Field renovation via OVERSEEding

ach year National Football League franchises that play their games on natural turf fields are faced with worn out turf between the hash marks. Much of this can be related to the decision to narrow the hash marks, eliminate a strong and weak side attack and open the game up offensively. From a turf perspective however, the decision has been devastating.

The easy (and expensive) solution has been to periodically replace the turf between the hash marks with sod. Often this requires a Herculean effort to remove the existing turf and install new sod in a 7-day period before the next game. Not only is this expensive, it is not a long-term solution that can be adopted by many scholastic sports turf managers.

Interestingly the increased number of sand-based fields has not alleviated all the problems associated with traffic stress. It can only be surmised that soil modification is but one component of high traffic turf strategy. Clearly, the ability to rotate traffic is critical, yet very little effort has been exerted to develop seeding programs to compensate for high traffic fields.

Overseeding basics

Jim Puhalla, Jeff Krans, and Mike Goatley, authors of *Sports Fields*: A *Manual for Design*, *Construction and Maintenance*, (Sleeping Bear Press, 1999) define overseeding in the cool season zone as a means of improving turf density. This might include coring or slit/slice seeding to improve soil and seed contact. In cool season turf this is performed on an actively growing turf as compared to warm season turf that is overseeded when dormant. The distinction between warm and cool season turf is critical as success for each requires an understanding of the ecology (relationship among the organisms and their environment) of a sports turf.

The presence of an actively growing turf creates challenges to successful overseeding. For example, the existing turf has a competitive advantage over young seedling turf in procuring water and nutrients from the soil. Also, if overseeding is performed during the season, the seedling turf will have to withstand regular mowing and traffic. Therefore, successful overseeding may require a shift in thinking to sacrifice field playability for seedling turf success, i.e., field rest, reduced mowing frequency, increased irrigation for establishing seedlings, etc.

Unfortunately, many fields are incredibly overused, leaving the existing turf in a noncompetitive state. While this can be desirable from an overseeding perspective (bare soil, thin weak turf), overseeding will still be a challenge, especially if the field will not receive rest. Inevitably the success of an overseeding program depends on getting the seed in contact with the soil, resting the field, and maintaining the field as a seedbed.

The process will involve thinning the existing turf if necessary with vertical mowing or scalping. After the turf is thin either from traffic or mowing, research here at Cornell University has demonstrated the benefit of multiple core cultivation, allowing cores to dry and pulverizing. The cores are destroyed and dragged with a mat or chain link



fence. The area is seeded with a broadcast applicator or slit seeding if you prefer. Following

the seed a starter fertilizer high in phosphorus is



Replacing turf between hash marks with sod is expensive and not a long-term solution for most scholastic turf managers.

applied and the area is lightly rolled to ensure good soil-seed contact. The field is irrigated to establish the seedlings and because the field was scalped or thinned, often mowing can be withheld for at least 3 weeks. Traffic should be withheld for at least 4-6 weeks for a perennial ryegrass renovation and 8-10 weeks for a Kentucky bluegrass renovation.

Compared to most scholastic sports turf, it is hard to refer to a professional sports field as high traffic that hosts 8-10 games of one sport per season. Many scholastic fields host school and community sporting events over multiple seasons. These events occur on a less than desirable root zone and are managed with considerably fewer resources than a professional sport franchise. Consequently, innovative solutions to high traffic areas, especially the use of overseeding, must be employed.

Aggressive overseeding

Many sports turf managers at the scholastic and community level are challenged with excessive high traffic fields. These fields may start the season with full turf cover but after a few weeks the turf thins in high traffic areas to be bare ground. This leaves many questions regarding field safety as well significant weed invasion.

To address the need to maintain turf density during high traffic periods we initiated an experiment to investigate the effect of aggressive overseeding, i.e., high rates of seed applied weekly or monthly under traffic. The experiment was conducted at the Cornell's Turfgrass Research and Education Center, Ithaca, NY, on three blocks of turf (Kentucky bluegrass "Coventry," perennial ryegrass "Manhattan III," and Tall Fescue "Jaguar III"). The turf was trafficked in two directions 5 days per week with a Brinkman traffic simulator. This traffic treatment resulted in significant turf thinning over the 12 weeks of the study.

Within each turfgrass block overseeding programs were applied on Friday of each week following mowing and trafficking. The treatments were 6 or 10 pounds of perennial ryegrass or tall fescue seed per 1000 square feet applied weekly or monthly, and Kentucky

bluegrass at 2 or 4 pounds of seed per thousand square feet applied weekly or monthly. The plots were not irrigated and were fertilized in May and September with 1 pound of nitrogen per 1000 square feet. The plots were rated for turf density, weed invasion, and overall quality.

Non-overseeded plots were less than 50 percent covered with turf and in some cases up to 20 percent weeds. Among the species, Kentucky bluegrass and tall fescue had lower turf density Kentucky bluegrass area

Overseeding with Kentucky bluegrass was ineffective under regular traffic.

then the ryegrass species without overseeding. Overseeding with Kentucky bluegrass proved completely ineffective under regular traffic most likely due to the long germination requirement.

Weekly overseeding with either perennial ryegrass or tall fescue at 6 pounds of seed provided excellent season long turf density. In fact, perennial ryegrass was able to maintain almost 90 percent density when overseeded weekly. Tall fescue overseeded plots were between 70 and 80 percent dense at the end of the experiment. There was no difference between the 6- and 10-pound seed rates. Interestingly the monthly overseeding of perennial ryegrass provided equal to or better density than the weekly tall fescue overseeding independent of seed rate.

The economics of aggressive overseeding should be considered. We calculated that if ryegrass seed could be purchased at \$0.70 per pound and applied weekly at the 6-pound rate it would cost \$4.20 per 1000 square feet per week. The average soccer field is about 2 acres, but most likely less than 0.5 acre would need this type of program

6 lbs Perennial ryegrass Weekly

Aggressive overseeding provides excellent avenue for high-traffic fields. (goalmouth, center of field, etc.). Therefore, for a 12-week soccer season the cost would be about \$90 per week for seed or \$1100 for the season for seed.

Clearly, aggressive overseeding provides an excellent avenue for high traffic fields. We are currently evaluating spring and summer programs and investigating lower seed rates applied more frequently.

Primary culture

Interest in athletic competition

has significantly increased field use and traffic. A significant amount of effort has been invested to improve rootzones and topdressing amendments (e.g. crumb rubber), yet, there is very little research in the area of overseeding. Roch Gaussoin (University of Nebraska) and Dave Minner (Iowa State) have been reporting success with using Bermudagrass in cool-season climates as a means of having turf cover during difficult times of the year.

High traffic fields demand an aggressive maintenance program that includes mowing, irrigation, and fertility. Core cultivation and topdressing have emerged as key primary cultural practices in the last decade and now overseeding needs to receive the same attention. It makes sense that if bare soil is present weeds will invade and the integrity of the surface is compromised. Regular overseeding either as a renovation a few times per year or in-season to keep pace with traffic will ensure a safe and durable sports turf.

Frank S. Rossi, Ph.D., is assistant professor of turfgrass science and an extension turfgrass specialist at Cornell University, Ithaca, NY.





Husqvarna AR25B aerators feature 3.5 hp Briggs & Stratton engines, a 25.5-in. aerating width, depth adjustable to 3 in., 42 3/4-in. coring tines, and can cover up to 40,000 sq. ft. per hour. Husqvarna/800-438-7297 www.husqvarna.com

For information, circle 143

SIMPLE SEEDER

The Bannerman Simple Dimple seeder is designed for both fine turf and regular turf areas. The design is popular because its dimpling roller is in constant contact with the ground, thus creating thousands of little dimples that seed is dropped into, by the machines calibrated seed shaft.

seed shaft. Bannerman/800-665-2696 www.sportsturfmagic.com For information, circle 154



BUNKER PUMPER

This floating de-watering pump may be lightweight, but it can move an impressive 240 GPM. It is perfect for draining water from ditches, bunkers, swimming pools, construction and excavation sites, manholes, boats and any other low-lying areas.

The pump is self-priming and can run dry with no harm, is able to run up to 45 minutes on a single tank of gas, and will operate in as little as 3 inches of water.

Otterbine Barebo/800-237-8837 For information, circle 142



OPERATOR COMFORT IS KING

The Ferris IS 1000Z compact zero-turn mower has front-wheel independent suspension. Either a 48- or 52-in. mower deck is mounted to the A-arms of the front suspension, allowing it to follow the ground contours closely, providing a better quality cut, says Ferris. Pivoting upper shock mounts keep all four wheels on the ground to help traction and stability.

The unit has a spacious operator compartment with plenty of leg room, a low center of gravity for stability, and adjustable steering control levers for enhanced comfort and convenience.

Ferris Manufacturing/800-933-6175 www.simplicitymfg.com For information, circle 147



HYDROSEEDER MACHINE

The FINN hydroseeder machine combines seed, fertilizer, soil amendments, mulch fiber, tackifier, and other additives into a thick slurry and sprays it onto your seedbed. FINN says this is good for quick establishment of vegetation. The process improves seed-to-soil contact and moisture retention.

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FINN Corp/800-543-7166 www.finncorp.com For information, circle 200

NEW 4-FOOT SEEDER

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Brillion/800-409-9749 www.brillionfarmeq.com For information, circle 148





Seeding is Believing

The Quick Slit Seeder follows the ground contours accurately and plants seeds at a constant depth in its own prepared mini seedbed. This unit is also a cultural tool in that it acts as a grass root pruner by cutting or breaking the grass plant roots. For the survival of the grass plant, it must immediately put all of its resources into growing new roots, resulting in stronger plants with better root structures.



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MOWER ALTERNATIVE

Yazoo/Kees makes two sizes of commercial riding mowers, the compact Mini-Max and the Max/2. The former (pictured) comes with a 17- or 19-hp Kawasaki engine and decks with widths of either 42 or 48 in. It has dual hydro gear pumps and Ross wheel-drive motors, and offers speeds to 8 mph.

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Yazoo/Kees/877-368-8873 www.yazookees.com For information, circle 146



OVERSEEDER ATTACHMENT

Turfco's Mete-R-Matic III overseeder attachment for tow-type topdressers features a four-pin attachment with a quick clamp system. Its stainless steel plated metering system and neoprene rubber rotor bar are easily removed for service, says the company. The attachment's hopper has a 2.5 cu. ft. capacity and is fully adjustable for all types of seed. The seed delivery system has 24 2.5-in. outlets and clear plastic tubing so you can seed blockages.

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UTILITY VEHICLE WITH SPREADER

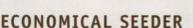
The Thompson Spreader is not just carried by the Cushman Turf-Truckster, but controlled by it as well. The Turf-Truckster, available with a 3-speed automatic transmission, has a ground speed governor control that works with the seeder to gives you precise, even distribution of seed. Rotary agitators ensure a constant flow of material at any speed. Seeder controls are conveniently located for the operator's use.

Textron Golf & Turf/888-922-8873 www.textronturf.com For information, circle 141

THREE-IN-ONE

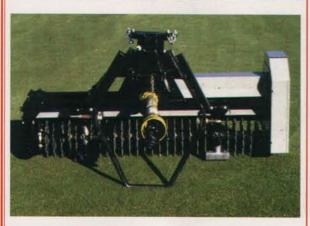
Redexim Charterhouse has improved its Turf Tidy product that allows you to combine dethatching, sweeping, and flail mowing with this one machine. Operators adapt the machine's floating head to switch functions by using an easy to reach access panel. The new versions are also safer during maintenance by permitting front access directly to the rotor mechanism, which elimantes the need to raise the hopper and climb between it and the head.

Redexim Charterhouse/800-597-5664 www.redexim.com For information, circle 201



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Toro/800-344-8676 www.toro.com For information, circle 150



The thing practically crawls up walls.

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Industrial Machine Specialties/ 888-418-9065 www.rocksolidx.com For information, circle 153

Roger Bossard on the industry: today and tomorrow

hen it comes to groundskeeping and sports field maintenance, Roger Bossard, head groundskeeper for the Chicago White Sox, is in a league of his own. In Major League Baseball for more than 35 years, he's been through the famous days of former owner, Bill Veeck, Disco Demolition Night and, more importantly, pioneering the sports field techniques used with the latest retractable domes and other ballpark innovations.

For Bossard, the game is in his blood. He's a third generation Major League groundskeeper. Grandfather Emil and father Gene are remembered for their "masterful groundskeeping techniques" and the entire family has a reputation for doing their part to deliver checks to the "Win" column for nearly a century. He's emerged from the long shadow of his father and grandfather and their famed 17 Tricks of the Trade, which were touted for delivering a real home field advantage in the old days. Today he's recognized, in his own right, as one of the premier groundskeepers in baseball.

"From the age of 8 or 9, I was dragging a hose around for the crew," remembers Bossard. "It took me 6 years to move up through the system to make assistant groundskeeper. I wasn't even allowed to water the field for the first 5 years because my dad always said that no two days were alike and I needed to be able to recognize what the field needed."

Today, he's known for his impeccably manicured infields that give the true, clean hops that all major league players love. Bossard is also a premier sports field builder, designing major and minor league ballparks around the country.

He works with a team of experts. People like Dr. Hank Wilkerson of the University of Illinois, and Andy Wright of Muller Mist Irrigation are among the industry's leading professionals. Each brings years of experience in his field of expertise, including turf management, drainage and irrigation systems, and other important facets to every project.

They have built six of the last 10 baseball ballparks in the U.S.: Comiskey Park in Chicago, St. Louis' renovation to turf at Busch Stadium, Seattle's Safeco Field, Bank One Ball Park in Arizona, Detroit's Comerica Park, and Miller Park in Milwaukee. They've designed minor league and spring training facilities in Tueson, Tampa, and Juniper, FL, and all the natural turf soccer fields for the Royal Family of Saudi Arabia. Bossard also consults for twelve major league teams.

Groundskeeping today

Because of his unique position and years of experience, there's no one better to reflect on the challenges of today's groundskeepers and what their futures hold.

"I've seen a lot of change throughout the league during my years with the White Sox. Everyone in the game works for people who expect perfection," said Bossard, "and everyone, managers, players, even the umpires, expects that perfection from the groundskeeping crew. The groundskeepers are often the first people blamed—one bad hop and your name's mud. For the new groundskeepers out there, that's a lot of pressure. It takes experience to be able to handle situations like that."

"These guys are putting in 14-17 hour days and having

to deliver on the demands of the players and others in the organization," said Bossard. "Now days the job is much more like a business. When I started, it was like a family around the league."

Many of the managers and owners recognize the importance of the groundskeeping staff. Some even refer to them as the 10th man on the field. But, there can also be a stigma as being just a "glorified grass cutter."

"In today's game," explained Bossard, "it's exceedingly important to understand the importance of a good groundskeeper and help train them



Bossard, pictured here with his late father, Gene, is the third generation to work in the big leagues. Including his grandfather, father, uncle and cousin, the Bossard family has a combined total of more than 200 years of experience.

to do their job to the best of their ability and reward them for their significant contribution to the organization."

"I think that working with other groundskeepers is the best way to learn," said Bossard. This year he's planning a training camp during December in Arizona to work with groundskeepers and managers from around the country to help them be the best at their jobs. This Professional Sportsfield Institute will be geared toward anyone interested in maintaining high-quality sports fields at any level of play. During the 3-day camp, the attendees will actually re-construct three of the spring training fields at Tucson Electric Park.

"I'm very excited about it," added Bossard, "they'll get an opportunity to get some real hands-on training and work with a couple of major league groundskeepers. I think it will be a very beneficial program and add to the credibility of the profession."

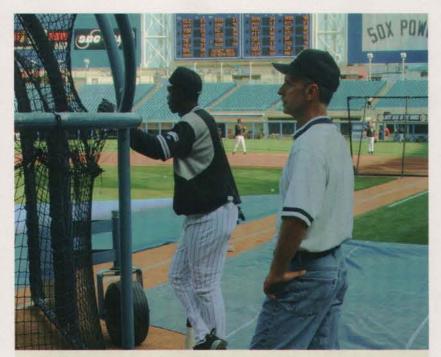
Philosophies

"When it comes to maintaining a field, the most important thing to remember," said Bossard, "is that 70 percent of all the action takes place on the infield, so that's where your resources should be focused." Keeping the infield conditioned and in play is critical. "A rainout can cost you close to a million dollars in the big leagues," said Bossard. The effects of rescheduling games at any level can seem almost as daunting.

"While research data and the science of growing turf is important," said Bossard, "you have to use it in the context of what makes a good athletic field." A successful groundskeeper has to be knowledgeable about soil structures, turf growing, and irrigation, but they also have to be able to communicate with the players and deliver what they want.

"I get real satisfaction when I know my field looks great and plays great," said Bossard. "Of course when an athlete tells you he likes the field, that means a lot too." Bossard says construction and renovation projects take a specialized knowledge

that not every one has. "Only about half the people who are installing and renovating fields—architects, landscapers, etc.—really grasp how what they do affects a sports field." The wear and tear, the needs of the players, and



While the concerns of a professional groundskeeper include management and player needs, the techniques they use on their field can be applied at any level.

the ability to recover between games are all-important factors. "I don't understand how people can call themselves an athletic field consultant if they've never talked to the players, know their needs or even walked on a field," added Bossard.

Future of industry

According to Bossard, times have really changed over his 35 years in the business. He's not sure if he were starting off today if he'd choose the same path.

"I've been blessed to spend my whole life doing something I like," reflects Bossard. "Not everyone gets to say that. There are great people in this industry and it just keeps getting better. If there were one thing I'd like to see change, it would be that the good groundskeepers coming up through the ranks get the opportunities to learn their craft from true sports field experts. I think it is really important that more of the ballpark savvy is learned. It's just as important as the science. Also that they get the pay and recognition they deserve for being the important part of the sports organizations that they are. As Bill Veeck once said, 'A good groundskeeper is worth 10-12 games a year.''

How does a groundskeeper become such a valuable part of their organization? According to Bossard, "A good education is a great start but nothing beats real sports field understanding and experience." He counsels, "Always

He counsels, "Always ask questions. Chances are someone's had the same problem. I hate when young groundskeepers say to me

that they didn't ask me something because they didn't want me to think they didn't know what they were doing. Don't be afraid to call the experts in the industry. We all like to talk about our victories as much as the players."

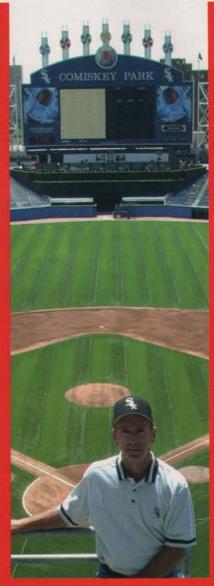
"It's always better to talk to some one in the business," said Bossard, "you just can't learn a lot of what goes on out here in a book." He suggests "rookie" groundskeepers look for internships with A or AA teams.

When asked how he wants to be remembered in this industry, he replied, "As someone who was able to bring professionalism and a certain amount of respect to this job, and as a straight shooter." He's been achieving that goal, and a lot more, his whole career.

This article was contributed by Oil-Dri Corp., maker of Pro's Choice soil amendments.



Bossard believes to be a valuable part of a baseball organization, you must start with a good education. But nothing beats a real sports field understanding and experience.



Roger Bossard's Professional Sportsfield Institute

For three days in December, you can work with Roger Bossard, Head Groundskeeper for the Chicago White Sox and world-renown sports field builder. As a third generation groundskeeper, he will share his expertise while you get onthe-job-training in Athletic Field Design, Construction and Renovation. This is a one-of-akind educational opportunity for anyone interested in maintaining high-quality sportsfields at any level of play. You'll even help re-construct three fields at Tucson Electric Park, home to White Sox spring training camp. For more information on this course and how to register for the Dec. 5-7 program please call, space is limited....

800.851.2399 Ask about the early signup discount.

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