

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.





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 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.



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 exiting 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

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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.” 

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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)

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