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IF YOU DEVELOP GOOD TURF-EYES, AND ASK "WHY" A LOT, THE GRASS NEVER FAILS TO TELL YOU WHAT'S GOING ON.

be done and this whole process goes quickly. But throughout the process, I try not be the defensive turf manager that is against any use or abuse of the turf. We are in business. We kill grass to make money for the company. Growing strong, healthy grass is like winning for a sports team; it takes care of a lot of problems. This is where my team and I come in. From a purely turf management perspective, our jobs might well be described as: establish the grass, prepare the grass for damage, observe to ensure the grass is damaged by the rules established, and repair the grass surface afterwards, repeat.

Growing strong healthy grass might seem quite obvious, but I feel its complexity goes well beyond what we know. It's the one thing we

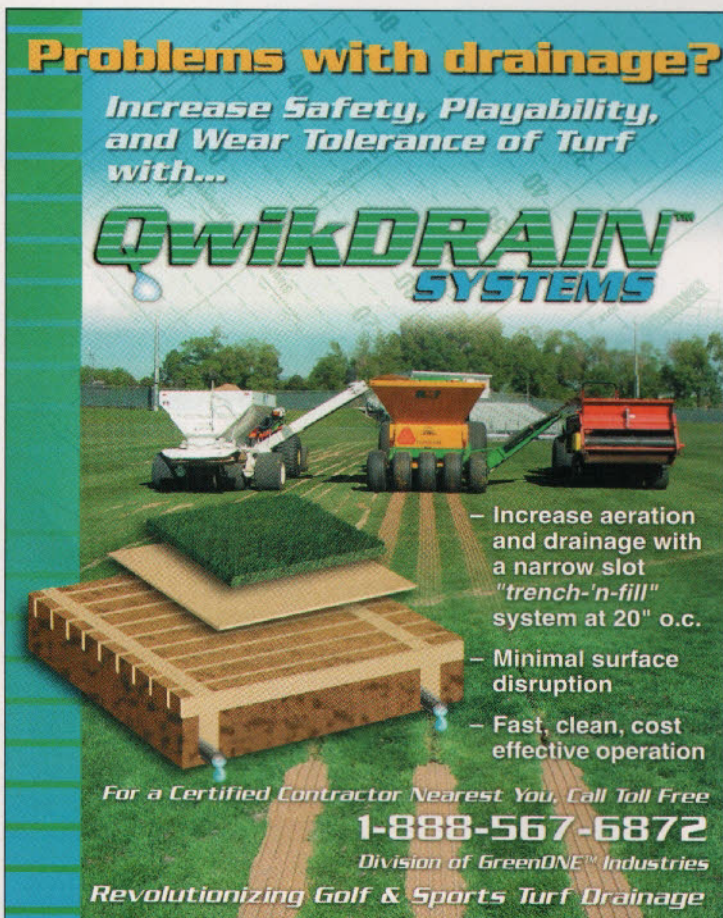
sports turf managers have relative control over (given adequate resources). But if it were easy, everybody would have a nice lawn. Sports turf management is a perilous dance of science and art. Success comes to those who study and learn the science, and apprentice the art. There are no short cuts, there is no recipe to natural grass sports turf management. The field comes with no instruction manual, and every day and every season is different.

Instead of our "recipe," I offer the following observations and approaches:

- We often say that we don't really make plans, we just generate scenarios. Maintenance and field prep operations have to be flexible and nimble to the winds of Mother Nature and the dynamic requirements of the events schedule.
- We constantly grind the efficiencies, but never lower the quality of our work. We employ the Critical Path Method of project management (Google it). This really pays off during quick multi-sport conversions.
- We reward creativity and heroic effort.
- We hire smart, passionate, professional turf-team members. "Hire smart, train hard, manage easy" as Dr. Dick Caton used to say at STMA conferences.
- We do job rotation and train everyone on everything. We try not to fall into the comfortable patterns and begin to specialize in tasks and operations.
- See what you are not looking for. Like many, we really get to know our field and often see subtle hints that something is off. Why did the seed pop here better than over here? How can we use this information? Or maybe the grass just seems happier in one part of the field. Why? We never just say "Hmmm, interesting" and walk away. We try to figure it out or at least come up with a theory. Maybe test our theory a bit. Valuable insights are gained about our turf management program with this approach. If you develop good turf-eyes, and ask "why" a lot, the grass never fails to tell you what's going on.
- I talk to my turf. Why not? Often, I apologize to it.
- We know how to calibrate application equipment and applications. We use factor-label to get our math and rates correct. (Google it).
- We don't do whack mowing patterns; we use patterns that enhance the field of play, not dominate it (just an opinion!).
- We use bright paint, stencil virtually everything, and have the field layouts shot in by a professional surveyor.
- The STMA has been a great facilitator for our continued education, and we are long time active members and supporters of both the STMA as well as the Colorado Chapter.
- We keep a clean, efficient shop and office.
- We run a tight budget, and can account for it.
- On our turf team, if you get bitter, and take things personally, you have to wear the "happy hat." You simply must play nice with the other children! We don't take ourselves seriously, just our jobs.
- "There are no grass problems, only people problems" the late, great Dr. Jackie Butler used to say.
- I heard that Tommy Lasorda once said, "Happy cows make better milk." We have a lot of fun at work. After all, we are ultimately in the

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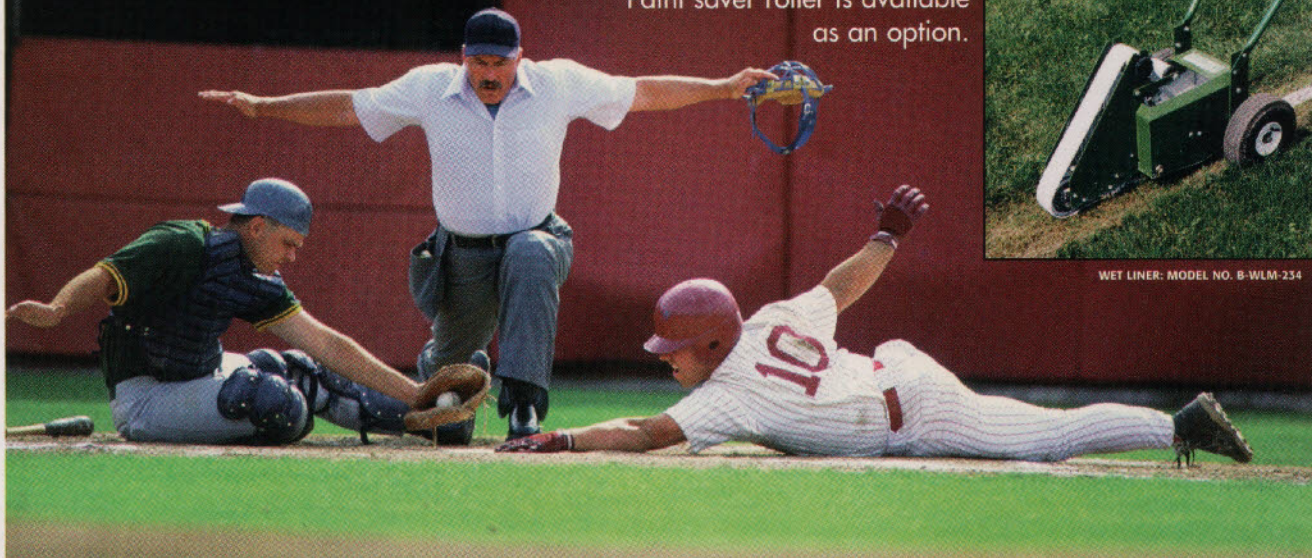
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FIELD OF THE YEAR

“fun” business. Shouldn't we know our product?

- There is a huge difference between almost right and exactly right. I learned this from Coach Shanahan. This is where we get serious about our jobs. Details, not even consciously perceived, earn a field a good reputation; bright, tight paint, straight painted lines, straight mower lines, quality cut, consistency, good traction and grip, resiliency, deep green color, density, smooth ball roll and hop, and a smooth finish are just a few.

- Lower mowing heights, especially cool-season fields, will win over players and coaches. We go with 1 inch and I have noticed several benefits. I think the increased density actually helps protect the crowns from traffic. I think the more shallow roots form a tight mass in the top inch of the soil, where the games are played. I can manage irrigation accordingly. Deep roots on high maintenance athletic fields are an over-rated concept, in my view. I want a tight mass up near the surface. The high density-short canopy with a strong root mass in the top inch is what the players mean when they call a field “tight.” Conventional turf wisdom may not bear me out here, but next time you play golf on a bluegrass fairway cut at 1/2 inch, you'll see and feel what I'm talking about. Besides, grass varieties these days are often bred for tolerating lower cuts.

- We believe in the new “Minner-ology.” Seed is relatively cheap, and players, coaches and fans dig good grass cover. Grass evolved being trampled and grazed, the seed will come up. (Note to Dr. David Minner: I've copyrighted that term and I'm willing to sell it to you).

- Do what you love, and you'll never “work” a day in your life.

Finally, I would like to express sincere gratitude to the STMA for these two prestigious awards. Only because we hosted two NFL play-off games in January were we not in attendance at the conference and awards banquet to receive them as a team. The awards were very well received throughout the whole organization. The plaques sit in the main trophy case at the stadium management offices. Our creative services department put together a 1 minute time-lapse video of us painting the game field, overlaid it with music and the turf team's names and awards we won, and then played it on the big video board during the Jets game in November. We even drew a cheer from the crowd! Needless to say, it was quite exciting. I'm just glad the field looked fairly decent that day.

A heartfelt thank-you must go out to the Broncos VP of Stadium Operations, Mac Freeman. His cutting edge approach to stadium, entertainment, and events management is leaving an indelible mark on the industry and was the key to winning these two awards. My boss



Wayne Bottom, our chief engineer, and his talented staff of professional tradesmen, along with Jamie Breitweiser and Nick Sadri from our operations department have helped us out countless times with goal posts, tarps and anything else we ask for. These people have my deep respect and gratitude; they also have a big part in these awards. Andy Gorchov directs our public events, and Patty Moser directs our private and corporate events. These two, along with the entire events staff, play a huge role in being so careful and detail oriented in their event planning and management. Howard Brown and his conversion team do the field sets and strikes with great care for the turf, even when it makes their job a lot tougher. Scott Blied and his heroic security staff have saved the day numerous times by acting as my eyes when I'm not at the stadium and alerting me to problems.

I can't give enough recognition to my former assistant Abby McNeal, CSFM, who is now the head turf manager at the new Toyota Park in Chicago, and my current assistant Andrew Hoiberg. These two talented professionals, along with Abe Picaso and the all the other part-time turf team members we've employed did (and do) all the work while I get all the credit. I'll bet I'm the only turf manager in the NFL that has a Picaso painting his field. Cody Freeman has some big shoes to fill as our newest turf team member. I could put this turf team up against any challenge in the sports turf world, and I could take the day off, they're that good. Not only that, they'd have a great time doing it! I have to say thank-you to our turf manager Troy Smith, CSFM and his gifted staff at our Dove Valley training complex. Troy, Nick McNamee, and Brett Baird keep the practice fields so nice, that the team rarely wants to come down to the stadium to practice. Brett was



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FIELD OF THE YEAR



recently named head turf manager for the Colorado Rapids new soccer stadium and complex in Denver set to open in 2007.

Apologies for all the names, but as you can see it's a team approach here at INVESCO Field at Mile High, and the Denver Broncos. After 22 years I have learned two simple steps that are essential to successful sports turf management:

1. Work for a great owner like Mr. Bowlen, who truly burns to be the best and win.
2. See step #1.

Ross Kurcab, CSFM, is turf manager for the Denver Broncos and INVESCO Field at Mile High.

The STMA Field of the Year Awards Program has been made possible through the generous support of its sponsors. They include Bayer; Carolina Green; Covermaster; Hunter Industries; Jacobsen, A Textron Co.; Nu-Gro; Turface Athletics/Profile Products; Turf Seed; West Coast Turf; and World Class Athletic Surfaces. ■

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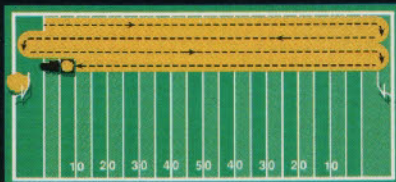


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It's bermudagrass

for Purdue's Ross-Ade Stadium

By Zac Reicher, Cale Bigelow, and Al Capitos

It was announced in February that bermudagrass would be used on Purdue's Ross-Ade Stadium starting this fall. We have been fielding questions about this topic since the middle of last year's football season, so here is an update:

What happened?

Unseasonably warm weather last summer and fall dramatically decreased Kentucky bluegrass rooting in athletic fields throughout the Midwest. Cool-season turfgrass root growth virtually stops once soil temperatures reach 80-85F, which is why seasonal root loss occurs throughout the summer.

Root growth normally resumes as soil temperatures cool in September. However, temperatures approaching 90F were recorded in West Lafayette as late as early October, and soil temperatures in a south-facing concrete bowl like Ross-Ade remained in the lower 90's. Shallow roots combined with shear forces from Division I athletes were the primary cause of poor stadium turf last fall, in spite of the best efforts and hard work of stadium staff.

Compounding the problem was our high sand content rootzone, which had been renovated in 2004 and lacked significant organic matter buildup. This organic matter increases over time helping stabilize granular sand-based rootzones. Like most major stadiums, Ross Ade was originally constructed and recently renovated using a greater than-85% sand profile to produce a firm, dry surface and reduce the possibility of rainouts.

Compared to native soil-based fields, sand-based fields do not hold together well if a dense root system is absent. The clarity of hindsight, suggests that we probably should have incorporated more fines (5-7% sandy loam) in the upper profile during the 2004 renovation, but we did not expect a summer like 2005 so soon. The field probably would have performed adequately if it could have matured for another year or two.

Though a number of major college fields were resodded during the season, we decided not to resod because thick-cut soil-based sod would have to be used. This would have improved the field in the short-term, but would have to be removed at the end of the season or it would have compromised the long-term performance of the field by severely reducing drainage through our high sand rootzone. It was decided

Above: Landscapes Unlimited workers remove turf from the Ross-Ade Stadium in mid-May. The KORO Field TopMaker machine seen here precisely removes the grass layer while leaving most of the rootzone in place and undisturbed. (Purdue University photo/Tom Campbell)



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"Wear tolerance of seeded and vegetatively propagated bermudagrasses under simulated athletic traffic," T.A. Bayrer, University of Kentucky (February 2006)

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immediately after the season to resod the field, the only question that remained was how to proceed.

Making a choice

Kentucky bluegrass, artificial infill turfs, and bermudagrass were all considered for the new surface. Kentucky bluegrass was almost immediately eliminated because sod would have to be laid by Thanksgiving for adequate rooting and the best performing field by next August. Kentucky bluegrass sodded onto a sand profile takes 8 to 10 months to root solidly and it must be in place before winter dormancy to maximize spring rooting. Processing the proper paperwork and arranging for sand-grown bluegrass sod just could not be accomplished fast enough after the decision was made to rebuild. Additionally, the first four games are at home in 2006 further reducing the chances for Kentucky bluegrass to perform satisfactorily next fall, especially if 2005 growing conditions repeat.

Artificial infill turf systems were seriously considered, especially with the scheduled replacement of the outdated artificial turf of the indoor practice facility beginning this spring. However, the coaching staff and athletes currently prefer to play on natural grass. Concern about long-term maintenance, durability, summer heat load, and yet-to-be-determined statistics on player safety eliminated the infill turfs from consideration.

Bermudagrass was chosen, partially by preference and partially by default. The football staff expressed their desire for a closely mowed, "fast" field and a desire to use Ross-Ade for occasional August practices. Of the options, bermudagrass was a natural recommendation. The vigorous network of stolons and rhizomes and recent genetic improvements in bermudagrass have created attractive cultivars that green-up quickly in spring, spread aggressively during summer, and retain their color well into the fall. Additionally, this recommendation was supported by three years of research in West Lafayette evaluating several cultivars for their winter hardiness and ability to tolerate simulated football traffic.

The cultivar Patriot will be the bermudagrass used on Ross-Ade. Compared to many other bermudagrasses, Patriot has survived and thrived in NTEP test plots in two northern test climates (West Lafayette, IN and Blacksburg, VA). It has been planted and successfully grown in many heavily used high school, college and National Football League stadiums and practice facilities.

Gary Wilber, vice president of Oakwood Sod Farm, said, "We certainly are honored that Purdue University has chosen Patriot bermudagrass for their football stadium. We have put a lot of effort into trying to produce a quality product, but it would not have been possible without Oklahoma State and their Turfgrass Development Team led by

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wrote **Ron Crooker**, Director Plant Operation,
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