THE SPORTSTURF INTERVIEW: DALE GETZ, CSFM, CSE

MAINTAINING LOW-BUDGET ATHLETIC FIELDS | HOW MOWING AFFECTS TURF | UPDATE ON FIELD PAINT TECHNOLOGIES

SPORTSFIELD AND FACILITIES MANAGEMENT

SportsTurf

April 2015

— FIELD OF THE YEAR —

COLLEGE SOFTBALL'S BEST: UNIVERSITY OF KENTUCKY

JOHN CROPP STADIUM

PLUS: Alternate insect controls for sports turf

green media

SportsTurf MANAGERS ASSOCIATION

OFFICIAL PUBLICATION OF THE SPORTS TURF MANAGERS ASSOCIATION

Longest lasting
Brightest whites
Vivid colors

Pioneer®
ATHLETICS
ingredients matter.®

Learn more about our commitment to the health and sustainability of athletic fields and Ultra-Friendly natural grass paints.

pioneerathletics.com/st45 1-800-877-1500

We fix relationships.

Are water repellency issues driving a waxy wedge into your soil/water relationships? Probably. Statistically speaking, there comes a time in every soil's life when water just doesn't find it as attractive anymore...

Aquatrols soil surfactants help re-establish the bond between soil and water, making water-repellent areas attractive and receptive to water once again. And with a full line of formulations, we can help you solve a wide range of relationship issues.

Aquatrols. We bring back the ❤.

Watch the video!

scan the QR code with your smartphone
or visit YouTube.com/Aquatrols

Aquatrols®
www.aquatrols.com

STARTING LINEUP

April 2015 | Volume 31 | Number 4

FEATURES

DEPARTMENTS

On the cover:
"I continue to remind myself that you attempt to control the controllable and challenge yourself daily." So says Eric Harshman, Sports Turf Manager, University of Kentucky, and 2014 STMA College Softball Field of the Year winner. Photo from winning field, John Cropp Stadium.

THE POWER TO MAKE THINGS GROW

KOCH TURF & ORNAMENTAL

Healthy turf. Healthy competition.
ENHANCE BOTH.

Keeping your sports fields in top playing condition is a priority. Apply UFLEXX™ stabilized nitrogen. Its dual-inhibitor technology keeps nitrogen in place so more is taken up by the turf, and less is lost to the environment. Plus, this enhanced efficiency fertilizer lasts up to eight weeks per application, saving you time, labor and money. For healthy, green fields, UFLEXX™ fertilizer delivers whether you spread or spray. Feel confident your turf performance will enhance theirs.

Consult with your distributor for more applied advantages, or visit **KASTurf.com.**

UFLEXX™ STABILIZED NITROGEN

POLIMER CREDITS CAMARADERIE, NETWORKING

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

When I called Ben Polimer, recipient of this year's STMA President's Award for Leadership, in mid-February the big news was that he wasn't pushing snow at that moment. The sports turf manager at Worcester Academy in Massachusetts, Polimer spent most of his time during 2015's first 6 weeks dealing with the prodigious amounts of snow that blanketed most of New England. But on this sunny Wednesday he reported it hadn't snowed for 2 whole days.

"We've been putting the snow in our quad and the pile now is about 150 feet long, 30 feet high and 50 feet deep," he said. "Everyone in the Boston area is running out of places to put it."

The President's Award for Leadership is bestowed by the outgoing STMA president to members who have made a significant contribution to the Association. David Pinsonneault, CSFM, CPRP, chose fellow New Englander Polimer, whose contributions are on-going; as a member of STMA's new, high-profile Natural Grass Task Force, he was preparing for a conference call that week. "When Dave asked me to be on this task force I told him I was just a lowly turf manager, not worthy of being selected alongside a 'who's who' list that includes Dr. Mike Goatley, Mike Tarantino, Jerad Minnick, Melanie Stanton, Patrick Maguire and others, but he said the Board needed everyone," Polimer said.

Polimer has served on several STMA committees, including Scholarship, Awards, and Chapter Relations, and he's currently the secretary for the large New England STMA chapter. I asked him how STMA has helped his career: "Starting in 2005 I began to attend conferences locally and nationally, and the camaraderie and networking were fantastic. You can call anyone in the association with a question. It has helped me so much in my role as sports turf manager; I am looked upon here at the Academy as a professional because of my involvement with STMA's committees, conferences, and now, this award," he said.

"Another benefit has been attending the Chapter Officers Training (COTS) sessions at the national conference for the past 5-6 years. It's great meeting different officers from around the country and finding out what they do and how things work for their chapters," he said. "Two good examples are help in hiring our executive secretary and planning our events. Bouncing ideas off one another, it's just a very collaborative effort. It helps me be a better officer and is a big benefit to our chapter.

"Chapters need involvement to be successful. I hear at COTS that some chapters are stale, with not a lot of new people joining and being active," he said. "Chapters need help being run. Yes, it can be time-consuming but I have found it to be very rewarding."

Polimer said he was truly shocked when Pinsonneault called his name in Denver. "I had no idea. I was humbled. When you look at the list of previous winners, I'm just not in the same class," he said. "Dave is such a huge asset to the national and our regional association; it was fantastic." ST

SportsTurf
SPORTS FIELD AND FACILITIES MANAGEMENT

EPG Media & Specialty Information
3300 Fernbrook Lane N,
Suite 200, Plymouth, MN 55447

The Official Publication Of
The Sports Turf Managers Association

SportsTurf
MANAGERS ASSOCIATION

STMA OFFICE
805 New Hampshire Suite E
Lawrence, KS 66044
Phone: 800-323-3875 **Fax:** 800-366-0391
Email: STMAinfo@STMA.org
www.STMA.org

SportsTurf (ISSN 1061-687X) (USPS 000-292) (Reg. U.S. Pat. & T.M. Off.) is published monthly by EPG Media & Specialty Information at 75 Pike Street, Port Jervis, NY 12271. POSTMASTER: Send address changes to Sportsturf, PO Box 2123, Skokie, IL 60076-7823. For subscription information and requests, call Subscription Services at (847) 763-9565. Subscription rates: 1 year, $40 US & Poss.; 2 years, $65 US & Poss.; 1 year, $65 Canada/Foreign Surface, 1 year, $130 Airmail. All subscriptions are payable in advance in US funds. Send payments to Sportsturf, PO Box 2123, Skokie, IL 60076-7823. Phone: (847) 763-9565. Fax: (847) 763-9569. Single copies or back issues, $8 each US/Canada; $12 Foreign. Periodicals postage paid at Port Jervis, NY and additional mailing offices.

Direct Mail List Sales
MeritDirect, Jim Scova
Phone: (914) 368-1012
jscova@MeritDirect.com

Subscription Services
Phone: (847) 763-9565
Fax: (847) 763-9569

Reprints
Robin Cooper
rcooper@specialtyim.com

Group Publisher
David Voll
dvoll@epgmediallc.com

Account Representatives:
Chris Pelikan
Senior Account Manager - East
Phone: (954) 964-8676
cpelikan@epgmediallc.com

Peggy Tupper
Senior Account Manager - Mid-West
Phone: (763) 383-4429
ptupper@epgmediallc.com

Leslie Palmer
Senior Account Manager - West
Phone: (248) 731-7596
lpalmer@specialtyim.com

MAKE AN IMPACT ON YOUR COMMUNITY

Allen Johnson, CSFM.
johnsona@packers.com

I often get asked by people what it is about my job that I like. I like what I do because I feel like I have a hand in creating something. I enjoy the anticipation of spring and the challenge of trying to transform a worn-out playing surface into one that makes people awestruck. I love working with nature. It's still exciting to watch the young seedlings sprout from the ground and week-by-week slowly fill in. It has taught me patience. It feels so satisfying each fall when the fields are ready for the season, and you can easily remember how barren they looked just a few months ago. I guess you can say that I like what I do because I can visually see the results of our turf crew's efforts. It feels good to know that you've made an impact.

I must admit that when I first started in this industry I didn't feel that way, and I think I know why. My father always had so much pride in being a farmer. He said that we had the most important job in the world. He used to say that if it wasn't for us, what would all the people living in the city eat? Boy, did that ever make me feel important. Whether or not he knew it, he sure made me proud of what we were doing. There were times that I remember being alone on a tractor tilling the fields and very much wanting to be done, but thinking if we don't get these crops planted someone was going to starve. Looking back, it's funny to realize that it might've been us starving rather than the folks living in the city.

And so as I entered the workforce as a young adult, I was searching for something that gave me that same feeling of importance. At first I didn't see it, but now I do, and I hope that wherever you are maintaining athletic fields that you do, too. Athletic fields are woven into the fabric of our society. You would be hard pressed to find someone who hasn't had some type of interaction with them—whether as an athlete, a parent, or a fan. You have either run, walked, slid, or fallen on an athletic field, or you cheered for someone who has. We maintain the world's playgrounds. We help create happiness. What we do is important.

In today's urban environment an athletic field may be the only place that children get much exercise, and falling on a natural grass field may sadly be one of their only interactions with nature. What we do as sports field managers is important. We should be proud of what we do and should know that we not only have an impact on the condition of the fields we maintain, but also have an impact on something much greater than that. This spring let's all give our best efforts in making an impact. ST

ALTERNATE INSECT CONTROLS FOR SPORTS TURF: *WHAT WORKS* AND *WHAT DOESN'T!*

Northern masked chafers exposed by pulling damaged turf back.

BY **DR. DAVID SHETLAR**

Unfortunately, many municipalities, even whole states, are banning the use of synthetic pesticides (and in some cases ALL pesticides) on municipal or school grounds. This can also apply to the athletic fields. In this article, I'm not going to debate the lack of scientific evidence that this is necessary as it is a reality in many locations! However, this leaves grounds and athletic field managers asking, "Are there any alternatives that work?" The short answer is yes, but there are many qualifications to this!

In many of these restricted environments, biological, natural and organic products are allowed. The problem is that many of the folks who passed these regulations don't really understand these terms, so managers will likely have to ask whether any product that is discussed is allowed in their particular situation.

BIOLOGICAL CONTROL OR BIOBASED?

There are many true biological controls in turfgrass habitats—predators, parasites and diseases. Each one of these completes its life cycle by capturing and eating prey, feeding internally on the insect or increasing its population by infecting and killing a host insect. Common soil-dwelling ants prey on white grub and sod webworm eggs, but they rarely control these pests when outbreak populations occur. There are also several parasite wasps and flies that attack turfgrass insects, but they usually do so at low levels (below 10%). When we sample turf insects, we often see ones with fungal, bacterial or viral infections, but these also rarely achieve more than 20-25% mortality. So, how can the efficacy of these biological controls be increased? In most cases, the nature of the biological control cannot be enhanced. However, others, like the insect parasitic nematodes, become effective when massive numbers are reared and released.

All white grubs are robust, C-shaped larvae of scarabs that feed on the organic matter in soils, especially thatch in turf.

Many people do not understand the difference between a true biological control and a biobased product. As an example, most users of *Bacillus thuringiensis* (Bt) products think they are using a biological control when, in fact, they are using a biobased pesticide! In short, the package usually contains dead bacteria and bacterial products. These bacterial products contain a protein toxin, called the delta-endotoxin, which if ingested by a susceptible insect, eats a hole in the insect's gut! This lets secondary bacteria to seep into the body cavity, causing infection and death. If Bt was

A NEW BREED OF CAT

NEW

TURFCAT®

Thanks to **all-hydraulic deck** and traction drives, **212 less service parts and 17 less grease points than the competition**, the all-new Jacobsen TurfCat out-front rotary mower provides the **lowest cost of ownership in its class**. The TurfCat also offer **superior versatility**, with nine different deck configurations and five attachments to keep it working year-round. If you want to get more done for less, take a look at the Jacobsen TurfCat at Jacobsen.com.

JACOBSEN®

1.888.922.TURF | www.jacobsen.com

The target of any grub control material should be the tiny first instar. The second instar is relatively easy to kill, but the third instar is difficult to control even with the best of materials!

a true biological control, the Bt bacteria would grow within the insect, take over the body and kill it. If an insect ingests live Bt bacteria, the gut enzymes will kill and digest the bacterium, thereby releasing the toxins.

Among the scientific community, biobased also includes toxins that can be derived from plants (botanical pesticides), and fungi. Using this definition, cedar oil, garlic extract, peppermint extract, pepper extracts, etc. are technically biobased, but none of these, by themselves or in combination, seem to have much effect on most turfgrass insect pests. I mention these because organic pesticide products are on the market that claim efficacy against turf and ornamental insects and mites. Since these two areas are not human health issues, EPA has turned a blind eye on requesting efficacy data! When asked, the suppliers of these products are quick to provide all kinds of testimonials, but can't provide independent testing results (preferably by a university-based turf researcher). Buyer beware!

SYNTHETIC, NATURAL AND ORGANIC?

Synthetic generally means that the pesticide is completely made using laboratory chemical methods. Natural simply means that the biological control or biobased chemicals are naturally occurring in nature. "Organic" means that the pesticide has passed the organic standards set by the USDA and the Organic Material Review Institute (OMRI). This can get confusing as you can have the same biobased insecticide being non-organic or organic depending on the formulation. As an example, azadirachtins are chemicals extracted from the neem tree that have insect repellency and growth regular effects. If you use Azatrol, the product is not organic because this formulation uses synthetic emulsifiers and stickers in the formulation. However, if you use NeemAway, the product uses natural surfactants and stickers and it has OMRI certification.

Being "natural" and/or "organic" does not mean that the chemical is low in toxicity! Rotenone, a botanical insecticide derived from tropical plants' roots, was considered organic, until testing found that it was a relatively toxic general metabolism inhibitor. It is now banned in Europe and the United States for insect control.

WHAT WORKS: BIOLOGICAL CONTROLS

As previously stated, the insect parasitic nematodes area probably the best of the true biological controls for use in turfgrass, but expensive. There are numerous species and strains on the market, but I can distill them down to two groups—nematodes that are best to control caterpillars and nematodes that are best for soil-dwelling pests like billbug larvae and white grubs. Nematodes in the genus *Steinernema* are general parasites that are very good at finding sod webworm and cutworm larvae. When billbug larvae are near the soil surface,

Bluegrass billbug larvae burrow down the seedhead stem to the crown. When they devour the crown, the plant will be killed.

LEFT: Bluegrass billbug damage often is mistaken for summer drought or disease. If not controlled, these spots will eventually die.
RIGHT: Billbugs have a complete life cycle with egg, larval, pupal and adult stages. The smaller larvae are easier to control targets.

Steinernema species can also be effective. For white grubs, nematodes in the genus, *Heterorhabditis* are the ones to use. If you are going to use the nematodes, be sure to contact the supplier months before you will need to control your target pest. Be sure to ask what strains they recommend for caterpillars, billbugs or white grubs. Determine when you will need the nematodes and the size of area you will be treating. The supplier will then gear up to produce fresh nematodes for the time you need them.

To get the best efficacy out of the nematodes, use the fresh product within days of receiving it! They can be applied using regular sprayers that deliver 1.5-2.0 gallons of spray per 1000 ft2. Apply late in the day to avoid direct sunlight and water in immediately after the application. Daily irrigation for the next four to five days will improve the nematode performance.

Milky disease (*Phaenobacillus*) of white grubs, the white fungus of insects (*Beauveria*) and green fungus of insects (*Metarrhizium*) are all available as commercial biological control products. None have been shown to consistently achieve acceptable levels of control (i.e., greater than 60% mortality), so don't waste your time and money! In fact, all these diseases are readily found in turf insect populations, but the diseases never kick off into epidemic levels, even when enhanced by additional applications.

WHAT WORKS: BIOBASED CONTROLS

As previously stated, none of the EPA 25b (minimum risk pesticides) have been shown to be effective at controlling turfgrass insects, in the field. This would include products that contain clove, peppermint, cedar oils or garlic or pepper extracts.

Biobased pesticides with demonstrated efficacy include microbials (Bt delta-endotoxins, spinosyns, and *Chromobacterium* extracts), and botanicals (azadirachtin and natural pyrethrum)

Bt 'kurstaki' and *'aizawai'* strains are active against caterpillars and there are formulations that can effectively kill sod webworm, armyworm and cutworm larvae. These are rarely used but could be effective when a biobased caterpillar control is needed. To maximize efficacy, applications need to be applied when the caterpillars are small (first three to four instars). *Bt 'israelensis'* toxins kill fly larvae and this is often used in small ponds or wetland sites to kill mosquito larvae. This isn't used in turfgrass but may be useful in water areas in or around turf. The latest strain is *Bt. 'galleriae'* which is a beetle-active strain. This strain was recently registered by Phyllom under the trade name of GrubGONE. We

LEFT: A masked chafer larvae that has been killed by the green fungus of insects. **TOP RIGHT: A billbug adult** killed by *Beauveria,* the white fungus that attacks insects. **BOTTOM RIGHT: This masked chafer** larva was killed by *Heterorhabditis* nematodes that normally turn their victims a reddish color.

have tested this product for more than 3 years and it regularly provides 70-80% control of Japanese beetle and masked chafer grubs when applied in July and early August. There are two more beetle-active strains of Bt known, but neither has reached the turfgrass markets.

Spinosyns are the chemicals that are excreted by a soil-dwelling microbe, *Saccharopolyspora spinosa.* Spinosyns are available in Conserve from Dow. This molecule is very active on caterpillars and recent data indicates that it is relatively active on the annual bluegrass weevil. While there are some certified organic versions of spinosyns, none of those labels currently have turfgrass listed.

Chromobacterium subtsugae strain PRAA4-1T was recently registered by Marrone for turfgrass use under the trade name of Grandevo. I believe that this product needs more testing, but we have seen significant population reductions of chinch bugs and sod webworms following applications of this product. Studies on billbug and white grub larvae have been inconsistent, suggesting that the formulation may need to be modified to get this product to the target insects. The chinch bug control is especially interesting as these are sucking insects that wouldn't normally pick up a microbial pesticide unless the chemical has some contact toxicity attributes!

Azadirachtin (primarily as Azatrol) has also provided good chinch bug and sod webworm control. Two applications, about 14 days apart are often needed for chinch bug control but a single application can eliminate caterpillars.

USING RESISTANT TURFGRASSES

In many areas of extreme restrictions, reseeding, precise fertilizing and mowing are the only options for dealing with sport field maladies! In the insect world, the use of endophyte enhanced turfgrass species and cultivars is an option to be considered! There have been major improvements in the heat tolerance and cold hardiness of turf-type tall fescues and perennial ryegrasses, the main grasses with endophytes that are useful on sport fields.

Turf-type tall fescues are especially useful as they also have more fibrous and deep roots. In field studies, tall fescues are more tolerant of white grub populations without showing signs of attack. The endophytes of both tall fescue and perennial ryegrasses produce natural toxins that kill off billbugs, sod webworms, armyworms and chinch bugs.

In athletic fields, you don't need a 100% stand of endophytic grasses to eliminate most of the pests. Field studies have shown that about 40% of the stand has to have stems that contain the endophytes. So, slit seeding or interseeding over a couple of seasons can usually reach this level of protection. On the other hand, if you are going to completely renovate a field going with a solid stand of one of these grasses is fine!

One caution about endophytic turfgrasses. The endophytic fungus is passed on in the seed, but the tiny endophyte starts can die off if the seed is stored too long or subjected to high temperatures. Because of this, you should contact your see provider and explain that you need recent harvest seed of cultivars that are high in endophytes. This request may cost a bit more, but the long-term benefits will pay for this increase.

In summary, there ARE some biological and biobased turfgrass insect management tools. If these are to be used, you will need to do some studying and careful reading of the labels to achieve the desired results. In most cases, the younger the target pest, the more efficacious these alternative products will be. It's also a good idea to thoroughly read the information packets that the suppliers have prepared. These informational pieces (and websites) often have some tips on how to maximize efficacy. And, finally, work toward developing sport fields that use the most resistant and tolerant species and cultivars of grasses. ST

Dr. David Shetlar is Professor of Urban Landscape Entomology, The Ohio State University, Department of Entomology, Ohio Agriculture and Development Center and Ohio State Extension.

The Sports Turf Managers Association Industry SOURCEBOOK

- **The premier online resource connecting sports turf industry professionals with the most relevant products and services**
- **Cost-effective way for manufacturers and suppliers to connect with STMA members**
- **Buyers can eliminate lengthy search engine efforts by using Sourcebook**
- **Include Sourcebook in your magazine and online advertising package**
  - Listing enhancements • Banner ads
  - Page peels • Video

www.STMAsourcebook.com
www.STMA.org
www.sportsturfonline.com

Created jointly by STMA and Green Media, publisher of SportsTurf magazine

green media

SportsTurf MANAGERS ASSOCIATION

CULTURAL PRACTICES & GUIDELINES FOR LOW-BUDGET ATHLETIC FIELDS

BY **DR. BRAD FRESENBURG**

Expectations on today's sports fields are much higher than they were when many of us played Little League baseball or other sports. High expectations often lead to disappointing outcomes when fields do not meet the expectations of coaches, players, and parents. There is often a gap between what is expected and what is necessary to provide a safe, playable field. If that gap can be minimized by removing excessive expectations, priorities and dollars can be more focused. The primary objective when maintaining athletic fields at any level of play is to provide safe, playable fields for athletes. All too often, budgetary limitations get in the way of proper care and maintenance of athletic fields. Although there is no universal budgetary formula, some level of success can be achieved on most athletic fields. Understanding and applying essential cultural practices, as well as using outside sources; athletic directors, coaches, users, and sports turf managers can collaborate to provide healthy, safe, playable fields that meet those primary objectives of safety and playability.

HAVE A PLAN

Whether maintaining one field or 20 fields, prioritizing them can help determine where time, supplies, and maintenance should be allocated. Schedules of events, basic maintenance desired, equipment and resources needed factor into the overall plan. Distinguish high priority areas from low priority areas. For example, game and main practice fields require the most time and money to maintain. Maintenance frequency and material allocation can be reduced on low priority fields and other areas.

Part of this plan includes an annual budget. You may not be responsible for this, but it helps to have an understanding of individual cost for various practices. What does it cost to fertilizing a field or core aerate the center of a football field? Knowing individual cost provides opportunities for donations when you consider outside relationships (discussed a little later).

LEFT: Seed and fertilizer on this compacted surface is a waste. Always provide good seed / soil contact when over-seeding by scratching up a seedbed or through core aeration. **RIGHT: Maintenance** should start earlier than this. Preventative maintenance is usually more economical than recovery maintenance. Also consider concentrating your maintenance efforts to areas needing the most work.

Advertisements offer excellent monetary support as well as trade for maintenance resources like fertilizer, seed, etc.

CONCENTRATE MAINTENANCE PRACTICES

While a practice like mowing and fertility may occur over the entire field, overseeding and aeration can be applied to areas of greatest need. Applying seed between football hash marks only will reduce seed requirements by 66%. Only 22% of an entire college football field exists from the 20 to 20 yard line to 5 yards beyond the hash marks. For high school football fields, this area is 26% of the field. You can increase your spending power by almost four times when targeting high traffic areas. Other high traffic areas include goal boxes on soccer fields and positional areas on baseball and softball outfields. Focusing on the areas of dire need will stretch limited dollars for the most good.

CULTURAL PRACTICES

There are cultural practices that are necessary and others that can be altered from a little to a lot. Mowing (time, fuel, and repairs) is a must and always part of

every annual budget. Beyond this, two of the next best practices are fertility and seeding. If the field manager can maintain the highest possible mowing height allowed (up to 3.5 to 4 inches), overseeding and fertility will help to maintain the highest turfgrass density possible for safety, playability, and weed competition (reducing annual weeds by 80%). When overseeding, always provide good seed/soil contact to get the highest level of seed germination. Always select turfgrass blends or mixtures best for your area with the highest degree of disease resistance possible. Often seed and fertilizer is spread on bare, compacted soil surfaces providing very little benefit for the dollars spent.

■ Cool-season grasses (tall fescue, Kentucky bluegrass, perennial ryegrass) are optimally overseeded and fertilized in the fall of the year. Spring overseeding and fertility may be an option if spring play occurs. However, late spring fertility can be detrimental to cool-season grasses as it relates to turfgrass diseases. Cool-season grasses, like fescue, are more susceptible to brown patch disease if fescue receives excess nitrogen late spring to early summer. Type of fertilizer and timing are key to managing diseases. If a budget only allows minimal overseeding and fertility (one or two applications), fall is the optimum time.

■ Warm-season grasses (bermudagrass, zoysiagrass, etc.) are re-established and fertilized during the late spring and early summer months for rapid growth and recovery. Seeding is the most economical means of re-establishment followed by sprigging.

Soil testing is another inexpensive practice to consider as a means to save money. Sports turf managers can determine what the needs are for nutrients as well as what the soil pH is. If soil pH falls outside the desirable range (pH 6 to 7); applications of fertilizer may not benefit turfgrass plants as nutrients may be locked up in the soil colloid. Soil test results may also indicate sufficient levels of some nutrients like phosphorus and potassium; therefore saving dollars on purchasing fertilizers containing these nutrients and apply that savings to additional nitrogen fertilizers or other practices.

To avoid fertilizer waste, determine the exact square footage of fertilized areas. Accurately measuring the square footage of treated areas helps determine some of those costs figures of many maintenance practices. Accurate fertilizer applications are dependent on purchasing the correct amount of fertilizer for a known square footage. Also, slightly reducing the fertilizer application rate (adjusting from 1 lb N/1000 sq. ft. to ¾ lb N/1000 sq. ft.) can make a difference when it comes to budgeted dollars. Spreading your fertilizer over several applications will be more beneficial than all at once (i.e., two applications of 0.50 lb of nitrogen per 1,000 square feet versus one application of a pound). Rotary walk-behind spreaders are very economical and

are often used for all levels of play. Fertilizer buggies from local farm co-ops are an option for applications over large areas.

Aerification (soil cultivation) is and always will be the most neglected maintenance practice. It provides some of the greatest benefits: reduced compaction, air exchange, water and nutrient infiltration, and opportunities for deeper root development. It is a practice that can be completed using a borrowed piece of equipment. Walk-behind units can be rented daily for a nominal fee and used in those areas with the most need (centers of a football field, goal mouths, sidelines, etc.). This practice can improve on safety better than most other practices.

Irrigation may or may not be an option. Most low budget programs tend not to have a source of water especially if it is potable water being purchased. While soil moisture is important during play, it can increase the chances of turfgrass diseases if applied too often. Only apply what the soil/root-zone can infiltrate in one watering. Anything more will cause puddles and runoff—wasting water and promoting diseases. It is best to be on the conservative side of irrigation except where safety is a concern.

Fertilizer buggies offer an alternative to spread fertilizer and topdressing sand.

Topdressing is usually a luxury practice in a low budget facility. While sand is very cheap to purchase, transportation cost is usually prohibitive, not to mention the lack of application equipment (topdresser). Those fertilizer buggies at the local farm co-op can be used to spread topdressing sand as well if the co-op is willing and you are able to get sand delivered.

Keep in mind that cultural practices, however completed; should be followed correctly to favor the turfgrass and not pests. There is a direct correlation between poor cultural practices and levels of pests observed. Minimizing pests minimizes costs.

Controlling usage can have an impact on maintenance dollars.

CONTROL USE

Over-use is a problem where athletic grounds are very limited. Any opportunity to restrict activities like physical education and band practice will greatly reduce wear and stretch maintenance dollars. Closing fields when conditions are unfavorable and limiting or eliminating public use can greatly reduce cost. In addition, shifting a field 20 to 30 feet or rotating them can spread the concentration of traffic over more area, therefore allowing previously worn areas to recover. Flexibility to change up a sporting event from a home field to an away field or vice versa to avoid wet playing conditions can save a field from excess damage. Controlling use will save dollars on maintenance.

Consider an advertising trade-off. Community businesses may have some excellent sources for knowledge and may be willing to donate products, equipment and services for an advertisement spot on a scoreboard or outfield fence.

CONSIDER OUTSIDE RELATIONSHIPS

Most communities will have a sportsplex or golf course nearby. Relationships between these facilities, local businesses and a local school district can be as simple as introducing oneself and asking a question. If a school district has no means to purchase an aerator, don't be afraid to contact a local golf course to potentially borrow their aerator. Perhaps several nearby school districts can purchase a piece of equipment to share. Many lawn care businesses will have specialized equipment like vertical slicers and aerators. Local farm co-ops are often a great source for seed, fertilizers and pesticides.

Consider an advertising trade-off. Community businesses may have some excellent sources for knowledge and may be willing to donate products, equipment and services for an advertisement spot on a scoreboard or outfield fence. Many sporting events are announced on local radio stations where broadcasters can promote a business for their contributions to a school or sporting program.

Booster clubs help to offset some of the cost for team uniforms, equipment and even field maintenance needs. Saturday morning bake sales, trivia nights, website sponsorships or auctions can often buy a piece of equipment or seed and fertilizer for a season. Calculating those cost in the planning phase of maintenance and resources needed, are the numbers you will need to provide to a booster club or individual for the asking.

Athletic field maintenance at the high school level or in any low-budget situation is not hopeless. Devise a plan, provide a list of needs and start asking around. You may find that safe and playable sports fields are an achievable goal even on a limited budget. More detailed information can be found on the STMA website, "2015 Conference recordings – Cultural Practices & Guidelines for Low Budget Athletic Fields." ST

Brad Fresenburg, PhD, is Assistant Extension Professor, University of Missouri Turfgrass Sciences.

John Mascaro's Photo Quiz

John Mascaro is President of Turf-Tec International

Can you identify this sports turf problem?

Problem: Brown circles with green centers of various shapes
Turfgrass area: Stadium grounds
Location: Jacksonville, Florida
Grass Variety: St. Augustine

Answer to John Mascaro's Photo Quiz on Page 21

Background illustration courtesy of istockphoto.com

UPDATE ON FIELD PAINT TECHNOLOGIES FROM THE MANUFACTURERS

PIONEER ATHLETICS

Editor's note: *Doug Schattinger, president of Pioneer Athletics, contributed this update.*

Have you ever noticed that a painted field looked slightly better right after it dried than after a particularly wet night? Have you ever stepped into an area you painted yesterday only to leave tracks as you leave the painted area?

When paints are dry to the touch they begin to cure. Many solvent-based paints cure very quickly. However, water-based paints can take hours and sometimes days to cure. If a coating is not sufficiently cured, water can re-saturate the paint causing it to track or, in instances such as rain, run off the blade.

Various additives and formulation tricks can speed up the curing process. However, that often means compromising plant health and coating flexibility. Many of the potential additives are very damaging to grass and the soil profile. Making paint cure too quickly will leave the coating too stiff, which will cause the paint to flake off the grass blade quickly in moderate traffic.

Curing of grass paints is difficult because the plant itself is regularly releasing water. When you factor in cool weather, dew, and normal sprinkling, the curing process can take days instead of hours. Additionally, there are circumstances when turf managers have to throw a tarp over a freshly painted field. This can virtually stop the curing process.

Fortunately, new technologies occasionally become available that give paint formulators an opportunity to make more environmentally friendly grass coatings that perform better for sports turf managers. For example, a new resin development allows us to get a water-based paint to cure much more quickly, remain very flexible, and not damage grass.

Research at various test sites throughout the US on bermudagrass, ryegrass and Kentucky bluegrass has concluded that the new resin system does not harm grass after repeat applications. Due to these results, our team of chemists was given the challenge to create a grass coating that had to

While trying to create a solution to one problem, you sometimes create a coating that has unexpected characteristics.

be bright, durable, easy to use, have a finished film pH between 6 and 6.5, have great hiding, have as little VOCs as possible (preferably zero), dilute easily and have the other properties that sports turf managers require.

During our comparative tests with existing grass coatings, we noticed significant differences in curing and re-wetting. The new formulation was performing extremely well all summer and into early fall. Unfortunately, product development often does not move in a straight line. While trying to create a solution to one problem, you sometimes create a coating that has unexpected characteristics.

After an unusually cool and dewy evening, we noticed that the square with the experimental coating had noticeably more dew than the squares painted with our existing formulations. Regardless of the intense dew, the experimental paint did not re-wet. Although the paint on the other squares had little dew, they re-wet overnight. The water resistance of the experimental product is a result of its extreme hydrophobicity. Therefore, water will bead on the coating like water beads on a freshly waxed car.

Internally, we faced the question: Is this new formulation a success now that sports turf managers can get on their fields earlier in the morning without tracking paint? Or does the new formulation require additional work because turf managers might have to wait longer for the dew to dissipate? Unfortunately, the new resin technology does not play well with currently used paint technology. So, combining the two will not provide a perfect middle ground.

Our new formulation was sent to a variety of climates for evaluation. In each case, pails, randomly labeled A, B and C were sent to test sites in different regions of the US. We asked for feedback on ease of use, whiteness, brightness, quickness to dry, and tendency to re-wet. We asked each test site to carefully evaluate the health of the grass from the samples. Finally, we wanted to know if anyone saw anything different or unusual.

In general, these tests confirmed what we saw. The new formulation would not harm grass and was often brighter in the morning than other paints because no pigment bled down the blades with the dew. However, the new formulation held noticeably more dew than the surrounding areas.

Rarely do improved technologies come along that are perfect replacements for existing ingredients. A new ingredient may significantly enhance one performance aspect while slightly degrading another. Turf coatings are carefully balanced formulations and it's our job to find dependable solutions.

Overall, there is a steady march toward better performance, an enhanced environmental profile, and more niche products to allow turf managers greater choice in providing good looking, healthy and sustainable fields.

ECO CHEMICAL

Editor's note: *Eco Chemical contributed this update.*

The trend toward increased multi-event use is the biggest driver of evolution and innovation within the sports field industry and particularly, with synthetic turf venues. The days of simply buying and applying paint without regard for preconditioning and eventual removal are gone, displaced by the demand for a more systematic approach to field maintenance.

There is also an increased awareness and demand today for ecologically sound field maintenance practices that will minimize the release of harsh chemicals and materials into the environment. These materials have the potential to be hazardous, and can also create long-term issues with field performance caused by material buildup and chemical impact on the synthetic turf and grass surfaces.

Technological advances in field paint are providing more options for field managers to maintain their fields with environmentally savvy products and methods, while saving time, labor, and cost.

According to Jeff Fisher, manager for the TempLine Coatings and Equipment Division of Eco Chemical, "The industry just demands it. Sports are huge and growing; everything from kindergarteners playing soccer, up to the big professional sports events on multi-use, high level fields. Today's sports fields are expected to be available for play 15 to 20 hours a day, so having an efficient and reliable field maintenance plan is essential."

According to Fisher, "It's not always just in the product that we're putting down, but it's in the packaging, the technology, the system, the man-hours, and the money it takes. All those things add up to being efficient as well as being ecologically responsible."

When it comes to innovation in the workplace, Fisher says that, "As a group, we have always been problem solvers who look at every situation in our market as an opportunity for delivering improvement or a totally new solution. We come at it with a long-term perspective, and I think because we're from the Pacific Northwest, we bring an additional 'ecocentric' dimension to our long-term thinking. We definitely come at it from a different angle."

When asked where the company gets the inspiration for new products, Fisher says, "I'm typically not in the lab. I'm in the field talking with customers and that's where a lot of the ideas come from. When I'm out there looking at the problems people are having, or how people typically do something, I try and streamline it and figure out what we can do to make the situation more efficient. Then I go back to the lab and explain the problem, and our R&D team comes up with solutions for it.

"We are pursuing several other significant opportunities in our current markets, in addition to other product ideas that might possibly take us off the athletic field and onto some other surfaces" says Fisher.

Grass paint has historically taken a back seat in the drive for continuous product improvement. Many of the products in the market deliver adequate performance in terms of opacity, color, and durability, but aren't efficient to work with, nor are they eco-friendly. Many field managers use thick latex paints (similar to house paint) on their grass fields. This choice of product gets the job done, but brings with it many potential problems for the natural grass environment, chief among them being the buildup of materials in the soil, eventually killing the grass and causing other field management problems. Eco Chemical is asking, "How do we take grass paint to the next level, and provide the best possible on-field performance for long-term use with maximum efficiency and protection for the grass and the general environment?"

The current market does not offer a superior, yet affordable natural grass green paint. There is a growing concern in many markets that the shortage of water for sports field and golf course maintenance will make it increasingly difficult and expensive to maintain the "green." Eco Chemical is leveraging their existing product technology to develop a more cost-effective solution for this market challenge. According to Fisher, "This year will be important because California is predicting this summer will bring one of the worst droughts in 20 years, so a product to efficiently and safely paint grass and have it look green is vital."

Change in the synthetic field turf industry is inevitable. The increased use of sport fields for multiple events and the resulting ever-expanding engagement calendar creates a steady demand for continued innovation. The buyers' search for greater efficiency and/or convenience will continue to challenge everyone on the supply side of the equation, including manufacturers and distributors. The incentives are substantial for those in the field-marking segment of the industry, but will require constant creativity and new ways of thinking about how the market is best served in terms of products, packaging, delivery, and service. Regardless of one's position at the table, the need for information will be at the heart of the challenge, along with the ability to respond with innovative solutions that also reflect the shared interest in environmental stewardship. ST

John Mascaro's Photo Quiz

Answers from page 17

John Mascaro is President of Turf-Tec International

When I drove by this area between Everbank Field and the baseball grounds at Jacksonville I slammed on my breaks and got out to take this photo. At first I thought the circles were rings created by improper pressure in the irrigation system. However, as I looked the areas over in more detail, I noticed that the green grass and brown areas were in different shapes and patterns, plus there were no irrigation heads located in the green centers. I had seen this before and knew it was caused by wear, however what happened here? I asked the Sports Turf Manager Mark Clay, what caused this and he said, "Oh that was the fair." As it turned out, once a year the Greater Jacksonville Agriculture Fair comes to the stadium parking lot of Everbank Field and sets up shop. Some of the small rides, ticket booths and kid's rides are set up on these St. Augustine grass areas causing these unusual wear patterns. The green area in the foreground is where a ticket booth stood and the brown wear area around it is where the people trampled the grass. The circle right behind this is a child's pony ride. Since the areas were pretty well destroyed after the event the damaged areas were stripped and re-sodded and the fair paid for the renovated areas and sod.

Thanks to Mark Clay, Sports Turf Manager at Everbank Field in Jacksonville, for allowing me to take this photograph.

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.

Set the height of cut within the plant's tolerance range.

HOW MOWING AFFECTS TURF

BY **DR. DOUGLAS LINDE**

Can you cut the soccer field lower for tomorrow's game? The answer is "it depends."

Mechanically, it is rather simple to lower the height of cut and mow the grass lower. However, under certain situations there can be some devastating consequences. For example, on Friday you lowered the mower from 2 to 1 inch and cut the Kentucky bluegrass/perennial ryegrass soccer field in preparation for a weekend youth tournament. Daytime temperatures have been consistently in the 90s, there are signs of drought stress and it's been a month since the blades were last sharpened. The players and coaches that weekend had great comments about the playability. Over the next 2 weeks, you notice the turf is not recovering as you expect. The stand is thinning and plants are no longer actively growing. Teams continue to use the field and plants in the high use areas become desiccated and the leaves pulverized. The areas become bare. It finally rains, but it's just before a game, and the foot traffic turns the bare areas into a muddy mess.

The purpose of this article is to explain how mowing affects turf and

Scalping exacerbates the stress created by mowing.

provide recommended mowing practices so that devastating consequences do not occur on your field.

PLANT'S RESPONSE TO EACH MOWING

Simply cutting a leaf blade is stressful for a grass plant. Botanically, mowing is harmful, but it's needed for aesthetics and function. Although turf-type grasses adapt well to mowing, they still have to recover from a wound and a reduction in the plant's energy-making factory, the leaves. Below are some of the plant's physiological (not visible) responses to being cut.

- Fluid exudes from cut leaf
- Stored energy (carbohydrates) is used to help repair the wound
- Carbohydrate production and storage reduced
- Temporary increase in water loss from cut leaves
- Root growth stops temporarily
- Reduced water absorption by roots
- Creates entry points for pathogens

PLANT'S RESPONSE TO REGULAR MOWING

What makes a grass a turfgrass is that it persists under regular mowing which may range from daily to once per month. Regular mowing causes additional plant responses which are morphological (outwardly visible) and take more time for the plant to do. Here are these responses:

- Dwarfism of plant
- Increase tillering which increases density
- Lowering of the budline (crowns)
- Decrease in seedhead production

More tillers increases turf density which in most sports turf situations leads to improved playability and wear tolerance.

When grass leaves are cut, the most photosynthetically active portion of the leaf is removed and the total leaf surface area for photosynthesis is reduced. The plant uses stored energy to repair the wounds and to regrow the leaves that were lost. Under regular mowing at a consistent height of cut the plant will not only regrow the leaves but will also increase leaf surface area by growing more tillers (shoots). More tillers increases turf density which in most sports turf situations leads to improved playability and wear tolerance. Under regular mowing turf plants can adjust the size of their parts so critical parts like the crown are not cut.

Improper mower setup can affect playability and aesthetics.

However, the amount of adjustment depends on species. The plants undergo a dwarfism in which plants maintained at a lower height of cut will have shorter shoots and roots. Less rooting is needed to support the smaller shoots.

Recommended mowing practices

- ▶ Regularly sharpen and adjust mower
- ▶ Operate mower properly
- ▶ Match speed with conditions for a quality cut
- ▶ Set cutting height within plant's tolerance range
- ▶ Follow the "one-third" rule
- ▶ Limit double/triple cutting
- ▶ Avoid mowing when: disease is active; when turf is drought and/or heat stressed; or when turf is saturated and heat stressed
- ▶ Raise cutting height during environmental stress periods
- ▶ Reduce thatch
- ▶ Alternate mowing pattern
- ▶ Mow grass when dry, if possible

PLANT'S RESPONSE TO CLOSER MOWING

Turfgrass species have mowing tolerance ranges. Mowing above the tolerance range can lead to poor playability because the turf is too high. Mowing below the range for a particular species can provide the desired playability but can lead to devastating consequences. When mowing within the tolerance range the plants can easily adapt to height of cut changes, provide the desired playability, and undergo responses 1 through 5 listed below. These responses typically are not devastating to the plants. When mowing below the plant's tolerance range, the plant not only undergoes responses 1 to 5 but can also undergo responses 6 to 9. These additional responses can lead to dead grass.

- ■ Increased shoot growth
- ■ Increased tillering and density
- ■ Increased succulence
- ■ Decreased root and stem growth
- ■ Decrease in carbohydrate production and storage
- ■ Scalping
- ■ Thinning
- ■ Less tolerant to environmental stress
- ■ Less tolerant to pests

Although closer mowing can improve playability, the smaller plants require a higher cultural intensity for them to

When following the one-third rule for an actively growing turf, a 1-inch turf should be mowed at least 3 times per week whereas a 3-inch turf can be mowed only once per week. Just labor alone, there is a big cost difference between heights.

persist. A shorter rootzone and greater competition make the plants less tolerant to other stresses caused by drought, heat, cold, pests, and traffic. Plus, the shorter root zone means there is less soil from which the plant can withdraw water and nutrients. Mowing, irrigation, fertilization, and pest management all need to be more frequent and more precise. Therefore, the turf manager needs a larger operating budget and more expertise. For example, the shorter the grass is maintained, the more frequent it should be mowed. Research has shown that the turf plant is least impacted by mowing when less than 30-40% of the leaf area is removed at one time. This is the basis for the classic one-third rule for mowing frequency which is to never remove more than one-third of the leaf at one mowing.

Removing more than one-third can lead to scalping which exacerbates the stress created by removing leaf tissue and the plant uses more stored energy and takes more time to recover. Mowing frequency should depend on growth rate not day of the week. When following the one-third rule for an actively growing turf, a 1-inch turf should be mowed at least 3 times per week whereas a 3-inch turf can be mowed only once per week. Just labor alone, there is a big cost difference between heights.

TURF'S RESPONSE TO THE MOWER

In addition to cutting the leaves, the mower can impact turf quality and playability through additional stresses. These stresses include things such as hydraulic leaks, tire wear, excessive clippings, improper mower setup, poor after-cut appearance due to mowing too fast and/or dull mower blades, mowing wilted or frosted turf, mowing saturated turf, mowing when too hot, spread disease and weeds, double/triple cutting, mowing thatchy turf, etc. A dense, actively growing turf can often tolerate these mower stresses. Be aware of these stresses and train your staff on how to limit them.

So, can you cut the soccer field lower for tomorrow's game? It depends. A one-time drop in height that's within the plant's tolerance range should not lead to devastating consequences if the turf stand is healthy and there are few additional stresses present. Drop below the tolerance range and add some other stresses, you risk serious consequences. ST

Douglas Linde, PhD, is Professor of Turf Management, Delaware Valley University, Doylestown, PA.

USED ON SPORTS FIELDS
OF THE HARDEST WORKING
ATHLETES ON EARTH

RIVIERA

Bermudagrass SportsTurf

Fans and players consistently praise the look, quality and superb playing surface of Riviera, plus its top-ranked hardiness and extreme resilience which means lower turf maintenance costs year-round. It grows in at just six weeks or less making renovations, repairs and new field construction a breeze. Riviera takes a beating and recovers week after week.

See for yourself why more sports fields are turning to Riviera.

JOHNSTON
SEED COMPANY

The Cold-Tolerant Bermudagrass Experts

800-375-4613
www.johnstonseed.com

THE *SPORTSTURF* INTERVIEW: DALE GETZ, CSFM, CSE

Editor's note: *: In the second installment of our new monthly feature, "The* SportsTurf *Interview," we get to know Dale Getz, CSFM, CSE, another long-time STMA member who currently is the sports turf sales manager for The Toro Company. Before joining Toro, Dale had been athletic facilities manager at Notre Dame for 17 years. Dale has served as the STMA's Commercial Vice President, and in 1999 was honored by STMA with the Harry C. Gill Memorial Founders Award.*

Dale Getz, CSFM, CSE, sports turf sales manager for The Toro Company, poses on a Super Bowl field. Before joining Toro, Dale had been athletic facilities manager at Notre Dame for 17 years.

SPORTSTURF: You arguably are one of the most successful people in the industry who began their career working as a sports turf manager and now works on the commercial side of the business. Why did you want to work for Toro?

GETZ: While I was perfectly happy at Notre Dame and truly enjoyed what I did, I came to a stage of my life where I was ready for new challenges and opportunities. I had always used and was very impressed with Toro products, and was invited to attend one of their customer feedback forums. Afterward, I remember thinking it would be a great place to work. About a year later, at the STMA conference in St. Louis, I ran into one of the Toro sales managers who said there might be an opening in the newly created segment that we now call the Sports Fields and Grounds Business. I applied and after a few months of interviews, I was selected for the position.

ST: What are the biggest differences in the two jobs?

GETZ: At Notre Dame, much of my job was agronomically technical. While I still use a lot of that knowledge in my current position at Toro, the day-to-day activities are much different. At Toro, my job is technical from a sales and marketing standpoint as it relates to products and benefits provided. I have learned a lot about managing relationships, acquisition strategies, managing travel and public speaking. That said, the hardest thing to get used to in my position is the travel, not only for me but also my family. While at Notre Dame I worked long hours and weekends but I was home most nights. Today, I'm gone about 3 out of every 4 weeks but I am home most weekends. The other big difference is that I do not have to worry about what Mother Nature is throwing at us.

ST: How has social media impacted your work?

GETZ: Social media is definitely changing the way we communicate and share information. Its use is growing among sports turf professionals as a way to stay connected, to share and to learn from others in the industry. For manufacturers these channels allow us to learn from our customers, share our knowledge, and answer questions to issues. And I know immediately when something I did was good or not so good.

ST:What are the biggest differences in sports turf management today compared to when you were working at Notre Dame?

GETZ: This is an interesting question. When I left Notre Dame, I felt like the turf management business would zoom past me. While some things have, the general basics of good cultivation practices, efficiently managing nutrients and water resources, and using IPM to manage insects and diseases still adhere today. What has changed significantly are the options for fertilizers and chemicals, technologies for managing water use, and of course, equipment. On the equipment side, we are now in the age of hybrid technology, propane and biofuels, fuel savings, productivity and total cost of ownership.

It was a tough transition but what helped was joining the STMA national organization, as well as the Midwest chapter out of Chicago.

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

GETZ: Probably the thing I hear most is, how to manage "up." Dealing with coaches, user groups and upper management are things that are not taught in turf school.

ST: How has the STMA impacted your career?

GETZ: I was a golf course superintendent at Notre Dame when I was asked to apply for the position in athletics. I told them I knew very little about sports turf but they felt my background in golf was enough. It was a tough transition but what helped was joining the STMA national organization, as well as the Midwest chapter out of Chicago. This was the best thing I ever did for my career. It put me in contact with many professionals around the country who I could contact at any time to learn and discuss issues I was having.

ST: How do you think the natural turf vs. synthetic turf issue will play out over the next decade?

GETZ: First, I am a natural grass person so may be a bit biased here. At some point, I think there will be equilibrium between synthetic and natural grass. I don't mean it will be 50% of one and 50% of the other in terms of numbers but that once this equilibrium is reached there will be a lot less conversion one way or the other. My hunch is that synthetic will probably go into places it should not be in and some of that will scale back and that some natural grass fields will get "squeezed out" by adding sports and land locked situations.

I also think there needs to be more research on the safety of the entire system. I feel that improving the education of sports turf managers will help provide safe, playable and appealing fields. I also feel there needs to be better education of the general public as well as administrators on synthetic vs. natural systems. Finally, there needs to be improved communication between turf managers, administrators and user groups about the maintenance practices required by both types of turf systems.

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

GETZ: I really like woodworking, it keeps my mind and hands sharp. Of course I like to fish and golf too—but who doesn't? ST

PROJECT MANAGEMENT FOR SPORTS TURF MANAGERS

BY **NICK JANOVICH**

If you would ask any turf manager what tools they need you will likely hear "more time, more money, and more people." The reality is that most are unlikely to get even one of those three. When that is the case, the challenge then becomes doing the best you can with the resources that you have available. Most sports field managers are well trained in turfgrass science. However, they are routinely thrown into the role of project managers responsible for efficiently managing those three things they always need more of: time, money, and people. The average turfie's training in that role may be less than ideal but with a little planning and effort you can outperform almost any general contractor.

As more projects are being completed in-house, the skills of the turf manager must change. Basic project management principles can often be easily applied to projects in the turfgrass management industry. Contrary to popular belief, not all projects have to be construction or renovation events. The term can also include acquiring new equipment, developing a master plan, conditioning your facility for a special event, or implementing a new procedure. The word "project" does not always mean putting a shovel in the ground. No matter what your project is the goals remain the same: do it right, do it on time, and do it within budget.

Project management generally has four definitive stages: definition of the problem, planning of the project, execution of tasks, and closing/handing-off of the project. Typically turfgrass managers are very good at executing tasks. It is the definition, planning, and hand-off phases that can cause projects to fail. Poorly planning a seemingly simple budget or timeline can make the best-executed project appear to be a failure. Execution of tasks with little-to-no planning is what causes projects to come in late and over the budget.

To avoid such pitfalls most project managers turn to some type of software. Large-scale projects will likely use sophisticated software to manage tasks and the flow of work. Such elaborate and expensive software is likely not necessary for projects that turfgrass managers will face. A project is not going to succeed or fail because of the software used (or not used) to plan the project. Additionally, the burden of learning new software can easily hinder the effective management of a project. The better approach for turf managers is to use an entry-level software that is quick to learn and easy to use. There are many free/cheap online-based programs that will aid turf managers without the burden of learning a new software.

COMMUNICATION IMPORTANT, AS USUAL

Great communication is a common theme throughout all of the four stages of managing a project. Anyone who has managed projects will almost always say that effective communication is the biggest factor in keeping projects within scope, on budget, and on time. Effective communication could be the topic of another article but here are some quick guidelines that turfgrass managers should use when managing projects:

First, communication is of the utmost importance but too much communication can negatively impact your message. Updates should be often enough that no stakeholder ever wonders about the project's status. On the contrary too many emails/newsletters/calls/meetings will be cause for your words to be ignored. Second, it is acceptable to have different communications for different groups of people provided they all have the same general message. For example, the project sponsor (typically an executive/owner/committee chair) may require less communication than stakeholders. Your project team will require the most intense level of communication. A third tip is to not shy away from communicating issues. Problems and issues will arise during any project. It is how you deal with them that will define the impact the issue has on the outcome of your project. Communicating issues clearly and responsibly is the first step in tackling them. Some tips include not placing blame, learning from the mistake, and looking for solutions.

PHASE 1: Definition of the problem

Identify the problem and fix it. Simple enough, right? Almost. This is a step that turf managers do daily. Most always have their eye on all aspects of their operation and know the next big improvement that will take their facility to the next level. What is rarely done, however, is putting those ideas on paper and moving forward. A project statement is an all-encompassing document that will define multiple aspects of the project including the goals, scope, stakeholders, team members, potential budget, risk-mitigation, etc. Some statements are more robust while others provide less information. Either way the point is to get a "game plan" on paper. The document should take your idea and turn it into a potential project.

One of the important tasks of the definition stage is to properly specify the scope of the project. This serves two purposes. First, the exact goals are established. The last thing you want at the end of a project is to have a stakeholder upset because they had different expectations. The second, and arguably more important, is that a proper scope keeps the project within those bounds. Too often projects are derailed because a stakeholder will say, "While you are doing that how about doing this too?" A proper scope defines what is included and what is *not* included. Both are essential.

Another crucial step in the definition stage is team selection. Oftentimes turf managers think their team is their crew. That could not be more wrong. A successful project, whether it is an equipment acquisition or a field renovation, should involve a robust team. Sub-contractors, salesmen, consultants, and in-house staff should all be considered for the project team. Having outside minds involved on your project greatly reduces groupthink and the associated difficulties. If a person's skills are only needed at limited phases of the project it is better to include them in the team and excuse them when not needed. You want to avoid approaching people after a project has started and begging for their input. Team members, in general, should have a positive outlook on the project and your core team should include 5-10 solid members.

PHASE 2: Planning the project

The project planning phase is one that, traditionally, most have done in their

THANK YOU FOR YOUR SUPPORT!

Thank you to the new commercial members and commercial associate members who joined STMA or renewed their membership post publication of the Membership Directory. The deadline to be included in the 2014-2015 Membership Directory was May 30, 2014. The members who were not included in the directory are

First Name	Last Name	Member Organization Name	City	ST
Robert	Alcantara	Sports Turf One, Inc.	Boynton Beach	FL
Nicole	Andrews	Matrax, Inc.	Lutherville	MD
Rhett	Autrey	Autrey's Goal Line	Jay	FL
Carmen	Baciotti	Tomlinson Bomberger	Lancaster	PA
Mike	Baker	Rainout, LLC	Palm Harbor	FL
Joe	Bammer	Grassmasters Sod Farm	Patoka	IN
Jim	Barger	ONCORE	Lincoln	NE
James	Beever	Agro Logics	St. Louis	MO
Chris	Bell	Pioneer Athletics	Cleveland	OH
Glen	Black	GT Air Inject	Jacksonville	FL
Timothy	Blake	Landcare Unlimited, LLC	Litchfield Park	AZ
Benjamin	Boehme	Golf Enviro Systems INC	Arvada	CO
Jeremy	Bohonko	Ewing Irrigation Products	N Charlotte	NC
Shawn	Booth	Nemaha Sports Construction	Lincoln	NE
Phillip	Bowers	BSI - Sports Turf Maintenance	Compton	CA
Todd	Britton	Shaw Sports Turf	Calhoun	GA
William	Brown, CGCS	Turf Republic	Kennett Square	PA
Joel	Brownsberger	OneSource Landscape and Golf Services	The Villages	FL
Evan	Buckley	J&D Turf	Fishers	IN
Thomas	Burger	Superior Turf & Landscape	Furlong	PA
David	Chu	EZ Hybrid Turf	Hackensack	NJ
Troy	Coker	Residex-Turf Fuel	Westfield	IN
Sean	Connell	Georgia Golf Construction, Inc.	Woodbine	NJ
Webb	Cook	Sprinturf	Atlanta	GA
Boyd	Crane	Nemaha Sports Construction	Lincoln	NE
Roger	Crenshaw	Advanced Turf Solutions	Louisville	KY
Sean	Cullen	Turf Equipment and Supply	Collegeville	PA
Dave	Cygan	Pro's Choice/Oil-Dri Corp	Barrington	IL
Vincent	D'Accolti	GAPPSI Outdoors	Smithtown	NY
Mark	Dargay	The Toro Company/ E H Griffith, Inc.	Pittsburgh	PA
Caleb	Davis	City and County of Broomfield	Broomfield	CO
Michael	Davis	Jeffrey L. Bruce & Company, LLC	Olathe	KS
Judd	Duininck	Duininck, Inc.	Prinsburg	MN
Sean	Egan	Pioneer Athletics	Cleveland	OH
Don	Frantz	PBI Gordon	Highlands Ranch	CO
Kevin	Fuselier	Milone & Macbroom, Inc.	Cheshire	CT
Brad	Garrett	Quali-Pro	Parkville	MO
Kail	Ghigo	Infield Systems	Van Buren	AR
Nicholas	Gialloreto	Walker Supply Inc.	Coraopolis	PA
Roberto	Gomide	World Sports Solutions Inlt Co	Las Vegas	NV
Jeff	Hall	Martin Limestone	Denver	PA
Fred	Heasley	Bay Chemical Company	Huntington	IN
Adam	Hesse	Munie Greencare Professionals	Caseyville	IL
Chris	Hodges	Naylor Association Solutions	Alpharetta	GA
Susan	Holmes	Kubota Tractor Corporation	Torrance	CA
Vince	Jagodzinski	MTD Products Company (Cub Cadet)	Cleveland	OH
Austin	Jarrett	Turfmech Machinery LTD (Allett USA)	Aiken	SC
Casey	Jones	Landscapes Unlimited	Lincoln	NE
Rick	Jurries	Sports Turf Innovations, LLC	Holland	MI
Hank	Kerfoot	Modern Turf, Inc.	Rembert	SC
Kyle	King	Nemaha Sports Construction	Lincoln	NE
Michael	Krupke	Frontier Servco FS	Brodhead	WI
Michael	Kubinec	Macro-Sorb Technologies / SMS Additive Solutions	Mount Laurel	NJ
Zach	Kuenzi	Barenbrug USA	Ramona	CA
Austin	Lanzarone	Pickseed USA, Inc.	Tangent	OR
Edward	Liu	Qingdao Bellinturf Industrial Co., Ltd	Shandong	
Luna	Liu	Leling Taishan Artificial Turf Industry Co., Ltd	Beijing	
Jim	Lohmann	Lohmann Sports Fields	Marengo	IL
Louis	Lynn	ENVIRO AgScience	Columbia	SC
Mandi	Mack	Vista Seed Partners	Shedd	OR
Dave	Martin	A-Turf, Inc.	Lancaster	PA
Michael	McAfee	Team Athletic Field Builders	Danville	KY
Timothy	McLarn	Tru Mark Athletic Field Marker	Omaha	NE
Jeff	Meyer	SiteWorks	Chandler	AZ
Jason	Mikkelsen	DLF International Seeds	Halsey	OR
Bob	Milano Jr.	Lloyd Civil and Sports Engineers	San Francisco	CA
Jason	Moore	Jacobsen, A Textron Company	Orlando	FL
Stuart	Morris, CSFM	Thomas Bros, Grass	Nashville	TN
Loren	Moulder	Agricen	Frisco	TX
Matt	Munie	Munie Greencare Professionals	Caseyville	IL
Bryan	Muntz	IntegraTurf, Inc.	Albany	OR
Jason	Myers	Tomlinson Bomberger	Lancaster	PA
Greg	Naffz	Sustane, Natural Fertilizers of America, Inc.	Auburn	CA
Jack	Nesser	Pioneer Athletics	Cleveland	OH
David	Nowakowski	Harrell's	Palm Bay	FL
Daniel	Ochsner	Perfect Play Fields And Links	Belleville	IL
Nicholas	Pappas	Greensource Sports Turf & Landscape	Southwest Ranehes	FL
William	Paprocki	Stabilizer Solutions	Austin	TX
Brian	Paseka	Nemaha Sports Construction	Lincoln	NE
Rich	Peraza	Greensource Sports Turf & Landscape	Southwest Ranehes	FL
Bob	Petrungaro	Earthway Products, Inc	New Lenox	IL
Blake	Phillips	ITAC, Inc.	Ashland	VA
Jeremy	Pimental	AZ Turf Masters	Phoenix	AZ
Lisa	Popour	Turf Masters	Phoenix	AZ
Joseph	Proksch	SSC	Gastonia	NC
Merle	Roe		Avondale	AZ
Jay	Rogers	Fleet US, LLC	Loxahatchee	FL
Dusty	Roper	Specialty Turf Supply	Calera	AL
Gary	Russell	Pawnee Buttes Seed	Greeley	CO
Myron	Sargisson	Sargisson Enterprises	Hot Springs	SD
Greg	Schweizer	Munie Greencare Professionals	Caseyville	IL
Mark	Shrift	K & W Engineers	Harrisburg	PA
Jered	Shukrecht	Pro-Tech	Rochester	NY
Austin	Smith	Precision Turf LLC	Buford	GA
Donald	Smith	Smithco, Inc.	Wayne	PA
Anthony	Stevenson	Lloyd Civil & Sports	Incline Village	NV
Judy	Terwilliger	ONCORE	Lincoln	NE
Loretto	Thompson	K100 Fuel Treatment (Kinetic Fuel Technology)	Youngstown	NY
Ed	Underhill	Underhill International	Lake Forest	CA
Jeremy	Van Ampting	Nemaha Construction, Inc.	Lincoln	NE
Matthew	Weaver	Petro Canada / Suncor Energy	Pittsburgh	PA
Matt	Wilkinson	Wilbur-Ellis, Co.	Auburn	WA
Lauren	Wilson	FMC Professional Solutions	Philadelphia	PA
Bryan	Wood	Commercial Turf & Tractor	Chillicothe	MO
Zack	Wrzeszcz	Eco Chemical, Inc.	Seattle	WA
David	Yakes	The Toro Company	Bloomington	MN
Derek	York, CSFM	Bush Sports Turf	Milan	IL
Jason	Zielke	MTD Products	Indianapolis	IN

head before starting a project. There are several things to gain by formally going through this process with your team. The overall purpose of this phase is to identify all of the individual tasks that will be required to complete your project. These tasks will be organized into groups and eventually a sequence. Many software programs will link tasks that are dependent on one another. As mentioned, it is better to focus on keeping the project moving forward rather than focusing on using the software. A simple note will suffice when one task is dependent on another.

When identifying tasks and sequences it is advantageous to work with the team as a whole. This will give your team ownership in the project. No one likes a manager who simply assigns tasks without consideration. Take the time and identify the tasks with your team. They are likely to have a better idea than you at some point along the way. When assigning tasks you may have more success by simply asking your team who is best for the job. Typically they will agree on a single person that is best-skilled to accomplish the task and often times that person will even volunteer. The point here is that it is always easier to urge someone to volunteer for a task than it is to forcefully assign one. You should also use this meeting time to brainstorm with your team to identify possible risks that will hinder the project. All projects will have risks that need to be mitigated. The team as a whole is best suited to identify them.

PHASE 3: Execution of tasks

Finally, the fun part! Now that the project has been well defined and properly planned it is time to set out on executing the individual tasks. This is really the "face" of the project. It is what most people will remember looking back on the project. If it is managed incorrectly the project can appear to be a failure even if it is, on paper, successful. Some tips include monitoring the progress of tasks closely and ensuring the critical path items are moving along nicely. The basic software discussed earlier is very helpful with these tasks. There should never really be a point where you panic because something was not done correctly or on time. If you are surprised about a task not being completed then that is an indication that more communication is needed with your team. Similarly, if you find the project's critical path being interrupted too often that likely means more time should have been spent identifying and mitigating risks.

PHASE 4: The hand-off

Once all of the tasks are complete it is time to wrap up the project. Some industries call this the hand-off and it is when the project manager officially passes the project to whoever will ultimately be responsible for its sustained operation. For field managers doing in-house projects this phase should be treated as a time for closure and reflection. You want to evaluate the project using various quantifiers to show your project met the goals initially established. Use this time to highlight your team's work and to show improved efficiency.

The role of the turf manager has certainly changed over time. Projects that would typically involve contractors are now being done in-house with little or no additions to the staff. Taking some time with your team to plan a future project will greatly increase your success rate (and reduce your stress!) A history of successful projects that are done right, within budget, and on time is the best way to secure future funding for additional improvements. The next time you are knee-deep in a project wishing you had more time, money, or people take a step back and ask yourself if you could apply basic project management tools to more efficiently use the resources that you have. ST

Nick Janovich is a Golf Course Superintendent at Oglebay Resort in Wheeling WV. He holds a BS in Turfgrass Science from The Ohio State University and an MBA from Wheeling Jesuit University. He is an adjunct instructor at local universities teaching courses in Sports Facility Management and Professional Golf Management. He also serves as a Grassroots Ambassador for the GCSAA's Government Relations program. Follow him on Twitter @njanovich for all things turf.

GROWING THEIR OWN FIELDS: THE "NEW NORMAL" FOR PROFESSIONAL SPORTS TURF FACILITIES

Editor's note: *This article was written by Joe Traficano, CGCS, sales and corporate sports turf specialist for West Coast Turf, Tempe, AZ.*

BY **JOE TRAFICANO, CGCS**

Top quality turf is no longer just a luxury for Super Bowls or championship games. Many college and professional sports turf facilities around the world now demand high-end surfaces; one way they get what they want is to custom grow their fields at sod farms.

Grant Trenbeath, head groundskeeper of the Arizona Diamondbacks, started the trend of custom growing his own fields at the sod farm before the team's 1998 inaugural season. As the first ballpark with a retractable roof, Bank One Ballpark (now Chase Field) needed to be prepared.

"It's important to me to have a fully dedicated nursery at the farm that has the exact sand base we have at the ballpark, and that is what we did. That first year was certainly a learning year. Of course we have it down to a science now. I want to give the grass we have in the ballpark every advantage we can to succeed, but it is inevitable that we need to replace areas throughout the season. And with events during the off season, it's necessary for us to replace the field every year before Opening Day, which for us is a big advantage," Trenbeath says. "I can go out to the nursery and make sure that the field is being grown exactly to my specifications, and make adjustments if I feel the need. We've had our own field out there [at West Coast Turf] for years. It's been such a success for us that I cannot imagine doing it any other way," he says.

Barney Lopas, left, of the Los Angeles Angels, with the author, Joe Traficano, CGCS, of West Coast Turf.

The demand for higher end fields has now become so popular that this year West Coast Turf (WCT) created my position to focus solely on sports turf customers. (I had been a longtime sales manager for WCT.) We're refocusing on this college and professional stadium customer, and are providing more hands on technical support during harvest, installation, and grow in.

To accomplish this goal, it starts with the customer meeting at the farm with the salesperson, farm manager, and management coordinator to discuss what variety is preferred. Once grass is selected it will be nurtured and held in inventory until time of harvest. Once the turf is selected they will discuss height of cut, fertilization schedule, and any cultural practices necessary to keep grass in top condition so it will be ready when needed. Several more visits will take place, but a month before harvest the group will gather and walk the field to make any changes and confirm all details of project.

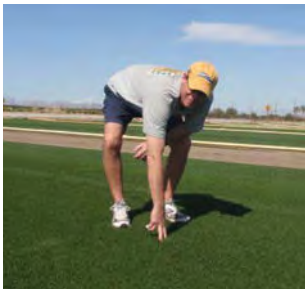
On the day of the harvest either the WCT salesperson or the WCT management coordinator will be on site with the farm manager to provide quality control over the harvest, making sure the correct thickness is consistent throughout the process and any unacceptable grass is left behind. Once the sod is loaded, the WCT salesperson and WCT management coordinator will be on site to supervise the installation of the sod. This process in some form will be used on all sports fields, not just for the high-end customers. We recommend to anyone planning on getting sod to make a visit out to the farm not only to see the grass, but to learn the entire process from growing to installation.

We've learned valuable information due to our involvement in other projects, such as seven Super Bowls and numerous championship and World Series games, which is then passed along to our customers. It is also pretty standard these days to re-sod between the hash marks or sometimes an entire field mid-season, or for playoffs in football. It didn't used to be that way. We do it on a regular basis now, and we are prepared with the right turfgrass for that situation.

WCT frequently has their high end customers out at the farm. Luke Yoder of the Padres (and his dogs Tucker and Torrey), Clay Wood of the Oakland A's, Will Schnell of the Rose Bowl, Eric Hansen of the Los Angeles Dodgers, Barney Lopas of the Los Angeles Angels of Anaheim, Kyle Waters of the StubHub Center, Matt Greiner of the San Francisco 49ers, Greg Elliott of the San Francisco Giants, Brian Johnson from Arizona State, Nick Cole of UC Berkley, Kevin Moore from Stanford Stadium, and Kore Higuchi for UC Davis are among the several turf professionals that can be found out the farm on any given day.

Will Schnell is the perfect example of that extremely meticulous customer, and he isn't afraid to say it. He makes many visits out to the sod farm in preparation for his big games. "My timeframe (to switch out his field) is so short that I have to make sure my sod is dialed in perfectly," says Schnell. "I go out and check thatch levels, take soil and tissue samples, and make sure there is a backup plan in case there are any complications. Every turf manager likes their turf different. I want to go out there to the farm and see what it looks like for myself. I could call and ask, and someone could say 'It looks great!' but then I'd be shooting blind. I have 2 acres of grass out there that I am going to put down. Sometimes I want a fungicide, sometimes I don't. My requirements vary. Sometimes I need to change the moisture to match my needs at the stadium."

Luke Yoder of the Padres, left, and West Coast Turf's farm manager, Larry Contreras.



LEFT: Will Schell from the Rose Bowl inspecting his plot at the farm.
RIGHT: Clay Wood at the farm; Oakland's The O.com Coliseum is also the only dual professional baseball and football facility left.

When asked what part of the process was most important, Schnell did not hesitate. "Relationships," he replied. "Specifically my relationship with Larry Contreras (WCT's Southern California farm manager). Sales people are awesome, but the most important guy out there is the guy that is out there every day growing the grass and that is Larry. The turf guys need to know the farmer. He's been out there growing the grass for the last 12 months. Yes, I'm particular—but it's the Rose Bowl. I have to be."

Luke Yoder and his dogs, Tucker and Torrey, are with him at San Diego's PETCO Park every day (since PETCO is where lucky pups go).

The Padres' Luke Yoder has made a habit of coming out to the farm for years, only now he brings his two trusty assistants, Tucker and Torrey, who happen to fall into the canine category. "The main reason I go out to the fields is because it makes the dogs happy," Yoder jokes. "They are out at the ballpark with me every day (since PETCO is where the lucky pups go!), and they know what they are looking for, so of course I take them to pick out the sod.

"I start out looking for a very mature bermuda. We have an extremely tough transition time, and we need to give our grass a fighting chance. We battle May gray and June gloom, so our bermuda doesn't really start kicking in until July and August. So transition is important," Yoder explains. "I walk the whole field because I need to be sure it is even. If I order ¾-inch cut sod I can't risk it being uneven. I can't flatten it out on the field that fast. I also want just a decent overseed. Nothing heavy."

Clay Wood of the Oakland Athletics is also a firm believer in being very hands on. "We re-sod every year because we have Monster Truck and Super Cross, "Wood said. The O.co Coliseum is also the only dual professional baseball and football facility left, which makes his turfgrass situation even more complicated than most.

"My timeframe for baseball is really tight. I only have about 3 weeks to get the field ready for Opening Day. My goal when I am out at the farm is finding the most established sod. I need to start my field with a strong stand of mature bermuda with a strong stand of rye. I need the sod to have the stability to stand on its own and sustain itself if need be. With our chances of inclement weather here, I can't take a risk. I like to be able to walk the fields. These days you can get a text photo of the field and it looks great, but I need to get out there and talk to Larry. We'll talk herbicide, and fertilizer, and I'll walk the field looking for any weeds. It's hard to explain. I think it's just a groundskeeper thing," Wood said. "I need to know exactly what to expect when I receive that sod. And let's hope they keep Luke's dogs off my section."

So it seems the sod farm managers have the most pressure to perform. Larry Contreras, WCT's Southern California farm manager, has been in the business for almost three decades. "I actually like to have the guys come out and inspect the fields on a regular basis. On their first visit we establish which field they like best. All of the managers are different and have unique needs. Some like a very dense bermuda base and a light overseed. Others only care about a strong base and a great looking grass. One customer wants a dense bermuda, yet a heavy overseed. Once they choose their section I can make the corrections and adjust accordingly to their wants. We have intense customers out here, and then a few more mellow ones. But they all want the identical end result—a strong safe field that looks great at the same time. We do our best to be sure they get that and there are no surprises," Contreras said. As for Luke's dogs? "I just let them go. They are so happy and excited to be out there that I'd never say a word." ST

Installing the sod at Angel Stadium of Anaheim.

IRRIGATION WATER QUALITY FOR SPORTS TURF IN THE NORTHEAST

BY **DR. PETE LANDSCHOOT**

Irrigation water quality is usually a minor concern for sports turf managers in the northeastern United States. However, in some areas contaminants in ground and surface water may pose a threat to turf and soil quality. Also, as the demand for potable water increases, sports turf managers may have to consider alternatives sources, such as recycled or effluent water. If you suspect poor or marginal irrigation water quality, it's advisable to test your water through a reputable lab.

Results from water test laboratories can be confusing. Reports often list up to 20 different quality factors with numbers having unfamiliar units. Fortunately, in the majority of cases you only need to be familiar with a few of these to determine if your water is suitable for use on turf. The four most important factors to consider when evaluating the quality of your irrigation water are: pH, bicarbonate, electrical conductivity or soluble salts, and sodium absorption ratio.

pH

The pH of irrigation water should be determined in a laboratory and listed in your test report. Water with a pH in the range of 6.0 to 7.0 is most desirable for use on sports turf in northern climates. Alkaline or high pH (> 8.0) water can be a problem if used for spray tank mixing with certain pesticides. Alkaline water can reduce the effectiveness of some insecticides, herbicides, and fungicides if present in your spray tank for several hours. One way to deal with this problem is to adjust your tank water to a lower pH with acidifying adjuvants. Labels of pesticides that are unstable in alkaline water often contain information on pH buffering of tank water.

ABOVE: In some areas contaminants in ground and surface water may pose a threat to turf and soil quality.
RIGHT: Measuring electrical conductivity.

Depending on how much you irrigate and the type of soil at your facility, the pH of your irrigation water may not have a large influence on soil pH. Mineral soils typically have high buffering capacity against rapid and drastic changes in pH, so periodic applications of alkaline irrigation water may not result in a high soil pH. For example, the pH of irrigation water at Penn State's turf research facility ranges from 8.2 to 8.4, but the pH of the soil is about 6.8. The best way to monitor pH of your soil is through a soil test.

BICARBONATE AND CARBONATE

Bicarbonate and carbonate are common constituents of irrigation water, and can influence soil properties and turfgrass performance if concentrations are high enough. If bicarbonate and carbonate levels are high (>120 and 15 ppm, respectively), these ions can react with calcium and magnesium in soil to form calcium carbonate and magnesium carbonate (lime).

In soils with high amounts of sodium (soils in some areas of the western US or soils treated with high-sodium effluent water or seawater), high bicarbonate and carbonate concentrations can reduce the amount of free calcium and magnesium in soil, allowing sodium to compete for and occupy negatively-charged sites on clay particles. Excess sodium in clay results in destruction of soil structure and reduced water percolation though the soil profile.

Most soils in the northeastern US are not high in sodium, so high bicarbonate

and carbonate levels in irrigation water are less of a concern. However, high bicarbonate levels are associated with alkaline water, and have been implicated in the build-up of lime and calcium deficiencies in turf. Calcium deficiencies due to high bicarbonate levels in irrigation water are a source of debate in the turf industry, and there is very little research-based information on this topic in the Northeast. Thus, it's advisable to look at soil and plant tissue tests before assuming your turf is starving for calcium.

Use of high bicarbonate-containing water (> 300 ppm) at the Penn State turf research facility over many years has resulted in water with a high pH (8.2 to 8.4), but we have not observed lime build up or calcium deficiencies in turfgrasses growing in sandy or silt loam soils. There may be several reasons for this, and one deals with how much calcium and magnesium is in the water. In many cases, there is more calcium and magnesium than bicarbonate on a charge basis in irrigation water, and in these situations calcium deficiencies are not likely to occur.

Some water test labs, including Penn State's Agricultural Analytical Services Lab, perform a test called residual sodium carbonate or RSC, which tells you the amount of calcium and magnesium relative to bicarbonate and carbonate in irrigation water on a charge basis. If the RSC number is negative, you have more milliequivalents of calcium and magnesium than bicarbonate and carbonate in your irrigation water, and a low likelihood of calcium deficiency. An RSC value higher than 1.25 milliequivalents/L, indicates significant calcium may be tied up as lime. A survey of 100 turf irrigation water test reports in Pennsylvania revealed that 90% of the samples had negative RSC values. Of the 10 samples with positive numbers, none exceeded 1.25 meq/L.

Test your water, but look at your soil test reports, too

Most water test laboratory reports list values or ranges of values that are considered outside the normal range of good quality irrigation water. These can be thought of as guideline values, and are warning signs of possible problems. However, just because a number on your test report exceeds guidelines for a particular factor does not necessarily mean you have poor water. Most of these values are generated from research done in irrigated cropping systems in arid regions of the southwestern US. In fact, very little research has been done to develop irrigation water guidelines for turf systems in other parts of the country. It's interesting to note that labs in the Northeast tend to use the same or similar guideline values as those in the southwestern US, where annual precipitation rates may be only 5-15 inches per year, and irrigation water is used in greater quantities than in the Northeast. Until more useful information is generated through research in turf and soils in cool, humid climates, we have to rely on information generated from arid regions. Given that we don't fully understand how some irrigation water quality factors will influence sports turf and soils in the northeastern region where irrigation is often used sparingly, it's a good idea to rely heavily on soil test reports for factors such pH, calcium, and salt concentrations in your soils.

ELECTRICAL CONDUCTIVITY (EC) AND TOTAL SOLUBLE SALTS (TSS)

Electrical conductivity (EC) is a measure of the degree in which water conducts electricity, and provides an estimate of the amount of salts or ions in your water. It is determined by passing an electrical current through a water sample and recording the resistance in mmhos/cm or dS/m. The higher the EC, the higher the salt concentration of the water. EC is used to estimate total soluble salts (TSS) on your water test report through multiplying by a conversion factor (usually 640). TSS is sometimes reported as total dissolved salts (TDS), or as total dissolved solids (TDS); all three are calculated from EC using the same conversion factor.

Acceptable TSS concentrations for turfgrass irrigation water range from 200 to 500 ppm (EC = 0.31 to 0.78 mmhos/cm). TSS concentrations higher than 2,000 ppm (EC = 3.1 mmhos/cm) can severely damage or kill salt-sensitive turfgrasses. Although high salt-containing water is unusual in the northeastern US, increased use of recycled water or water contaminated by seawater or runoff from heavily salted pavement in winter may be a concern in some areas.

EC and TSS tell you the concentration of salts or ions in irrigation water, but they do not indicate *which* salts are present. Salt can refer to any ion, including calcium, magnesium, potassium, nitrate, bicarbonate, chloride, sulfate, sodium, and others. Some salts are more damaging to turfgrasses than others, so TSS alone does not provide all the information needed to assess the quality of your irrigation water. Some people mistakenly assume that TSS refers to sodium, and apply gypsum or other calcium products to displace the sodium. Although sodium may contribute to high TSS, this ion should be considered separately in your report. High EC or TSS-containing water should be mixed with cleaner water, or not used at all on turf. If you are forced to use irrigation water with a high TSS concentration, attention should focus on irrigation duration and frequency, improving drainage, and selecting turfgrass species with higher salt tolerance. Application of gypsum is not an effective remediation method for high TSS, unless sodium is the dominant ion.

SODIUM ABSORPTION RATIO (SAR)

The concentration of sodium relative to calcium and magnesium is an important determinant of irrigation water quality. Calcium and magnesium play a major role in maintaining good structure of clay-containing soils, whereas high concentrations of sodium tend to destroy structure of clay in soils. If water

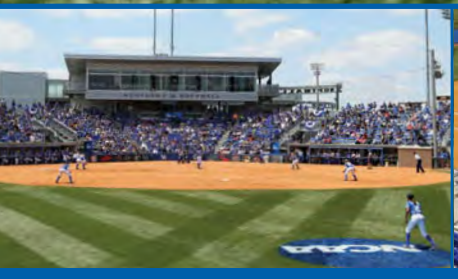
with excess sodium and low calcium and magnesium is applied frequently to clay soils, the sodium will tend to dominate negatively-charged sites on clay particles, resulting in breakdown of structure and reduced permeability.

Sodium absorption ratio (SAR) provides a useful indicator of the potential damaging effects of sodium on soil structure and permeability. It is calculated by the laboratory using a formula that takes into account the chemical weight and charge of sodium, calcium, and magnesium. Because this number is a ratio, no units are listed on the report. Although some labs report percentages of sodium, calcium, and magnesium; reliance on percentages alone as a meaningful quality indicator is misleading because they do not take into account charge differences among the ions, which impacts how they act in the soil.

Typically a SAR value below 3.0 is considered very safe for turfgrasses. In Pennsylvania, we usually see SAR values between 0.02 and 2.0. Three recent reports from the Penn State lab indicated SAR values between 3.0 and 4.0, and all three involved recycled water. In western states, water with a SAR of 9.0 or above sometimes occurs and can cause significant structural damage to clay soils. Sandy soils are not as susceptible to structure and permeability problems, and can tolerate higher SAR values (up to 10 or 12 in most cases). The soil damaging effects of sodium also depend on EC of your water. As EC increases, soils are less likely to be damaged by water with intermediate SAR. If your water has a SAR higher than 3, you will want to have an adjusted sodium hazard (adj RNa) value on your report to take into account the bicarbonate concentration in your water. High bicarbonate levels can accentuate soil permeability problems if your SAR is high. More information on SAR and adj RNa can be found in the publications listed below.

If your water is consistently within acceptable guidelines for the quality factors on your water test report, you don't have much to worry about. Even if one or two factors are a bit outside the normal ranges for irrigation water, this does not necessarily mean you will run into turf and soil problems. In the Northeast, where natural precipitation is around 40 inches per year, and irrigation is usually applied over relatively short periods of summer drought, it's a good idea to rely on soil tests for factors such as pH, calcium, and salts. ST

By Pete Landschoot, PhD, is professor of turfgrass science, Department of Plant Science, The Pennsylvania State University.

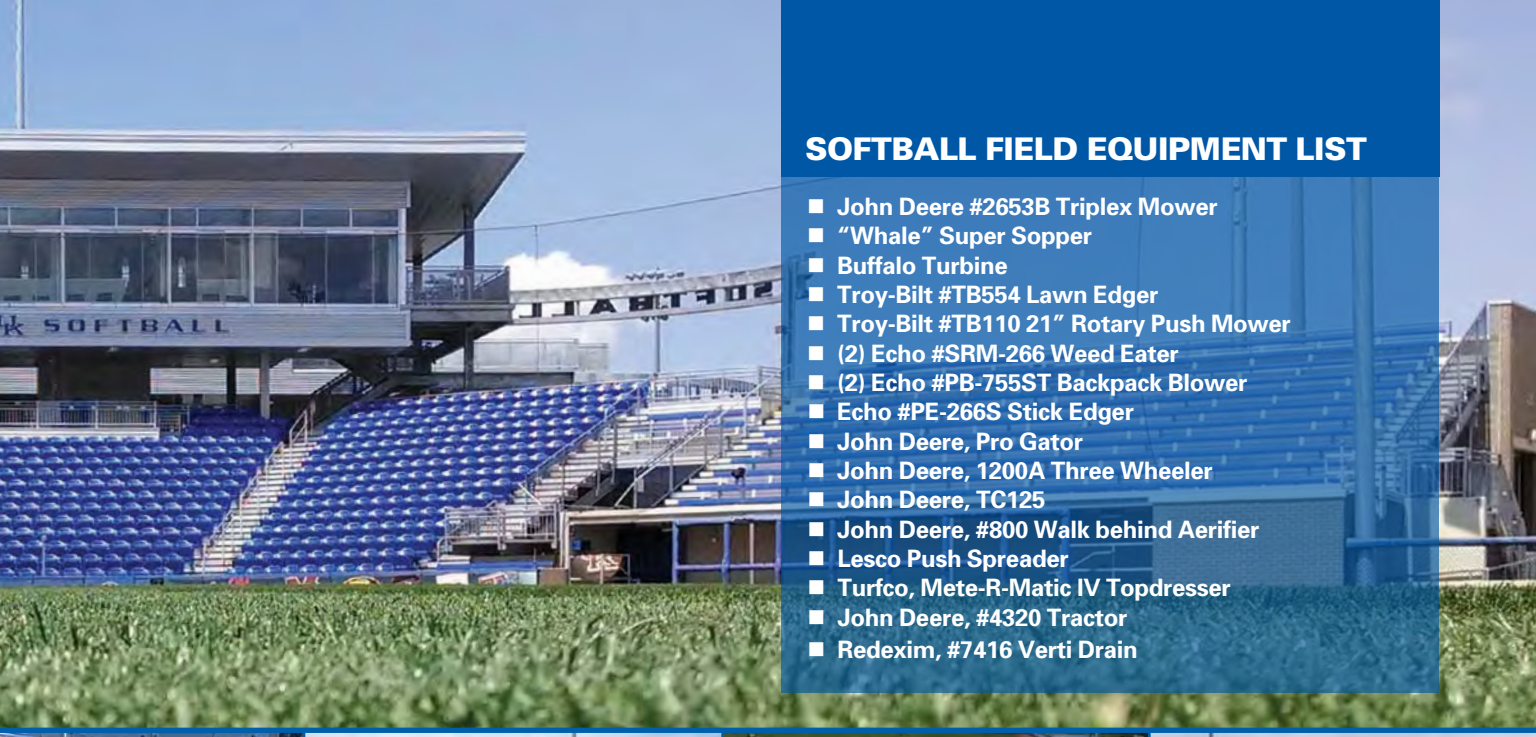


FIELD OF THE YEAR

JOHN CROPP STADIUM, University of Kentucky

Category of Submission: College Softball
Sports Turf Manager: Eric Harshman
Title: Assistant Sports Turf Manager
Education: Bachelor's degree in Marketing
Experience: I started my career in the golf industry in 2005. In 2007 I made the switch to sports turf as a game day employee with the Louisville Bats Baseball Club. I then worked my way into a seasonal full-time staff member position and eventually the 1st Assistant. In June, 2011, I moved to Baton Rouge to take on the roll as Assistant Sports Turf Manager at Louisiana State University. In July 2013 I was employed as the Assistant Sports Turf Manager at the University of Kentucky.
Full-time staff: 2
Part-time staff: Three student workers during the spring season and one student worker during the off season.
Original construction: 1996
Rootzone: Native soil (clay)
Turfgrass variety: Perennial ryegrass
Overseed: Ryegrass was seeded four separate occasions throughout the year equaling 10 lbs/1000.
Drainage: Four 4-inch perforated sub-surface drain lines in outfield that run from left center to right center.

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



SOFTBALL FIELD EQUIPMENT LIST

- John Deere #2653B Triplex Mower
- "Whale" Super Sopper
- Buffalo Turbine
- Troy-Bilt #TB554 Lawn Edger
- Troy-Bilt #TB110 21" Rotary Push Mower
- (2) Echo #SRM-266 Weed Eater
- (2) Echo #PB-755ST Backpack Blower
- Echo #PE-266S Stick Edger
- John Deere, Pro Gator
- John Deere, 1200A Three Wheeler
- John Deere, TC125
- John Deere, #800 Walk behind Aerifier
- Lesco Push Spreader
- Turfco, Mete-R-Matic IV Topdresser
- John Deere, #4320 Tractor
- Redexim, #7416 Verti Drain

FIELD OF THE YEAR

WHY STMA SHOULD CONSIDER YOUR FIELD A WINNER?

Every turf manager deals with a variety of challenges year in and year out, but by far the most challenging issue, in my opinion, is the weather and how quickly it can change.

The total precipitation amount we have accumulated in Lexington is 47.41 inches, to date. The average amount of precipitation is 35.69, that's a difference of +11.72.

Rain is beneficial in so many ways; it is a key ingredient in producing strong healthy turf that we as turf managers strive for. One major concern is that we cannot control the amount of rainfall, like we can with irrigation. Too much and we will have a flooded infield, an unsafe and sloppy outfield, or a moat where your warning track once was. Depending on the time of year and geographic location, rainfall can freeze, which gives you more challenges to figure out.

This past softball season brought many challenges both professionally and personally.

The 2014 season would be my first at UK Softball. I have never maintained a 100% ryegrass field or dealt with native soil with heavy clay content. I have done minimal snow/ice removal in the past (parking lots), but never on an athletic field. Plus, being separated from my wife and daughter as we tried to finalize an ongoing adoption only added to my list of challenges.

I had circled February 28 on my calendar. That was the date I had to have the field ready to go for the UK Tournament, the first of two tournaments we were hosting this season. One of the biggest challenges we faced all season was with the infield going through multiple freeze/thaw periods leading up to February 28. If I knew it was going to rain/snow I would not hesitate to put on the tarp. However, the problem I encountered was that snow and ice removal has to be handled differently than after a heavy rainfall. The tarp needs to be kept free of holes or tears, which is why we purchase a spare just in case. We learned quickly that spreading Urea on the tarp or on the frozen warning track expedites the melting process.

On February 10, I used the JD 800 walk behind aerifier to penetrate the frozen surface of the infield with minimal to no success. We then applied bags of "Sure Dry," hoping to get some product below the surface and help draw out moisture. Once the thawing had begun, we applied pallets of "Sure Dry" to continue drawing the moisture out. We initially tried this method in January and had good results, so the process was repeated several times leading up to the 28. Once satisfied, we would remove the top layer of unwanted material before applying conditioner to the infield.

The warning track was handled in a similar fashion; Urea, JD 800 walk behind aerifier, "Sure Dry" and the addition of adding track material/grading. The warning track would show signs of wear anytime there was snow removal. During the snow removal process, all the snow from the outfield is pushed to the track and then hauled away with a tractor and Pro Gators.

I was surprised by how well the ryegrass responded to all that was happening on and around it. I am fortunate that the team has an indoor facility in which to practice so early in the year. Because of the new indoor facility, only two full field snow removals were required before the weather broke. I am glad the weather broke when it did

because morale during this period was at an all time low. The crew and I became extremely tired of doing the same things day after day: shovel snow, break and chip ice, "Sure Dry", repeat! We were all glad to have a break in the weather and get the season underway and prep the field for the tournament/games.

The original construction of the field was in 1996. Other than an additional drain line and moving the outfield wall back, nothing has changed with the playing surface. Native soil with a heavy clay content requires aerification on a regular basis to limit compaction for proper drainage. The field is set up to have the majority of the water run towards the foul territory track then to the outfield warning track area. This works most of the time, but right field tends to hold water longer than any other location, so it is usually the first area we use the "Whale" Super Sopper. This piece of equipment is a lifesaver. It can remove some serious amounts of water. It can easily remove 5,890 gal/hr. I have never needed it to remove that much, but it saved us several times last season, and I am glad we have one to use. Not only can we use it on the grass, but it does a fantastic job removing standing water from our warning track that has less than adequate drainage.

Having a ryegrass playing surface is great during the months of January through May and September through December. I did not include June through August because I have to manage the grass completely different those months. Chemical applications and monitoring irrigation becomes of topmost priority. During these summer months the majority of camps are conducted, so any wear areas that develop and could easily be taken care of any other time have to be treated with extreme caution. Do not over irrigate, watch the nighttime temperatures and please no substantial rainfall! All was well until August 8-10. We received an excessive amount of rain (6+ inches). The temperatures were high and I had no way of making a fungicide application because the rain never stopped.

When I came in Monday morning on the 11th, pythium blight had developed on the field. The foul territory and along the back arch of the infield were affected the most. The total precipitation amount we have accumulated here in Lexington, Kentucky to date is 47.41 inches. It came in multiple different forms, bringing its own unique challenges along the way. I learned a great deal this year, not just as a turf manager, but as a father and a husband. New methods and practices were learned, some that worked and others that failed. I continue to remind myself that you attempt to control the controllable and challenge yourself daily.

SportsTurf: What are your specific job responsibilities?
Harshman: At the University of Kentucky I manage and maintain the day-to-day activities and oversee the majority of the maintenance practices for the university's softball facility, John Cropp Stadium and the Bell Soccer Complex (consisting of a training & competition field). I also communicate daily with three separate coaching staffs making sure they are informed of field and weather conditions that may alter activities.

ST: What do find most enjoyable? What task is your least favorite and why?
Harshman: The most enjoyable aspect of the job is at the conclusion of a game when all the repairs are made. After all the spectators are gone, I'm left alone in the quietness of the facility, standing under the lights watering the infield.

Least enjoyable—snow removal!

ST: How did you get started in turf management?
Harshman: My turf management career started in 2005 while working at my family's golf course in Northeast Indiana. I obtained my Golf Turf Management Certification from Rutgers University in 2008. That same year I switched to sports turf and began working for the Louisville Bats Baseball Club. In 2011, I relocated to Baton Rouge, LA and became the Assistant Sports Turf Manager at Louisiana State University. My family and I moved back to the Bluegrass State in 2013 so I could work as the Assistant Sports Turf manager at the University of Kentucky.

ST: What changes if any are you considering or implementing for the winning field in 2015?
Harshman: A change we implemented this offseason is how we managed the infield during the winter months. We rolled the infield multiple times (weather permitting) in the months of November through January. We also kept the infield covered from November through January with a custom-fit infield skin tarp. By keeping the infield tight and covered all winter helped us in prepping the field for early practices in January. It also reduced the amount of freeze/thaw combination we encountered the previous year.

ST: How do you balance your family life with work demands?
Harshman: Personally, this upcoming softball season will be a little different compared to last season. During the 2014 season, my wife was stuck in Central Africa fighting and waiting to bring our daughter home. Since their homecoming in July 2014, balancing the two aspects of my life has been a work in progress, but one that is manageable. During the fall 2014, my wife and daughter would come in for lunch or just hang out for awhile on the days I knew I would be working late. They would also stop by to watch whatever sporting event was happening that particular day. Having the ability to bring my family into work helps balance being a father, husband and sports turf manager.

ST: If you could snap your fingers and instantly could change one thing about your work life, what would it be?
Harshman:If I could change on thing about my work life it would be: Snow removal and the effects it has on the turf. There's no right or wrong way to remove snow, but it can be a monumental task and can use many man hours that would benefit elsewhere.

ST: How do you see your job changing in the future?
Harshman: With new technologies in the sports turf industry happening all the time, maintenance practices and the means to apply them change at a rapid rate and evolve into something better. Staying up to date on trends/technologies is a never-ending cycle. Sports Turf Managers need to keep themselves educated while learning and sharing ideas amongst their peers. By doing so, we will not only better ourselves, but the millions of athletes that compete on our fields every year will reap these benefits of our hard work and dedication. ST

Membership Application

SportsTurf MANAGERS ASSOCIATION

Experts on the Field, Partners in the Game.

Fax to: (785) 843-2977

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

Name _____ Title _____

Employer/ Facility _____

❑ Business ❑ Home

Address _____

City _____ State _____ Zip _____

Home phone _____ Work _____ Cell _____

Fax _____ Email _____

Signature _____

Direct Supervisor Name _____

New Members*

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

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

Person who referred you:

_____

Facility name:

_____

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

Membership Category:

❑ Sports Turf Manager	$110
❑ Sports Turf Manager Associate* (Additional member(s) from the same facility)	$75
Please select the primary facility type where you are employed: ❍ Professional Sports ❍ Higher Education ❍ Schools K-12 ❍ Parks and Recreation	
❑ Academic	$95
❑ Student (verification of enrollment)	$25
❑ Commercial	$295
❑ Commercial Associate* (Additional member(s) from the same commercial company)	$75
❑ Affiliate (Person who is indirectly or on a part-time basis, involved in the maintenance/management of sports fields)	$50
❑ Retired	$50
❑ Chapter Dues (contact headquarters for amount) Chapter name) _____	$_____
❑ Contribution To SAFE Foundation (research, education and scholarship):	$_____
Total Amount Enclosed:	$_____

Payment Method:

❑ Check ❑ Money Order ❑ Purchase Order #:_____

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

Name on Card _____

Card #: _____ Exp. Date: _____

Signature: _____

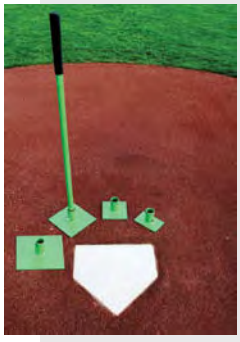
*There must already be a national sports turf member from your facility or commercial member from your company before you may sign up in the Associate category.

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

BARENBRUG USA TURFGRASS TECHNOLOGY PATENTED

A turf technology years in the making is now protected by a US patent: the [START ITAL] Lolium perenne ssp. Stoloniferum[END ITAL], perennial ryegrass with determinate stolons, developed by Barenbrug USA. The turfgrass is available as Barenbrug's RPR[DASH HERE]Regenerating Perennial Ryegrass. RPR is durable, thrives under temperature extremes and regenerates turf horizontally with determinate stolons. This ability to expand laterally is what separates RPR from any other perennial ryegrass. The technology provides unmatched traffic tolerance and other highly desirable traits, including rapid initial establishment. RPR's patent includes 50 claims that cover various aspects including determinate stolon counts, crown perimeter and even determine stolon index. A determinate stolon is an above ground horizontal stem that roots at the nodes and does not produce aerial shoots intermittently, but apical meristem will terminate with an inflorescence. This laterally expanding "runners" in RPR, create identical new plants as they expand. The Regenerating Perennial Ryegrass was developed by the plant breeders at the Barenbrug research site in Virginia.

Barenbrug USA



SWEETSPOT TAMP

Beacon Athletics has reinvented the tamp! The SweetSpot tamp system combines innovations such as interchangeable tamp heads, articulation of the tamp head and a damping system that alleviates vibration to the operator's body while insuring a direct hit that delivers every bit of compaction power to the soil surface.

Beacon Athletics

HUNTER'S MP800SR360 FOR SHORT RADIUS IRRIGATION

Hunter Industries has released the new MP800SR360, a short radius version of its MP Rotator, featuring rotating streams of water applied at a slower rate to conserve water and prevent runoff. The rotator reaches radius settings as low as 6 feet and can reach up to 12 feet on the high end. The precipitation rate remains matched across all arc and radius settings at approximately 0.8 inches per hour. This new addition to the MP Rotator family boasts all of the features and benefits of the current MP Rotator line, including high distribution uniformity, wind-resistant streams, debris-resistant double-pop design, and construction with the highest quality materials available.

Hunter Industries

ELECTRICAL VALVE-IN-HEAD FIELD SPRINKLER W/ 177' RADIUS

Underhill International's new M-180S sports field sprinkler offers a range of innovative features, including a 177-foot wide radius and integral electric valve-in-head. The M-180S is designed for use on natural and synthetic turf fields and installs out of the area of play for greater safety and easier maintenance. The M-180S is the newest addition to Underhill's expanding line of Mirage long-throw sprinklers, which also includes the M-115, M-125 and M-160. Featuring German engineering and manufacturing, the powerful M-180S is built to perform for up to 25 years. It is constructed from engineered plastic with stainless steel and brass components. Fully adjustable from 30° to 360°, the M-180S can irrigate a regulation football, soccer or hockey field with just six heads. Variable rotation speeds deliver precise, consistent coverage and can efficiently water a sports field in minimal time. The M-180S is also used to quickly cool and clean synthetic turf surfaces before play.

Underhill Mirage systems

STIHL BATTERY KOMBISYSTEM

STIHL provides professionals the power to make an impact on landscapes without leaving the carbon footprint. STIHL battery-powered equipment combines performance, portability and convenience, all in an environmentally conscious package. Professionals appreciate their quiet operation, instant starting and lightweight construction. The only things missing are fuel costs, engine exhaust and seasonal maintenance. Each tool in this innovative battery system is powered by Lithium-Ion technology, delivering long run times with no gradual drop in power. Because STIHL Lithium-Ion batteries are designed to be swapped between STIHL Battery KombiSystem tools, you can use a single battery to tackle a wide range of outdoor projects with no gasoline required.

STIHL

EXMARK OFFERS TWO NEW UTILITY VEHICLES

Exmark has expanded its 2015 product line to include two side-by-side UTV models. The new models feature switch-on-the-fly two- or four-wheel drive, and a customizable two-in-one tilting cargo box that transforms from box to flatbed in minutes. The Exmark 500S and 700S UTVs feature a dual-range automatic transmission. The Continuously Variable Transmission (CVT) design responds to inputs including vehicle speed, load and engine RPM in real time to deliver optimal acceleration and fuel efficiency. The 700S adds an electric locking front differential for maximum traction and pulling power, regardless of conditions. The transformable design of the tilting rear cargo box can be converted to a flatbed in minutes for enhanced versatility. Integrated front and rear two-inch receivers give users the ability to hook up trailers or attachments at either end of the machine.

Exmark

THANK YOU FOR COMMITTEE SERVICE IN 2014!

As STMA begins its 2015 committee year, it is appropriate to thank all of the volunteers who participated last year. Your work has helped to advance many of STMA's initiatives.

AWARDS COMMITTEE
Chair: Andy Gossel. **Members**: Matt Anderson, CSFM, Robert Blake, Alan Dungey, CSFM, Michael Flowers, CSFM, Robin Francis, Joe Kovolyan, CSFM, Matthew Martin, William McBride, Ben Polimer, Dean Rush, CSFM, Scott Thompson, CSFM, George Trivett, CSFM, Charlie Vestal, Kevin Versen

BYLAWS COMMITTEE
Chair: Mike Trigg, CSFM. **Members**: Richard Miller, Mary Owen, Scott Pippen, Troy Smith, CSFM

CERTIFICATION COMMITTEE
Chair: Martin Kaufman, CSFM. **Members**: James Bergdoll, CSFM, Noel Brusius, CSFM, Michael DiDonato, CSFM, Jesse Driver, CSFM, Jody Gill, CSFM, Ron Hostick, CSFM, CGM, Nick McKenna, CSFM, Chris Metcalf, CSFM, Steve Peeler, CSFM, Rick Perruzzi, CSFM, Paul Schinner, Grant Spear, CSFM, Lance Tibbetts, CSFM, Mary Owen

CHAPTER RELATIONS COMMITTEE
Chair: Debra Kneeshaw. **Members**: Bobby Behr, CSFM, Greg Brodd, Jason Campbell, Dan Douglas, Jason Kopp, Ray Krebs, Donn Mann, Nathan Massey, Chris Miladoro, Justin Moss, Ph.D., Jason Mueller, Debbie Savard, Chrissie Segars, David Schlotthauer, Rob Walls, Brian Winka, CSFM

COMMERCIAL MEMBERSHIP SUBCOMMITTEE
Chair: Doug Schattinger. **Members**: Steve Bush, CSFM, Dan Jennings, Ronn Ponath, Eric Simmons, Jim Surrell, Matt Wimer, CSFM

CONFERENCE COMMITTEE
Chair: Allen Johnson, CSFM. **Members**: Education Vice **Chair**: Jeffrey Fowler Tours Vice **Chair**; Phil McQuade Exhibition Co-Vice-**Chair**s: James Graff and Doug Schattinger

CONFERENCE EDUCATION SUBCOMMITTEE
Chair: Jeffrey Fowler. **Members**: Weston Appelfeller, CSFM, Jim Brosnan, Ph.D., Chris Hohnstrater, CSFM, Matt Hollan, Bryan Hopkins, Ph.D., Joshua Koss, Stephen Lord, Andy McNitt, Ph.D., Troy McQuillen, Gregg Munshaw, Ph.D., Craig Potts, Matt Tobin, Joe Traficano, Brant Williams, CSFM, Don Scholl, CSFM, Brant Williams, CSFM, Alan Wilson, CSFM

CONFERENCE EXHIBITION SUBCOMMITTEE
Co-Chairs: James Graff and Doug Schattinger. **Members**: Jim Barbuto, Jason Berning, Paul Hollis, Art Petrone, Christine Sionne, Waldo Terrell, CSFM, Trent Whiting

CONFERENCE TOURS SUBCOMMITTEE
Chair: Phil McQuade. **Members**: Dan Bergstrom, Andrew Bird, Herb Combs, CSFM, Weston Floyd, Eric Harshman, Darrold Hughes, Derek Hurlburt, Andy Parker, Dave Radueg, Tim Stanford, Brian Walker

BOWLING FUNDRAISER SUBCOMMITTEE
Chair: Jeffrey Salmond, CSFM. **Members**: Greg Brodd, Herb Combs, CSFM, Mike McDonald, CSFM, Brad Jakubowski, Steve Torske

EDITORIAL COMMITTEE
Chair: Brad Jakubowski. **Members**: Tyler Clay, Jim Cornelius, CSFM, Mark Frever, CSFM, Jamie Mehringer, Brad Park, Eric Schroder, Scott Stevens, CSFM

ENVIRONMENTAL COMMITTEE
Chair: Tim Van Loo, CSFM. **Members**: Ryan Bjorn, Amy Brackin, Richard Calarco, CSFM, Jim Catella, Steve Dugas, CSFM, Blair Elliot, Beth Guertal, Ph.D., Kevin Mercer, CSFM, Justin Moss, Ph.D., Dean Pearson, Joel Rieker, Gwen Stahnke, Ph.D., Mike Trigg, CSFM, Gary Tubesing, Vickie Wallace, Rich Watson, Barret Werner

ETHICS COMMITTEE
Chair: Ken Mrock. **Members**: Patrick Berger, CGCS, Scott MacVicar, Mary Owen, David Schlotthauer

Ben Polimer, right, Worcester Academy, received the President's Award for Leadership from outgoing STMA President David Pinsonneault, CSFM, CPRP, during the Annual Awards Banquet. See page 6 for an interview with Polimer.

FINANCE & AUDIT COMMITTEE
Chair: Jeffrey Salmond, CSFM. **Members**: Josh Bertrand, Nick Caggiano, Bob Curry, Chad Price, CSFM, CFB, Jimmy Simpson, CSFM, David Schlotthauer

HISTORICAL COMMITTEE
Chair: John Mascaro. **Members**: Steve Ballard, Tom Burns, Leo Goertz, Mike Hebrard, Rich Moffitt, Mike Schiller, CSFM, Steve Trusty, Suz Trusty

INFORMATION OUTREACH COMMITTEE
Chair: Darian Daily. **Members**: Neil Cathey, Brad Fresenburg, Ph.D., Ed Jordan, David Kimel, Jason Kopp, Alec Kowalewski, Ph.D., Jeff Langner, Doug Linde, Ph.D., Jason Moore, CSFM, Rob Walls

INTERNATIONAL COMMITTEE
Chair: Abby McNeal, CSFM. **Members**: Tab Buckner, Ken Curry, Murray Cook, Paul Gillen, Simon Gumbrill, Roberto Gurgel, Marcela Munoz, Don Scholl, CSFM, Paula Sliefert, Gerard Van't Klooster, Massimiliano del Viva, Andy Yeaman, Doron Zur

MEMBERSHIP COMMITTEE
Chair: Sarah Martin, CSFM. **Members**: Drew Barber, Bobby Behr, CSFM, Jason Bowers, CSFM, Pete Cheswick, Patrick Daly, Larry Fitzpatrick, Tim Howe, Jason Koester, Gerald Landby, Kevin Mercer, CSFM, Kevin Meredith, CSFM, Brian Piper, Joe Rieker

NATURAL GRASS TASK GROUP
Chair: Mike Tarantino, CSFM. **Members**: Ben Polimer, Jerad Minnick, Melanie Stanton, Mike Goatley, Ph.D., Pat Maguire

NOMINATING COMMITTEE
Chair: James Michael Goatley, Jr., Ph.D. **Members**: Mike Andresen, CSFM, Chris Calcaterra, M.Ed, CSFM, CPRP, Darian Daily, Dale Getz, CSFM, CSE, Jody Gill, CSFM, Abby McNeal, CSFM, Andy McNitt, Ph.D., Mary Owen, Don Savard, CSFM, Don Scholl, CSFM, Troy Smith, CSFM, Lynda Wightman

PAST PRESIDENTS' ADVISORY COUNCIL
Chair: **Members**: All past presidents are **Members** of this council.

SCHOLARSHIP COMMITTEE
Chair: Ken Edwards, CSFM. **Members**: Weston Appelfeller, CSFM, Brian Bornino, Chris Ball, Steve Dugas, CSFM, Stephen Crockett, CSFM, Patrick Daly, Josh McPherson, CSFM, David Mellor, Scott Miller, Billy Pipp, Kyle Slaton, CSFM, Rene Smith, Brett Tanner, CSFM

STUDENT CHALLENGE SUBCOMMITTEE
Chair: Eric Fasbender, CSFM. **Members**: Jeremy Atkins, Scott Bills, CSFM, Leah Brilman, Ph.D., Jerry Cummings, Sam Doak, Ken Edwards, CSFM, Brad Jakubowski, Evan Johnson, Richard Mendez, Steve Ries, Rusty Walker, CSFM, Michael Watson, Lynda Wightman, Derek York

TECHNICAL STANDARDS COMMITTEE
Chair: Jason Henderson, Ph.D. **Members**: Norm Hummel, Ed Norton, Robert Oppold, Adam Thoms

TURFGRASS CURRICULUM COMMITTEE
Chair: Jeffrey Fowler. **Members**: Amy Fouty, CSFM, Chad Follis, Nick McKenna, CSFM, Marc Moran, CSFM, Juan Ortiz, Steve Peeler, CSFM, Brandon Putman, CSFM, Vickie Wallace

WEBSITE COMMITTEE
Chair: Pamela Sherratt. **Members**: Jason DeMink, CSFM, Andrew Powers, Joe Rodocker, Sun Roesslein, Debbie Savard

EVER HEARD OF A CPA? WHAT ABOUT A CSFM?

By Martin Kaufman, CSFM, Purgreen LLC, Nashville, TN

Managing turfgrass can be a challenging task. How any people know what the transition zone is? Some might think it is a demilitarized zone in Iraq or Korea. Does the general public realize all the possible turf types we may grow across the US.? Do they realize what it takes to make turf look green and usable for their purposes? Does the average person even want to learn how to grow grass? A Certified Sports Field Manager (CSFM) is knowledgeable about all of these topics.

If you have struggled with a tax return, own a business or communicate with the administration of your organization, you may have worked with a Certified Public Accountant (CPA). Most of us go through a budget process annually so we may function in a fiscally responsible manner. A CPA is usually the professional financial advisor that your organization relies on to help manage your budget. Becoming a CPA requires education, experience and examination. The same is true for becoming a CSFM.

Status as a CSFM has laid the groundwork for my success in the sports turf industry. It has taken my career to new heights and provided tangible credibility to my work.

The CSFM certification is a higher level program of education and professionalism in the turfgrass industry, offered by the Sports Turf Managers Association. According to the STMA, there are currently 193 CSFM's. To gain certification, there are certain education and experience requirements. Experience can qualify a candidate; however, education alone may not.

Status as a CSFM has laid the groundwork for my success in the sports turf industry. It has taken my career to new heights and provided tangible credibility to my work.

Eligibility into the CSFM program is based on a point system. You may earn points based on your level of education or the degree of education you have obtained, as well as the field of study. For example, a bachelor's degree in business would earn fewer points than a bachelor's degree in turf management.

A degree helps earn points for eligibility, but so does experience. You may not become eligible for the exam based on education alone, but you may become qualified based solely on experience.

Eligibility points for experience are similar to points for education; you will earn more points for being the head of your department than you would while occupying a labor position.

Becoming qualified is the first step. Once that information is compiled and confirmed with STMA headquarters, you may qualify for the exam. An examination may be proctored at a location near you at any time of the year you choose to set up.

The exam is also offered at the annual STMA Conference & Exhibition, which will be held in San Diego in January 2016. The exam itself is composed of four parts: Agronomics, Pest Management, Administration and Sports-Specific Field Management.

Becoming a CSFM requires passion, commitment and professionalism. Sports turf managers are professional and passionate about growing the standards in the turf industry. As a CSFM, there is an extra level of commitment to excellence needed to continue raising the bar for sports fields.

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

APRIL 2015

SportsTurf Magazine ADVERTISERS' INDEX

Continued from page 50

There are several herbicides that have shown good efficacy in controlling *Poa* if applied at the right frequency and rate. As with any pesticide program it is important to rotate products that have differing modes of action, to prevent the development of herbicide resistance.

Preemergence herbicides are chemical products that form a barrier at the soil surface and prevent weed seed germination. Their use on athletic fields is precarious because they may also prevent the germination of desirable grass seed. Herbicides that can be used at the same time as seeding include siduron (Tupersan), mesotrione (Tenacity), quinclorac (XLR8 and Drive) and topramezone (Pylex).

Postemergence herbicides are chemical products that control emerged, visible weeds. These include selective herbicides like ethofumesate (Prograss), amicarbazone (Xonerate), mesotrione (Tenacity) and topramezone (Pylex). A non-selective option (something that kills all green plants) used for simple spot-treatment or renovation is glyphosate. Examples of potential herbicide programs for cool-season grass athletic fields are as follows. In each case, it is best to experiment with these herbicide programs on small areas first before implementing a full scale treat-the-whole-field program.

Ethofumesate (Prograss) has been available for many years. It is recommended to be applied in the fall using 2 to 3 sequential applications at 3 to 4 week intervals, with a possible single spring follow-up. Please read the label for seeding restrictions.

Amicarbazone (Xonerate) is recommended to be applied in the spring when air temperatures are cooler than 85ºF. Four (4) sequential applications at 7-10 day intervals at a low rate of 1oz product per acre. It is imperative to use the low rate, as higher rates can cause injury.

Mesotrione (Tenacity) and amicarbazone (Xonerate) in combination at 2 oz and 1 oz product per acre respectively has given excellent results in Dr. John Street's research at Ohio State and allows the application frequency to be reduced to 2 applications at 3 week intervals.

Topramezone (Pylex) is in the same chemical family as mesotrione (both pigment inhibitors) but both alone show limited activity on *Poa*. Combinations with amicarbazone have shown enhanced Pylex activity.

Q&A with Pamela Sherratt

Questions? Send them to 202 Kottman Hall, 2001 Coffey Road, Columbus, OH 43210 or sherratt.1@osu.edu

MAKE A *POA* PLAN

Editor's note: *This is the debut "Q&A" column for Pamela Sherratt, sports turf specialist at Ohio State, where she teaches sports turf and plant science classes, does applied research, and has some Extension duties. Pamela is originally from England, where she left school at age 16 to pursue an apprenticeship in horticulture and turf. She was an instructor in sports turf management at Myerscough College before coming to the US for her master's degree at OSU. She has served on the board for STMA and the Ohio chapter of STMA, and was honored with the William H. Daniel Founder's Award in 2003, as well as the OSTMA Founder's Award in 2002 and 2011.*

We have had serious issues with- *Poa annua* at our rec. sports playing fields. I feel our main contributors are (1) sand-based fields that receive a ton of play in the fall (soccer/flag football); (2) geese eating and disposing their waste full of *Poa* seeds; and (3) lack of a solid plan. The first two I can't do much about, but I was hoping you would be able to help with #3. I'm open to any and all suggestions.

Poa annua (annual bluegrass) is a winter annual that germinates in the fall, so when athletic fields are heavily used in the fall it is able to germinate in the disturbed soil and quickly gets a foothold. Given that there are anywhere from 150-450 viable *Poa annua* seeds per sq.ft. in the soil seedbank, it's not surprising that as soon as there is a divot, *Poa* colonizes it. The biology of *Poa* is actually quite fascinating. It is a formidable opponent because it is able to adapt to the local climate and thrive where desirable grasses cannot. It is one of the five most widely distributed plants on earth, found on all continents, and it produces copious amounts of seed each year. Most significantly, it is so genetically diverse that many different types of the plant can exist on the field at the same time. Some biotypes are true annuals and some are perennial in nature.

On low-maintenance athletic fields the *Poa* is usually the annual type, but as the cultural intensity of a field is increased the annual type takes on a perennial nature. The perennial type is classified as *Poa annua* var. *reptans*. Perennials are characterized by a more stoloniferous growth habit, produce more tillers and shoots, have a deeper root system, and produce fewer seed heads when compared to annuals. The conversion from annual to perennial type is influenced most strongly by mowing stress and research has shown that as long as the mowing stress is present, the *Poa* will tend to exhibit the perennial traits, but once mowing is stopped the *Poa* would revert to an annual. In essence, it can be whatever it wants to be!

There are some field managers, particularly in mild climates, that manage *Poa* rather than spending time and resources trying to eliminate it, but it is largely considered a pest on athletic fields. Since it is a winter annual it typically dies out during summer stress, so it is of no use to field managers preparing fields for summer play. Like a typical annual, it puts all of its energy into seed production so it also has low tillering (density) and shallow roots. Further, it has a light green color, is tolerant of neither heat nor cold, is susceptible to several diseases, and produces an uneven playing surface. The uneven playing surface trait is directly related to its genetic diversity and varying growth characteristics among the *Poa* plants.

Since *Poa* can adapt to a form that is best suited to the current management conditions, a multi-faceted approach to controlling it is needed. Relying on herbicides alone is not the answer, since *Poa* is conducive to the development of herbicide resistance (according to the Weed Science Society of America there are 27 cases of herbicide resistance in *Poa*). Cultural management strategies that limit water and fertilizer in the hope of killing it through stress can be somewhat successful but can also have a detrimental effect on the more desirable grasses if taken to the extreme. Some of the tried and tested approaches have included: (1) aggressive overseeding with desirable grasses; this is most successful if quick-germinating species like perennial ryegrass are used. (2) hand-picking; (3) avoiding soil disturbance (e.g. coring) during peak germination in the fall; (4) maintaining a healthy mowing height for the preferred grass, since *Poa* will gain the competitive edge if the mowing height is too low; and (5) doing all that is necessary to grow healthy turf, such as relieving soil compaction and reducing shade.

Another option that may open up in the near future involves turf breeding. There has been some advancement in research with athletic grasses like Kentucky bluegrass that show resistance to the active ingredient glyphosate. In practice, glyphosate herbicide could be applied to the bluegrass to selectively remove *Poa* and other susceptible weeds. To date, this grass is not on the market but the research is encouraging.

Continued on page 49

PRODUCTIVITY
by design

NEW! AUTOMATIC TRANSMISSION

No shifting. No sacrifices. No nonsense.





Workman® HD Series

Get more work done with the hardest working utility vehicles on the market today. Hefty payload capacities and towing capabilities deliver increased productivity. With a category-leading two-year warranty, improve your return on investment through the strength, reliability and durability of the Workman. **toro.com/hd**

GSA WSCA-NASPO NATIONALIPA COOPERATIVE PURCHASING TIPS

TORO. **Count on it.**

Innovative turf solutions for sports turf.

The Only Supercharged Bermudagrass

- Provides moisture during seed germination
- Ideal for renovation and repair
- Reduces need for frequent watering during establishment
- Improves rooting and establishment
- Absorbs and releases nutrients to seedlings
- Improves handling of small seed

The Only Tall Fescue with True Rhizomes

- Produces a thick and durable lawn
- Quick to establish with extensive root system
- Saves 30% water over other cool season grasses
- Strong disease and insect resistance
- Self repairing rhizomes fill in bare spots
- Available as sod or seed

BARENBRUG®

Great in Grass®

www.barusa.com