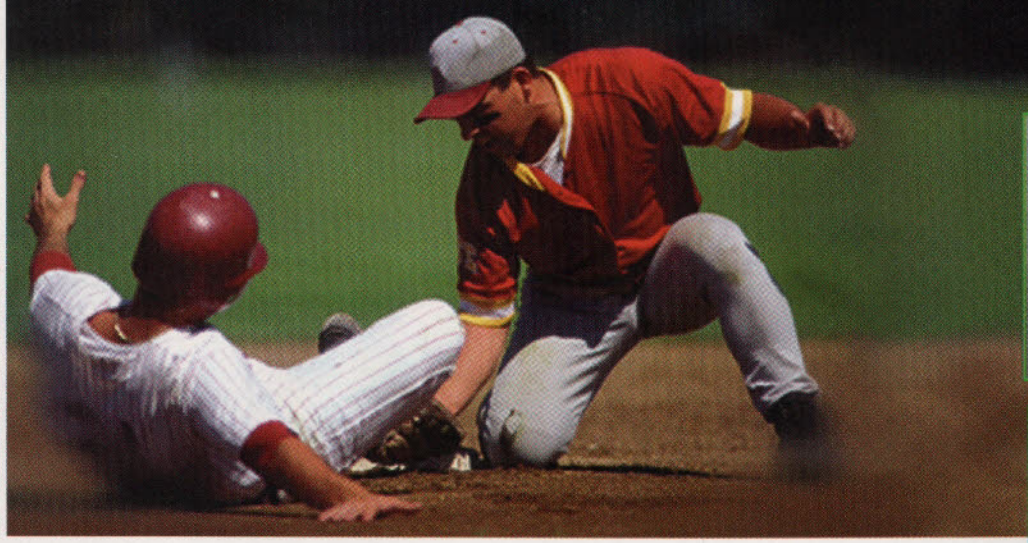
HOME TEAM ADVANTAGE



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Kentucky bluegrass at Ross-Ade Stadium. This turf has since been replaced with the bermudagrass cultivar Patriot for the 2006 season.

greater soil depths. Currently the turf-type tall fescues are underused for higher profile stadium fields. However, on heavily used recreational fields receiving a lower level of management intensity that often includes less frequent mowing at higher (more than 2 inches) mowing heights, turf-type tall fescue may provide a fairly durable and reliable surface.

Turf maturity and existing health. Newly planted turf, both seeded and sodded, usually requires 25-50% more annual fertilizer for the first few years to encourage rapid turf coverage and deep rooting. In addition, many turf areas are established on disturbed urban soils that lack sufficient readily available nutrients. Only soil testing will determine the specific nutrient needs of a given area.

Geographic location and environment: The growing season in the upper transition zone is longer than in northern states. Therefore, slightly more annual N may be needed to sustain turf quality in Southern regions. Shaded turf will require approximately 50% less annual nitrogen than turf grown in full sun with irrigation. Shaded turf simply grows slower and should not be heavily fertilized to minimize disease incidence, improve wear tolerance, and maximize turf persistence.

Soil type. Turf grown on high sand content soils with synthetic sand-based rootzones or heavy clay soils will often require more fertilizer than turf grown on a silt loams or organic soils. Sandy soils are prone to nutrient leaching losses and many heavy clay soils sometimes bind nutrients making them available more slowly.

Weather and irrigation. Readily available soil moisture facilitates nutrient uptake and stimulates turf growth. However, frequent heavy rains or irrigation can flush soluble nutrients (e.g. nitrogen and potassium) from the soil. Thus, more frequent fertilization will be required in wet years or on irrigated sites.

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Sources of nitrogen

No discussion on fertilization would be complete without at least mentioning the myriad of N sources available to turf managers. There are two broad categories: quick release or readily water soluble, and slow release or water insoluble. Most good N programs will use both sources and various quick and slow mixtures at different points during the growing season depending upon your intent.

Quick release N sources like urea or ammonium sulfate dissolve easily in the presence of water, and are capable of greening turf in a matter of hours. These N sources are relatively inexpensive but also can be short lived (a few weeks) and produce unpredictable growth flushes.

The traditional rule of thumb, for quick release N sources has been that you should never apply more than 1 lb. of N per 1000 ft2. This guideline was established long ago to minimize burn potential, avoid significant growth surges, and minimize environmental losses. With this in mind, quick release fertilizers by themselves are best used at reduced rates, applied frequently or as a smaller part of a fertilizer blend or used at times of the year when they are likely to cause little damage. When used alone at higher rates, these sources work best when applied during the last part of the growing season, just before winter dormancy.

The most commonly used slow release N sources include, sulfur coated urea (SCU), polymer coated urea (PCU), methylene ureas, and the natural organics (e.g., activated sewage sludge, manures, etc.). Slow release N sources require more than just water to release their N. Mechanisms like protective coatings and microbial decomposition control how quickly the N is released. Slow release N sources can sometimes be applied at higher rates, 2 lbs. of N per 1000 ft2 without significant risk of foliar burn or environmental losses.

Unlike quick release sources, they do not cause rapid greening but provide extended feeding, often for two to three months or more. This sometimes makes them more economical than the quick release sources because they do not need to be applied as frequently which can reduce the overall labor costs involved with fertilization. One thing to keep in mind when using the coated products on athletic fields that as those particles are subject to foot traffic or anything else that may damage the integrity of the particle coating the N release rate may be affected. If this is a concern a lower more frequent application of a quick release N source or switching to a methylene urea source may be appropriate.

For high value stadium fields or heavily used athletic fields an irrigation system is vital to ensure turf persistence. Dormant turfgrasses cannot recover from traffic stress, and unirrigated cool-season athletic fields will be especially vulnerable to accelerated wear during use in summer months.

Mowing height and clipping management. Higher mowed turf may require less frequent fertilization because the turf plant possesses a deeper more extensive root system. Where clippings are regularly removed, such as on a stadium field, 25 to 50% more annual N will be required to sustain turf quality.

Traffic and use. Fields subjected to intense use (e.g., a football practice field) will require more annual N to maintain stand density, promote growth, and recover from damage. Additionally, the skill level and size of the athletes affects fertilization strategies. Fields used by larger more skilled athletes may necessitate more annual N during the period they are using the fields.

There is no single correct way to fertilize a turf area. Many factors including turf species, growing environment, maintenance resources, available N-sources and use intensity all play a role in developing an appropriate program. While the focus of this article has been on annual N needs, don't forget the other essential nutrients.

The "don't guess, soil test" adage is certainly appropriate to reliably determine your needs. Pay attention to any existing environmental restrictions in your area regarding nutrient applications. Soils and growing conditions vary regionally and some restrictions intended to preserve and protect water quality must be observed.

Cale A. Bigelow, PhD is an assistant professor of Agronomy-Turfgrass Science at Purdue University in West Lafayette, IN. ■

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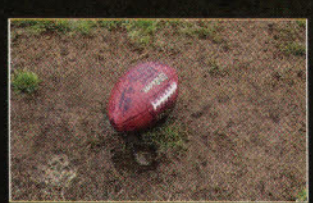


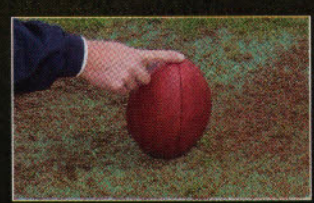

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Spartans, Fouty win College Football Field of the Year

Amy Fouty, CSFM, and her crew at Michigan State University, and their turf at Spartan Stadium, won the 2005 Sports Turf Managers Association's College Football Field of the Year award. Fouty credits "many individuals' hard work and dedication, from our president to the student body" for help in winning the award.

Michigan State's stadium opened in 1923 with a capacity of 14,000, followed by renovations in 1935, 1948, and 1956. In 1957 the upper decks were added, raising capacity to 76,000, and Spartan Stadium became its official name. Capacity today is 75,000 and the facility boasts state of the art video boards, club level seats, etc.

For 46 years the turf was natural grass on native soil and then artificial turf was put in in 1969. A new natural surface was installed in 2002 via the Green Tech ITM Modular Field System. Trays of turf that had been established from seed at MSU's Hancock Research Facility the previous year were moved into the stadium, 4,800 "modules" in all. This same turf faces its fifth season of play this fall.

Then-grad student Jason Henderson of MSU lab engineered the soil for the modules, testing for porosity, strength, and durability to match East Lansing's climate. Drainage is to the asphalt base underneath the modules and then surface drainage to channels under the sidelines. The soil heating system using forced air initially installed in 2002 was turned off and now turf/growth covers are used in spring and fall.

SportsTurf recently heard from Amy Fouty, CSFM, who was busy preparing for the football season.

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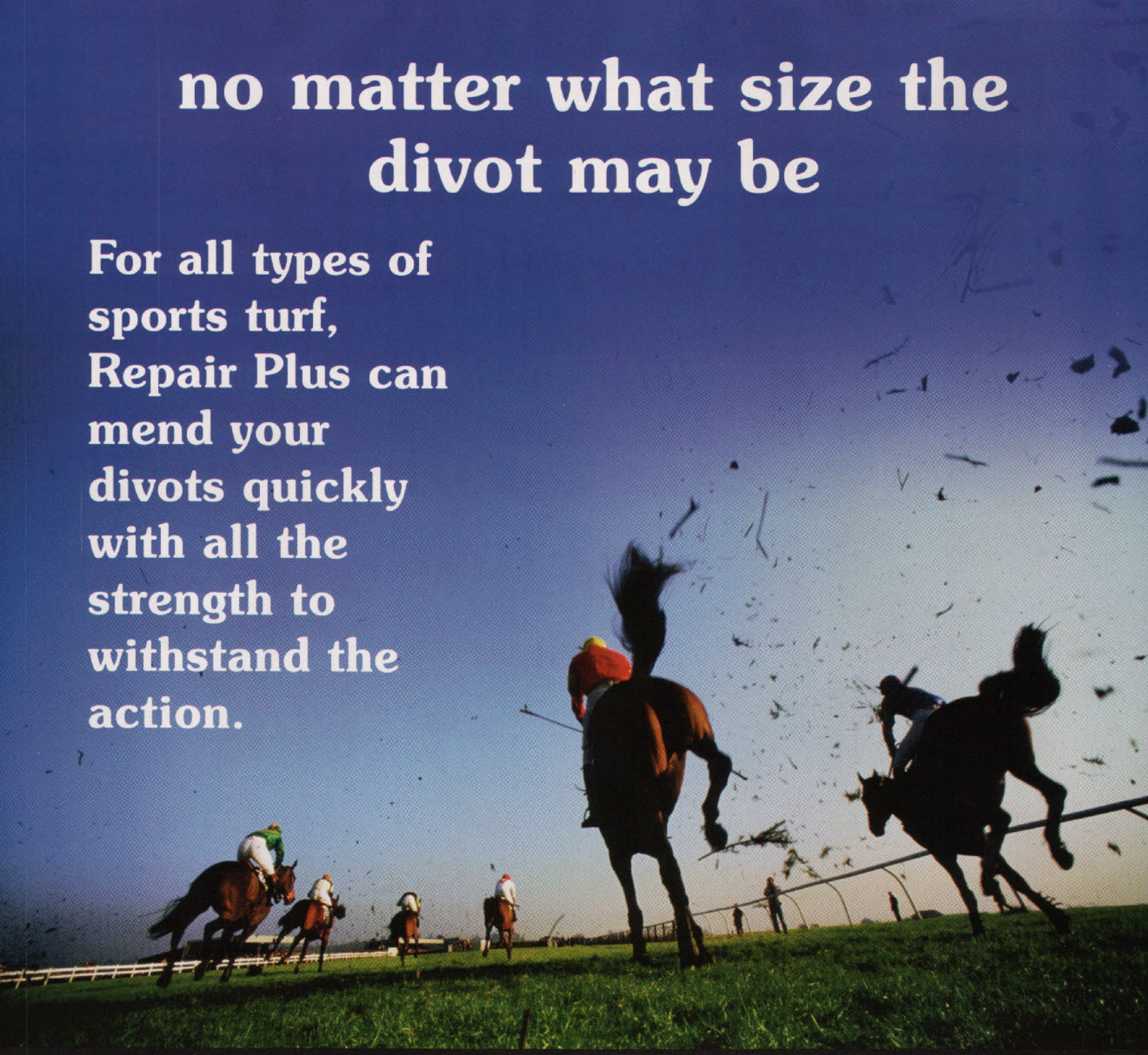

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Spartan basketball coach Tom Izzo is surrounded by Amy Fouty and (clockwise) Tim Vanini, Tim VanLoo, and Alec Kowalewski.

ST: What are your specific responsibilities in this job?

Fouty: My responsibilities begin with the football facilities: the indoor practice building (infill field), the outdoor practice complex (two native soil natural grass fields and one 50 x 25-yard infill "study area" for various drill and workout activities), and the stadium field level. I report directly to Greg Ianni, our Senior Associate Athletic Director in charge of facilities, and John L. Smith, our head coach.

My secondary responsibilities include speaking on campus to students, speaking locally and nationally to represent our athletic department and turf program at various alumni events and turf conferences, and to renovate and manage new construction of athletic fields for the department. At different times, I may act as architect and designer, project manager, construction manager, and complete the grow-in before turning it back over to our athletic grounds supervisor, William Ratliff, and staff. In my 3 years with Michigan State University, major renovations to the football complex, softball facility, and baseball facility have all been completed.

ST: How did you first become interested in turf management and athletic field management?

Fouty: I helped my grandparents work in their yard from the time I could pick up sticks. I have always loved being outside and helping take care of the outside of their home.

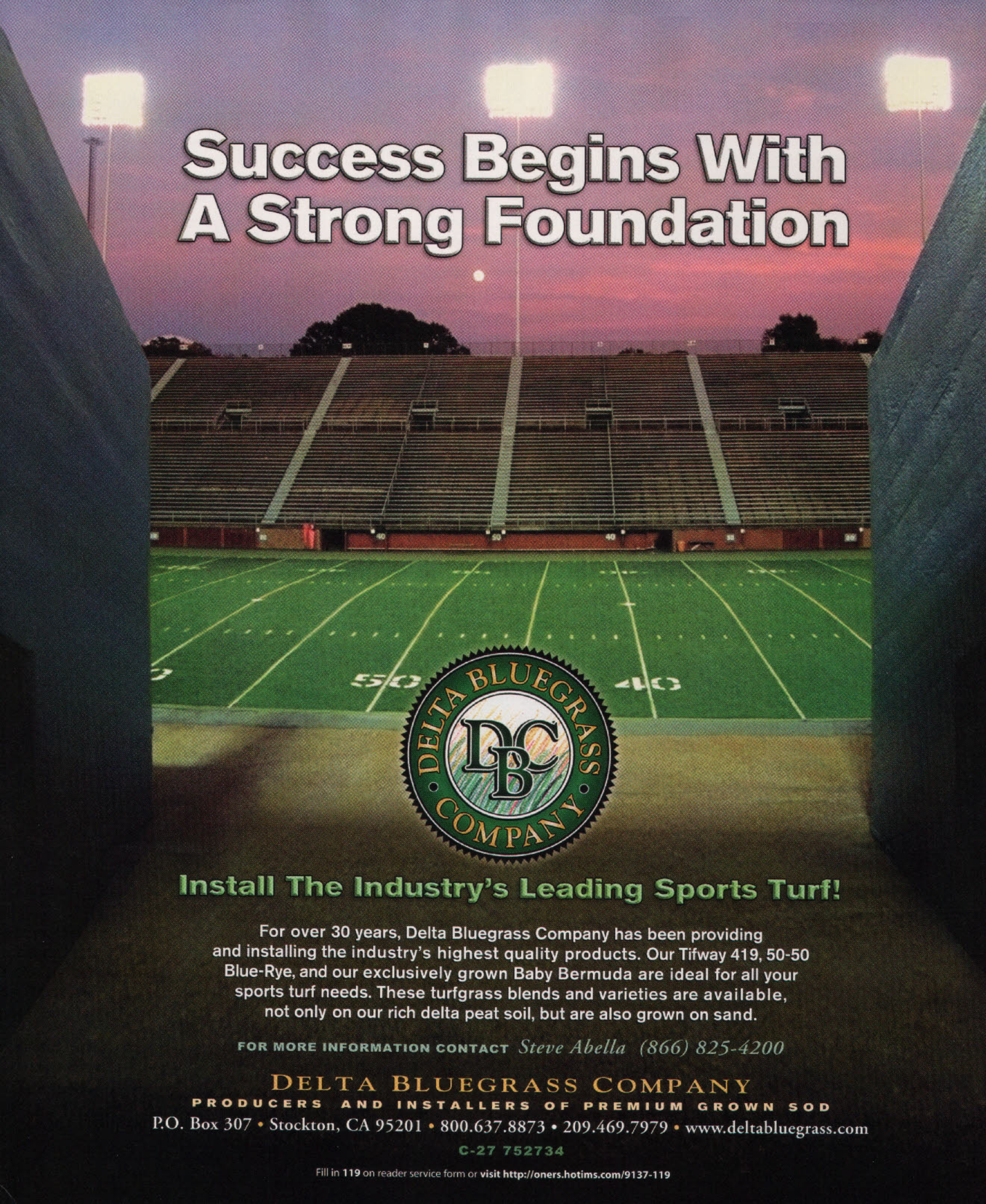
I have also always been very passionate about sports and competition, and took an interest in athletic fields following a major injury while playing softball. In my junior year of high school, I slid into third base on a steal and caught my cleats under the bag, which was not secured properly. I tore my Achilles tendon and sprained my knee. I had always wanted to coach or play sports at a higher level, which I did not think would be possible anymore following rehabilitation, so I looked to other avenues where I could still be combine my love of outdoors and athletics.

When I was 17, I began working on a golf course around the clubhouse grounds, where we planted and maintained about 10,000 annuals, as well as the rest of the beds on the course. Over the next 3 years, I progressed and became a second assistant golf course superintendent, before coming to Michigan State for turfgrass management. The two courses were constantly renovating tees, bunkers, fairways, and greens, and working on these improvements gave me a background in construction.

Following graduation, I became an assistant golf course superintendent at a course here in Michigan and became the superintendent the following year for two years.

ST: What was your first sports turf job?

Fouty: My first sport turf job was taking care of daily field operations for the football and soccer fields at the University of Michigan. I look back now and joke about how I thought the transition from golf to sports turf would be easy. I learned very quickly (and publicly) how different they are. The contacts I made through the STMA with other turf managers around the country helped me to understand athletic field management at the collegiate and professional level and over my 5 seasons at the University of Michigan I was very fortunate to have



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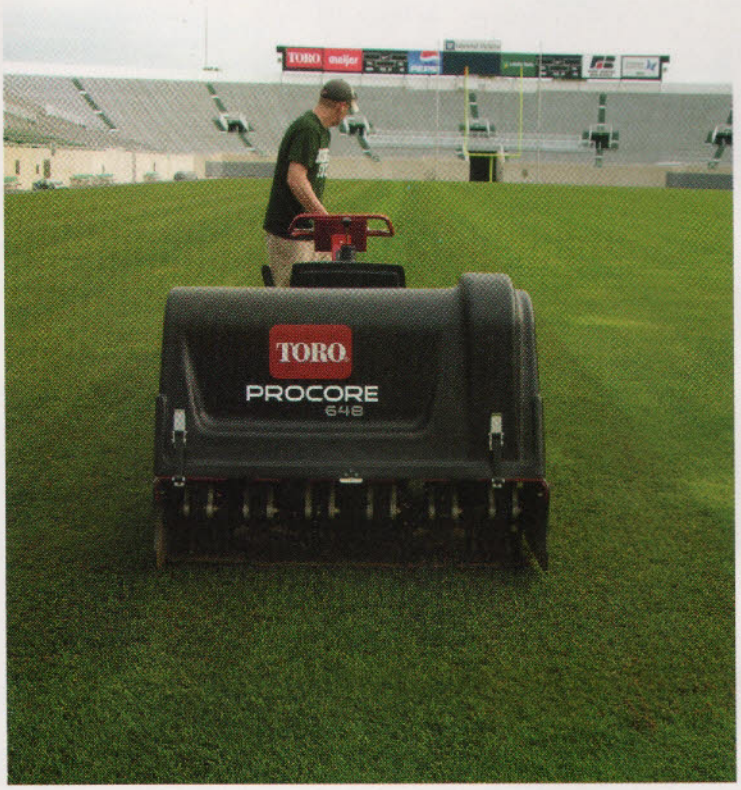

great mentors on the football staff. They took time to teach me about the game, the importance of each position, and how to recognize what was excellent playability, and what was the most beneficial for each position in terms of field conditions. I took that football knowledge and combined it with my turf experience to develop my own management philosophies on and off the field.

ST: How is the innovative turf system put in a few years ago performing? Are there maintenance practices you do that are unique to this field?

Fouty: The Spartan stadium field is not unlike most stadium fields, other than it is modular. We have not needed to trade out any modules and have found the engineered rootzone to be fantastic. Like all fields there is a learning curve in the first few years and we have developed a good understanding of this field.

I do a great deal of aerating in the spring, disrupting 35% of the surface area and topdress throughout the year as needed. Also, I syringe throughout the summer as necessary, using PGRs throughout the year and apply a 2:1 ratio of potassium to nitrogen. My turf program is not unlike managing a putting green in the woods.

My management philosophies are based along managing for a strong and healthy root system, as having such allows for a dense and healthy turf stand. Also, moderate nitrogen applications, elevated potassium levels, and irrigation in moderation. Everything done is for the root structure, not the top growth.