

grass. Small amounts of iron will be used as needed to enhance field aesthetics. Iron and other sprayable supplements will be applied on the Tuesday or Wednesday before a game for greatest visual effect.

The stadium is used for football only, though future concerts are a possibility. There are seven home games each year and a spring game. Occasionally, the visiting teams will walk through on the Friday before a Saturday game. Former football coach George Welsh brought the team to the stadium field for Tuesday practice. Al Groh, the current head coach, has used the facility exclusively for games.

Football-only use doesn't lessen the maintenance challenge for those 57,600 square feet of playing field and especially not for the 12,000 square feet between the hash marks. With 320-pound linemen who can vertical jump 40 inches and the ever-increasing speed and agility training of all players, the turf stresses continue to rise.

And, while Scott Stadium is on campus, it's 3/4 of a mile away from the heart of campus and the main University Hall sports complex, which does pose some logistical problems. The main complex consists of a soccer/lacrosse stadium, a baseball stadium, a track and field complex, two natural grass football practice fields, an artificial turf practice field, and three other auxiliary practice fields. The auxiliary fields are used primarily for men and women's soccer and for conditioning and agility drills by all the teams. This adds up to 16 acres of close-cut sports turf. There also are 8 acres of common fescue, bluegrass, and perennial ryegrass turf areas surrounding the fields and athletic buildings that are under the care of Rodgers and his staff.

He says, "I have what I consider the best grounds crew in America. Henry Shifflett



Winter holiday is Rodgers' only downtime.

brings an agricultural background to our program, having worked on an Albemarle County horse farm for 25 years. Tracy Burge brings extensive golf course experience. I've gained sports field management experience at the professional baseball, as well as the college, levels. The three of us have molded all that together in our comprehensive maintenance program. We've added part-time student staff members during the spring and fall seasons, and anticipate hiring an additional full-time person soon.

"Al Groh has set our program on a course to win a football national championship at the University of Virginia. Our purpose and our function are to support this aspiration and the goals of not only football, but all of our University's athletic teams, through

excellence in our field maintenance program. An important part of that is communication with the coaches and athletes so they are aware not only of the role of the field in this process, but also of the need to preserve the field as a resource. I need to convey the importance of the turf so that its preservation is part of the planning for practice layouts and the game plan."

Rodgers adds, "Our coaches and the University administration have been very supportive of our maintenance efforts. They recognize the fact that our fields are an important asset for the University and a great recruiting tool. Five of our seven home football games were either regionally or nationally televised in 2001. All of the coaches hold various camps, which bring potential students and their parents to view the campus and our sports facilities. Our staff takes an aggressive and proactive approach to our sports field maintenance program with the purpose—providing the best possible fields for all of the athletes—always our key focus."

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Overseeding southern athletic fields

BY DR. MICHAEL GOATLEY, JR.

The practice of seeding ryegrasses into bermudagrass athletic fields is a maintenance strategy that has long been practiced in the southern United States, but far too often the potential results and effects of the overseeding have not been fully considered. With the arrival of football season, it's time to think about how overseeding may or may not fit into your field management program.

Why overseed? Dr. Jeff Krans, my colleague at Mississippi State, made a statement several years ago that I have never forgot: "Overseeding is NOT an agronomic decision it is an economic decision." What Jeff meant was that you can disregard any argument about how overseeding is possibly good for the bermudagrass. Common sense says that introducing millions of seeds into a warm-season grass field just before winter dormancy cannot be good for the warm-season grass. If you want superior bermudagrass, the answer is simple: don't overseed!

However, Jeff's statement also points out the "economic" justification for overseeding: color and playability. For southern sports field managers who are familiar with "bermudagrass color" for 8+ months out of the year (and if you grow it, you know what I mean), there is tremendous satisfaction in the color and striping possibilities that present themselves when an overseeded bermudagrass field peaks in appearance.

Is an overseeded field more playable than a dormant bermudagrass turf? There is no clear answer, but the concept is that an actively growing grass will withstand the wear and tear of athletic events better than a dormant or slowly growing grass. However, don't correlate green turf cover from the overseeding grass turf with recuperative potential. The ryegrasses that are used for overseeding athletic fields are not capable of producing lateral stems (rhizomes or stolons); hence, once the stand is thinned it cannot rapidly fill voids in the canopy.

Things to consider

Many coaches strongly believe that overseeded fields are slick and this contributes to more player injury. Unfortunately, there is not a lot of research that has been done to support or disprove this thought. From work presented by Dr. Don Waddington of Penn State and Florida's Dr. Grady Miller (see "Q&A" p. 54), it appears that the critical factor in slipping on overseeded fields is moisture on the leaf surface. No surprise—wet leaves of any turf will increase the chances of slipping. The debate continues.

Does your field use really justify overseeding? Consider this: In Mississippi, the regular season for public high school football ends for all teams by November 9 in 2002. Out of approximately 250 teams that play football in five classifications, 80 will make the state playoffs beginning Nov. 16. This means that more than 67 percent of the teams will not be playing soon after Halloween (and a check of other southern state high school athletic associations shows similar scheduling). For some of these fields that are overseeded, it is likely that their ryegrass seed has not completed germination before the season is over!

Also, consider that the average first killing frost date in the northern half of our state is the first week of November, and in the southern half, it is roughly 7-10 days later.

So, is overseeding REALLY necessary for your situation? If your answer is yes, then do it, and do it well, but in many situations overseeding may essentially be wasted time, effort, and money.

What about overseeding for winter and/or spring sports? Spring baseball is the best argument for overseeding bermudagrass sports fields. When baseball season begins (in February in most states in the south) most bermudagrass is still dormant. Throughout the late winter and early spring months, the overseeded ryegrass will be peaking in density, playability, and wear tolerance. The ryegrass will greatly retard bermudagrass



Vertical mowing bermudagrass before overseeding enhances seed germination and establishment.

regrowth, but since the entire spring schedule is going to be played on overseeded turf, it is much easier to justify overseeding for spring baseball than for fall football. (These comments would apply for spring soccer and other sports as well.)

What are you using?

What are you going to overseed with? Perennial ryegrass is the superior choice for athletic field overseeding if you seek the highest quality playing surface. It is usually more expensive per pound than the other ryegrasses, but its performance usually justifies the additional cost. Perennial ryegrass has rapid germination and establishment, excellent density, tolerates regular mowing as low as 2 inches, and is exceptionally wear tolerant after establishment. There are many cultivars available, but experience has shown that two- and three-way blends of cultivars have performed the best (i.e., you are taking advantage of the genetic diversity gained by blending the grasses).

Remember though, the higher the density and qualities of the ryegrass turf the more competition for the bermudagrass. Our research in overseeding trials consistently shows that the plots with superior performing perennial ryegrasses during the cooler months are by far the lowest quality bermudagrass plots later that year.

Turf breeders have made great strides in improving the heat and drought tolerance of perennial ryegrass, but these grasses do not necessarily meet everyone's needs for a superior overseeding grass.

Why not? Again, defining success in overseeding is measured by how the grass fits YOUR situation. A more heat and drought tolerant perennial ryegrass is a logical choice if you want to play baseball into late spring on a ryegrass turf, but such a grass is not nearly as critical for you to use if your need for overseeding is fall football alone. A great resource to determine how perennial ryegrass cultivars are performing in your region is the National Turfgrass Evaluation Program. View the performance data on the web at www.ntep.org.

Annual ryegrass is the cheapest ryegrass per pound of seed, and is noted for having the fastest germination, establishment, and growth rate of the ryegrasses. However, its rapid growth rate means it has the most frequent mowing requirement, and it also has poor traffic tolerance, and is extremely intolerant of temperature extremes (i.e., there will usually not be a transition problem because it likely will not be around).

Use annual ryegrass primarily for a splash of color, but not when lasting turf performance and quality are most important. The latest entries into overseeding programs that warrant consideration are the intermediate ryegrasses. These hybrids are hoping to combine the strengths of perennial and annual ryegrass and truly meet the niche of southern overseeded turf by providing a rapidly establishing grass with good quality that transitions quickly in the spring.

There are some promising releases on the market, but it is still too early in the evaluation program to make recommendations. The earliest intermediate ryegrasses more closely resembled annual ryegrass in performance and appearance, and would have limited application for superior athletic fields.

What seeding rates should be used? Field use should be considered. For fall football, the use and appearance of the field dictates as much color and grass as soon as possible. Therefore, recommended seeding rates are anywhere from 10-20 pounds of pure live seed per 1000 sq. ft. If the field is to be used only for spring sports, seeding rates of 6-10 pounds of pure live seed/1000 sq. ft. are adequate, as the grass density will increase over time.

Good timing

When should you overseed? Research from Texas A&M many years ago indicated that overseeding establishment was most successful when soil temperatures at a 4-inch depth peaked at approximately 70 degrees F for 4-5 consecutive days. Basing your overseeding date on soil temperatures allows for a very reliable environmental window that balances adequate temperatures for ryegrass germination with slower bermudagrass growth rates.

However, real-world situations where field use is extremely heavy often means the overseeding event is simply crammed into the best break in the schedule possible. In this case, it is best to schedule overseeding earlier in the season rather than later in order to provide future opportunities to apply more seed if necessary.

Overseeding earlier results in more rapid seed germination, but also means greater bermudagrass competition, more disease pressure, and problems due to desiccation, heat, etc., so the field must be given constant attention! In very tight scheduling situations, playing on a field immediately after seeding is unlikely to significantly damage the seed, and likely improves soil to seed contact. On the other hand, heavy play on seedling ryegrass very likely removes most of your overseeding stand and results in an unacceptable stand (and the need to overseed again IF it is possible and/or affordable).

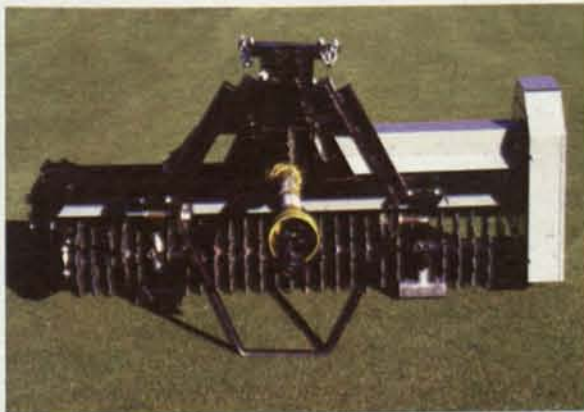
The best ryegrass establishment is gained by mechanically thinning the bermudagrass before seeding. Vertical mowing is an excellent way to prep a bermudagrass field, reducing initial competition between the grasses and improving soil to seed contact (see photo). But remember this is absolutely one of the worst times of the year to severely disrupt the warm-season turf. This practice solidifies your commitment to having the best overseeding establishment possible and tosses common-sense bermudagrass management aside.

(Note: Vertical mowing at this time of year is not intended to be a dethatching event. If a significant thatch problem exists on the field, it should have been addressed during the summer months.)

Pre-seeding applications of the growth regulator Primo have also been shown to improve overseeding establishment by way of slowing the bermudagrass growth, but our experience has indicated that this treatment is not as successful as vertical mowing. Another way to improve establishment if time, money, and/or work force allow, is to topdress the overseeded field following seed application. A 1/8 to 1/4 inch depth topdressing with an appropriate soil material can greatly improve overseeding establishment by ensuring soil to seed contact.

Preplant fertilization should balance the needs of the emerging ryegrass with the potential growth response from the existing bermudagrass. Too much nitrogen will

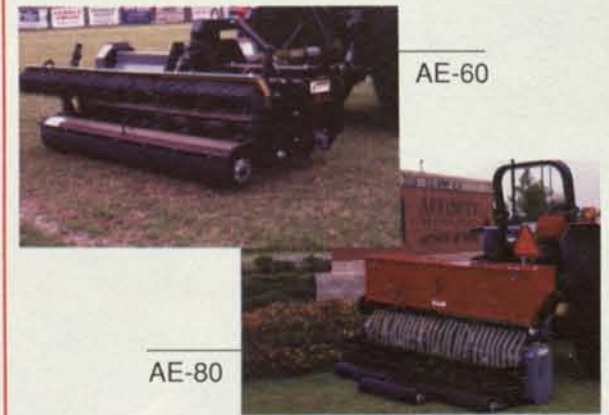
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encourage bermudagrass competition so an application of a complete fertilizer high in phosphorus and potassium is desirable (e.g., an 8-24-24 at a rate of 200 pounds product per acre is often used at seeding). Later, as the ryegrass establishes and the bermudagrass growth slows, fertilizers containing more nitrogen can be used to promote overseeding development. Fertilize as needed to promote growth and color for your particular needs, but realize that turfgrass growth during the dead of winter will be very limited for weeks at a time in many parts of the south.

Irrigation and mowing require some special considerations to enhance overseeding establishment. The irrigation philosophy on a newly established field is "lightly and frequently." The strategy is to maintain a moist soil surface, while not drowning or washing away the seed. Anticipate numerous irrigation cycles throughout the day for a period of 10-14 days, followed by a gradual shift in watering philosophy toward "deeply and infrequently."

If it is possible, refrain from mowing the turf for a few days after seeding. Raise the mowing height, remove baskets, and try to mow when the turf is as dry as possible within your irrigation program. As the turf establishes, gradually bring mowing heights to your desired level and mow regularly in order to promote turf density. The ryegrasses will be actively growing when daytime temperatures are consistently above 50 degrees F, and annual ryegrass in particular will require very frequent cutting to maintain desirable turf quality.

Next spring, you will likely have to make a choice regarding how to handle the overseeded turf and the transition back to bermudagrass. If the field is only used for fall football, then the ideal way to handle the ryegrass overseeding is to chemically remove it as soon as possible to minimize spring competition with the emerging bermudagrass.

However, for baseball or other spring sports, the strategy will likely be to maintain the ryegrass until the completion of the sport season. To hold the ryegrass is going to require very careful water management as much as anything. One day of excessive heat in the late spring can result in catastrophic loss of an overseeded stand.



The striking visual appeal of an overseeded bermudagrass sports field.

If you have no need for the ryegrass during the spring, then the prospects for chemical removal are better than ever. Non-selective herbicides such as Roundup Pro and Finalé have been successfully used to remove ryegrass from bermudagrass, but obviously the bermudagrass must be completely dormant. Kerb and Image are two herbicides that have successfully been used for selective ryegrass control.

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Michael Goatley, Jr. is professor of plant and soil sciences at Mississippi State University.

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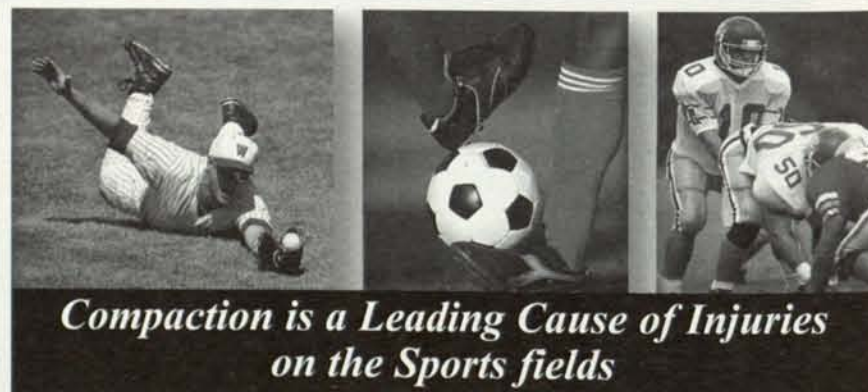
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