-friendly binder, SPAIN is ideal for high impact sports fields because it dries fast and stands up to traffic. Turf managers have the flexibility to apply SPAIN to actively growing, semi, or totally dormant turfgrass. When used correctly SPAIN will allow sport turf managers the ability to conserve valuable resources such as water, fertilizers, and seed. One gallon of SPAIN can treat up to 12,000 square feet and can be used as a standalone product or mixed with foliar fertilizer, PGR's, and/or crop protectants.

Grigg Brothers



ALLETT LAUNCHES PROFESSIONAL MOWERS IN USA

Allett USA has launched to US market its range of reel mowers, featuring roller driven walk-behind and ride-on models, which are capable of producing first-class finishes across a wide range of grass types and mowing conditions. The Buffalo and Regal models are ideal for maintaining larger, sensitive areas such as Stadium and First Team fields. The C-Range features quickly interchangeable cartridge heads enabling a single power unit to cut grass and carry out other essential turf maintenance tasks. Available

with 10 different Cartridges: 6, 8 and 10 bladed cutting cylinders, 10 blade with groomer, two scarifiers options, verticutter, sorrel roller, brush and slitter. Also available is the brand new RM34 rotary mower; specifically developed with and for stadium turf managers. The twin-bladed, high-lift system cuts and vacuums quickly and efficiently to give the busiest grounds-team massive capacity to clean-up after matches or mow higher during grow-in. All machines are engineered to be best in class; delivering a wide cut, true "flat" surface, all with a design that is comfortable to hold and easy to use.

Allett USA



HUNTER'S SYNTHETIC TURF IRRIGATION SYSTEM

Hunter Industries has released its new STK-6V synthetic turf irrigation system to clean and cool synthetic sports turf. The shorter vault design provides a connection to the mainline at approximately 24"-30" deep, a much more manageable depth for installation with less digging required. In the new model, the rotor hangs from an adjustable bracket within the vault for precise adjustment to meet grade, and adjustable stands support the manifold, eliminating the need to backfill the vault with gravel for support. The STK-6V includes a new three-inch galvanized ductile iron assembly with heavy-duty grooved fittings for ease of servicing. The isolation valve and point of connection for the quick coupler are now inside the vault and provided with the field-installed assembly, for a total top service solution. The vault also includes a drain valve for easier servicing and winterization.

Hunter Industries

K100 FUEL TREATMENT

Developed in 1965, K100 Fuel Treatment removes water from fuel systems by seeking out water, encapsulating it, altering the chemical make-up of water by changing it to a combustible compound that burns clean, lubricates, and increases power in gasoline, diesel, and home heating fuels. K100 Fuel Treatments are designed and formulated for use in all fuels including E-10, ULSD, Off-Road, Bio-Diesel and Home-Heating Fuels. We are a national supplier



of fuel treatment products for fleets, small engine sales & service, as well as lawn care contractors for residential, commercial, sports fields, university campuses, and golf courses. For the Turf Industry Professionals, these fuel treatments will increase your gas mileage, reduce maintenance costs on both equipment and vehicles, and transform standard fuel to premium fuel, which will not harm your investments.

Kinetic Fuel Technology, Inc

BIG BROWN MOUND CONVERTIBLE MOUND

Big Brown Mound is the first of its kind. It's an innovative pitching mound system that converts from a mound to a flat surface in just seconds, which maximizes field space, and creates a multi-use space from the same field. It's easy to install on a skinned, grass or synthetic field at the time of construction or retro-fitting into existing fields. Its unique proprietary flipping feature makes the Big Brown Mound user friendly and easy to operate and maintain. Big Brown Mound can be set at 46' or 50' for baseball and uses multiple rubber positions for fast pitch that include 46, 43, and 40 feet, providing unmatched flexibility and performance. The Big Brown Mound stores within itself eliminating hauling the mound on or to the field as with traditional mound solutions, and it's cheaper to operate and maintain over 5 years.

Big Brown Mound



STMA CONFERENCE EXPERIENCES RECORD EXHIBITORS, INTERNATIONAL ATTENDEES

4-day event in Denver featured nearly 60 educational sessions

STMA recently hosted its 26th annual Conference & Exhibition in Denver with a record 200 exhibitors and 1,200 attendees from nine countries.

During the 4-day event attendees took part in more than 60 educational sessions, visited sports turf exhibits and networked with environmental science leaders. A highlight was two “Seminar on Wheels Tours” at various professional, collegiate and youth sports fields in the Denver area.

“Our annual Conference continues to increase sports turf exposure and offers a unique networking opportunity,” said Allen Johnson, CSFM, newly elected STMA President and Fields Manager for the Green Bay Packers. “We hope the information shared here will aid in the progression of safer and more playable fields for years to come.”

Karl Mecklenburg, former Denver Broncos captain and All-Pro linebacker, provided a keynote speech January 15 to the STMA membership. He discussed his challenges rising from a college walk-on and 12th round draft pick to a professional career that included six Pro Bowls and three Super Bowl appearances. His message to attendees was one of embracing positive thinking and focusing on your goals.

Following Mecklenburg’s keynote, the association held its annual meeting during which the 2015 STMA Board of Directors officially took office, the results of the annual audit were reported, and highlights from the year provided. A summary of STMA’s public relations efforts were described; highlights include coverage in *Sports Illustrated*, *USA Today*, *Forbes*, NPR, CBS and many more media exposures.

FOUNDERS AWARD WINNERS

Friday night’s Awards Banquet was topped off with a presentation of the industry’s most prestigious awards, STMA’s Founders Awards.

Dr. Andrew McNitt of Penn State was honored with the Harry C. Gill Memorial Award, presented to an individual for his or her hard work in the sports turf industry and to acknowledge their dedication to STMA.



Left: Dr. Andrew McNitt of Penn State was honored with the Harry C. Gill Memorial Award. **Right:** Tony Leonard, Philadelphia Eagles, was honored with the Dick Ericson Award.

Tony Leonard, Philadelphia Eagles, was honored with



Left: Mike Albino, Ballard Sports, received the George Toma Golden Rake Founders Award. **Right:** Brian Scott, Mt. San Antonio College, received the William H. Daniel Founders Award.

the Dick Ericson Award, presented to someone who plans and executes the sports turf management of their facility, who effectively leads their team to accomplish their goals in field maintenance, and who positively

impacts the sports turf industry.

Mike Albino, Ballard Sports, was honored with the George Toma Golden Rake Award, which acknowledges the superior performance of a sports turf member in “on the job” activities and in community service.

Brian Scott, Mt. San Antonio College, was honored with the Dr. William H Daniel Award, which recognizes an individual who has made significant contributions to the sports turf industry through his or her research, teaching or extension outreach.

2015 STMA BOARD OF DIRECTORS

The 2015 STMA Board of Directors was introduced to the membership January 15 at the annual meeting. At the helm is President Allen Johnson, CSFM, Fields Manager for the Green Bay Packers. His Executive Committee consists of four other Officers: Immediate Past President David Pinsonneault, CSFM, CPRP, Operations Manager,



The 2015 STMA Board of Directors: (l to r – front row) Allen Johnson, CSFM, Robert Behr, CSFM, David Pinsonneault, CSFM, CPRP, Doug Schattinger, Dan Bergstrom. (l to r – back row) Jeff Salmond, CSFM, Tim Van Loo, CSFM, Sarah Martin, CSFM, Jeff Fowler, Matt Anderson, CSFM, Jimmy Simpson, CSFM. Not pictured: James Graff and David Anderson.

Town of Lexington; President-Elect Jeffrey Salmond, CSFM, Director of Athletic Field Management at the University of Oklahoma; Commercial Vice President James Graff, Owner, Graff's Turf; and Secretary-Treasurer Tim Van Loo, CSFM, Manager of Athletics Turf & Grounds, Iowa State University.

Newly elected Directors include Bobby Behr, CSFM, Athletic Director, Ashley Ridge High School, representing the K-12 membership category; At Large Jimmy Simpson, CSFM, Facility Works Expeditor, Town of Cary; Dan Bergstrom, Director- Major League Field Operations, Houston Astros representing the professional facilities category; and Doug Schattinger, President Pioneer Athletics, representing the Commercial sector.

The Directors who were appointed include Jeff Fowler, Penn State extension services, who represents the Academic segment; Matt Anderson, CSFM, Superintendent of Grounds for the University of Arizona, who represents the higher education category; and Dave Anderson, PE, Principal with D.A. Hogan & Associates, who is named to the second At Large position. Sarah Martin, CSFM, Turf Manager/Foreman 1 for the City of Phoenix is fulfilling her second year in her first term as Director. She represents the parks and recreation category.

STMA'S 2014 FIELD OF THE YEAR AWARD WINNERS

Professional Division:

Soccer—Maryland SoccerPlex Stadium Field (Boyd's, MD): Ryan Bjorn, Sports Field Director

College and University Division:

Baseball—Russ Chandler Stadium at Georgia Tech (Atlanta, GA): Jon DeWitt, CSFM, Sports Turf Manager; Chris May, Baseball Field Manager

Football—"The Swamp" at Ben Hill Griffin Stadium - University of Florida (Gainesville, FL): Jason Smith, Turf Coordinator

Softball—John Cropp Stadium at University of Kentucky (Lexington, KY): Eric Harshman, Sports Turf Assistant Manager

Soccer—Georgia State Soccer Complex at Georgia State University (Atlanta, GA): Kyle Slaton, CSFM, Director of Sports Turf & Grounds

Schools and Parks Division:

Baseball—Don Dunker Field at Noblesville Schools (Noblesville, IN): Joshua Weigel, Superintendent of Grounds

Football—Clover Memorial Stadium at Clover School District (Clover, SC): Will Rogers, Sports Turf Manager

Softball—Waukegan Park District (Waukegan, IL): Noel Brusius, CSFM, Sports Turf Manager

Soccer—North Area Athletic Complex Soccer Field at Jefferson County School District (Golden, CO): Sun Roesslein, Stadium Manager; Christi Clay, Stadium Manager

Sporting Grounds—Championship Field at Pleasant View Sports Complex (Boulder, CO): Don McGhee, Head Maintenance Professional

STUDENT CHALLENGE CELEBRATES 10TH YEAR

The STMA student challenge celebrated its 10th year by expanding

the exam to include a new hands-on component: irrigation assembly. Congratulations to all STMA Student Challenge participants for



The University of Maryland Team 414 took first place in the four year category of the 10th annual Student Challenge Competition.



Penn State Team 207 took first place in the two year division of the 10th annual Student Challenge Competition.

their exceptional performance on the exam.

Thirty-one teams encompassing more than 115 scholars competed for \$4,000 awards. These students represented both 2 and 4-year colleges across the nation. The Student Challenge is presented by SAFE, Founding Partner Hunter Industries, and new sponsor Ewing.

Winning the 2-year competition was Penn State University – Team 207. Mt. San Antonio College - Team 206 took second place, and Mt. San Antonio College – Team 202 took third

place. Winning the 4-year competition was University of Maryland - Team 414. Penn State University – Team 413 took second place and Penn State University – Team 420 took third place.

SAFE FUNDRAISERS SUCCESSFUL

SAFE, the association's charitable foundation, raised almost \$15,000 during the Conference through its "Night of Bowling;" "Casino Night"; and silent and live auctions throughout the week. Proceeds benefit educational programs, scholarships and grants with the goal of enriching communities through safe, sustainable sports and recreation fields for all athletes. A highlight of the live auction was two groundskeepers for a day packages - one valued at \$2,500 from the Minnesota Twins, and the other similarly valued that offered a choice of teams from which to select. Those teams include Phillies, Marlins, Cardinals, Mariners, and Padres.

SAFE announced that it has produced three educational videos about field safety, titled "Sports and Recreation Fields – Safety First." The videos help non-sports turf managers to do a field and facility inspection for elements that may pose hazards to players. The videos cover natural grass fields, synthetic fields, and sports facilities and equipment. They can be downloaded for free from SAFEFields.org.

STMA and SAFE thanks its conference sponsors who make enhanced programming possible each year. The sponsors are: Barenbrug, Beacon Athletics, Bush Turf, Covermaster, Diamond Pro, Ewing, Fields, Graff's Turf, Green One Industries, Hunter, John Deere, Rain Bird, Toro, and World Class Athletic Surfaces.

Next year's event will be held in San Diego, January 19-22, 2016. Additional future sites include Orlando (2017) Fort Worth, TX (2018), and Phoenix (2019).

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.

Chapter Sponsors



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Sponsors are committed to chapters' success

STMA's chapter sponsors help contribute to the success and viability of the association's 33 affiliated chapters. Due to the longtime support of Hunter Industries and John Deere, STMA has been able to provide funding to help its chapters deliver strong educational programs and grow membership. In 2014, Aquatrols and Turface joined the chapter network. Their support enabled STMA to award tens of thousands of dollars to improve our chapter network. These funds were used to bring in high quality speakers for chapter events, improve communications for chapter members by helping to subsidize the printing of chapter newsletters and promotional materials, and finance the development of chapter websites.

Our newest sponsor, Pioneer Athletics, joined the chapter network in early 2015. According to Pioneer president

Doug Schattinger supporting STMA chapters' initiatives helps to strengthen the entire industry. "Pioneer realizes that all agronomy is local and that belonging to an STMA chapter helps sports field managers do their jobs better. Individuals managing fields to their best ability helps advance everyone in the profession," says Schattinger.

In addition to ground level funding for chapter advancement, funding from our sponsors helps to support the Chapter Officers' Training program, which is held annually during the STMA conference, provides important support for event liability and directors and officers liability insurance, makes possible the availability and enhancement of chapter booths and materials to help chapters grow membership.



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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
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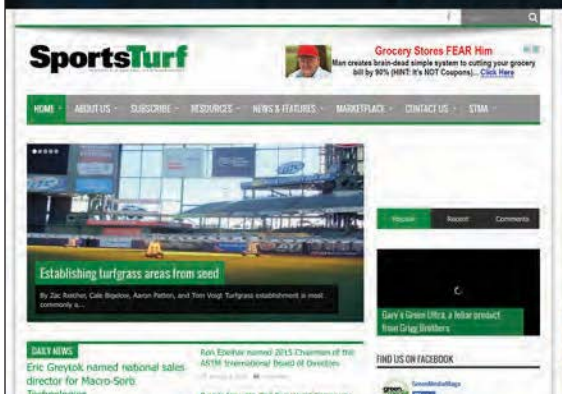
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Q&A with Dr. Grady Miller

Professor, North Carolina State University

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

WHEN REGULATION CAN BE GOOD

What are the benefits of using a plant growth regulator (e.g. Primo)? If there are thin areas of turfgrass cover, should one wait until it is more grown in to apply the Primo or does the Primo promote enough lateral growth in the bermudagrass that it will fill in just as fast being sprayed?

— STMA member from Richmond, VA

The primary benefit to using plant growth regulators (PGRs) is to reduce mowing. Since mowing is one of the greatest expenses with turfgrass maintenance, reducing mowing frequency and still maintaining turf quality can save significant fuel costs plus result in less wear over time on mowers. If you are not currently using PGRs, I would suggest that you give them a try.

PGRs have not been as widely used in sports turf management as on golf courses or utility areas so it may surprise some to know that they have been actively used for more than 40 years. A common negative with the first PGRs was turf discoloration and damage. The popularity of PGRs increased in the 1980s with the introduction of paclobutrazol (Trimmit and TGR Turf Enhancer) and flurprimidol (Cutless), which were safer on the turf than the earlier products. After trinexapac-ethyl (Primo) was introduced in the 1990s, the interest in their use went to an entirely new level, with greater acceptance on highly maintained turfgrasses such as those found on golf courses and athletic fields.

The PGRs are regulated the same as pesticides. They also are governed by the same patent laws. The active ingredients found in the common PGRs are off-patent so this has increased their availability as generic products. Trinexapac-ethyl continues to be the most common PGR active ingredient used on high-quality bermudagrass. You mentioned Primo, which was the product trade name of the original

trinexapac-ethyl. But now trinexapac-ethyl is also sold as Armor Tech, Goldwing, Governor, Groom, Podium, PrimeraONE Trinexapac-Ethyl, Primo, Promo MAXX, RegiMax, Solace, T-Nex, T-Pac, and Triple Play. Like other turf products, the active ingredient may be mixed with other chemicals and sold under a unique trade name.

Trinexapac-ethyl is a foliar-absorbed product that works by inhibiting the late-stage gibberellin synthesis in turfgrasses. Gibberellins are plant-produced hormones that are needed for cell elongation and normal growth. When gibberellin production is inhibited, plant cells do not elongate, stem length is shortened, and overall plant growth and growth rate are reduced. The result is a darker turfgrass with increased density. Trinexapac-ethyl is not very effective in seedhead suppression compared to some of the others. In addition, trinexapac-ethyl generally does not suppress weed growth, particularly broadleaf weeds.

Trinexapac-ethyl has been shown to reduce common and hybrid bermudagrass clipping weights by 50 percent at 7 days after application. Depending upon application rates, it may provide some level of suppression for 4 to 8 weeks. The slowed growth can also dramatically reduce the chance of scalping. This can be a significant management advantage during periods of high rainfall that can result in missed mowing cycles. When the effects of trinexapac-ethyl begin to “wear-off” there is usually an increase growth rate unless it is reapplied. This is typically referred to as “rebound effect.” At typical use rates, it is recommended that repeat applications be made at approximately 4-week intervals throughout the active growth period so this rebound effect is not experienced.

Trinexapac-ethyl is a low-use rate product, with the active ingredient application rates from 0.05 to 0.5 pounds per acre.

Amount of formulation used per acre can vary widely depending on formulation, turfgrass, etc., so carefully read the label. For example, Governor is a granular product and has an upper broadcast rate of more than 200 pounds of product per acre; whereas the liquid Primo MAXX may be sprayed at just a few fluid ounces per acre. It should also be noted that PGRs should not be applied before bermudagrass is actively growing following green-up. Apply it too early and expect some discoloration. Some of the bronze-colored discoloration can be offset with light applications of soluble iron and/or nitrogen, which I would recommend. It is only the year’s first application of PGR that normally has the discoloration issue, not subsequent applications.

Studies and experience have shown that trinexapac-ethyl should only be applied to healthy turfgrass. While it may increase rooting, it does not promote increased lateral growth. When applied to sparse stands, it may take longer for the turfgrass to fill in bare areas. The use of trinexapac-ethyl has been shown to promote better drought and heat tolerant as well as an increase in shade tolerance when applied to healthy grass before the onset of these stresses. For sports turf managers the other significant use of trinexapac ethyl is as a bulk paint additive. The rate for Primo MAXX in paint is 1 ounce per gallon of marking paint mix to treat approximately 1,000 square feet of line surface area. Not having to paint lines so often is a huge benefit.

Note that there are differential responses to trinexapac ethyl among grasses and cultivars. So, it may be helpful to start at a moderate rate and then try increasing rates until you determine the one that maximize growth suppression of your turfgrass while still maintaining high quality. Try it. I think this will be one regulation you really like. [ST](#)

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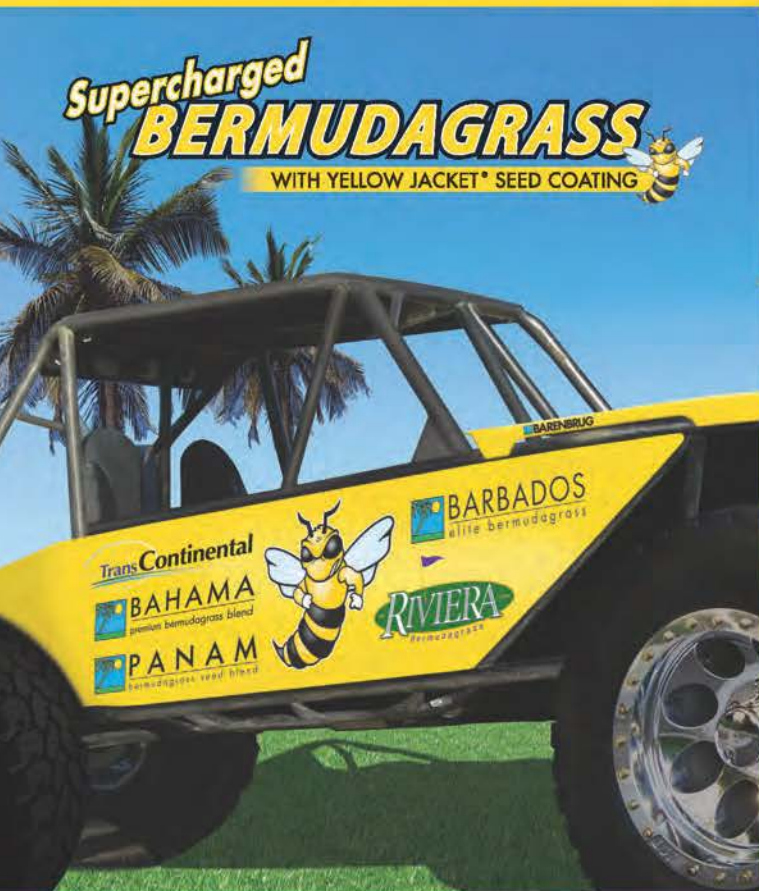
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