school state championship football games, six park league championship football games and one band competition, and didn't wrap up until Dec. 11, 1999. Horton avoided overseeding to better gauge the TifSport's performance and the weather cooperated with a milder than usual winter. Wear developed in the traditional places: between the hash marks, from the 20 yard line to the 20 yard line, along the sidelines and at the field entry points. Field paint was used to add color for the last few games.

"The turf didn't want to go dormant," notes Horton. "Some natural green turf remained even after the football season ended despite several heavy frosts. We all thought the field would lie idle until spring, but then, the Alabama Sports Foundation landed a premium event for Birmingham, a US Soccer Federation International Friendly game between the US Men's National Team and Tunisia. We were notified in late January of 2000 that it would be played on Legion Field. To comply with the no visible logo request from the US Soccer Federation, we overseeded the field with a perennial ryegrass blend in February.

"That gave us just 45 days to get the grass up and growing. We used our greenhouse range to pre-germinate 2,500 pounds of seed for application on Feb.7. After two weeks, we then added another 300 pounds of pregerminated seed in the heavy paint and high traffic areas and moved to in-season maintenance levels. The field was star quality for the soccer match on March 12th."

Horton offered Dr. Ward and Dr. Harold Walker of Auburn the use of the field as a test plot for chemically removing the perennial ryegrass this past spring. He adds, "Several products made a good showing, with Manor the most impressive of those currently on the market. As temperatures rose, field green-up was excellent. Dr. Ward's inspection by cup cutter revealed strong roots 6- to 8-inches deep with good stolon and rhizome development."

The third improvement made during the 1999 season involved an equipment up-grade. We were able to purchase a new boom sprayer similar to the one we already had but with a major improvement. This one had a diaphragm pump instead of a centrifugal pump. As most turf managers have learned, turf paints cause the seals of centrifugal pumps to leak. The diaphragm pumps operate

Renovations in 1999 created a 90 percent sand base that increased infiltration and perculation rates and eliminated the 4-inch organic layer.

without problems with all paints, fertilizers and pesticides.

Horton has worked with Field Supervisor, Donna Kent, on development of an aggressive and comprehensive field management program over the last four years. He credits her daily attention to detail and the dedication she and the crew consistently focus on the field for its success. "I couldn't do it without her," he says. "She has incredible intuitive instincts concerning turf." He also credits the cooperation and support of the City Administration and of the other two City Departments, Parks and Recreation and Street and Sanitation and their staff. Lastly, he appreciates all fellow employees of Horticulture and Urban Forestry for their help during the year, and for putting up with him during the football season.

Horton facilitates cooperation by supplying the departments with a daily schedule of field maintenance at the beginning of each week so they know when mowing, fertilizing, spraying and irrigation will take place. He also communicates adjustments in the schedule to adapt to changing weather conditions.

He says, "With the sand-based field, the Legion Field staff takes both soil and tissue tests at the same time every four weeks during the growing season and every six weeks in the winter. The results can change rapidly, with the soil test usually indicating the turfgrass is starving while the tissue test proves otherwise. The tests are compared to fine tune our fertilization program.

The Maintenance Program

*** Mowing:**

March - May: 3/4 inch or less, as needed

June: 1 inch, every other day

July-August: 1 inch, daily or every other day, depending on growth

September - December: 1 inch, as needed

January - April: to be determined by XFL team needs

*** Aeration:**

Total field: 5 to 7 times per year (3-4 hollow core/2-3 solid tine)

Cores always removed in logo-painted areas

Remaining cores removed 1/2 time, dragged into profile 1/2 time

*** Topdressing:**

Up to 4 times per year, following core aeration, with sand/peat mix matching soil profile, or with matching pure sand

*** Nutrient Applications:**

(All based on soil and tissue test results, usually 4-1-2 ratio warm season and 2-1-4 ratio cool season)

Granular fertilizer at the rate of 1/2 to 1 pound of N per 1,000 square feet per week depending on seasonal demands

Granular formulas used include: 10-20-10, 5-10-31, 13-13-13, 34-0-0, 13-0-44, K-Mag, SC 34-0-0, poly coated 0-0-52, poly coated 45-0-0, and Milorganite

Gypsum applied as needed

Liquid applications include: 28-8-18, chelated ClawEl magnesium, Ferromec A.C., and Sol-U-Bar

Pelletized lime is applied to maintain pH at or near 6.5, at least 4 times per year

*** Pest Control:**

Field is evaluated daily for insect or disease activity and treated following IPM methods

Ronstar applied each spring at sprigging

TurfShield for Dollar Spot and Brown Patch in late spring

Merit for insect control applied in May

Subdue for damping off control applied at time of overseeding

Chemical removal of overseeded perennial ryegrass with Manor or Kerb as early in season as field use allows

*** Post game:**

Immediately after game:

Divot replacement

Irrigation

Immediately after game, or following morning:

Field clean up

Divot replacement

Mowing

Fertilization

Painting for Saturday event on Wednesday or Thursday, depending on weather

*** Other:**

Field covered with winter blanket when temperatures drop below 25 degrees F more than 6 hours

Sideline and gate areas tarped for every game with Enkamat placed under tarp

Terraplas specified for every non-game function (i.e. concerts and band competitions) on any area of field used

Logo painting changeovers as required for each game, as many as six different end zones painted per season

*** Improvements Scheduled for 2000 Maintenance Program:**

Improvements in paint application methods

Improvements in field cover methods

Experimentation with new chemicals for any needed applications

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Wednesday Workshop with Floyd Perry
Wednesday Golf Outing
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Sunday Seminar on Wheels to Tampa area sports venues
Sunday Wheels Tour to Tampa attractions
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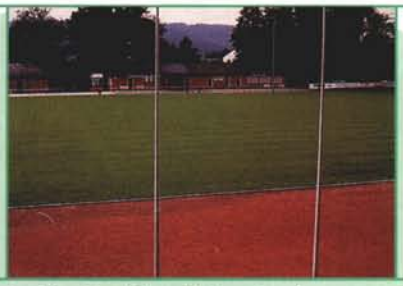
Usually, potassium, boron, manganese and magnesium levels are low in the soil, but in the sufficient range in the tissue. Iron, sulphur and phosphorus usually test in the medium range in the soil tests. However, we're keeping all nutrient levels between the sufficient and optimal ranges in the tissue.

"Slow release N and K are used trying to get a sustained baseline hoping to avoid the peaks and valleys of fertilizer release and leaching. Supplemental applications of ammonium nitrate, urea, potash and other nutrients are necessary to maintain adequate nutritional levels. We'll often use liquid fertilizer and iron on the Thursday before a Saturday game to enhance the field color and the contrast of the mowing pattern because the boost generally shows in the turf about three days after application."

While some college level football games have moved away from Legion Field, the 2000 season is still packed with ten college games, nine high school games, and one band competition. And, beginning a new era of Legion Field football tradition, the Birmingham XFL Thunderbolts start their first season of play in February of 2001, proving once again that star quality has staying power.

The XFL will come to Legion Field in 2001, as the field will host the home games of the Birmingham Thunderbolts.

Bob Tracinski is the Business Communications Manager for the John Deere Worldwide Commercial & Consumer Equipment Division headquartered in Raleigh, N.C. He serves as public relations co-chair for the national Sports Turf Managers Association.



The Best Cool Season Turfgrasses for Your Field

by Dr. John Stier, University of Wisconsin-Madison

The best grass type for your field will depend on several factors. These include soil type, type and frequency of play (soccer, baseball, etc.), environmental conditions, level of performance expected, the level of play (professional, high school, elementary) and available inputs. This last may well be the most important. If irrigation is unavailable and a fertilizer budget unlikely then it makes little sense to install a nutrient-demanding, high water use grass. The environmental conditions can also dictate the grass type. For instance, it makes little sense to install a Kentucky bluegrass field in the Pacific Northwest where consistent rainfall and cloudy conditions will result in uncontrollable leafspot and poor turf performance. Perennial ryegrass may die during extreme cold spells during winter months in the northern part of the U.S. and Canada. The characteristics described below will help you determine which grass species are best for your fields.

Desirable features of a good sports turfgrass

Wear tolerance is the ability of a plant to survive a given amount of traffic. If this were the only desirable attribute then everyone would use tall fescue. Recuperation is the ability of a plant to recover from damage, i.e. grow new leaves and tillers. Plants with creeping growth habits (stolons and rhizomes) often have better recovery than those with bunch-type growth. Other desirable features include good density, sufficient traction, stress, disease and insect tolerances and overall appearance. Differences in appearance can be caused by differences in leaf texture (leaf width), two or more species in the turf or even different cultivars of the same species which have contrasting shades of light versus dark green.

Selecting the right grass type will result in excellent turf performance.

"Kentucky bluegrass will survive long drought periods during which its leaves die, though irrigation can prevent this type of dormancy. Its water use rate is considered moderate."

Plants with creeping groth habits often have high rates of recovery.

The best locations for cool-season turfgrasses

In the eastern U.S. cool-season turfgrasses are usually limited to the area north of the transition zone, an area bordered on the north by the Mason-Dixon line in the east and the Ohio River in the midwest. The exception is in the mountainous areas of the southeast U.S. where cooler temperatures prevail. West of the Mississippi, cool season turfgrasses can be used when adequate irrigation is available, particularly in mountainous areas.

Heat tolerance limits the southern range of cool-season turfgrasses. Cool-season turfgrasses grow best between 60 and 75 Fahrenheit. Most possess good to excellent cold tolerance. Excessive heat, depending on its intensity and duration, can denature proteins and kill susceptible plants. Photorespiration is a less dramatic, but critical heat-related problem. In cool-season turfgrasses, oxygen competes with carbon dioxide during photosynthesis and causes some potential sugar production to be lost, a process termed photorespiration. As temperatures increase, so does photorespiration, sometimes to the point where the turfgrass is using more energy than it is making. This stops

the growth of the grass and can ultimately lead to death.

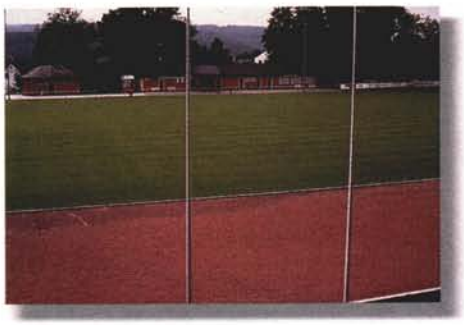
Meet the grasses

Kentucky bluegrass

Despite its name, Kentucky bluegrass (Poa pratensis L.) actually originated in Eurasia and was brought to North America by early settlers. The most commonly used cool-season turfgrass, it prefers moist, well-drained soils and full sunlight. Depending on the cultivar and management level, it can provide a dense turf over a range of mowing heights from 0.75 to 2 or more inches. Kentucky bluegrass will survive long drought periods during which its leaves die, though irrigation can prevent this type of dormancy. Its water use rate is considered moderate.

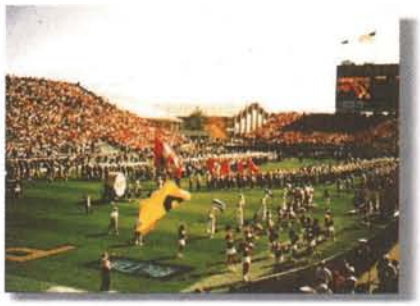
Limitations: Its modest rate of germination (seven to 21 days, depending largely on temperature) and establishment is a major limitation when seeding new fields and overseeding existing fields. When planted by itself (monostand), Kentucky bluegrass is susceptible to necrotic ring spot and summer patch diseases. Cultivars with some resistance are available. During rainy periods leaf spot disease can cause severe yellowing and thinning of the turf stand, although improvements in disease resistance are making this less of a problem than in the past. Its shade tolerance is rather poor and powdery mildew is often a problem in dim light.

"Perennial ryegrass (Lolium perenne L.) is one of the most widespread turfgrasses on northern athletic fields due to its quick establishment rate."



Cool season turf grass grows best between 60 and 75 degrees Fahrenheit.

Advantages: Its wear tolerance is moderate, and its rhizomes provide good recuperative abilities. These underground lateral stems provide Kentucky bluegrass with a creeping growth habit and allow a single plant to spread further than any bunch-



Heavy wear can be a killer: Make sure your turf is up to the challenge.

type grass could ever develop. The rhizomes provide stability for athletes, particularly in football fields. The root system is perennial which may provide some stress tolerances not present in species where the root systems are all the same age. Its cold tolerance is among the best of the cool-season turfgrasses. A large number of cultivars exist, with leaf texture (width) ranging from fine to medium and color from light to dark green. Since it is primarily the only cool-season turfgrass grown as sod, Kentucky bluegrass sod is used often for construction and quick-fixes in many athletic fields.

"Bermudagrass and zoysiagrass are occasionally tried in cool-season areas because both grasses are noted for their wear tolerance; however both are warm-season grasses and have no place north of the transition zone."

The wide variety of Kentucky bluegrass cultivars can make their selection difficult. Kentucky bluegrasses are primarily designated as either common or improved types. Common types are usually older cultivars adapted to low maintenance conditions. They green up early in the spring and have an upright growth habit. Their main downfall is their high susceptibility to leaf spot diseases especially when intensively managed. Improved types are usually proprietary and require medium to high management inputs for best performance. Their growth is more prostrate than common types and they are more disease resistant. Since common types produce abundant seed without irrigation and are non-proprietary, they cost considerably less than improved types. Don't let that fool you into relying on them for your athletic field unless you plan to have a low-use, low maintenance turf with low expectations.

Improved types are further categorized as belonging to one of the following major groups: BVMG, compact, mid-Atlantic, Julia, Bellevue, or aggressive. Aggressive types have a dense, prostrate growth habit and can be ideal for athletic fields, though the other types have desirable characteristics and can be a useful addition to a seed mix or blend. Aggressive cultivars include 'Touchdown', 'Fairfax', 'Award', and 'Limousine'. Not all cultivars have been classified into these sub-groups. Since new cultivars become available every year and production of some older cultivars stops, don't expect your seed dealer to know the sub-group to which the latest cultivar belongs.

Perennial ryegrass

Perennial ryegrass (Lolium perenne L.) is one of the most widespread turfgrasses on northern athletic fields due to its quick establishment rate. Perennial ryegrass has a bunch type growth habit which limits its spreading ability to the area able to be covered by a single plant through above-ground vertical shoots. It prefers moist, acid to neutral soils. The optimal cutting height is between 0.5 and 2 inches. Its tough fibers give it better wear tolerance than Kentucky bluegrass but also make it more difficult to mow: sharp blades are required to provide a clean cut or else a ragged turf results with shredded, bleached leaf tips. This is less of a problem in the newer varieties though the wear tolerance may be decreased. Like Kentucky bluegrass it can survive dry conditions, staying green longer than Kentucky bluegrass though it's less likely to recover from extended drought periods. Newer cultivars have narrower leaves and much darker color, though a wide color range still exists.

Limitations: The bunch type growth habit and sometimes distinct coloration cause irregular patches of turf to be especially noticeable, par-