

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 than 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



(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.

ST

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

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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



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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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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.

The Max/2 units can be bought with Kohler Pro, Kohler Aegis, or a Kawasaki engine, with power ratings from 23 to 27 hp, and deck widths of 52, 61, or 72 in. It has twin 5.6-gal. saddle tanks and a top forward speed of 10.5 mph, meaning productivity of 7.3 acres an hour.

Yazoo/Kees/877-368-8873
www.yazookees.com
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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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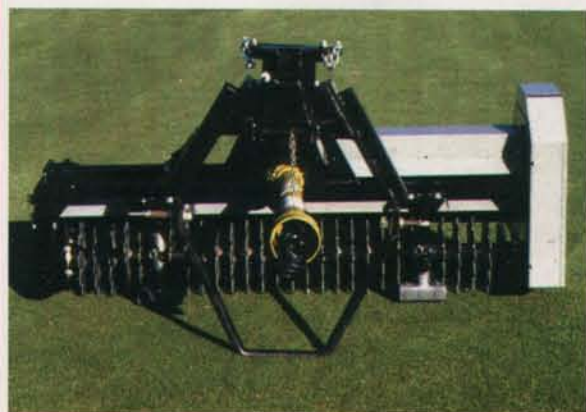


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Roger Bossard on the industry: today and tomorrow

When 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 Tucson, 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."

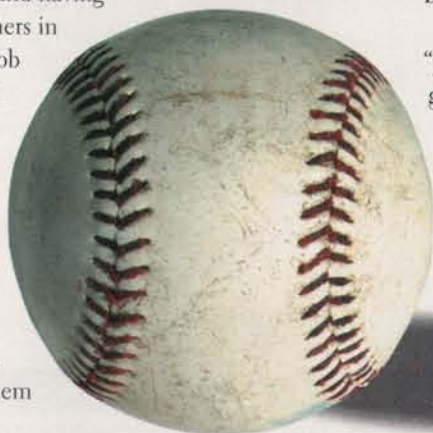
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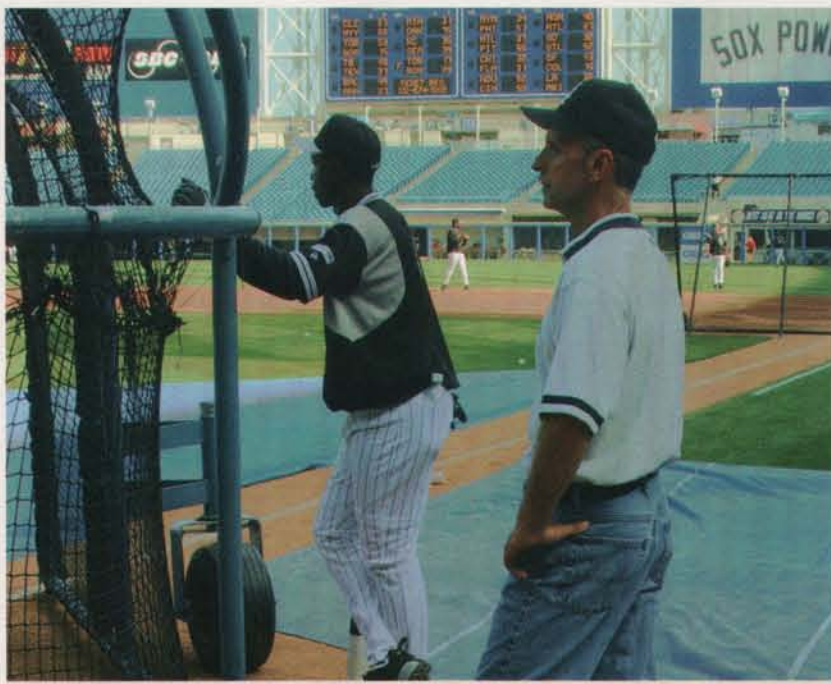
"When it comes to maintaining a field, the most important thing to remember," said Bossard, "is that 70 percent of all the action takes place on the infield, so that's where your resources should be focused." Keeping the infield conditioned and in play is critical. "A rainout can cost you close to a 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

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. **ST**

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

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



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 on-the-job-training in Athletic Field Design, Construction and Renovation. This is a one-of-a-kind 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...

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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.

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Danger zone

Baseball fans at risk and the materials that can protect them

BY JOHN KMITTA

Every baseball fan loves to catch a foul ball—unless that ball catches them off-guard. At the professional level, bulked-up power hitters repeatedly send foul balls into the stands, and the pitches they are fouling off are being hurled at speeds up to 100 mph, severely limiting the amount of time fans have to react. But foul balls and fan safety are under scrutiny at other playing levels as well.

The increased scrutiny regarding fan safety in baseball is the result of recent incidents in the National Hockey League (NHL), including the death of a 13-year-old fan that was hit in the head by a puck. That incident, and other cases of fans being struck by errant slapshots, resulted in the NHL mandating that all arenas place protective netting behind the goalies, and has caused fans of hockey and baseball to question their own safety during sporting events.

According to Patrick Courtney, senior director, media relations for Major League Baseball, the league doesn't have an official rule regarding backstop/protective netting. It is a club-by-club decision.

"A lot of it is because of the shape of the field and the ballpark," said Courtney. "There are no two ballparks that are the same, so the clubs make the decision on the amount of netting and the type and the length. So we don't have any official rules on that. Obviously, the safety of the fans is most important. The things that have come up in the NHL we have been asked about, but it's a club-by-club decision on that."

According to Jason Koch, manager of sales and marketing for West Coast Netting, a Kingman, AZ, developer and supplier of netting materials, it might take something as tragic as the death of a fan for Major League Baseball to mandate that parks have to extend protective netting further down the baselines. However, he added that baseball is different because ballparks already have some level of protection.

"In baseball, they already know it's a fact that they have to have [protective netting]," said Koch. "In hockey they never wanted to have it. It was only certain arenas that thought it would be a better idea to have it. Baseball already has it. Some colleges and high schools have extended nets to protect a street or another field along the outfield. Or if it's a complex with multiple fields, they might want to extend nets or put a lid on things to protect fans. But there hasn't been a real increase [in netting sales to baseball parks] that I have seen since the hockey incident."

"We haven't been approached by any Major League ballfields about extending the nets," said Dan Farrow, net design and sales representative for Seamar, a Seattle-based developer of netting materials. "We called a couple of parks that we had supplied nets to, and they didn't have any plans on extending the nets along the foul lines."

"What we've found is that more high schools, colleges, junior colleges and public ballfields are extending netting to protect against foul balls going into the stands and also the parking lot. There are a lot more backstops going up and most of our calls are from school districts. We do see a trend toward a lot more use of backstop netting in a lot more areas. We're getting a lot more calls for along the third and first baselines, dugout and over the top of fans."



Net design and materials

For those who do make the buying decisions and are concerned about improving fan safety, there are several materials available.

"There are primarily two types of materials that we use for backstops," said Farrow. "One is knotted nylon netting, and the other is knotless polyethylene netting. There are differences in each. The knotted nylon netting is cheaper. It does have knots in it, it absorbs water, and the black nylon will fade over time to a dingy gray. But it has a lot of strength."

According to Farrow, black netting is used because black reflects the least. The black polyethylene, as opposed to nylon, doesn't absorb water. The knotless has less wind resistance. It is also stronger, because the knots are a point of tension in netting. However, that isn't as big of a factor in backstops, because there is not a lot of strain being

put on the net. The biggest features of the black polyethylene are that it's easy to see through because there are no knots, it doesn't shrink or stretch as much as nylon, it doesn't change configuration in humid climates and it is lighter weight, which is an important feature with regard to the suspension of the netting. The other advantage to polyethylene is that it stays black much longer than nylon, because the dye on the polyethylene nets is permanently in fibers (the dye on nylon nets is external).

"Our most common net is either nylon or polyester," said Koch. "It's what we typically call a number 36 netting. It's a typical run-of-the-mill netting that is used for backstops, home run fence, protection along the sides, batting cages, etc. It's more popular because there are more high schools and colleges out there than there are pro teams or people who have the big bucks."

"The other net that we use is a Spectra net, which is usually reserved for high-end college teams, minor league ballparks and Major League Baseball parks. Nylon vs. polyester is pretty much a wash. Some people prefer one to the other, so we manufacture both. We've found the polyester doesn't stretch as much over time, so we're starting to switch over a lot of our products to polyester instead of nylon. We can get the same break strength, so it actually works out that it's a better material."

According to Koch, Spectra is a high-strength fiber made by Allied Signal (now part of Honeywell). There is also a product called Dyneema, which is essentially the same as Spectra, but Dyneema is manufactured by Toyobo, Co. Ltd., Japan. Spectra and Dyneema are strong fibers at a smaller twine diameter, which provide increased strength as well as increased fan visibility.

"Right now Spectra is the top of the game, but it comes down to a cost factor," said Koch. "You can use less expensive materials and you're still going to be able to sit behind a high school ball game and see what's going on. Some people are really fanatical about how big the twine is, but at the lower levels most people don't mind. It's a net they can replace every five to 10 years. Whereas at the Major League level, it is something they don't want to have to deal with very often and they can afford the expense."