

THE INTERVIEW: Mike Tarantino, CSFM

SPORTSFIELD AND FACILITIES

MANAGEMENT

September 2015

SportsTurf

www.sportsturfonline.com

HYBRID TURF SYSTEMS

ALSO INSIDE

MANAGING TURF
in the transition zone

PLUS

- ABC's of fall fertilization
- Overseeding bermudagrass fields
- Keeping grass between the hashmarks

green
media

SportsTurf
MANAGERS ASSOCIATION

OFFICIAL PUBLICATION OF THE SPORTS TURF MANAGERS ASSOCIATION

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 .



scan the QR code with your smartphone
or visit [YouTube.com/Aquatrols](https://www.youtube.com/Aquatrols)

PRODUCTIVE. PROFESSIONAL. PROSERIES.

Introducing The
All-New Jacobsen®
ZT Pro Series™



WZT PRO SERIES™



SZT PRO SERIES™



ZT PRO SERIES™

DISCOVER THE TRUE POWER OF ORANGE.

Equipped with your choice of a 25 or 27 horsepower Kawasaki FX engine or a 27 horsepower Kohler EFI engine, the ZT Pro Series can power you up to an **ultra-productive speed of 5.8 acres per hour*** to ensure you spend less time cutting. The SZT stand-on proves its industrial strength with a **7-gauge steel deck** that processes large volumes of grass without slowing you down. Rounding up the lineup, the WZT walk-behind slices through grass quickly while providing easy access through narrow gates. The brand new line-up of zero-turn mowers offers something for everyone. Learn more at Jacobsen.com.

1.888.922.TURF | www.jacobsen.com

JACOBSEN®

*at 12 mph and 80% efficient ©2015 Jacobsen division of Textron. All rights reserved.

STARTING LINEUP

September 2015 | Volume 31 | Number 9

FEATURES

Field Science

- 8** Managing sports turf in the transition zone
- 16** The ABC's of fall fertilization
- 20** New natural and synthetic hybrid turf system
- 24** Overseeding bermudagrass athletic fields
- 28** Keeping grass between the hashmarks into November
- 30** Aeration: hollow-tine, solid-tine, or both?
When and where? Part 2

The SportsTurf Interview

- 34** The *SportsTurf* Interview: Mike Tarantino, CSFM

Facilities & Operations

- 36** Troy Rudolph: ASBA's first triple-certified builder

Tools & Equipment

- 38** STMA Commercial Member Spotlight: CoverSports USA

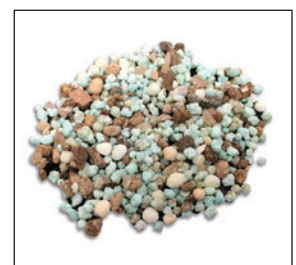
Field of the Year

- 42** Schools/Parks Baseball: Don Dunker Field, Noblesville Schools, Noblesville, IN



DEPARTMENTS

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



On the cover:

Natural grass roots are shown extending down through the synthetic backing of a new natural and synthetic turf hybrid system. Photo courtesy of James Graff, co-owner of Graff's Turf, Fort Morgan, CO.



You deserve the best in the business.

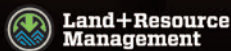
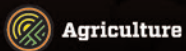
We know the value of your time and the everyday hassles of getting product where you need it. Our stocked shelves, eager professionals, and on-time delivery service will keep you off the road and doing what you do best.

Every call, every transaction, every delivery.




Irrigation & Landscape Supply

EwingIrrigation.com/locations



EDITORIAL COMMITTEE WORKING FOR YOU (AND ME)

Eric Schroder
Editorial Director
Eschroder@epgmediallc.com
717-805-4197



The STMA's committees' contributions to the success of the organization, and so indirectly to members' success as well, isn't publicized often. Volunteers do committee work behind the scenes and it's those efforts that have resulted in too-many-to-mention-here programs and initiatives that greatly benefit the sports turf industry, and particularly its front line: you turf managers.

The Editorial Committee of course is of special interest to this column as it provides article ideas, critiques of past issues, and a sounding board for a wide range of subjects, all with the intention of publishing the most useful product for you we can.

For example in this issue, our lead story on "Managing sports turf in the transition zone" was born by a suggestion from a committee member. Though it now appears as an obvious good idea, we hadn't covered that topic in years and it was overdue.

Last month we began a two-part series that concludes on page 30 in this issue on "Aeration: hollow-tine, solid-tine, or both? When and where?" With the help of committee member and new Technical Editor Joey Young of Texas A&M, we were able to develop good, specific questions that drew out great responses from turf managers and commercial members.

Also in the August issue was a piece by Edit Committee member Joe Churchill of Reinders, Inc., titled, "Renewing your vows: understanding the customer/vendor relationship." If you missed it, I urge you to go back and read it. Entertaining and informative, it speaks to nearly everyone in the industry. Thanks, Joe!

Another article this month, "Overseeding bermudagrass athletic fields," was written by

committee member Scott Stevens, CSFM, the sports turf manager at Elon University, Elon, NC. In my mind nothing beats having a working turf manager pen an article on a specific subject because no one, no one, can tell a story better than a person who has seen first-hand and had to deal with what works and what doesn't. Terrific job, Scott!

We also use the STMA membership roster in full to generate content. Though I was disappointed in the number of responses generated by my asking (via email), "How do you keep grass between the hashmarks into November?" the responses we did get were terrific. And that's what I've come to expect from STMA members when I email them asking a question or two—well thought-out answers. It's just another iteration of what many agree is the most valuable part of being an STMA member: receiving easily provided expert advice when you ask for it.

If you are interested in being included on one of my lists, e.g., football guy/gal, baseball, transition zone, cool-season, warm-season, etc., please drop me a line via eschroder@epgmediallc.com and become a de facto Edit Committee member. Your expertise will be appreciated by thousands of your peers.

Thanks to this year's Edit Committee chair, STMA Board member Sarah Martin, CSFM, who is doing a great job, and to all the committee members, past and present. The latter include: TJ Brewer, CSFM; Cliff Driver, CSFM; Eric Fasbender, CSFM; Jamie Mehringer; Greg Petry; Jeremy Driscoll; Jim Cornelius, CSFM; Mark Frever, CSFM; Jeff Salmond, CSFM; Matt Hollan; Troy Smith, CSFM; and Young, Churchill & Stevens. **ST**

SportsTurf
SPORTS FIELD AND FACILITIES MANAGEMENT

EPG Media & Specialty Information
10405 6th Ave. N., Ste 210
Plymouth, MN 55441

The Official Publication Of
The Sports Turf Managers Association

SALES 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@epgmediallc.com

EDITORIAL

Group Publisher: David Voll
Editorial Director: Eric Schroder
Technical Editor: Dr. Joey Young
Art Director: Brian Snook
Production Manager: Karen Kalinyak

SUBSCRIPTION SERVICES

Phone: (845) 856-2229
Fax: (847) 763-9569
customerservice@epgmediallc.com

REPRINTS

Robin Cooper
rcooper@epgmediallc.com

GROUP PUBLISHER

David Voll
dvoll@epgmediallc.com

DIRECT MAIL LIST SALES

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

EPG MEDIA &
SPECIALTY INFORMATION



Publisher's Notice: We Assume No Responsibility For The Validity Of Claims In Connection With Items Appearing In Sportsturf. Reader Service Numbers Are Given To Facilitate Further Inquiry. Mention Of A Commercial Product Does Not Imply Endorsement By Sportsturf Or EPG Media & Specialty Information, Or Preference Over Similar Products Not Mentioned.

President: Allen Johnson, CSFM
Immediate Past President: David Pinsonneault, CSFM, CPRP
President-Elect: Jeff Salmond, CSFM
Secretary/Treasurer: Timothy Van Loo, CSFM
Vice-President Commercial: James Graff
Professional Facilities: Dan Bergstrom
Academic: Jeffrey Fowler
Higher Education: Matt Anderson
Parks & Recreation: Sarah Martin, CSFM
K-12: Bobby Behr, CSFM
Commercial: Doug Schattinger
Elected-at-Large: Jimmy Simpson, CSFM
Elected-at-Large: David Anderson
Chief Executive Officer: Kim Heck

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

STMA Editorial Communications Committee
Chairman: Sarah Martin, CSFM
T.J. Brewer, CSFM; Joe Churchill; Jim Cornelius, CSFM; Jeremy Driscoll; Cliff Driver, CSFM; Eric Fasbender, CSFM; Mark Frever, CSFM; Matt Hollan; Jamie Mehringer; Greg Petry; Jeff Salmond, CSFM; Troy Smith, CSFM; Scott Stevens; Dr. Joey Young

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 (845) 856-2229. 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. COPYRIGHT 2015, SportsTurf. Material may not be reproduced or photocopied in any form without the written permission of the publisher.

FIGHTING OBESITY ONE FIELD AT A TIME



Allen Johnson, CSFM.
johnsona@packers.com

For as long as I can remember the snapshot of health in our country has been a concern. It seems there is no shortage of weight loss programs, exercise equipment and videos to buy, pills to take, music to meditate to, and food guides to live by.

Health initiatives come from all angles. They come straight from the White House with encouragement from our First Lady to stay active and eat healthy foods. We will see the NFL's PLAY60 initiative the month of November rife with commercials, field logos and banners, encouraging our children to be active at least 60 minutes per day. We are also seeing an increase in encouragement from our own employers, driven by the incentive to lower insurance premiums, to be a healthy employee.

All of these endeavors are worthwhile because the problem is very real. Through our history, we have evolved from a mostly rural, laborious citizenry to an urban, sedentary people. There are plenty of people whose average day sees them walking from their house to the garage, driving to work and parking somewhere near the office door, sitting in front of their computer most of the day, only to return in the evening to spend some quality time in front of the television. Of course that doesn't describe everybody, but you get the point.

Even though we aren't all growing up on farms and forced to do childhood labor, which I think is a good thing if not taken to extremes, there is a decent substitute in

youth sports. But for all of the public and private industry encouragement we still don't seem to make a positive dent in our nation's health crisis.

As a student of politics I've learned that change happens more readily when an issue is raised in the public conscience and is also influenced by the tax code. It's exactly why local governments give tax breaks for companies to call their cities home, and it's also why we've seen smoking rates decline due to the public awareness campaign and the negative tax on that product.

What if we took the same approach to our nation's health crisis? What would happen if, in addition to the public awareness campaigns, we start to offer incentives to those who support the youth sports industry? What if funds that were allocated to maintain athletic fields, including the sports turf managers' salaries, were a tax deduction for private institutions or were eligible for a subsidy for public institutions? Would we see an increase in properly cared for sports fields? Would that correlate to an increase in youth sport participation?

Regardless of the likelihood of that scenario, what I'd like everyone to realize is that the Sports Turf Manager is a vital cog in the wheel of success in combating our nation's poor health status. In fact, everyone involved in this industry is a key contributor to stemming the tide of obesity. Do you ever look at yourself that way? You should. **ST**

MANAGING SPORTS TURF IN THE TRANSITION ZONE

■ BY STACIE ZINN ROBERTS

There may be one universal truth about the challenges associated with growing cool-season or warm-season sports turf in the transition zone: “Both grasses grow equally poorly,” says Tony Leonard, director of grounds for the NFL’s Philadelphia Eagles.

From the Mid-Atlantic to the Heartland, sports turf managers nod and smile in recognition. In the summer, most transition zone locations are too hot for cool-season grasses that burn up and die a quick death. In the winter, it’s too cold for warm-season grasses that pale to a brown off-color and wither back like the shoes on the Wicked Witch of the East. What’s a dedicated sports turf professional to do?

While many facilities overseed a cool-season grass like ryegrass or bluegrass into a warm-season grass like bermudagrass, for the Eagles, Leonard chooses not to fight that battle in his stadium.

“You get to a point where overseeding or putting new grass seed out is not as effective in that it’s so young. When you play

games every weekend, it’s not long enough to get seed established to hold up to the torque of a player’s foot. Sodding is part of our maintenance program like fertilizer or mowing,” Leonard says. “When a part of the field begins to wear out, we resod it. It’s playable the next day. There are no issues with safety and playability, and it looks good, too.”

Lincoln Financial Field hosts more than just Eagles football. This summer, the stadium hosted concerts from Taylor Swift and Kenny Chesney, and other public events that put thousands of spectators on the field. The grass was stripped out for some 5 weeks and covered with a decking material, to allow for audiences and tents on the field.

By mid-July, in peak of the summer heat, the stadium at Lincoln Financial Field was sodded with Tifway 419 bermudagrass, grown in North Carolina on plastic for an instantly playable surface. The plastic growing surface condenses all of the roots into a 1.5-inch thick layer of sod, delivered in 45-foot-

Philadelphia Eagles’ bermudagrass
in week 1 of NFL season.





TURF DEFENSE

TM

QUALITY

RECOVERY

PLAYABILITY

The game is about to change.

Introducing CIVITAS TURF DEFENSE™ for sports and athletic fields.

You need turf that's tough enough for every big game. Turf treated with CIVITAS TURF DEFENSE shows improved wear tolerance, delivering high-quality turf and enhanced visual aesthetics from preseason to post. It has no known pathogen or insect resistance issues, and because the health of your turf will improve, so will its playability.

Make this season a winning one for your turf - and your team. Trial CIVITAS TURF DEFENSE today.

civitasturf.com

Always read and follow product label instructions. Use of the product that varies in any way from the product label instructions is a violation of federal and state law.

Patent(s): www.suncor.com/patents

™Trademark of Suncor Energy Inc. Used under license.

intelligro
smarter growth for a better world



Philadelphia Eagles' bermudagrass in week 4 of NFL season.

long x 3.5-foot-wide rolls that each weigh about one ton. The heavy weight of the sod holds the rolls in place on the field so that players can step foot on the grass the next day. A heater under the field—28 miles of heat pipe under the playing surface—helps keep the bermudagrass playable for as late into the year as possible.

Come November, with autumn in full swing and temperatures dropping, Leonard will have pushed the bermudagrass as long as he can, but by nature, the warm-season grass thins and goes dormant. It's then that the stadium is stripped out and converted to a more cold-tolerant and green Kentucky bluegrass sod grown nearby in Hammonton, NJ. The bluegrass will carry the team through the end of the season.

The team's three natural grass practice fields are a different story. Built in 2000, all three fields were originally grassed in Kentucky bluegrass. "As the age of the fields became older, we dealt with summer patch disease in the heat of summer in Philadelphia. It was becoming more humid, hotter," Leonard says.

By 2013, when Chip Kelly was hired as head coach and decided to host training camp at the training facility, instead of off-site, Leonard says it was apparent that he needed to switch two of the three practice fields to a warm-season bermudagrass. "We needed to be sure we'd have safe, playable fields. We felt Latitude 36 was the best grass at that time," he says.

Latitude 36 is a cold tolerant bermudagrass, developed at Oklahoma State University (and marketed by Sod Solutions). Latitude 36 stands up to the heat of the summer while also providing a longer lasting green color into the fall, with the added benefit of high traffic tolerance. Leonard oversees the Eagles' Latitude 36 practice fields with perennial ryegrass. After such an unusually cold winter last year where he saw some limited winterkill on his bermudagrass, he decided not to transition out the ryegrass at all.

LOUISVILLE

In Louisville, Kentucky, Tom Nielsen has been the head sports turf manager for 16 years at Louisville Slugger Field, home to the Louisville Bats, a Triple A farm team for MLB's Cincinnati Reds. The field is also used by the Louisville Coopers, a professional soccer team. The seasons for both teams overlap, with soccer starting in March and baseball starting in April. For the first 14 years that Nielsen managed the field, it was grassed with bluegrass.

"Kentucky is the bluegrass state. We should be able to grow it here," Nielsen says.

But it wasn't easy.

"I think of all of the stress I had gone through over the years, not sleeping once it hit 80 to 85 degrees, all of the babying with the cool-season grass. There was just no question to go to bermudagrass. The heat of the summer is just as hot as Georgia, it's just a smaller window. Our heat is June through September.

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

The rest of the year is great for cool-season grass. It performs beautifully. But boy, it's hard to grow cool-season grass when you need it. From June 15 on, I'm hanging on for dear life with cool-season grass as it's declining day by day," Nielsen says.

Mother Nature forced Nielsen's hand in 2013. "I got hit with grey leaf spot and it pretty much wiped out my whole field," he says. The stadium field was switched over to a warm-season bermudagrass called NorthBridge (also developed at Oklahoma State and marketed by Sod Solutions). "If I'd known what I know now, I'd have made the switch to bermudagrass from day one because of the stress and how well the bermudagrass has done at this location," Nielsen says.

Since installing the NorthBridge, Nielsen has cut his fungicide rates in half.

"The humidity is brutal and the bermudagrass loves it," Nielsen says. "I just smile."

The bermudagrass on his field goes dormant by mid-October. To protect the dormant bermudagrass during the cold winter months, Nielsen overseeds in the third week of September with 4 lbs. per 1,000 sq.ft. of cool-season ryegrass. Come spring, the ryegrass is ready for play while the bermudagrass is still dormant.

"In March, April and May, I have tons of play on it and they have to have it green and growing. In the transition zone at that time of year, you're not going to have bermudagrass that is

"I have to put the rye in there to mask the dormant bermudagrass."
—Tom Nielsen

green and growing enough to put wear on it. I have to put the rye in there to mask the dormant bermudagrass."

By the end of August, the bermudagrass is strong and he sprays out the rye. He leaves it out for about a month, then overseeds again.

This practice of keeping in the overseed later into the summer, or not removing it at all, appears to be a trend among transition zone sports turf managers, even though it goes against conventional wisdom.

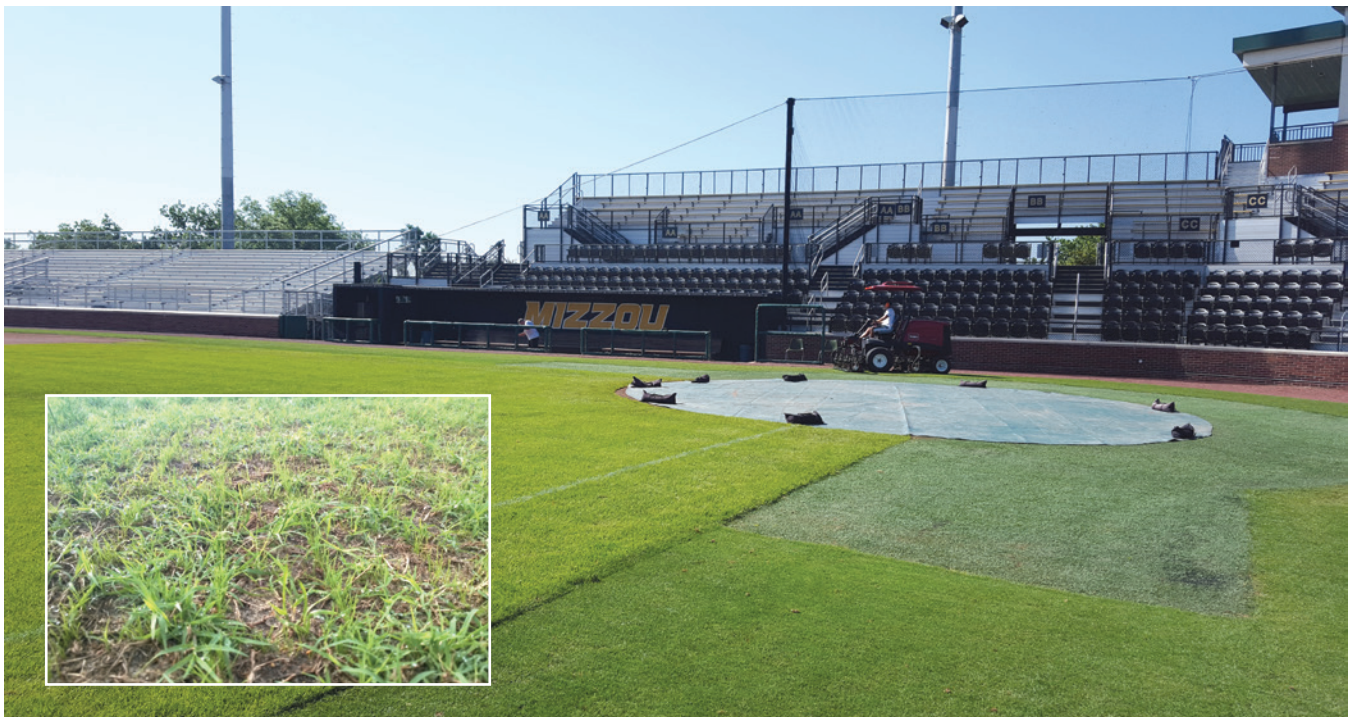
Grady Miller, PhD, is a professor and extension specialist at North Carolina State University in Raleigh. Miller explains that the rule of thumb for removing overseed—the actual window of time a bermudagrass needs to grow without competition—is 100 days. "If you look at your first frost and count back 100 days," Miller says, that's the time when overseed should be removed. "Get the ryegrass out 100 days before you overseed again."

But just like Leonard, who is not spraying out his overseed, and Nielsen, who has shortened that window to only about a month, other sports turf managers are altering their programs.

COLUMBIA, MO

At the University of Missouri in Columbia, about halfway between St. Louis and Kansas City, the weather this summer has swung from temps in the 40s to near 100-degrees. Josh McPherson, CSFM, director of sports turf & horticulture at Mizzou, experiments with his turfgrass variety selection and overseed program according to the sports played on each particular field.

Sodded HGT bluegrass infield with Latitude 36 bermuda overseeded sidelines on Missouri's baseball field. **Inset image: Close up view** bermuda/HGT Blue mix in Chesterfield, MO.





Your preparation. Their participation. ENHANCE BOTH.

Apply XCU® slow-release fertilizer to better manage turf appearance and playability. This dual-coated enhanced efficiency fertilizer delivers turf response for up to 10 weeks per application. And with the highest nitrogen content and lowest sulfur content of any polymer-coated sulfur-coated urea (PCSCU), you can control costs by using less to treat more area. Insert XCU® fertilizer into your nutritional lineup and feel confident your turf is ready for play when teams take the field.

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

Mizzou's softball field is a seeded cool-season field of RTF tall fescue mixed with HGT bluegrass seed (both developed by Barenbrug). The baseball infield is sodded with HGT bluegrass and sprigged with Latitude 36 bermudagrass in the outfield. The soccer field was recently sprigged with Latitude 36 bermudagrass into an existing Patriot bermudagrass (another from Oklahoma State, marketed by Johnston Seed) stand. Two football practice fields were sprigged with NorthBridge bermudagrass into an existing Patriot bermudagrass field last year. The practice fields were overseeded with ryegrass last year that was not transitioned out, and overseeded again this summer with HGT bluegrass instead.

This Heinz-57 approach to field grassing is McPherson's strategy for outsmarting the fickle transition zone weather.

"Today is the perfect example of why the transition zone is so hard. It's a high of 59 degrees in July. That's what it is

right now, and that's the high today with 2 inches of rain. We're having a cool summer but we will be in the 90s by Friday," McPherson says. "It's really difficult to plan. I want to think I keep getting better at it. I look at so much weather data and look at long-term predictions. I just didn't think that would mean I'd have a day in the 50s in July. I don't think I'm ever going to take the cool-season overseed out anymore. We have to find a way to have the bermudagrass and ultimately the bluegrass survive, maybe try to coexist. One may end up crowding out the other one, in the warm year if the bermudagrass takes over, or if the bluegrass does in a cooler year."

Not far away in suburban St. Louis, Brian Winka, CSFM, is parks maintenance supervisor for the City of Chesterfield. He manages a 200-acre complex that includes 18 baseball and softball fields, 10 soccer fields, two game football fields, and a 3.5-acre multipurpose field along with 7 acres of non-irrigated fields. A decade ago, the playing fields were grassed with a mix of Quickstand and Patriot bermu-

dagrass. Today, Winka is converting the fields over to a sprigged mix of Latitude 36 and NorthBridge bermudagrass. The bermudagrass base is also seeded with HGT bluegrass. "I selected that bluegrass based on NTEP (National Turfgrass Evaluation Program) trials and scores as far as early green up and how it handles traffic and the heat. The color was something actually that I liked. The HGT is not as dark midnight blue. It's a little bit lighter which is great because it blends in with the bermuda," Winka says.

While Mizzou's McPherson is considering discontinuing the practice of transitioning out his overseed at the university, Winka has already made the commitment.

"We are no longer transitioning out our cool-season grass that we overseeded into our bermudagrass," Winka says. "I'm growing warm-season and cool-season grass together year-round. I'm not transitioning. I don't have to overseed a bunch every fall, and then spray it out in the spring, and try to push the bermuda all summer, just so I

Kyle Brown mows a bermuda/HGT field in Chesterfield, MO.



can overseed it again in the fall.”

Several factors led Winka to come to this decision.

“What started my process is we went through a couple of really bad winters where we had a lot of winterkill on our bermuda. Once we transitioned out the overseed we were like, ‘Oh, what do we do now? We’ve either got to re-sprig, or re-seed, or resod.’ And by doing that, that means the fields have got to be closed down for a period of time. Between that, and a new direction in our complex wanting to be able to play more and more hours, and become almost a 12-month of the year complex, those were the two things that really precipitated my trying this experiment,” Winka says.

“It’s a gamble in the transition zone from year to year as far as how rough was the winter, do we have winterkill, how hot is the summer? Is it going to be hot and great for growing bermuda? Or is it going to be cool and mild and it’s just not going to fill in very quick and be slow to grow? All of those factors are kind of why I’ve done what I’ve done,” Winka says. “If it gets really hot and I start to lose my bluegrass or ryegrass, I’m not really worried because if it’s that hot that I’m losing my cool season turf, my warm season turf that I have in there is growing like crazy, so it will fill in those areas. In years when I have a cool, mild summer and bermuda is not growing as well as I want it to, I still have plenty of cool season turf out there to make a nice, safe, playable surface.”

He says the biggest change he’s had to make to his management program is the way he fertilizes. Rather than pushing the bermudagrass through over fertilizing to get it to grow and fill in, he now applies foliar and slow release fertilizers with significantly less N. He does two granular apps (spring and fall) and a weekly or biweekly foliar feed with slow release N for a yearly total of just 4 lbs. of N per 1,000 sq.ft. He’s also introduced frequent aerification into the program and increased the fungicides used to keep disease at bay.

The results have been remarkable. Winka tracks usage hours on the fields and can quantify performance. On just

On just one field that before the changeover could only support less than 300 hours of play, the same field is now supporting nearly 1,100 hours of play.

one field that before the changeover could only support less than 300 hours of play, the same field is now supporting nearly 1,100 hours of play.


Winka’s new management program has caught the attention of turfgrass researchers at the University of Missouri, University of Kentucky and Virginia Tech. Winka says plans are underway to conduct trials on his methods at all three universities.

TWO-GRASS SYSTEM RESEARCH

Dr. Michael Goatley, professor and extension turfgrass specialist at Virginia Tech, is eager to learn more about Winka’s “two grass system.” Goatley says to make the system work, he thinks sports turf managers will have to “be very careful in your management not to shift competi-

tive advantage to one or another through fertilization or irrigation.”

A professed fan of bermudagrass for sports turf in the transition zone, Goatley says the varieties that stand out in NTEP, and his own university wear tolerance research, are: Patriot, NorthBridge, Latitude 36 and PremierPRO “that is just coming on the market and has intrigued me for 15 years.” Seeded bermudagrass varieties that have done well in testing, he says, are Riviera and Yukon.

Still, with all of the research and all of the testing on grasses that will grow in the transition zone, NC State’s Miller says success all comes down to a facility’s specific location. Miller says, “It depends on where you are located in the transition zone and what is best adapted to you.” 

Get ahead of the game in the cold months with FieldSaver® Winter Turf Blankets/Growth Covers.

Custom sizes available. CoverSports is the manufacturer!



Actual sequence in same location

November: Season ended with less than 10% of turf cover.

December: After seeding and fertilizing, active turf growth even with temperatures below freezing.

Spring: Covers have been removed. (Uncovered turf still dormant)

- Protect turf from harsh winter conditions!
- Promote faster spring growth and green-up!
- 8 Year Limited Warranty
- Heavy 100% woven polypro fabric
- Reinforced hems and grommets all edges
- Stakes stay in place & won't rip fabric



Stakes keep covers in place in brass grommets at 5' intervals.

For price quotes, sizes, fabric specs and samples, visit www.CoverSports.com
sales@coversports.com • 800-445-6680

We make covers for all athletic surfaces:
Rain Covers, Sideline Tarps, Track Protectors



Humphrys CoverSports
Industrial and Athletic Fabric Products Since 1874



THE ABC'S OF FALL FERTILIZATION

BY BRAD FRESENBURG, PHD

When field managers think about fall fertilization, many assume the focus is on cool-season grasses. While this may be true for many regions of the country, the ABC's of fall fertilization can include some considerations for both warm- and cool-season grasses. The type of fertilizer and application timing has always been and is still important, so using the correct fertilizer at the correct time will maximize growth, recovery and performance; making fall one of the most important time-frames for fertilization. One item that still remains true is the fact that a good fertilization program is dependent on proper soil testing. So as we discuss

CALCULATING THE AMOUNT OF FERTILIZER NEEDED

Take the amount of N , P_2O_5 , or K_2O needed per 1000 sq ft divided by the percentage of that respective nutrient as a decimal (e.g. – 24% N = 0.24) to equal lbs of fertilizer product required per 1,000 sq ft.

◀ **Blended fertilizers** can be blends of quick (white prill) and controlled-released (blue prill) nitrogen sources including a phosphorus (brown prill) and potash (rose prill) component. Photo: Brad S. Fresenburg.

the ABC's of fall fertilization, we will remind everyone on the importance of testing our soils, look at the various types of products available, and develop a plan with some of the latest research in mind.

Soil testing is the basis for developing a fertilization program. While the small investment in a soil test can tell the field manager what is needed; a soil test can also tell a field manager what is NOT needed, saving money. Testing should be conducted annually on sand-based fields and every 2 or 3 years on a soil-based field. Another option in conjunction with soil testing is tissue testing. Here, a field manager can determine the effectiveness of their fertility program, by seeing if nutrients are actually being taken up by grasses in sufficient amounts. The following table has been an excellent resource for understanding the role that each nutrient plays in the growth of a plant and the amount of nutrients required for that growth.

A helpful conversion for this table and soil testing reports to convert ppm to pounds/acre is to take ppm times 2 to equal pounds/acre. Refer to "Understanding Soil Tests" at STMA.org for interpreting a soil test report and managing soil pH. We also need to remember that soil pH plays a role in nutrient availability; therefore pH results are as equally important to knowing nutrient levels. Kentucky bluegrass and bermudagrass grow best when soil pH is between 6.0 and 7.0; tall fescue prefers a soil pH from 5.5 to 6.5. Perennial ryegrass can tolerate a wide range of pH (5.1 to 8.4); however it performs best with a soil pH of 6.5.

Your local Extension Office or soil-testing lab will usually provide recommendations based on your particular location and soil type. It is also important to indicate on the submission form that your soil sample is for turfgrasses so appropriate recommendations can be made.



Table 1. Essential nutrients, their function, sufficiency range in shoot tissue, and potential deficiency/excessive occurrence to plants

Essential Nutrient	Chemical Symbol	Available Form	Primary Role	Mobility	Tissue Sufficiency Range	Frequency of Deficiency In Turfgrasses	Deficiency Occurrence	Excessive Occurrence
Carbon	C	CO ₂	Many	---	---	Sometimes	Drought Stress	---
Hydrogen	H	H ₂ O	Many	---	---	Sometimes	Drought Stress	---
Oxygen	O	CO ₂ O ₂	Many	---	---	Sometimes	Compaction, water-logged	---
Nitrogen	N	NO ₃ ⁻ NH ₄ ⁺	Amino Acids Nucleic acids Proteins Enzymes	Mobile	% 2.8-3.5	Common	Sandy soils; high leaching conditions from high rainfall or irrigation; clipping removal; denitrification; low pH (<4.8)	Direct toxicity as a salt; excessive growth and tissue succulence
Phosphorus	P	H ₂ PO ₄ ⁻ HPO ₄ ²⁻	Sugar phosphates Phospholipids Nucleic acids Enzymes ATP	Mobile	% 0.20-0.55	Sometimes	Sandy, low CEC, irrigated soils; under low pH(<5.5) or high pH (>7.5-8.5); reduced uptake in cold soils with high clay content	May induce Fe deficiency under some conditions
Potassium	K	K ⁺	Enzymes Stomata function	Mobile	% 1.5-3.0	Sometimes	Sandy or low CEC soils; low pH (<5.5); clipping removal; soils receiving high Ca & Mg additions	Contributes to salinity stress; cause fertilizer burn; suppresses Mg, Ca, or Mn uptake
Calcium	Ca	Ca ⁺²	Cell walls Enzymes	Immobile	% 0.50-1.25	Rare	Low pH (<5.5) on low CEC, high leaching soils; soils receiving high levels of Na, Al, Mn or H	Can induce deficiencies of Mg, K, Mn, or Fe
Magnesium	Mg	Mg ⁺²	Chlorophyll	Mobile	% 0.15-0.50	Sometimes	Low pH (<5.5) on low CEC, high leaching soils; under high Na, Ca, or K additions	Can induce deficiencies of K, Mn, and Ca
Sulfur	S	SO ₄ ⁻²	Proteins	Somewhat Mobile	% 0.20-0.50	Sometimes	Low organic matter; sandy, low CEC soils; under high N with clipping removal	Cause foliar burn; induce soil acidity; contribute to black layer under anaerobic conditions
Iron	Fe	Fe ⁺² , Fe ⁺³ Fe Chelates	Chlorophyll pigment Proteins	Immobile	ppm 50-100	Common	High pH(>7.5); excessive thatch; cold and wet soils; low organic matter soils; irrigation water high in HCO ₃ ⁻ , Ca, Mn, Zn, or Cu	Acidic, poorly drained soils can produce toxic levels; can induce Mn deficiencies; blackened leaves and injury
Manganese	Mn	Mn ⁺² Mn Chelates	Enzymes Photosynthetic evolution of O ₂	Immobile	ppm 20-100	Sometimes	High pH(>7.0); calcareous soils; warm weather reduces availability; high levels of Cu, Zn, Fe, and Na on leached low CEC soils	Low pH(<4.8); anaerobic soils; high Mn can induce Ca, Fe, and Mg deficiencies
Zinc	Zn	Zn ⁺² ZnOH ⁺	Enzymes	Somewhat Mobile	ppm 20-55	Rare	High pH (>7.0); high levels of Fe, Cu, Mn, P, or N; high soil moisture; cool wet weather and low light intensity	Municipal waste; high levels may induce Fe or Mg deficiencies
Copper	Cu	Cu ⁺² Cu(OH) ⁺ Cu Chelates	Enzymes	Somewhat Mobile	ppm 5-20	Rare	High pH; organic soils; heavily leached sandy soils; high levels of Fe, Mn, Zn, and N	Use of sewage sludge; pig/poultry manures; over-application of micros
Molybdenum	Mo	MoO ₄ ⁻² HMoO ₄ ⁻	Nitrate reduction for N ₂ fixation	Somewhat Mobile	ppm 1-4	Rare	Low pH, sandy soils; soils high in Fe and Al oxides; high levels of Cu, Mn, Fe, and S suppress uptake	High pH, wet soils
Boron	B	H ₃ BO ₃ BO ₃ ⁻³	Cell wall and plasma membrane integrity	Somewhat Mobile	ppm 5-60	Rare	High pH induces deficiencies on leached calcareous soils; high Ca; dry soils; high K may increase deficiency	High B in irrigation water; over-application of micros; compost amendments
Chlorine	Cl	Cl ⁻	Photosynthetic evolution of O ₂	Mobile	ppm 200-400	Never	Uptake suppressed by high NO ₃ ⁻ and SO ₄ ²⁻	Component of many salts enhancing soil salinity reducing water availability
Nickel	Ni	Ni ⁺²	Urease enzyme to transform urea to NH ₃	---	ppm < 1.0	Never	Conditions unclear; rare occurrence of deficiency	Use of sewage sludge

Table developed from: Carrow, R.N, D.V. Waddington, and P.E. Rieke. Turfgrass Soil Fertility and Chemical Problems. 2001. Ann Arbor Press. Chelsea, Michigan.



Photo: Josh McPherson.

Choosing a fertilizer is dependent on needs, expectations, time of year, soil temperature and soil moisture. Do you need rapid recovery or not? Does your fertilizer choice require microbial activity and warmer soil temperatures? Or, does your fertilizer choice require soil moisture for hydrolysis?

Complete fertilizers contain some percentage of nitrogen (N), phosphorus (P) and potassium (K), but may also contain an additional component such as iron (Fe) or sulfur (S) or micros. Compound fertilizers contain at least two of the primary nutrients of N, P and K. Homogeneous fertilizers have prills that contain an amount of each fertilizer component within indistinguishable granules. Heterogeneous blended fertilizers are a blend of separate fertilizer components for each of the primary nutrients included. Homogeneous fertilizers are usually thought of as being better for providing an even distribution of nutrients; however with many fertilizers being formulated with lower size guide numbers (SGN), even blended fertilizers distribute well.

Sometimes fertilizers are defined by the fertilizer ratio of N to P to K; therefore a maintenance fertilizer defined by a 3-1-2 ratio could be a 15-5-10 fertilizer. Keep in mind that the P and K component in a fertilizer are truly a percentage of P_2O_5 and K_2O , respectively. To determine the actual amount of phosphorus being applied, the amount of P_2O_5 needs to be multiplied by 0.44. To determine the actual amount of potassium being applied, the amount of K_2O needs to be multiplied by 0.83.

Several nitrogen, phosphorus and potassium sources are available as many of you are familiar with. A vital part to controlled-release nitrogen sources is understanding the method of release: microbial breakdown or hydrolysis or some of both. There are countless fertilizer products available from complete to single nutrients, from quick to controlled-release, and granular versus foliar. Keep quick-release fertilizers to a minimum; establishment/grow-in and rapid recovery. Maintenance fertilizers should include 30 to 50% controlled-release nitrogen forms and usually in a 4-1-2 or 3-1-2 ratio. The guaranteed analysis on every product will indicate what you are purchasing. Simply select fertilizer products based on your needs. Often products are selected based on low cost. However, consider spending a little more if you can find a product that better matches your need and saves on labor by lasting longer. Fertilizers that provide consistent feeding over time are better for your grasses.

SCHEDULES AND RATES

Fall still remains the most important time of the year to fertilize cool-season fields for recovery from summer and fall seasons as well as building carbohydrates reserves. With fall comes compacted soils and aerification just before an application of fertilizer is an excellent practice for recovery. Fields being used heavily will obviously benefit from both practices.

Research shows that late fall applications of nitrogen will enhance fall color of both cool and warm-season grasses. Early

fall applications of nitrogen to cool season grasses should contain 30 to 50% controlled-released nitrogen, especially on sand-based fields. Late fall applications are best when shoots have begun to slow in growth (but remain green), promoting root growth. Late fall applications of nitrogen have also shown to have an impact on root development in the spring. Precautions for late season applications on cool-season grasses include the potential for increased snow mold and winter annual weeds (annual bluegrass, henbit, chickweed, etc.). Understand that phosphorus and potassium applications in the fall is not as critical for timing when correcting soil needs or when just including some amount as part of a complete fertilizer. Fertilizers should never be applied to frozen ground as the potential for runoff is greatly increased.

On the warm-season front, research has indicated that late season (fall) nitrogen applications to bermudagrass will not contribute to winterkill. Maintaining adequate levels of potassium in the medium to high range is important for winter protection. However, studies have shown that additional applications of potassium in the fall, when sufficient levels already exist in the soil, will not increase winter hardiness of bermudagrass. Here a soil test can save on that purchase of a winterizer if potassium levels are found to be adequate. If potassium is needed, applications should be made well ahead of warm-season grasses slowing down in growth. So, late season applications of nitrogen to bermudagrass will allow for more recovery, maintain green color longer, help to build carbohydrate reserves and not contribute to winterkill.

One precaution to note with fall applications of nitrogen to bermudagrass is the increased potential for spring dead spot disease. Avoid late season applications if spring dead spot is beginning to or historically occurs at your facility. Late season nitrogen applications to bermudagrass fields can also contribute to increased winter annual weeds.

Regardless of how well you developed your fertilizer program, if application techniques (swath and overlap) and calibration (half rate applied in two directions) are not properly followed, then you will realize the lack of uniformity in about 7 to 10 days! **ST**

Brad Fresenburg, PHD, is assistant extension professor the University of Missouri in Columbia. See stma.org for "Understanding Soil Tests," "Late Fall Fertilization of Athletic Fields," from Penn State, and "Fertilizers," University of Tennessee, Extension Publication W161-E. 2008.

2014 STMA Field of the Year

Congratulations to Jason Smith and crew at Florida Field



Two things I love about Celebration are the dark green color and the rate of recovery. We need a grass that can take a lot of abuse and recover quickly. We have high expectations and Celebration is our grass of choice.

- Jason Smith, University of Florida
Turf Coordinator

CelebrationBermudagrass.com

NEW NATURAL AND SYNTHETIC HYBRID TURF SYSTEM

This close-up view shows sand being topdressed over the synthetic base. All photos by James Graff.

A new natural turfgrass and synthetic turf hybrid system has entered the US market as a product named XtraGrass. The message that this can be a good thing for sod producers is coming from one—James Graff, co-owner of Graff's Turf, Fort Morgan, CO.

“Some folks have a tough time wrapping their head around a sod producer and a synthetic turf company working together,” says Graff. “I think we can have our differences and our preferences. We want to see a natural grass field go in. They want a synthetic field that plays like a natural grass field. Those are separate goals. But when we combine them in a hybrid system we have a solution that keeps natural grass on the field while gaining the durability of synthetic turf. It’s an opportunity to work with the strengths of both because, in the end, we all want the same thing: a safe field that plays well.”

▼ This operator is topdressing sand over the synthetic base.



▼ **Left:** This XtraGrass field installation shows the surface shortly after the sand topdressing and overseeding have been completed. **Right:** Natural grass roots are shown extending down through the synthetic backing.



Graff's Turf has been working with AstroTurf on the XtraGrass product and is the US distributor for it. Graff says, "Both companies view this arrangement as a partnership and everybody respects the expertise of the others. We let them know upfront that we wanted to be involved in the customer support through the grow in and the establishment process of the natural grass and they totally agree with that."

Graff's XtraGrass brochure explains the product like this: "XtraGrass is a network of synthetic turf fibers woven into a strong backing material and laid directly on a standard field base. It is carefully topdressed with sand and overseeded with your choice of turfgrass. The grass seeds germinate and grow between the synthetic fibers and through the backing. This creates a strong natural grass surface, which is more resistant to heavy wear. As the grass grows, 60% of the backing material biodegrades, leaving more room for the roots to grow through, while still retaining a strong support structure for the grass."

The hybrid concept has been used before. SportGrass, a synthetic turf combining polypropylene blades and a tightly woven, synthetic mesh backing was installed on a well-drained sand-based field. Natural turf was seeded or sprigged into the synthetic turf and topdressed with amended sand. In another hybrid system, TS II (MotzGrass), the backing was burlap plus mesh, with the burlap intended to degrade over time. Both of these products were installed on fields in the US with varying degrees of success and all were removed and replaced with other field systems.

Graff says, "XtraGrass has a more porous backing than SportGrass or the TS II MotzGrass, which allows for much better root penetration. This product has been used in Europe for 12 years. They have refined the process and the product. We are getting a very well developed synthetic layer and good information on the grow in for those installations seeded or sprigged on the site and those seeded or sprigged by turfgrass producers to be installed as sod."

Building on that background, Dr. John Sorochan, associate professor of Turfgrass Science for the University of Tennessee (UT) reports research is underway at the UT Center for Athletic Field Safety. "We have established XtraGrass plots with bermudagrass, turf type tall fescue, perennial ryegrass and bluegrass," says Sorochan.

Initial research results on both bluegrass and bermudagrass plots showed XtraGrass offered an improved percentage of green turf cover compared to non-XtraGrass plots after 30 events. Clegg surface hardness values were less than 100 Gmax for all plots tested even after 30 events. Additional research is underway.

Sorochan did a great deal of research on the original SportGrass. Graff did the original grow in at the farm and then installed the SportGrass on Folsom Field at the University of Colorado. Thus both are aware of the problems involved with previous products and the steps taken with XtraGrass to avoid them.

Sorochan says, "We will be incorporating some of the new



This cutaway view shows the components of the XtraGrass hybrid system. Image courtesy of AstroTurf.

technology into our research, including the fraze mowing that is widely used on athletic fields in Europe. The process removes the surface organics, leaving the plant's growth point and root system intact, basically allowing the turf to start over. We want to evaluate the effectiveness of fraze mowing on thatch management control, especially on the bermudagrass. We'll also be gauging what impact fraze mowing makes on the synthetic fibers in terms of damage. We'll continue to simulate traffic at various levels on each of the trial plots and look at the wear comparisons."

The Best Dressed Sports Fields Start Out In Our Hands.



Major League Baseball. National Football League. Major college programs. High School teams. America's leading sports fields use America's best field marking paints and custom stencils. When great teams choose to decorate their fields, they turn to World Class.

WORLD CLASS
athleticsurfaces

We Make The Games Look Better
www.worldclasspaints.com • 1-800-748-9649



The natural grass grow in is progressing well.

The first XtraGrass field in the US was installed on Lakewood Memorial Field in Lakewood, CO, in June 2014. The field was built in 1973 and renovated previously in 1999. It is maintained by the Jeffco Schools Athletic Department. The field is native soil with surface drainage. The installation covers 83,000 sq ft. The field was overseeded on site with a mix of bluegrass and perennial ryegrass. This field is used for high school boys' and girls' soccer and college men's and women's soccer. It hosted 60-plus soccer games between late August and late October 2014. A tour of the field in January 2015 showed a good stand of grass.

"The infill is USGA spec sand which is not hard to find. There are no custom blends or proprietary mixes involved," Graff says. "It's a simple process. The site can be either a native soil that is graded for drainage or a sand field that is equipped with an in-ground drainage system."

XtraGrass can be grown on plastic at the sod farm and then shipped to a location for installation or delivered and installed by the grower. Graff says, "We hope to work with other sod producers so grow ins would take place in climate conditions similar to those of the installation site."

Graff anticipates the interval from seeding to harvest of the XtraGrass sod will range from 60 to 90 days. He says, "The seed needs to root in enough to hold the plants in place.

EPG MEDIA &
SPECIALTY INFORMATION

Maximize your positive press from your feature in

SportsTurf

Reprints

Maximize the marketing power of your feature.

Eprint

Give your feature a presence on the World Wide Web.

Custom Plaques

Showcase your great press in a public area for all to admire.

For custom reprints contact us today!

Call 678-292-6054

or email us at

rcoper@epgmediallc.com



Now offering short-run reprints!
Order 100 copies or less.

TARGET YOUR CUSTOMERS

Want to reach qualified buyers?

- TARGETED LEADS • SUPERIOR PENETRATION
- PROVEN VALUE • OUTSTANDING RESULTS

Then rent our list of targeted, qualified readers for your next direct mail promotion. Call today for more information regarding our product lines and extensive database marketing programs.

SportsTurf EPG MEDIA &
SPECIALTY INFORMATION

Jim Scova at MeritDirect
jscova@MeritDirect.com • 914-368-1012

The strength for the sod to hold together is supplied by the synthetic base.”

Sorochan also sees growing the XtraGrass sod on plastic as an advantage. “The sod grower can select the root zone material to match the soil profile of the site. Root development is typically tighter in sod grown on plastic. The harvested sod would travel a shorter distance, so trucking costs would be reduced. The sod should have a better ‘shelf life’ as well.”

Graff says, “Up to this point, the solutions to problems with these hybrid fields were limited to a full field installation, either of the product or a straight natural turf field, a switch to synthetic turf, or a continuing struggle with existing conditions.”

That’s true with another concept, also introduced overseas, DESSO GrassMaster natural grass that is installed on a sand-based field with subsurface drainage. A specialized installer “sews in” artificial turf fibers that loop from just above the soil surface to a depth of 7.87 inches. It has been used at Sports Authority Field at Mile High, home of the NFL’s Denver Broncos, since the initial field installation but will be replaced in 2015.

With XtraGrass, replacement can be limited to sections, such as the goal mouth, a sideline, or the lacrosse creases. For replacement and repair, XtraGrass can be cut out and rolled up like regular sod. It can be moved to another area and reinstalled. It can be replaced with XtraGrass sod cut to the same depth. Graff says, “It takes no special tools or equipment or skills; just the same folks doing the same work.”

Sorochan adds, “I would think some of the facilities would want to be maintaining more XtraGrass sod on plastic as replacement turf for those high wear areas. The worn section that was removed could be laid out on the plastic for rejuvenation and recovery, allowing the field manager to keep switching the sod back and forth.”

Once established, maintenance is similar to a totally natural grass field. Graff says, “Coring is not recommended, but you can use solid tine aerification, either shallow or deep tine. That was not an option with the SportGrass system.”

Sorochan adds, “We’ll be working with needle tine aeration on it. With the smaller tines we can do closer spacing than with the standard solid tines. We’ll be tracking how that affects the degradation of the backing and how it impacts the root development of the natural grass.” Graff states, “We’ll be sharing and comparing research notes with the Europeans as well.”

Graff says the anticipated life is 8 years or more and that one of the initial European installations is being replaced this year after 12 years on that field. **ST**

Suz Trusty, co-editor of Turf News from Turfgrass Producers International (TPI), wrote this article. Thanks to TPI, Suz, and Turf News for permission to reprint it.



Natural grass roots are shown extending down through the synthetic backing.

Beautify Your Sports Turf with Billy Goat!

Versatile Towable Aerator for deep hard soil aeration

- Flexible aeration widths at 36", 48" or 60"
- Foldable wings raise & lower for desired widths
- 80 hardened steel tines
- Manual lift raises & lowers tines with ease
- Mounts to a standard tow bar or category 1, 3-point hitch
- Tines swivel when mounted to 3-point hitch



**440 LB
4 ACRES/HOUR!**



Take the chore out of the chore with Billy Goat! www.billygoat.com



This field has been overseeded

OVERSEEDING BERMUDAGRASS ATHLETIC FIELDS

■ BY SCOTT STEVENS, CSFM

How do turf managers keep bermudagrass fields green all year long? Is there something in the water that allows the fields to stay green? Is it magic? Well, maybe, but in reality the majority of turf managers are overseeding their bermudagrass fields with a cool-season grass to keep them green when the bermudagrass goes dormant.

After the first couple of frosts bermudagrass turns brown or goes dormant. Brown grass is an unsightly appearance for users, so each fall season the decision is made to overseed sports fields. In the Transition Zone we overseed from September through November and some-

times continue to reseed in December/January. In other zones seeding is done at different times depending on temperatures and schedules. Overseeding can be simple or complex depending on the level of maintenance required.

PROCESS

The simplest method to overseeding warm-season grasses is to mow low, spread the seed, drag in, and water. Mowing the grass a little lower than you typically do will allow the cool-season grass to grow higher than the warm-season grass. Essentially the warm-season grass is slowing down in growth to harden up and prepare for the winter. The cool-season grass will grow higher than the dormant short cut grass giving you green instead of brown dormant grass showing. You will want to be care-

» **Short frequent cycles of irrigation** will help the seed to germinate more quickly.

ful not to scalp the bermudagrass too low when you lower the mowing height. Scalping the grass will shock the plants. The seed can be dragged in with a metal drag or cocoa mat. This helps to work the seed down through the canopy to reach the soil. The last step is watering in the seed. Short frequent cycles of irrigation will help the seed to germinate more quickly.

A more complex method to overseeding is to vertically mow, then horizontally mow lower, followed by spraying fields with a plant growth regulator, spreading the seed, topdressing, dragging in, applying a starter fertilizer, and watering. This method requires more time/effort and resources to accomplish.

First vertically mow your field. For some bermudagrasses that are more aggressive, like Patriot, this may require going over the field twice or more in different directions. Vertically mowing will cut down through the thatch and thick grass canopy getting to the soil. The height setting on your vertical mower will depend on how aggressive you want to be cutting into your field. In some cases where the field is prone to overuse, like soccer goal mouth areas, you may want to be less aggressive by setting the verticutter to a shallower depth. Being less aggressive will help to protect these areas from wearing out from the high use.

This is followed by mowing the grass a little lower than what you are currently mowing, which will allow the cool season grass to grow higher than the bermudagrass. After mowing the grass lower, spray the field using a plant growth regulator (PGR) at proper chemical label rates. Spraying the field with a PGR will assure that the warm-season grass will not flush back growth that will result in a dormant/brown showing through the winter. In the Transition Zone, we receive some warm days in October that allow the bermudagrass to continue to grow. PGRs help to slow this growth down.

The next step is seeding, which is followed by topdressing with sand. The sand helps to cover the seed and fill in the vertical mowing cuts. After topdressing with sand you can drag the sand in with a mat or brush. Dragging will help to work the sand down in the bermudagrass.

Next you put out a starter fertilizer. This will be a fertilizer with a high percentage of phosphorus, such as 18-24-12 or a complete fertilizer such as 17-17-17. Phosphorus helps new plant growth. Some turf managers put this out soon after topdressing thinking that the fertilizer will be broken down and taken up by the plants as soon as the seed starts to germinate. Others wait to fertilize after the seed has germinated.

Waiting until the seed has germinated makes certain that the new seedlings, not just the bermudagrass are able to take up the fertilizer. This process, just as before, is completed with watering. Short frequent cycles help to keep the soil moist to encourage the seed establishment process.

Either one of the methods, simple or complex, will work well when it comes to overseeding bermudagrass with a cool-season grass. You can choose to use some of the processes or all of the processes when overseeding. For example if you are in the middle of a soccer season and there is not much time between practices/games on the field you may just put the seed out and have the players cleat the seed into the ground. Do not aerate or aeravate your field before overseeding. The seed will germinate in the aeration holes rather than having uniform coverage across the field. The goal is to get good seed to soil contact and plenty of water on the seed afterwards to successfully overseed a field. One guarantee for failure is never actually putting the seed out.

SEED TYPES

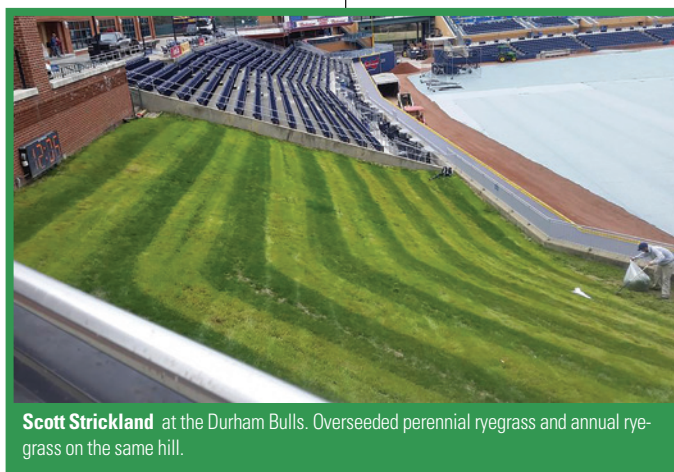
The most common type of cool-season grass seed used in the overseeding process is ryegrass, both annual and perennial. Ryegrass has the ability to germinate within 5-7 days. Annual ryegrass will germinate in 3-5 days, if conditions are right; it has a lime green color, which is lighter green than most other grasses. Perennial ryegrass will germinate in 5-7 days with correct conditions and has a darker green color, and is most often used for overseeding fields.

In recent years, some managers have been experimenting with overseeding both annual ryegrass and perennial ryegrass on the same field. For example on a football field, alternating grasses every 5 yards to give a light green (annual ryegrass) versus dark green (perennial ryegrass) appearance on the fields. The drawback to this

method is that using both types of grasses on one field makes managing more complex, because there are 3 different types of grasses on the field.

RATES

Many managers use different seeding rates depending on a number of variables including expected usage and budget. If high use of the field is expected and the budget is large, then a higher rate may be used. Normal rates for overseeding are between 8-10 lbs. per 1000 sq ft. For example, for a football field 57,600 sq ft would require between 460 lbs. and 576 lbs. of seed. To help offset usage and costs, rates can be higher



Scott Strickland at the Durham Bulls. Overseeded perennial ryegrass and annual ryegrass on the same hill.

ESSENTIALS FOR ALL YEAR GREEN

■ **TIMING:** choose a time in the schedule when there is at least a week's time of little to no use on the field to give the seed time to germinate

■ **SEED TO SOIL CONTACT:** mow lower, drag in, verticut, and topdress to get the seed down into the soil

■ **STRATEGIC SPREADING:** go a little heavier with seeding rates in high wear areas on the field

■ **LIGHT, FREQUENT IRRIGATION:** keep the soil moist

■ **GERMINATION:** proper temperatures, oxygen, water, and sometimes light are required for successful germination

■ **GET THE SEED OUT:** seed sitting in a bag of your shelf will not help keep your field green

in more heavily trafficked areas rather than seeding the entire field at a higher rate. On a football field this can be the area in between the hashes, in soccer the goal box areas, and for baseball the infield would require more seed than the outfield. Design your plan to fit your fields and meet the expectations of users and administrators.

Using higher than normal overseed rates can create immature overseeded grass. The maximum rate is between 30-40 lbs. and sometimes even up to 50 lbs. per 1000 sq ft. For a football field this is between 1728 lbs.-2304 lbs. and 2880 lbs. Usually when higher than normal rates are used, managers are seeding multiple times throughout the season. This helps to create a seed bank where seed will germinate throughout the season. The biggest concerns with higher rates are the extra cost and creating competition for bermudagrass come spring green up.

Using lower rates of overseeded grass can still provide good winter green color. The minimum rate for a field should be around 5 lbs. per 1000 sq ft. For a football field you will need 288 lbs. of seed. Anything less than 5 lbs. per 1000 sq ft. creates a thin stand of overseeded grass that is too thin to properly cover the dormant bermudagrass. Using a minimum rate is cost effective and creates less competition come spring green up for the bermudagrass. Just be sure that your rate is not so minimal that it does not meet the expectations of users.

When seeding, there are two types of spreaders most commonly used to get the seed out: a rotary spreader and a drop spreader. A rotary spreader is quicker and can cover more square footage. A drop spreader is used for going along edges or trimming out a field and/or can also be used for seeding an entire field. The user just needs to be careful to get full cover with both types by using a checkerboard pattern, which is created by going one direction, for example east to west on a field, and then spreading perpendicular to this direction, going north to south. The applicator should split the seed application rate for each direction. Using a checkerboard pattern will ensure good uniform coverage of the field.

ALTERNATIVES TO KEEP GREEN

There are a couple of alternatives to overseeding a bermudagrass field: painting the fields green or using grow covers to help protect the turf. Not overseeding will make spring green up of the bermudagrass and transitioning of the field a lot easier.

Painting the field green can be time-consuming and a costly



Painted green only

process. There are a number of turf colorant products on the market that can be used depending on the required green color needed. The painting process requires multiple applications that should begin before the bermudagrass goes dormant. Each time painting the manager should go in multiple directions to cover both sides of the grass blades. Depending on the weather painting the field could take 4 to 5 or more applications per winter. Challenges include having to repaint field markings, upsetting equipment managers (green paint tends to stick to white uniforms and is difficult to remove), and the wearing out of seals on your spray machine's centrifugal pumps.

Grow covers can be used to keep the bermudagrass from going completely dormant. The bermudagrass will retain its green color, but will not have normal plant growth like it does during the growing season. The area covered will not be able to recover from damage, but will stay green. Over extended periods of time the crown of the plant will start to separate from the soil, acting as if the grow cover is the top layer of the soil. The field will become puffy, like walking on a sponge. Using covers requires a lot of work to pull them on and off the field. Make sure the covers have complete coverage of the field or there will be dormant spots anywhere not covered.

When it comes to overseeding there are just as many downsides as there are upsides. Choose what works for you and your fields. Work within your budget to meet the expectations of users. If you choose to overseed get ready to mow all year long. Be creative with your mowing patterns to make your field look great! **ST**

Scott Stevens, CSFM, is the sports turf manager at Elon University, Elon, NC. He is currently a member of the STMA Editorial Committee.

John Mascaro's Photo Quiz

John Mascaro is President of Turf-Tec International

Can you identify this sports turf problem?

Problem: Irregular patches of scalped turf
Turfgrass area: Sod farm
Location: Littleton, Colorado
Grass Variety: Kentucky bluegrass

Answer to John Mascaro's Photo Quiz on Page 33



Background illustration courtesy of istockphoto.com

INDUSTRY'S FASTEST Drainage System



“ The reason we use Hydraway 2000 can be summed up in two in words, strength and permeability. When we use Hydraway 2000 under our fields, we know we are using a material that has superior compression strength, combined with higher permeability and water flow rates than other products we have used in the past. ”

— Charles D. Morris, PE
 J.E.M. Morris Construction, INC.



Natural Grass Fields
 Synthetic Turf
 Golf Courses



- High Compressive Strength
11,400 PSF
- High flow rates
80% more available open space

Hydraway[®]
 Drainage Systems

800-223-7015 | hydraway.net

KEEPING GRASS BETWEEN THE HASHMARKS INTO NOVEMBER

Editor's note: We asked turf managers from different regions in the country how they keep turf cover deep into their football seasons. Here are some good responses:

KEITH LEHMAN, Pine Grove Area SD (PA)

I always felt the key was to have the turf stand as healthy as possible going into the season and that process starts the day after the last event the previous fall. It is an ongoing cycle. I feel core aeration after the fall season and in early spring, if possible, combined with proper mowing practices to promote a thick stand, irrigation when necessary to promote deep rooting, a solid fertilizer maintenance program including weed and insect control are all important.

As Dr. Andrew McNitt says, "seed – seed – seed" to keep a high percent of living turf between those hashmarks.

I do not screen drag the cores in the fall aeration process but will include seeding, fertilizing and screening in the spring process. We maintain our athletic field turf height 2-3 times per week during the main growing season and do not want excessive clippings on the stand after mowing. If necessary a second opposite direction cut will be completed. When irrigation is necessary it's a deep watering. Soil test results every 3-4 years is critical in putting together my fertilizer program.

Observation while mowing assists me when determining to include weed and insect control in the program. Seeding takes place during the spring aeration process if completed or I will

Before last regular season football game at Pine Grove (PA) HS.





Home of the Overbrook Rams in Pine Hill, NJ.

spot seed with compost coverage. I also try to seed between the hash marks before every Friday night football game. Add these maintenance practices to some “good luck” that the scheduled events take place that will permit recovery and that events do not take place during excessive moisture conditions. Include pride when performing your duties and there should still be green between the hashes in November.

MARCUS DEAN, CSFM, University of Kentucky

On our practice football fields we cover with growth tarps from CoverSports between the hashes every Friday once games start. We leave them covered from Friday afternoon after practice until Monday morning. I get my entire crew to stay every Friday to help complete this task. On the stadium field we used to use the same type covers based upon weather, but now it is synthetic turf, so I don't need to worry about that anymore.

RICH WATSON, Pine Hill Public Schools (NJ)

I am not sure there is one simple answer to this question. Over the years there were many different ways to keep turf between the hash marks on our football fields. One thing I would consider is to try and communicate with the user groups and attempt to set some limits on non-game activities. For example, try to convince the coaches that it would really help field conditions if they could move their Thursday or Friday walkthrough to the practice field.

The day before “walkthrough” usually turns into a 2-hour or more practice with multiple series of plays run from the same spot on the field. The fact that they are in shorts and helmets may bring some relief to the players but doesn't help the field. Any cooperation you can get from the user groups will help keep turf in the middle of your field.

While my first suggestion depends on the cooperation of others, heavily overseeding from the first time the cleats touch the turf through the end of the season is something anyone

can do. It has been my experience that the only way to keep up with wear is to continuously seed. Broadcasting seed between the hash marks before practice or games will allow the players to work the seed in for you and hopefully allow germination before the next major event. Of course there are a lot of variables that come into play when seeding like this but for those of us in the north, football season is the best time of year to seed. Heavily seeding your “field within the field” will go a long way to help keep turf there all season long.

**PETER THIBEAULT, CSFM,
Noble & Greenough School (MA)**

To keep turf between the hashes you need to keep going all year. Most of our prep starts in June after graduation and when lacrosse ends. We will go in and core aerate in three directions with a heavy overseed blend that is 50% bluegrass and 50% perennial ryegrass. Our seed rate down the middle is @ 10lb/1,000 sq. ft.

I will also core aerate and heavy overseed again at the beginning of August; the field is used all summer for day camp, which is around 1,000 little kids so the field gets very little rest and the work needs to be finished early.

During the season we will monitor compaction and aerate as needed to maintain optimum growing conditions. We overseed throughout the season to help replace worn turf, and in late September we will start to use a straight perennial ryegrass blend to give quick cover. We follow a fertility program that is based off our soil tests and turf needs. We have started to add silica, which is a blend of silicon, calcium and other micros that help the turf perform better during the stress of the summer heat and the stress of the athletes.

To manage the space between the hashes you almost have to look at that area as a completely separate space. Oh, and we do have a synthetic but that is for field hockey and lacrosse; soccer and football do not want to be on it unless they absolutely have to. **ST**

AERATION: HOLLOW-TINE, SOLID-TINE, OR BOTH? WHEN AND WHERE? PART 2

We recently asked turf managers four questions about their aeration practices:

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

We also asked aerator machine manufacturers two questions:

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

The response was so good that we were forced to divide it into two parts; the first installment appeared in our August issue.

KEVIN TAYLOR CSFM, CGCS, SMG-NRG Park, Houston

We have cored aerified our trays 8 times (to adjust the weight and height of trays). We routinely solid tine bi-weekly. Each tray is 4,000 lbs. and we have to manage the height of soil profile to interface with warning track.

We started our aeration process in January due to the fact we have to move all 2,700 trays 10 miles down the road. They are stationed there for 2 months due to accommodating the Houston Livestock and Rodeo. Maintenance is a bit of a challenge when your field is off site.

Considering our unique situation, we have to do lots of prep to facilitate sound management practices on a soil profile of 8 inches grown in a parking lot. We use controlled release granular greens grade due to density of turf and supplement with foliar “spoon feeding.” I was not here last year during the process but I understand the trays are as healthy as they have been.

Problems and headaches? The list long but as they say, “No guts no glory.”

GREG MOORE, Saturated Solutions

Hollow tines should be used during the less stressful time of the year here in the Northeast. This is due to several reasons. *Poa annua* does not like to be disturbed during stress weather conditions. The second is due to its disruptive nature during a very short growing



season compared to south or bermudagrass regions. Hollow tine perforation (not aeration) is performed when other cultural practices are unable to keep the thatch diluted from cultural baseline standards such as spiking, grooming, topdressing and verticutting. By simply infusing a steady diet of oxygen, in a non-disruptive manner will resolve many turf managers' problems.

Needle tines are used during stressful times of the season when hollow aeration cannot be performed. This assumption of puncturing the surface with solid tines will allow oxygen to get

into the sub-surface of the soil. The problem with this technique is that not only will oxygen enter into the soil but also it allows for carbon dioxide to enter. The buildup of the carbon dioxide, which is heavier than oxygen, means that it will always settle to the bottom of every hole that was created. As CO₂ builds up through such changes; atmospheric, plant respiration and microbial activity has and always will force the oxygen out due to the atomic structure of each compound molecule. It's for these reasons that roots have a tendency to shorten during stressful periods

The sports turf and the golf industries view aeration as a "preventative" cultural practice and, the user (player, coach or club member) views it "as needed" or "curative" cultural practice. Aeration has always been viewed as a "need or want" from the turf manager but it is actually what you're allowed to do by users! The less disruptive, the more you can aerate.

ANNE BECKINGHAM, Vassar College

I like to use both hollow and solid tines. I also like to use different sized solid tines depending on what time of the year it is and what I'm using them for.

I normally try to solid tine the fields mid spring, weather permitting. I'll use a ¾" tine for this time of year and if I get a good window to aerate, try to go two ways. I've always had a *poa* problem, so rather than pull cores, I'll stick to the solid tines so the seed bank doesn't get disturbed.

I've been known to aerate (with the ¼" tine) goalmouths, bench areas, and ref's areas, middle of the field; anything that looks like its getting worn during the fall season. I have done this before games and really take special care to still keep the field in great playing condition. Past years we have used our old Ryan TrackAire to slice the turf two ways. Anything to get air and water moving for the roots! We are prolific seeders! I'll aerate these areas, then seed and topdress. We just stay right on top of the fields constantly in these areas. While the fields look like they are getting beat up (and they are) the growth the following spring is amazing and it's because of all the maintenance that took place in the fall.

Normally, I'll pull cores mid October through November on all the fields. This is the time of year that I really feel that pulling cores is the most beneficial practice of all as far as turfgrass health. Removing all of that compacted, tired soil and turf and then renewing it with seed and sand keeps our fields in top condition. I have also "spot" core aerated soccer goals, the baseball diamond, and other areas during the fall season. In my opinion, if your turf is tired or even pretty healthy, this aggressive maintenance will just make it stronger.

The biggest benefit of aeration is that it's really the only way to combat compaction in your field. If your field is compacted, then the plant is stressed. And, then the opportunity for weeds, disease and insects to move in will be available for take over. Aeration is probably the most important mechanical maintenance practice that your field should get.

I think the biggest problem is weather! As everyone knows, aeration takes time. And, it's messy, especially when cores are involved. I try to schedule it when the teams are away for games

or for break in October. I have waited also waited until season is finished. I like to keep track of how the teams are doing in their seasons. It's important not to disturb their flow! I'll try to get one field completely finished before I start another depending on coaches schedules, games, weather or anything else that might cause difficulty. We have good communication with our coaches so everyone is on the same page.

STAN MOSCRIP, GreensGroomer WorldWide

Hollow tines are used primarily for two reasons. One, to remove unwanted soils and thatch from the existing soil profile in order to change the composition by replacing with a desired product such as sand to promote agronomic health and conditions. By gathering and removing the cored existing soil as part of a regular maintenance program, over time, the profile of the field can be modified drastically. The second reason would be to accomplish the goal of relieving compaction of existing soils and promoting proper drainage. By coring and removing dense and compacted soil, and then filling the core holes with a product that allows the free movement of water and air through the soil profile, drainage issues can be alleviated.

Solid tines are used primarily for promoting a "quick opening" solution to alleviate an "acute" issue such as a need to introduce seed to soil contact for germination in the short term, or to allow the movement of air or water deeper into the profile.

Primarily by being prepared through advanced planning. Having a pre-aerification checklist that covers all of the eventualities of the process is important. Visualize what you want to accomplish and then plan accordingly. Aerification is a violent process that, when done well, is of the utmost benefit to the health of the grass plants and soil profiles on your property. Having the needed equipment well maintained, a fully functioning irrigation system, waiting for proper weather conditions, and an action plan in place, is of the utmost of importance. This is true whether a simple solid tine run is made in order to overseed between the hashes, or whether a full out core aerification and topdressing program is used. Far too often, challenges arise that could have been met through proper prep.

DON SCHOLL, CSFM, City of Tracy, CA

Our turf management program incorporates both solid and hollow tine aeration. When I started with Tracy we had only one pull-behind core aerator. That unit still serves us well, but our inventory now also includes both a large deep-tine aerator and a smaller ride-on deep-tine aerator; a walk-behind small area unit; as well as a larger slice aerator. Depending on the time of year, upcoming scheduled sports uses, the goal of the project (e.g. overseeding, compaction reduction; temporary drainage improvement, etc.), field conditions, and frankly, available staff time, the type, size and angle of the tines will vary.

Tracy's sports fields and parks have very tight, compacted soils. I am a huge proponent of the benefits of aerating so we tend to be aggressive in our aerating and will use anywhere from ½-1" solid tines and ¾-1 ¼" hollow tines; length/depth will vary from the 3-4

inches up to as much as 16 inches (we rarely are able to get more than 10 inches depth due to soil conditions).

Early spring and fall are the 'must-do' times for our aerating. This is typical for parks and lesser-used remote fields. At our more heavily used sports facilities we attempt to aerate an additional 2-4 times per year or more. Since we program in 3-week long 'rest' periods for the most fields (avoiding closures during peak youth recreation season), those will get a very aggressive deep-tine aeration during those periods. At other times we will use either the 4-inch hollow tines and then immediately break up the cores, or as temperatures rise during the summer, the slicer will be used more frequently.

The benefits are many. We get deeper rooting, better drainage, fewer weed infestations, and better water penetration to name a few. The results are a denser and more durable playing surface that is far more uniform in playability with the ultimate outcome of being a safer surface for the athletes. Aesthetics also improve as a result of a good aerating program but to be honest, that is not a priority for me but merely a bonus of good cultural practices.

The biggest challenge is simply finding the staff time to perform the task as often as I would like, and then squeezing the work in between field uses. Like most public agencies, we don't have an overabundance of staff and the demands on our fields are high. We force ourselves to get this task done whenever time allows because my experience has been that, next to proper irrigation, aerating is the most important cultural practice to a safe, quality field.

Other challenges I faced in the early years of implementing the aerating program and programs such as the field rest periods was educating our user groups. They were not accustomed to the sacrifices *they* had to make in order to achieve better quality playing surfaces. It took some time, but for the most part I now have tremendous support from our users and the City Council is now very supportive of our efforts. Our fields aren't perfect but they are a far cry from where they were before the current turf management program being implemented.

MYRON SARGISSON, Broyhill

Using hollow tines is a great practice in early spring and late fall before heavy play begins and when it's ending. Hollow tines relieve the soil and enhance grass plant growth; the down side is as cores are being pulled it disrupts playing surface until coring holes fill and grow in.

Solid tines are less disruptive to playing surface and opens up soil for air and water penetration. If solid tine moves while under surface to fracture soil to disrupt more sub surface area than just the hole, in most cases you will see improved plant growth. As a solid tine penetrates the soil there is some compaction but the benefit outweighs any fracture compaction.

Another option to hollow core and solid tine aeration can be slicing aerator. A round disk with several slicing points on a single disk, several disks make up the width and rotate while being pulled through playing surface. Some manufactures offer these in a gang arrangement that are offset to slicing surface not covered by front gang.

A great choice during the playing season due to less playing surface disruption and can be used more time throughout the season. Slicing aerator slices the playing surface opening up for aeration and water penetration. Slicing is fast, efficient and slicing depth that can change throughout your season of play. Great way to use slicing aerators is change directions each time you aerate. If you have the final resources to hollow tine or solid tine in Spring & Fall and slice aerate in playing season you can expect great results.

BROOKS HASTINGS, John Deere Golf & Sports

Hollow tines are best suited for situations that require soil to be removed, such as amending the soil profile. Solid tines can be used when aeration is required, but expending resources to remove plugs is not an option.

Sports turf managers can avoid challenges when aerating by knowing what priorities they are aiming to accomplish with each aeration event. This will help with the decision making process regarding tine size/length, hole spacing and tine block configuration. A few key considerations:

- First, operators should ensure the aerator is operationally sound.
- Once it is set up with the proper tines, tine blocks and hole spacing, sports turf managers should make a 'test run' on an inconspicuous area of turf to understand if any additional adjustments need to be made.
- Lastly, be sure to communicate with stakeholders that will be affected by the aeration. Having a transparent aeration schedule that stakeholders can see will offset any surprises by members or players.

JEREMY OPSAHL, The Toro Company

Aeration is a great practice for establishing and sustaining healthy, vigorous turf. Hollow tine aeration is ideal for removing excessive organic matter and reducing soil compaction. It involves removing cores (plugs) of soil that are often pulverized and returned to the turf canopy or removed. Many turf managers will apply top dressing to the freshly aerated turf to help preserve the aeration channel. Hollow tine aeration can be stressful and is best done when the turf is actively rooting.

Solid tine aeration creates holes in the soil without pulling a core. It's an effective practice for improving air and water movement into the rootzone. Since no material is removed, the process is considerably faster and easier than hollow tine aeration. Additionally, turf is ready for immediate use after making this a popular aeration treatment during peak season.

The most effective step to avoid aeration problems is to first create a comprehensive aeration plan. Turf managers must determine the aeration type that best fits their need, schedule and resources before any work is done. For example, core aerating is an effective means of reducing compaction while solid tine is not. However, turf recovery is much longer with hollow tine aeration and is more labor intense. The best aeration strategy includes a variety of aeration treatments and is done regularly. [ST](#)

John Mascaro's Photo Quiz

Answers from page 27

John Mascaro is President of Turf-Tec International

These irregular patches of scalped turf are the result of hungry rabbits. This sod farm in Littleton, CO is surrounded by enough native land to support a population of more than 100 rabbits. The nice green bluegrass on this farm proves too tempting for them and since rabbits love to eat grass, they often will munch it all the way down to the crown, putting a lot of the stress on the plant. However, the damage usually grows out and stress is not lethal to the turf, it is similar to scalping it with a mower. Even though the farm uses coyote cut outs for deterrents, the crew usually just tries to run the rabbits off if they see them during the day. But in the evening after the crew has gone, the rabbits come on to the edge of the field and feast on the bluegrass. It seems that Colorado is not only attracting tourists for their grass, the local animals can't seem to get enough either!

Photo submitted by Ross Kurcab, CSFM, sports field consultant. Joe Wilkins III is general manager at Green Valley Turf Co in Littleton.



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.

IT'S YOUR GRASS ON THE LINE. SAVE IT WITH THIS PAIR.



TRIWAVE 40

- ▶ Hook up to your favorite turf vehicle for quick and easy seeding
- ▶ Patented floating heads follow the ground contour—you won't destroy unmarked sprinkler heads
- ▶ TriWave technology creates the optimum slits for improved seed-to-soil contact, increasing germination by 30% while minimizing turf disruption



METE-R-MATIC XL

- ▶ Just hook up and go—ground-drive system means no hydraulics or speed calibration
- ▶ 60" drop spreader with extra large hopper capacity for less reloading
- ▶ Patented Chevron® belt ensures uniform application of all types of materials, regardless of moisture content



WWW.TURFCO.COM

Demo TURFCO on your field — call 800-679-8201 today.

TURFCO MANUFACTURING, INC. | 1655 101st Ave. NE | Minneapolis, MN 55449-4420 | TOLL FREE 800-679-8201

THE SPORTSTURF INTERVIEW: MIKE TARANTINO, CSFM

Editor's note: This month in "The SportsTurf Interview," we hear from Mike Tarantino, CSFM, director of maintenance and operations, Poway (CA) Unified School District. Tarantino is a long-time STMA advocate and former Board of Director member who has led the work on several important association initiatives.



Mike Tarantino, CSFM

SPORTSTURF: What are your biggest challenges working for a school district? How are you meeting them?

Tarantino: Without a doubt it is budgeting. Since the "Great Recession" school districts have seen their budgets slashed. My departments lost 30% of our workforce and millions in dollars for supplies, contracted work and project work. However, it is important to keep your eye on why we do what we do, educating children. With that said, money needs to be directed to the classroom: teachers, teaching supplies, textbooks and providing a safe, orderly and aesthetically pleasing environment. My sports fields are classrooms that provide the tool for PE teachers and coaches to educate children and these sports fields need to be safe, orderly and aesthetically pleasing. I have been fortunate working here in the Poway Unified School District as they understand and support what I do to make the sports fields the best they can be for the benefit of children. There of course are other issues: drought, storm water regulations, pesticide use and renovations that loom large; however, most can be managed through proper budgeting.

Meeting these challenges is not all that difficult with proper planning. For my high profile fields, I rely on my past Player Condition Indexes (PCI). When performing the PCI I record past practices, weather conditions and materials used. This information allows me to know what has worked and what hasn't and to budget accordingly. A working relationship with suppliers and contractors as well as internet use is another valuable tool for keeping up to date on new technology or

products that provide me with information to include in my budgeting process.

SPORTSTURF: How has social media impacted your work?

Tarantino: It has increased my workload. Our work is constantly under scrutiny and now is available to the world to scrutinize! So now I must monitor emails and social media to see if there is a problem with any of the fields. I have created a social media "friends" group to be proactive if there is a concern my staff or the community or I have on particular fields or for field closures. And yes, it also goes out via email to our users as well.

With this said, social media and email also provides me with information that I may not know about, i.e., events not posted on our facilities calendar or work we may have missed or sub-par maintenance.

SPORTSTURF: What are the most important changes you've seen in sports turf management since you have been an STMA member?

Tarantino: The use of social media, apps and the growing professionalism in our industry. I discussed social media and what that has done to change the way I work and communicate. With smart devices (is that an oxymoron?) and the use of the internet information to help problem solve, help is now literally in the palm of your hand! You no longer need to go back to the office or the shop to grab a reference book to problem solve you can do it right on the field, and if you determine the problem and need materials to remedy the problem the material can be ordered from the field.

With my years in STMA this organization has always strived to be the very best and to promote our members as professionals. It is so important that professionalism is represented in our core values, mission statement and in our credo, "experts on the field, partners in the game." Our membership numbers keep growing, attendance at the annual conference keeps growing and the need for networking and education is very much in demand.

It is important that our membership stays current on new technologies, new products, climactic conditions, and federal and state regulations. We also must include synthetic turf fields and the maintenance they require, and to be able to discuss synthetic turf field concerns to their communities and employers; in other words, be professional.

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

Tarantino: Passion, what a strong word. My passion is something that I found in 1987 (don't tell my wife, she was my first passion, starting in 1970). In 1987 I attended a seminar in San Francisco and met Steve Wightman. I was new to the Poway Unified School District and one of my duties at the district was to maintain the sports fields. I had no formal training in this but since I could grow grass in a landscape setting, I figured how hard could it be?

I soon realized I didn't know enough about the demands of a sports field! Steve in that seminar brought out my passion for learning and the love of the green industry. Steve shortly thereafter took the turf manager's job at Jack Murphy Stadium in San Diego and in 1990 I joined the National STMA and my local chapter.

It was at the local level that I soon realized how important STMA is and what it could do for me and others in the green industry; networking and education and I soon realized that at one time or another we all have had the same problem but not all the same results. STMA is like opening up a reference book, researching the problem and discovering the solutions through a variety of methods, networking being the most important to me. I'm a people person, so I enjoy listening and talking to people, picking their brain on solutions and running ideas through them and hopefully being of some help to others.

This really is what STMA is about: people helping people. I have not found another organization whose members are so willing to assist their fellow members; we are a very confident group of individuals that promote a common goal, safe playing fields for all. There are no trade secrets, and information is passed on willingly.

So my passion is to continue what Steve instilled in me in 1987; to continue to be a learner, find your passion whether it is in the green industry or elsewhere but more importantly, to be what Steve was to me, a mentor and a friend.

SPORTSTURF: What STMA project are you working on currently?

Tarantino: I am currently the Chair on the Natural Grass Task Force and Chairing the Seminar on Wheels and Co-Chairing the SAFE golf tournament for the National Conference being held in my home town, San Diego, in 2016.

The Natural Grass Task Force has been challenging. This group of volunteers has been tasked with bringing the importance of natural grass to other sports turf managers, their customers and the general public. This is a very diverse group, all with a passion for natural grass and the important role it plays in our communities. The role of natural grass is often overlooked unless you are a player or a parent whose child is playing on a poorly maintained sports field. It is the Task Force's role to promote the use of natural grass playing surfaces through education including magazine/newspaper articles, training videos, the education of the STMA members and the general public. We are making progress but our work is far from over. We are currently working on an article that we

hope will be out soon on the benefits of natural grass and how communities (this includes all schools, park and rec and professional) can become educated about the benefits of natural grass, how to recognize a safe field, and what can be done to keep or make the field safe.

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

Tarantino: Tough question. I'm not a basher of synthetic turf fields. I have approximately 20 acres of synthetic turf fields and approximately 165 acres of natural grass.

We need to come to the realization that the synthetic turf fields are not going away, we need to do what we do best and that is to educate our membership on promoting natural grass, understanding the health concerns of synthetic turf, how to maintain synthetic turf and to offer viable solutions to our members when faced with making a selection.

Synthetics to me are a tool; my stadium fields are all synthetic, as they could not be maintained on what budget I could allocate to them for the amount of sporting events played on them. It was my only logical solution if I wanted to have a safe playing surface.

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

Tarantino: Don't get me wrong I like technology but I feel technology (apps, texting) detracts from the interaction between people and I fear that we will have a world of people that will not know how to communicate with each other beyond texting. This is a scary thought for a people person.

Technology will quicken the way we problem solve and do things. I can see mowing in the future that will be done via GPS guidance (unmanned), mowing could be done in the evening hours freeing up time to concentrate on the turf or soil.

The turf industry will need to invest more dollars into research to develop that "super" grass that can compete with the synthetic turfs.

The industry and STMA will need to be on this cutting edge to keep up with the information stream and provide information to its membership. We will also need to demonstrate to a younger generation the importance of being able to communicate face to face and that relationship building is important to succeeding in any profession.

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

Tarantino: I love to cook for family and friends. It's kind of a hobby that I find relaxing. I'm not sure that there is anything that beats a good meal with great company.

I know that when I retire I will get back to into my artwork. Most people don't know that I was an art education major and really wanted to teach high school art. I still dabble now and then but will get more serious once I retire. Too busy now working on a 3-dimensional canvas: my sports fields. **ST**

TROY RUDOLPH: ASBA's first triple-certified builder

With CFB, CTB and CTCB designations, the association's Track Division president is encouraging the industry to seek credentials

■ BY MARY HELEN SPRECHER

Talk about an overachiever.

Troy Rudolph of Sunland Sports, Phoenix, AZ is currently the only individual in the industry (as well as in the American Sports Builders Association) to hold three (yes, three) professional certifications in sports construction.

Presently, Rudolph not only holds the Certified Field Builder (CFB) credential, but the Certified Track Builder (CTB) and Certified Tennis Court Builder (CTCB) credentials as well.

The road to certification, he notes, was not a straight shot, nor was it easy.

"I got my tennis certification in 1999," he notes, "but I let it expire. I took the CTB exam 2 years ago, then went and retook the tennis exam."

He originally sat for the Certified Builder-Synthetic (CFB-S exam), but did not pass. Later, he decided to sit for the CFB exam (which incorporates knowledge of both natural and synthetic fields.) His persistence paid off and he passed it the second time.

Now, he notes, he is focused on keeping all three certifications up to date and active. (Certification must be renewed every 3 years in order to remain valid.)

Builder certification is voluntary for ASBA members, and is applicable to individuals (rather than to companies). In order to be eligible for certification, an individual must complete an application that shows a specific amount of experience in the industry. He or she must also successfully complete a comprehensive exam

in the area of field, running track or tennis court construction.

Rudolph, a 31-year member of the industry and an active member of ASBA, is (not surprisingly) a strong advocate of certification for builders, noting that as awareness of the credential grows, and as more owners write it into their bidding documents, it becomes a powerful marketing and sales tool.



Troy Rudolph

"Having one person certified tends to fuel other contractors to take the test. I have people on my staff that want it now, and I push owners to require it. It's really useful in the marketplace."

— Troy Rudolph

"Certification is valuable now," he states. "And as more owners require it, it will become more widespread."

Already, he is seeing the growth of the reputation of the certification program.

"When I first had the tennis certification, I was the only contractor in the state of Arizona with it."

That, he noted, did not last long.

"Having one person certified tends to fuel other contractors to take the test. I have people on my staff that want it now, and I push owners to require it. It's really useful in the marketplace."

Rudolph originally worked with Sunland Asphalt. Sunland Sports, a separate company, is his own entity, and allows him to demonstrate his area of expertise. The company builds tennis courts, running tracks and synthetic fields.

In addition to his work at Sunland, Rudolph is an active volunteer in ASBA, and is currently the president of the Track Division, where he is responsible for all the Association's activities with regard to this type of facility.

With three certifications under his belt, of course, the question becomes: is he ready to look outside the industry and sit for another test?

"No," he laughs. "I think I'm good for now."

Note: those interested in information about the ASBA's Certified Builder program can find information at the website, www.sportsbuilders.org, under the tab on the blue menu bar, reading "Certification." **ST**

SportsTurf

Subscribe today to choose the version that fits your Lifestyle

- Available one week prior to the print version
- **BONUS:** Expanded content
- Page for page replica of the print version
- Read content instantly – no downloading required
- Hot links to advertisers websites
- Save a Tree – every page you read online is one that didn't go through the paper mill.

Digital issue not for you?

You can subscribe to either version

– simply click on the link below

to claim your **FREE 1-year subscription**



• iPad • Mobile • Print

www.sportsturfonline.com/subscribe

STMA COMMERCIAL MEMBER SPOTLIGHT: COVERSPOUNTS USA

Editor's note: This month we debut a new feature that will appear occasionally, the STMA Commercial Member Spotlight. To kick it off, Fred Hoge, vice president of CoverSports USA, answered our questions:

SportsTurf: How do you develop relationships with turf managers?

Fred Hoge: The key to developing successful relationships with turf managers, or any customer, is to meet their needs. That concept might seem simplistic, but it is a core principle espoused by such business icons as Jeff Bezos from Amazon and Peter Drucker.

Customer needs related to product performance, on-time delivery, pricing, and customer service are all factors. Our objective is to meet customer needs across the board, not simply in one or two areas.

A few cases in point:

► Fred Hoge



When CoverSports began manufacturing winter turf blankets/growth covers more than a decade ago, most competitive products were made without reinforced hems and grommets; the blanket was rolled on the edge and staked in place. During windy conditions, the fabric could tear and blow the cover off the turf it was to protect. Turf managers expressed a need for a blanket that would resist tearing and stay in place. CoverSports introduced a cover with reinforced hems and heavy-duty grommets, virtually eliminating the tearing problem and assuring turf protection. The product met the need of turf managers and has become well accepted in the market.

Every baseball season, a week or so before opening day, we receive a call or two: "I just received budget approval for a new infield cover. Can it be delivered for our home opener?"

As a manufacturer with 100+ employees, CoverSports can adjust its production schedule to respond. We view this capability as another way of meeting an important customer need: on-time delivery.

This spring I visited a minor league park during the NCAA Division II regional baseball tournament. I realized that the infield tarp and (unused) tube storage cover for the tarp and roller had been purchased from CoverSports. When I spoke with the groundskeeper between games, he told me that the storage cover had mistakenly been ordered 4 feet too short for the roller and could not be used.

I asked him to ship the tube cover back to our

factory, where we added the extra length and shipped it back to the customer at no charge. We had no obligation to modify the cover and there was some cost for us, but in line with our philosophy of meeting customer needs, it was the right thing to do.

Of course, to foster relationships with turf managers, CoverSports is an active member of STMA and affiliated chapters (KAFMO, NESTMA, STMNJ, and others). We participate in national and chapter trade shows to make face-to-face contact with customers. The underlying mission is to understand customer needs and to fulfill them. If we employ that approach successfully, the relationships with turf managers will be successful as well.

ST: Do you have any recommendations for customers on how to get the most out of their supplier relationships?

Hoge: With demands on time in the workplace today, it is often tempting to view contact with suppliers' salespersons as unnecessary. I know firsthand because I have done much of our purchasing over the years and still do some. Reputable suppliers, however, are resources not only for products, but also for valuable market and industry information and should be heard.

To maximize the supplier relationship, the turf manager must invest some time to communicate with the supplier. To be most effective, the customer should schedule a meeting time (don't make it a practice to meet if the sales person arrives unannounced) and be prepared to cover the issues on his/her agenda.

Specifically:

■ Communicate needs. For example, years ago, turf managers requested field cov-



Evidence of growth blankets' effectiveness

ers that did not need stakes or sandbags for them to remain in place. The weighted cover was born! Today weighted spot covers are standard for baseball, track jump pits and other sports applications.

- Describe an unsolved problem. Suppliers often know other customers with similar issues and may be able to make a recommendation or provide contact information for assistance.

- Ask about industry trends, new products, upcoming events, etc. Knowledgeable salespersons can be a wealth of market and industry information.

- Determine supplier credibility. Get to know the supplier, so you can feel confident in his ability to perform and/ or stand by you in time of need. In the case of a new supplier, ask for references and check them. Visit the manufacturer; seeing the facility, viewing the manufacturing process and meeting personnel will tell a lot about the product and the supplier.

ST: How do you typically research and develop new products?

Hoge: Our new product process ideally works as follows:

Identify a customer need that none of our existing products can meet.) One comment by a customer may start the process, and then we ask other customers if they have the same need.

Business analysis. Through research we determine if this is a need with worthwhile market potential. If so, we identify competitive products and pricing. Then, estimates of potential sales and profitability are developed.

Product development. If indicators are positive, we design the product to meet the customer need. Ideally, it would be manufactured with existing machinery, minimizing the need for new capital equipment.

Test. Manufacture prototype(s) and test; for our winter turf blanket/growth cover, CoverSports contracted with Penn State University's Valentine Turfgrass Research Center for a credible, independent test. The results proved the product's effectiveness through an authoritative, respected source.

Test market. Sell the product on a limited scale. It allows us to obtain customer feedback, modify the product, and identify any issues before full commercialization.

Full commercialization. The product is launched with a complete marketing plan.

Performance evaluation. After 1 year, we measure sales and profitability vis-a-vis goals. We evaluate the results and develop a marketing plan for the future.

It takes a few years from concept to commercialization.

ST: Are there any new technologies you are developing that you can share with us, or any new products that will soon be available?

Hoge: Digital printing on covers for a variety of athletic surfaces is not new, but it is a trend with enormous momentum. In today's culture, teams, schools, colleges and universities and other organizations want to promote their brand. To support that effort, ad sponsorship is encouraged. The trend to promote brands and generate ad revenue is creating huge business opportunities.

CoverSports has invested in digital printing equipment to create images on several products we supply, including field covers, mesh windscreen/fence covers, banners, wall padding for gymnasiums and stadiums, etc. We print images designed by our in-house graphics team or from customer files to match pantone colors or custom shades. Using this new equipment, large jobs can be printed quickly at very competitive prices.

ST: Are there any new markets that you are entering?

Hoge: In 2014, our corporation began selling awnings and canopies for residential and commercial applications through Globe Canvas Products, a recent acquisition.

This year, retractable awnings were added to the product line. Perhaps there is a stationary and/or retractable shade system for athletic venues somewhere in the company's future. **ST**

PRODUCTS



TURFCO TURNAER XT5

Turfco's TurnAer XT5 steerable and reversible aerator now offers increased speed, a new weight system and a new gear ratio system, improving efficiency and hill performance. The weight system allows operators to adjust weight in the back of the aerator, improving control on hills, and the gear ratio system gives operators 14 percent more speed. The TurnAer XT5 also utilizes Turfco's patented steerable aerator technology with a new variable-speed hydrostatic drive system, providing 50 percent more productivity than traditional aerators. Additionally, operators can steer and reverse with tines in the ground eliminating need to stop, lift and turn with each pass.

Turfco Manufacturing



STIHL UNVEILS NEW HEDGE TRIMMERS

The new STIHL HS 82 and HS 87 hedge trimmers (22.7 cc) provide precise and tough cutting for professional performance. Several features make these hedge trimmers a great choice for any landscape professional: New fuel efficient engine uses 20% less fuel than

the previous models which allows for longer run times and reduced costs; lightweight, well-balanced design allows for longer work hours with reduced fatigue as well as easy maneuverability around large shrubs or hard to reach spaces; low-vibration technology and swivel handle provide improved comfort compared to previous models; convenient multi-function control handle makes it easy to start and stop the trimmer and all of the throttle controls are in one central location.

STIHL Inc.



STEINER NEW SNOW BLOWER

STEINER introduces the SB648 Professional Snow Blower, a new dual-stage unit that is designed to increase productivity with a 48"-wide clearing path moves snow up to 27" deep. Together with the STEINER® 440 Tractor, the SB648 is designed to blast through winter's toughest snow conditions. Constructed of cast iron and heavy-gauge steel, the snow blower is equipped with an 18" four-blade impeller, a sawtooth auger and 237° chute rotation, resulting in exceptional snow clearing performance. The Professional Snow Blower's 48"-wide clearing path moves snow up to 27" deep, making it ideal for use on large residential driveways, parking lots, walkways and other thoroughfares.

STEINER

KIOTI TRACTOR DEBUTS NEXT GENERATION CK10 MODELS

KIOTI Tractor Division Daedong-USA, Inc. announces four new models to its CK10 Series. Built with a Tier 4 compliant Daedong eco-friendly diesel engine, the new CK10 models serve as the next generation of KIOTI Tractors and include two gear and two hydrostatic transmission (HST) models ranging from 25.4 to 40 horsepower (HP). The new CK10 models value safety and comfort for the operator. The modern and self-supporting hood design provides the operator with excellent visibility



and enables quick and convenient access for maintenance. Additionally, the ergonomically designed suspension seat, power steering and conveniently located standard single lever joystick allow the operator to ride in comfort no matter what the task may be. HST models feature performance-proven, heavy-duty HST drives that deliver power and efficiency. The dual pedal operation makes any job easier with smooth forward and reverse engagement reducing fatigue when doing repetitive tasks. When the optional HST linked pedal is engaged, the HST pedal and the engine rpm are synchronized, reducing fuel consumption and simplifying tractor operation for a variety of utility and loader applications.

KIOTI Tractor

ELECTRIC START BACKPACK BLOWER

The STIHL BR 450 and STIHL BR 450 C-EF backpack blowers come packed with new features for operator comfort and convenience. In addition, the BR 450 C-EF model is the first professional STIHL blower equipped with an integrated instant electric start. The electric start is conveniently powered by an on-board battery that charges while the unit is running, making it an ideal product for pros on the go. Newly designed telescopic tube adjustment that allows the user to quickly adjust the length for a variety of user heights and cleanup applications.

STIHL Inc.



SAFE FIELDS FOR ALL

that's the root of our mission



7 MILLION
SPORTS AND RECREATION-
RELATED INJURIES OCCUR IN
THE U.S. EACH YEAR

62% of injuries happen during practice



50%

IN KIDS UNDER
THE AGE OF 15

AS AN STMA MEMBER, SAFE IS YOUR CHARITABLE FOUNDATION. We work to enrich communities by championing safe, sustainable fields for all athletes – providing research, educational programs and scholarships to help meet the industry's need for more qualified sports turf managers.

SO FAR, WE'VE GIVEN OVER
\$225,000

in scholarships & travel reimbursement
to 120+ students



of SAFE scholarship recipient
graduates work full time in sports
turf management

**TOGETHER, WE CAN
DO SO MUCH MORE.**

**OUR GOAL: \$1 MILLION OVER THE NEXT 5 YEARS
FOR NEW PROGRAMS AND RESEARCH**



80%
of the 2,600 STMA members
from 33 chapters around the
country have never donated

We rely on individual donations for
60% of our total funding

**PLEASE
DONATE
TODAY**

SAFE

The Foundation for Safer Athletic Fields for Everyone

Follow us on Twitter @SafeFields

WWW.SAFEFIELDS.ORG

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



DON DUNKER FIELD,

Noblesville Schools, Noblesville, IN

Category of Submission: Schools/Parks
Baseball

Sports Turf Manager: Josh Weigel

Title: Superintendent of Grounds

Education: Bachelor's degree in Turf
Management

Experience: Bachelor's degree in Turf from
University of Tennessee (2007). Interned
with the Indianapolis Indians in 2006.

After college took the Assistant Director
of Grounds position at Wesleyan School
in Norcross, GA. A year and a half later
became the Director of Grounds (2009-
2013). The start of 2014, I accepted the job
as Noblesville Schools Superintendent of
Grounds in Indiana (Jan. 2014-present).

Full-time staff: Rex Wallace

Original construction: 1992

Rootzone: Native soil, sandy loam

Turfgrass variety: Kentucky bluegrass
overseeded with ryegrass

Overseeding: We overseed with Sunrye
GLR mix at a rate of 10 lbs./1,000 sq. ft. this
past September. We also overseeded in
March 2014, at a rate of 12 lbs./1,000 sq. ft.

Drainage: No system installed

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

WHY STMA SHOULD CONSIDER YOUR FIELD A WINNER?

Noblesville Schools was like every other public school in America. Although their athletic program was important to them, it was not a financial priority to maintain their athletic fields. That started to change 5 years ago when the Director of Operations, Jeff Bragg, hired Jamie Mehringer and J&D Turf to start a fertility program along with getting their skin up to grade and continually improving it. Once this program took off, Dunker Field started to differentiate from other schools in the area. Noblesville took it one step further and hired a college-educated sports turf manager. With the creation of this position, the field would not only have someone looking over it year round, it would actually have someone who knew what they were doing, maintaining it. They would also go on to purchase a Toro Sidewinder to yet again separate themselves from other schools. Just by adding a manager, one mower, and a fertility program costing no more than \$10,000 a year, Dunker Field stands out from all the rest.

In the pictures attached, you can see the difference from just 3 years ago to today. We recently hosted a tournament, and spectators who had been coming to the field for years thought we had tore the field up and built a brand new field in the offseason. I simply responded with, "If you have the right equipment, someone who knows how to use the equipment, and a little bit of money, you can have this field as well."

I think Dunker Field deserves the Field of the Year Award, because of what it started out as and what it has become. We are a good example to other public schools that they can have these types of fields as well; it just takes a little TLC. To most people, aesthetics of a field are all that matter but to us sports turf managers, playability and field conditions area major factor. Dunker not only looks great but also plays and drains excellently. Between three high school teams games/practices, travel ball, fall ball, and hosting two-three tournaments, the field held up great. The main picture shot behind home plate was taken right before our State tournament in June. Before this photo, 45 games and who knows how many practices had been on the field. There was a



span of 3 weeks where Sundays were the only day a game was not played on the field.

We contract a lot of work out to J&D Turf but daily maintenance is done by two people who are in charge of 16 other fields in the district. Finding time to keep Dunker in the shape it is in is very hard work but it is well worth it at the end of the day. The standard at Noblesville has changed and if someone were to go to any of our other 16 fields, they would see the same result. Being a sports turf junkie, I know and hope more and more public schools in the area have noticed and are working to raise the bar as well.

ST: What are your specific job responsibilities?

Weigel: I oversee and maintain 17 athletic fields consisting of baseball, softball, football, soccer, track and field, rugby, and lacrosse for Noblesville School District. We also have a pristine cross-country course as well as a full practice band field. Daily we mow, weed eat, paint, and set up for each event. We are fortunate to contract our fertilizer applications, chemical applications, aerification and topdressing out to J&D Turf. I write and oversee the program but do not do the applications. Twelve of our fields are irrigated, so I program and sometimes repair (together with our maintenance staff) any heads or pump issues we have.

ST: What do you find most enjoyable?

Weigel: Seeing the student athletes compete on the fields is the most enjoyable part of my job. The end result of all our hard work and dedication is put to use at the end of the day when the teams take the field. My crew and I enjoy seeing the visiting teams use our facilities, especially when they compliment the way the fields look and play. Even our student athletes compliment us daily, which makes it all worth it.

ST: What task is your least favorite and why?

Weigel: I would say the least favorite part of my job is all the driving I do daily. Our school district is very large and it can take 15 to 20 minutes to get from one field to another. If I do not have our day planned and equipment prepared, I can spend a lot of time in the truck. We are constantly on a time frame, and it really bothers me to see the clock tick while I'm in the truck and not on the fields.

ST: How do you get the most out of your budget at the schools/parks level?

Weigel: We prioritize everything. First and foremost, the budget money goes to the safety and playability of the surfaces of our student athletes. After that, we manage the maintenance and upkeep of 17 fields and 36 acres through a combination of

First and foremost, the budget money goes to the safety and playability of the surfaces of our student athletes.

our local resources and our talented maintenance staff who have the ability to address all needs from mechanical, electrical and plumbing, to the exterior painting, roofing, and concrete work.

ST: How did you get started in turf management?

Weigel: While growing up, I mowed several yards around town, and always had a passion for it. At the time, I didn't realize you could actually go to college and study turf. I started my freshman year at Indiana University where I studied Sports Marketing/Management. The following year, I transferred to the University of Tennessee where my girlfriend (now wife) was enrolled, with intentions of continuing the same major. There I met Dr. John Sorochan, associate turf professor, who persuaded me to go into the turf field instead. Besides marrying my wife, this was the best decision I have made.

ST: What was your first sport turf-related job?

Weigel: At UT, during my junior year of spring semester (turf block), I was required to take 9 weeks of turf classes and then start my internship (mid-March). I was fortunate enough to intern with the Indianapolis Indians under the tutelage of Jamie Mehringer. I feel like I got a late start in turfgrass management compared to my colleagues, but after spending an entire minor league season with Jamie, I felt like I caught up quickly.

ST: What changes if any are you considering or implementing for the winning field in 2015?

Weigel: With public school budgets always being tight, it is tough to change things up. We have had success with our current program so we won't change anything there. I have plans to do some warning track work along with raising our synthetic halo around the plate.

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

Weigel: When I first started my career, I worked all the time and that was all I wanted to do. Once I got married, I tried my best to get home at a reasonable hour, but at times it was tough, and I couldn't get work off my mind. Sometimes my wife would come into work with me on the weekends to keep me company or just so we could spend time together. Once we had our first child, things changed. I soon realized there was a lot more important things in life than turf, and that the work would still be there in the morning. The neat thing is that my wife used to come in on the weekends with me to walk the fields etc., and now my oldest son (3) comes with me and loves it. Maybe one day I can pass my love of sports turf to my children.

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

Weigel: Our school district's enrollment keeps growing every year. We currently have over 10,000 students in the district. I can see if the upward trend continues, we will have to add more school buildings, which would lead to more athletic fields. Even with our 17 athletic fields and 20+ acres of recreational space, field availability seems hard to come by these days.

27th Annual

SportsTurf

MANAGERS ASSOCIATION

Conference & Exhibition

January 19-22, 2016

San Diego Convention Center ~ San Diego, CA

Host Hotel: Manchester Grand Hyatt



© Alancrosthwaite | Dreamstime.com



7 guidelines to impeccable conduct

As a professional association, the adherence to a Code of Ethics and Professional Conduct Guidelines by membership is essential. A Code of Ethics is a significant indicator of individual responsibility, character and professionalism. The Code of Ethics is legally enforceable and membership sanctions can be implemented if violated.

Professional Conduct Guidelines encourage the highest standards of conduct among the membership of STMA. These guidelines are a companion document to the STMA Code of Ethics. While professional conduct guidelines may not be enforced with membership sanctions, noncompliance with these guidelines should be noted

and self-policed by fellow STMA members, officials and affiliated chapters. In assessing one's actions, all sports turf managers should ask the question, "Would my actions meet with the approval of other sports turf managers?"

Follow these guidelines to be viewed as a professional:

STMA Professional Conduct Guidelines

1. A member should always contact a fellow sports turf manager before visiting his or her facility regardless of the reason for the visit, other than when attending an educational meeting, association event or as a spectator at a public event at the facility.



Featured Chapter – Pacific Northwest STMA
The PNSTMA has unveiled a new logo!

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



JOHN DEERE



2. A member should only submit an application for a position and/or accept an interview for a position currently held by a fellow sports turf manager if the applicant has contacted the current sports turf manager to verify the position is open, or if the applicant has learned about the opening through an open position listing or through direct contact to the applicant by the facility's personnel.

3. A member should only accept a consulting assignment at a sports field facility if the current sports turf manager at that facility is aware of such impending consulting activity.

4. A member should make verbal consulting recommendations for a facility only with the knowledge of the current sports turf manager or make written recommendations only when

issuing a copy of such recommendations to the current sports turf manager.

5. Commercial members, soliciting business for their company's products and services, should channel such solicitations through the current sports turf manager of the facility or ensure the current sports turf manager at that facility is aware of such impending solicitation.

6. Members should always conduct themselves in the highest professional manner at all sports turf-related events and other public events where the member is representing the sports turf management profession.

7. A member should not render negative opinions or comments about fellow members. [ST](#)

Did you know STMA works with a PR firm?

At the 2013 fall meeting, the Sports Turf Managers Association Board of Directors approved the hiring of Buffalo Brand Invigoration Group (Buffalo) to gain recognition for its 2,600 members who manage sports field worldwide. Buffalo is headquartered outside of Washington, DC and has offices in Boston, Denver, Miami, Minneapolis, New York, Raleigh, NC and Richmond VA.

Over the past two years, Buffalo has collaborated closely with the STMA team in Lawrence, KS as well as individual members across the US to secure stories in both consumer and trade publications. Since November 2013, Buffalo has obtained more than \$22.8 million in PR/advertising equivalency with STMA appearing in 200-plus outlets. Non-endemic titles include: *Forbes*, *NBC*, *SB Nation*, *Sports Illustrated*, *The Washington Post*, *USA Today* and *Yahoo! Sports*.

Buffalo's aim is to gain awareness for sports turf managers in consumer outlets and educate their employers through trade publications on the complexity, technical knowledge and expertise needed to manage sports surfaces. By acquiring media attention for sports turf managers at all levels, Buffalo has increased recognition for STMA in business, sports and lifestyle outlets.

During its 2-year tenure, Buffalo has teamed with a number of turf managers on specific storylines around events, anniversaries and so on. Most recently,

they helped promote several STMA members regarding CONCACAF Gold Cup and International Champions Cup soccer matches. Placements include John Torres (PPL Park), Tom Vaughn (Bank of America Stadium) and Phil McQuade (Dick's Sporting Goods Park).

While Buffalo's role primarily focuses on proactive media outreach, they are also assisting STMA in preparation for crisis or reputation management situations that could harm the perception of the sports turf industry. This includes weekly monitoring of storylines and media "hot buttons."

In addition to placing STMA members "in the news," Buffalo also manages STMA's social media channels. Since January 2014, they have organically grown Twitter followers from 100 to more than 2,200 and counting. Other platforms include Facebook, Instagram and LinkedIn.

Rich Katz, Managing Director of Buffalo, is impressed with STMA's active membership.

"They are deeply passionate about the importance of their roles in the dynamic and innovative sports turf industry," says Katz. "Sharing their unique stories and contributions nationally and regionally helps them garner much deserved recognition."

Buffalo is always interested in hearing from STMA members and encourages you to reach out if you have an interesting

story, event or research project you would like to share. Please contact Glenn Gray, GGray@buffalobig.com. [ST](#)

Marketplace

Turf-Tec International
TOOLS FOR MEASURING PLAYABILITY AND SAFETY

The advertisement displays a variety of turf management tools and products, including soil probes, water analysis kits, nutrition analysis kits, grass analysis tools, and management products. Each item is numbered for identification.

Turf-Tec International
800-258-7477
www.turf-tec.com
Made in USA



Great **Turf** in less **Time**
with the right **Equipment**



ADVANTAGE
Topdressers



ADVANTAGE
Aerators



THATCH MASTER

*The classic
Dethatcher/
verticutter*

www.TurfTimeEq.com
800-201-1031

BEAM CLAY® INFIELDS!



Beam Clay® has supplied products to every MLB Team, most minor league and college teams, and thousands of towns and schools from all 50 states and worldwide.

Beam Clay® supplies special mixes for infields, mounds & batter's boxes, red warning tracks, infield conditioners, drying agents, plus over 200 other infield products (from bases to wind-screen), including **regional infield mixes** blended for every state and climate from bulk plants nationwide!

BEAM CLAY®
800-247-BEAM (2326)
WWW.BEAMCLAY.COM

#1 Choice for **TOP DRESSER**

*Time to
Top Dress!*



POWERED by
HONDA

Visit website for Action Videos,
Demo requests, Financing options,
Marketing materials, FAQ,
Tips & Contacts.

Ecolawn Can Spread

Pelletized products - Infield mixes
Calcite clay - Crumble rubber
Sand - Top soil - Compost
Lime - Soil amendments

Call now: **802-673-9077**

www.ecolawnapplicator.com

LINE UP

Hash-Mark Painting System

Made of lightweight aluminum & **FOLDABLE**.
Self-aligning, 5 yard units.



Alumanumber

4x6 in size, made of 1/8" aluminum
Offsets built-in for quick alignment
Three font types available

**The Only Painting System
You'll Ever Need.**

763-780-1669



Diversified Sports Specialties
www.DSSworks.com

SportsTurfInnovations.com



info@sportsturfinnovations.com

The EZ-Stringer



Never wind
manually
again

Paint fields
in less than
half the time



Can also be purchased from



The Disc Rolling Spray Shield



The Disc
How do the professionals
create precision field logos?
Try the Disc Rolling Spray
Shield Features:

- Razor sharp cutlines
- Disc shield makes contact with work surface and cuts as it rolls
- Reusable discs last for years

*"When the game is on the line,
call Athletic Field Design"*

Athletic Field Design

(503) 698-6383
www.athleticfield.com



Please complete this form in its entirety to receive your subscription.

Yes, please start/continue my FREE subscription to SportsTurf

FOR FASTER SERVICE visit our website at www.sportsturfonline.com/subscribe or fax to 847-763-9569

No, thank you.

Which version would you like to receive?

Print

Print & Digital

Signature: (required) _____ Date: _____

Name: (please print) _____

Title: _____

Company: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____

Email: (required) _____

September 2015 - Expires January 2016 - RS1509

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

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

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

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

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

4 Yearly operating expenditures (excluding salaries)

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

5 Please also send a free subscription to the following people at the same location

Name _____ Title _____

Name _____ Title _____

SEPTEMBER 2015

SportsTurf Magazine ADVERTISERS' INDEX

Advertiser	Page #	Web Address
Aquatrols	2	www.aquatrols.com
Athletic Field Design	48	www.athleticfield.com
Barenbrug USA	52	www.barusa.com
Beam Clay	48	www.beamclay.com
Billy Goat	23	www.billygoat.com
Civitas	9	www.civitasturf.com
CoverSports USA	15	www.coversports.com
Diversified Sports Specialties	48	www.dssworks.com
Ecolawn	48	www.ecolawnapplicator.com
Ewing Irrigation & Landscape Supply	5	EwingIrrigation.com/locations
Hydraway Drainage Systems	27	www.hydraway.net
Jacobsen	3	www.jacobsen.com
Koch Turf & Ornamental	13	www.kochturf.com
Redexim North America, Inc.	51	www.redexim.com
Sod Solutions	19	www.CelebrationBermudagrass.com
SAFE Foundation	41	www.safefields.org
STMA San Diego Conference	45	www.stma.org
STMA SourceBook	11	www.stmasourcebook.com
Sport Turf Innovations	48	www.sportsturfinnovations.com
Turf-Tec International	47	www.turf-tec.com
TurfTime Equipment	48	www.turftimeeq.com
Turfco Manufacturing	33	www.turfco.com
World Class Athletic Surfaces	21	www.worldclasspaints.com

Want to reach qualified buyers?

- TARGETED LEADS • SUPERIOR PENETRATION
- PROVEN VALUE • OUTSTANDING RESULTS

Then rent our list of targeted, qualified readers for your next direct mail promotion. Call today for more information regarding our product lines and extensive database marketing programs.

SportsTurf EPG MEDIA & SPECIALTY INFORMATION
SPORTS FIELD AND FACILITIES MANAGEMENT

Jim Scova at MeritDirect
jscova@MeritDirect.com • 914-368-1012

image istockphoto.com/mrPliSkin



Q&A with Dr. Grady Miller

Professor, North Carolina State University

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

OVERTAKEN WITH CRABBINESS

It was late when I thought about putting out a pre-emergence herbicide so I thought I would just roll the dice and see what came up on our high school fields. We now have lots of crabgrass in our bermudagrass. Until early July it did not look so bad. The last 2 or 3 weeks it has grown like crazy. So, what can I safely use this late in the year?

Crabby in NC

Oh, the feared and dreaded crabgrass. It is an annual grass that is fairly easy to control with pre-emergence herbicides even though it may require two applications for season-long control. That is worth mentioning since it is easy to forget it's a long time between February (first pre-emergence application) and that second flush of crabgrass that often occurs in mid to late-summer. Even with pre-emergence control, post emergence herbicides may need to be used to remove crabgrass that either escaped the preemergence application or has come up after the break down of the preemergence product.

So, areas that do not have crabgrass do not need to be treated. If your outbreak is fairly localized **this can really be a cost-effective way to control the weed.** Of course if the entire field has crabgrass, then this will likely be a more expensive way to target this plant.

So, you have crabgrass and it is late summer. Let's review some post-control options. One option is to do nothing. Crabgrass does not like cool weather. Once the summer temperatures begin to drop, crabgrass growth drops off much quicker than the bermudagrass. So, if your infestation is tolerable, then doing nothing may work. If the infestation is widespread (as your question suggests) or your threshold tolerance level is low, then a postemergence herbicide should be considered.

There is actually a big advantage to using postemergence products on crabgrass rather than preemergence control. With post applications you are targeting a known weed and treating only the areas that need to be treated. This is the foundation of a good IPM program. So, areas that do not have crabgrass do not need to be treated. If your outbreak is fairly localized this can really be a cost-effective way to control the weed. Of course if the entire field has crabgrass, then this will likely be a more expensive way to target this plant. Crabgrass can also be very unsightly since compared to bermudagrass it has a lighter green color, coarser leaf texture, and a more rapid growth.

For many years the go-to product for grassy weed control was the herbicide MSMA. This was an effective product with a low-cost. Currently EPA is considering what to do with MSMA and its status has been a moving target the last couple of years. In 2009, the MSMA label use on athletic fields, parks, and residential lawns was cancelled. The only turf areas that remained on the new label were sod farms, golf courses, and highway right-of-ways. These areas also had various use limitations. If you purchased MSMA by December 31, 2010 with an older "all uses" label then you can continue using as per the label until the supply is exhausted.

Even if you have some MSMA, you may not want to use it for crabgrass control. To me, it would be much more valuable to use the MSMA for spot spraying harder to control grasses than on crabgrass. Today there are other herbicides have more effective active ingredients specifically for crabgrass.

The suggested active ingredient for postemergence crabgrass control is quinclorac. Currently, the best known product with quinclorac is labeled as Drive XLR8. This newer formulation is a liquid and a bit faster acting than the older dry formulation labeled just as Drive (without XLR8 suffix). The active ingredient is also available as a generic product in the dry formulation. This formulation can also be found mixed with other herbicide products and sold as a combination product under various trade names.

Quinclorac is very effective on not only immature crabgrass, but also is effective on very mature crabgrass such as that commonly found in late summer. In addition to being effective on (large and smooth) crabgrass, it also has good activity on some broadleaf weeds such as black medic, white clover, and common dandelion. The active ingredient quinclorac can also be safely applied to turfgrass other than bermudagrass.

If you need greater broadleaf weed control or sedge control one of the combination products may be beneficial. If not then a straight quinclorac with the addition of a methylated seed oil (MSO) or a crop soil concentrate is sufficient for great crabgrass control. Application to weeds under stress will result in poorer control. So, apply about 24 hours after a rain or irrigation if drought conditions exist. Check the label for limitations and application directions. **SI**



BITE THIS BULLET

if you can catch it



Working speeds
near 4 mph

Introducing **'The Bullet'** by Redexim North America. This new Verti-Drain has working speeds near 4 mph for the highest performance in its field.

The Bullet has working widths of 64 and 83 inches and is the most productive Verti-Drain ever built. It is built heavier than other high speed aerators, yet it can be used with tractors starting from 45 hp and up.

Both models are low maintenance with sealed bearings on most pivot points, a single-speed gearbox and optional hydraulic depth adjustments made from the tractor seat. These units penetrate 9 inches into the soil, and our patented parallelogram action give you a true forced heave to the tines, thus producing the shattering effect and relieving compaction, leaving the surface ready for play. **NO PARALLELOGRAM - NO FORCED HEAVE.**



Depth adjustments made
from the tractor seat



See "The Bullet"
in action

Redexim
NORTH AMERICA, INC.



www.redexim.com ■ 636-825-8300

GAME ON

The Ultimate Seed for Mastering Winter Turf



Number One
Selling Turf
Annual Ryegrass
in the World

It's no wonder SOS grass seed is hot in the overseeding market. It establishes fast at lower temperatures and transitions naturally without chemical assistance when spring temperatures rise. With improved varieties that feature darker color, improved leaf texture and reduced vertical growth, SOS is an economical alternative to perennial ryegrass.

- Improved dark green color
- Fine leaf texture/Improved density
- Easier, natural spring transition
- Reduced vertical leaf growth
- Lower maintenance costs than common annual ryegrass

Exclusively From

 **BARENBRUG**[®]

Great in Grass[®]

www.barusa.com

STRONG AS IRON

Regenerating Perennial Ryegrass



Superior traffic tolerance and persistence.
Produces determinate stolons for regeneration.
Stronger grass and more playing hours.

Available in **TURF STAR RPR**

Exclusively From



Great in Grass®

www.barusa.com

