Developing Safer Sports Turfs

A focus on agriculture and natural resources programs at the University of Tennessee Institute of Agriculture
Developing safer, higher-performing sports turfs

The high school quarterback is in the shotgun formation. The center snaps the ball.

As he drops back to pass, the signal caller trusts his left tackle to protect his blind side, but the lineman loses his footing on the worn turf, and a blitzing linebacker comes smashing through. The quarterback's only hope now is that when he lands on his back, the ground will be forgiving.

It's a scenario played out on hundreds of fields across Tennessee, whether the game is football, soccer, baseball, or golf. University of Tennessee Institute of Agriculture researchers and Extension specialists are working to make sure the turfgrass athletes play on is of the highest quality.

“We try to focus our efforts on making fields safer,” says Dr. John Sorochan, a turfgrass specialist with UT’s Department of Plant Sciences.

Sorochan and his colleagues Dr. Tom Samples and Dr. Jim Brosnan work to come up with management programs for those who take care of sports fields—everything from Neyland Stadium in Knoxville down to local parks where kids play football and soccer. Institute specialists have also served as turf consultants to the Tennessee Vols and the Philadelphia Eagles of the NFL.

The experts offer advice on the cultivation of turf varieties, irrigation, cutting heights of grass, and soil composition. The goal is to have a dense turf stand that offers a more consistent, uniform playing surface. Sports playing surfaces are safer when the turfgrass gives athletes sure footing and cushions them when they fall.

“We want to prevent injuries from when they hit the ground,” Dr. Sorochan says. “But also when that quarterback plants his back foot to throw, we don’t want him slipping.” Sorochan says many lower extremity injuries such as torn ACLs and twisted ankles can be blamed on turfgrass that is worn or simply doesn’t offer stability.

While a playing field can be too hard, it can also be too soft—and that also can cause sports injuries. If an athlete tries to run through a soft turf stand it can put additional strain on ligaments and joints. Institute turf specialists work to find the right blend of turf varieties to suit a particular sport. The specialists often recommend adding a sand base to soil to promote proper turf growth and drainage and to mix recycled tires into the soil to make turf last longer.

That’s the situation at Neyland Stadium, where 12 inches of sand serve as a root zone underneath the turf at Shields-Watkins Field where the Tennessee Vols play on fall Saturdays. The stadium got a new variety of turfgrass for the 2007 season called Patriot Bermuda, and if you’ve ever had the opportunity to step on it, you can feel how spongy it really is.

“You’ve got 300-pound linemen wanting to beat each other up, and they’re beating up the grass at the same time,” Sorochan says. “If one of those guys gets hurt, we don’t want it to be because of the turf.”

UTIA specialists also helped develop the turf at Haslam Field where the team practices, which receives considerably more wear and tear than inside the stadium. The specialists are using recycled tires there for upkeep of the playing surface and for safety reasons.

But most of us will never score a touchdown in the checkerboard end-
zones of Neyland Stadium. We play our recreational sports in parks and school yards, and that gets much of the focus of Institute specialists. Many school fields, for instance, are cared for by custodians and coaches, and while they may not be turf experts, Institute advice is readily available to them. But Sorochan would like to see this involvement go a step further. “I would really like to see school systems hiring our graduates in turf management to oversee sports fields. They could really educate the coaches about making their fields safer.”

As for that Saturday morning youth soccer game, Dr. Sorochan loves to see kids active in sports, and he believes safer turfgrass will encourage participation. “If we can prevent children from suffering injuries by improving playing conditions, maybe they’ll stay active the rest of their lives,” he says.

**AND FOR GOLFERS, A BETTER LIE**

It’s a critical question that golfers asks themselves several times a round. How’s my lie?

For those of you who don’t play this game that can be both joyous and confounding, the lie is how the ball comes to rest in the grass. If it’s sitting pretty, propped up nicely in the fairway on a beautiful patch of turf, then you have the opportunity to hit a good shot. If the lie is so-so, well, even Tiger can’t be bothered to hit this shot for you.

But a bad lie shouldn’t be the result of a poorly maintained course, and that’s where turfgrass specialists with the Institute come in. The turf experts work with superintendents across the state and country to help them come up with better management practices for their fairways and greens, with recommendations about warm-season grasses that are drought tolerant and disease resistant. Some of the well-known Tennessee courses our experts work with include Tennessee’s Honors Course in Ooltewah and Legends Course in Franklin.

“We really focus on attractiveness and playability,” says Sorochan. “We also want courses that are environmentally beneficial to the community.”

Sorochan says Institute specialists study turf varieties for golf courses that can use wastewaters normally high in salts for irrigation, which recycles water and saves community resources. He says a good turf stand can actually take pollutants out of the atmosphere, such as carbon. When a green absorbs carbon, the process actually improves its overall health and appearance.

Turfgrass is the largest irrigated crop in the country, and it’s especially critical in this economy for courses to be well maintained to keep customers coming back. “The big thing is the greens,” Sorochan says. “People want nice greens where the putts roll smoothly.” - Chuck Denney