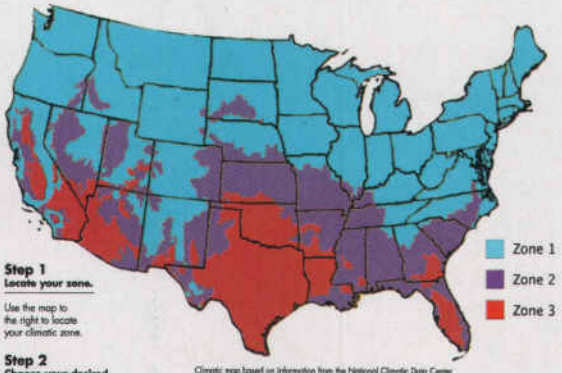
Want Transition Control?

SOS™ PLUS PANTERRA



Climatic map based on information from the National Climatic Data Center

Step 1
Locate your zone.

Use the map to the right to locate your climatic zone.

Step 2
Choose your desired transition speed.

For each climatic zone there are three S.O.S. products which exhibit Rapid, Ideal or Slow rates of transition.

DESIRED TRANSITION SPEED

	RAPID	IDEAL	SLOW
ZONE 1	SOS 400 15 lbs./1,000 sq. ft.	SOS 400 15 lbs./1,000 sq. ft.	SOS 310 20 lbs./1,000 sq. ft.
ZONE 2	SOS 400 15 lbs./1,000 sq. ft.	SOS 220 15 lbs./1,000 sq. ft.	SOS 202 20 lbs./1,000 sq. ft.
ZONE 3	SOS 400 15 lbs./1,000 sq. ft.	SOS 211 15 lbs./1,000 sq. ft.	SOS103 20 lbs./1,000 sq. ft.

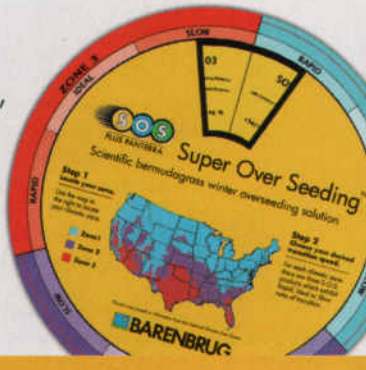
It All Starts with the Right Seed

Managing Bermudagrass means overseeding in the fall. This can lead to added costs and unneeded stress. Now there's a better solution. Barenbrug and Texas A&M University have teamed up to create a revolutionary new Bermudagrass overseeding program. Now you can have optimum transition – when you choose.

The program is simple. Go to **www.barusa.com**. Click on the SOS link. You will then be asked two simple questions:

1) Where are you located?
2) How fast do you want your transition?

Once you've answered these two questions, you will be presented with your ideal overseeding grass mix. Call your local distributor and ask for your SOS mix. Plant this fall and watch how well you can control your spring transition.



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Fill in **114** on reader service form or visit **http://oners.hotims.com/ 14681-114**

Recent advances it turfgrass breeding efforts have introduced new turfgrass cultivars that have potential for use in transition zone athletic fields. Most KBG varieties do not perform well in the transition zone due to a lack of tolerance to heat, drought, and disease. Texas bluegrass (TBG), mainly a forage grass, demonstrates higher levels of heat and drought resistance relative to KBG, but has poor turfgrass quality. Thermal Blue is a hybrid of these two species and possesses genetic traits from each species allowing it to survive the hot, humid summers of the transition zone and provide an actively growing turfgrass surface during the fall athletic seasons.

Hybrid bluegrass without crumb rubber topdresssing

Hybrid bluegrass with crumb rubber topdressing

To test these turfgrasses under simulated athletic field wear, the Cady Traffic Simulator (CTS) was used. The CTS is a walk-behind Jacobsen core cultivation unit with artificial feet to simulate athletic wear. Two passes with the CTS is designed to generate wear equivalent to that sustained during a football game between the hash marks and the 40-yard lines.

The four turfgrass species were subjected to 1 (low traffic) or 3 (high traffic) simulated games per week. Timing of traffic applications was established to mimic fall high school football schedules. Plots receiving crumb rubber were topdressed twice with 10/20 mesh particle size crumb rubber to achieve a depth of 0.75 in.

Results

Hybrid bluegrass (HBG) retained its color and provided an actively growing turfgrass surface after bermudagrass plots had entered winter dormancy. Riviera and Tifway bermudagrasses were more tolerant to wear than Quickstand. Quickstand consistently ranked lowest in percent cover, which shows that Riviera, Tifway, and HBG are better suited for athletic fields. Crumb rubber proved to significantly reduce the amount of wear sustained during traffic events. All plots receiving crumb rubber treatments had improved turfgrass cover at the end of the season than those not receiving crumb rubber topdressing.

Crumb rubber provided a more resilient turfgrass surfaces, reducing the amount of athletic field wear as a result of traffic. By retaining the amount of actively growing turfgrass cover, crumb rubber provided a safer playing surface. This study has introduced a new management practice for transition zone athletic field managers use to improve the overall performance and longevity of their fields.

Matt Goddard is a graduate research assistant in turfgrass weed science at Virginia Tech. Dr. John Sorochan is an associate professor in turfgrass science & management at The University of Tennessee. ■

Best Management Practices

Best fertility management includes the use of soil tests, an understanding of the nutrient requirements for each turf species, careful observation, and balancing aesthetics v. function. Proper interpretation of soil tests will allow you manage both components and develop the best fertility programs. Meticulous recording keeping of soil test reports, fertilizer applications (rates, formulation, dates), and turfgrass responses are essential to developing a strong and consistent fertility program.

When observing turf responses look for turf color, growth, quality, recuperative capacity, establishment speed and consistency, wear tolerance, playability and responsiveness to fertilizers. Use soil tests to uncover underlying poor turf performance or overt and negative turfgrass conditions like nutrient deficiencies. Soil chemistry and microbiology are complicated; therefore keep it simple use soil tests as a rough guideline with strong consideration to basic agronomic principles, including subsurface and surface drainage, promoting the correct ratios of air, soil, and water, adequate fertility, and thatch management using frequent mechanical cultivation.

Common lab tests for sports turf

Exchangeable nutrient data/Nutrient sufficiency levels[END ITAL]. Represents the amount of each nutrient present in the soil and the extent to which plant requirement are met (sufficiency) for optimum growth (lb/A). Usually expresses as low/ optimum/high.

Extractable Nutrient Data[ENDITAL] (ie. soluble paste extract). Represents the nutrients that are easily extracted from the soil and therefore the best indication of plant availability (ppm).

Cation Exchange Capacity (CEC) Represents nutrient holding capacity (target 4 cmol/kg soil).

pH. Soil reaction affecting most notably nutrient availability and microbial activity

Organic Matter (OM) Percentage. Indicates degree of organic matter accumulation which can affect drainage, soil reaction, and presence/extent of localized dry spots (target ≤ 4%)

Soluble Salts/Sodium. Represents the level of salinity and sodium in the soil. High levels of salinity (various salts) will impact the soil reaction, infiltration in the top two (2) inches, and plant water relations. High sodium (≥ 3% of total CEC or sodium adsorption ratio > 2) will negatively impact soil structure and permeability. Salinity or sodium problems usually arise due to poor irrigation water quality or lack of rainfall, particularly in arid or semi-arid regions.

Irrigation Water Quality. In general it is good idea to test the irrigation water to determine if problems exist. Potential problems including high bicarbonates (HCO_3^-), or high Na^+ and Cl^- concentrations compared to calcium (Ca^{2+}) and magnesium (Mg^{2+}).

DEBRIS PICK-UP JUST GOT A WHOLE LOT EASIER

LitterKat®

Picking up trash and unwanted matter on synthetic turf has never been so easy. The LitterKat is a ground-driven design built around aircraft aluminum, guaranteeing high strength and light weight. The tubular ladder chassis and connection arm firmly house the wheel and sweeper gearing — giving you what it takes to keep your surface looking good and playing safe.

LitterKat is outfitted with Dual On-Board vibrators in the collection baskets, quickly and easily redistributing infill while the electric actuator allows for an infinite level of height adjustment. The brushed aluminum collection baskets are designed for easy removal and emptying.

The structural parts are equipped with a durable, long-lasting powder coat finish. All this sits on forged aluminum wheels. And don't forget the tow-behind magnet for pickup of unwanted ferrous objects. The powerful 6-foot wide unit pulls objects from deep in the surface into the magnet — keeping your surface safe and ready for action.

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LETTER TO THE EDITOR

Bio-fuels not so great

Dear Editor,

Re the article by Chris Harrison on "Alternative fuels power next wave of equipment" (Jan. '08, p. 40): Mr. Harrison states that "Emissions from bio-fuels and biodiesel blends are lower than petroleum-based diesel fuels making them more environmentally friendly." This statement is totally false.

In fact, bio-fuels (ethanol) and biodiesel often burn less efficiently and pollute more than most petroleum-based fuels. This type of "Al Gore" reporting that selectively ignores data that shows these fuels, while being an alternative to petroleum-based fuels and lessening our dependence on foreign oil, are not always cheaper or cleaner. The additives that have to be put into the biodiesel fuel tanks, to keep it from growing bacteria, are even worse at polluting the air when it is burned.

Mr. Harrison should have checked the facts (all the facts) instead of writing a "sexy green" article that gives many in our industry incomplete information. I am all for lessening our dependence on foreign oil and being good stewards of the environment, but let's be wise in how we do it. It is not a quick fix, and this type of article fuels the fire that the "feel good" fix is just around the corner, and does not address the economics. [For example] the installation of an underground, 500-gallon biodiesel storage tank, if a permit can be obtained (currently Los Angeles County will not issue any permits for biodiesel storage tanks) costs a minimum of $50,000. These costs, plus the current information coming from several fleet managers who are now seeing more frequent servicing on equipment using biodiesel, should make us all "look before we leap."

Richard Farmer, Manager, Landscape Services
California State Polytechnic University
Pomona, CA

Cure the root of summer stress

Let's analyze the problem. Summer heat, humidity, disease and physical injury can stress your sports turf. Cure the root of the problem with ROOTS plant performance products:

Maintain root mass under stress conditions	TurfVigor®
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Rethink Tomorrow

Latest biostimulants on the market

ROOTS Concentrate

ROOTS Concentrate is an advanced plant supplement that promotes rapid root growth and plant regeneration. When applied to seedlings or cuttings, it penetrates roots to create a stronger root system and faster plant growth. It is non-phytotoxic, formulated for soil or foliar application, and designed to supplement all fertilizer programs, and can be applied through injection and drip irrigation, fertigation, or sprayer system.

Roots Plant Care Group

For information, fill in 054 on reader service for or see http://www.oners.hotims.com/14681-054

ProPlus JumpStart

The new ProPlus agronomic formulation JumpStart is designed to improve overall soil conditions and allow faster, more complete seed germination and turf establishment. It can be applied during overseeding or grow-in projects. It has a proprietary formulation that includes beneficial soil bacteria, humic acid and a wetting agent, which work together to improve water infiltration and retention, and promote faster nutrient uptake and conversion.

Profile Golf

For information, fill in 055 on reader service for or see http://www.oners.hotims.com/14681-055

Aminoplex

Aminoplex, a true biostimulant, contains 15 free amino acids, complex polysaccharides, and natural phytohormones. It can be applied as a foliar or soil drench and is designed to promote plant health preventatively, therefore sequential applications are recommended prior to and during the onset of environmental stresses such as heat, drought, and salinity. Free amino acids are hypothesized to conserve plant energy, making more available to upregulate natural defense mechanisms during environmental stresses.

Grigg Brothers

For information, fill in 056 on reader service for or see http://www.oners.hotims.com/14681-056

Launch and Focus

PBI/Gordon's Launch or Focus, formulated as liquids or granules, provide ingredients that increase germination rates and promote growth of fibrous roots. They also transform minerals for absorption by plant systems, promote growth and assist seeds in breaking dormancy. And treated plants recover from play stress more quickly.

PBI Gordon

For information, fill in 057 on reader service for or see http://www.oners.hotims.com/14681-057

BioGain WSP + Sprint 330

This package combines BioGain WSP, a bionutrient and beneficial bacteria blend that improves plant response and improves water and nutrient uptake. Sprint is a chelated iron additive that strengthens chlorophyll production and results in richer, greener turf, trees and shrubs.

Becker Underwood

For information, fill in 058 on reader service for or see http://www.oners.hotims.com/14681-058

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❑ Sports Turf Manager Associate* (Additional member(s) from the same facility) $75

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❑ Academic $95

❑ Student (verification of enrollment) $25

❑ Commercial $295

❑ Commercial Associate* (Additional member(s) from the same commercial company) $75

❑ Affiliate (Person who is indirectly or on a part-time basis, involved in the maintenance/management of sports fields) $50

❑ Chapter Dues (contact headquarters for amount)
Chapter name) _____ $_____

❑ Contribution To SAFE Foundation (research, education and scholarship): $_____

Total Amount Enclosed: $_____

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— Bob Campbell, CSFM
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Membership Segment

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*There must already be a national sports turf manager from your facility or commercial member from your company before you may sign up in the Associate category.

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2/2007

This installed drainage system failed.

This drainage system was not working properly.

Pay now or play later

By Steve Bush, CSFM

As I sit here watching the rain outside I am reminded how challenging this spring has been for sports field managers. I don't think we have had more than 3 consecutive days without rain this entire season. I have heard countless stories of saturated field and cancelled events from frustrated coaches, athletes, owners and administrators. Canceling events is expensive; whether it is lost gate revenue and concessions, travel time and lodging, or having to reschedule or rent other facilities. If you don't pay now for drainage you can expect rainouts, cancellations and to play the games much later.

I have looked at fields this spring where the turf may look great but the field is completely unusable as a result of standing water or drainage problems. What is truly frustrating to the owners is that several of these fields have been built recently or have an installed drainage system that isn't working. Even established turf may have soils that are so severely compacted or where poor grading exists that the drainage is ineffective.

In fact the most common drainage problems I see are the result of poorly graded or uneven fields. I have walked countless fields that hold water and will not drain because of improper grading. Even with properly installed drainage, improper grading may render the installed drainage system useless. Many times, the field is designed correctly and has enough slope to move water but the unevenness of the final grade causes water to pond or not get into the installed drains. Proper grading is the critical factor for a

John Mascaro's Photo Quiz

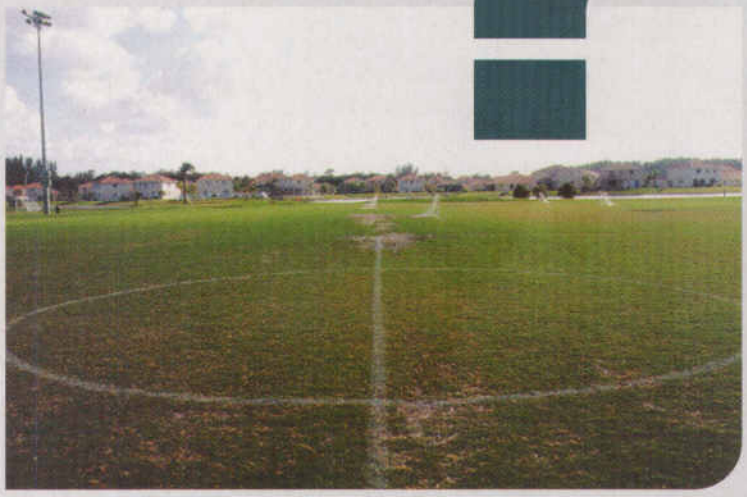
Can you identify this sports turf problem?

Problem: Area void of grass near sideline

Turfgrass Area: Soccer field

Location: Coconut Creek, FL

Grass Variety: 419 Bermudagrass



Answer to John Mascaro's Photo Quiz on Page 46

John Mascaro is President of Turf-Tec International

well-designed and installed field to drain efficiently.

Athletic fields are designed to have very minimal slope so players do not feel like they're running up and down hill. Here are common slopes for different athletic fields:

Baseball infield, 0.5%
Baseball & Softball outfield, 1% to 2%
Baseball and Softball skin areas, 0.5% to 1.75%
Football Crown, 1.0% to1.75%
Soccer side to side, 1.0% to1.75%

A .5% slope on a baseball infield means it is falling at the rate of 6 inches of fall in 100 feet of length. At this minimal slope any variance in grade will cause water to stand on the field. Any fields with 1% or less slope almost always require an installed drainage system.

Because the slopes are so minimal, it is suggested that laser guided equipment be used for any new construction or renovation project because of its accuracy. Trenchers can also be equipped with global positioning equipment that will not only install the drainage with accuracy but will also map out the system for future reference.

On existing baseball and softball fields the skinned area should be laser graded as needed to prevent low areas and lips from forming. One of the common misconceptions of infield materials and drainage is that water should pass through the skin and be removed by drain lines under the skin. Actually, the infields should be graded so that the water sheets off of the skin and into the turf where it can infiltrate or be collected in a drain system.

Ponding

Ponding water can also be the result of high wear areas becoming compacted or dissimilar soils settling at different rates. This can often be seen where players stand on a baseball field, in soccer goal mouths, and between the hash marks on football fields. Almost every baseball field I have seen has standing water on the infield as the turf becomes lower than the level of the skin.

On football fields unevenness and drainage problems often arise as areas of repeated use become compacted. Between the hash marks and along yard lines are usually the worst areas. Repeated drills and activities like band practice often contribute heavily to this compaction. Playing under wet conditions also destroys the soil structure. Aeration can help break up compaction thus improving the permeability of the soil.

Adding amendments or topdressing are also ways to increase the infiltration and percolation rate of the soil. The most commonly used amendments are sand and calcined materials. When sand is added as a soil amendment, it is important that the correct amount and proper particle size is used. If the sand is too fine, it can actually slow the internal drainage in the soil.

If the grading is not an issue and compaction has been addressed, yet drainage is still a problem, installation of some form of drainage system is in order.

A 1-inch rain on a football field produces 42,282 gallons of water. That's a lot of water. When thinking about installing a drainage system several factors should be considered:

- How much water will need to be removed from the field?
- What is an acceptable time frame to remove this water?
- What types of soils are on the field?
- What is the budget for the drainage system on this field?
- Using these factors as a guideline, an effective installed drainage system can be designed and installed to meet your needs.

The drainage systems for native soil athletic fields are based on the principles of gravity and capillary action. There are three main types of drainage systems that are used today on native soil sports fields; pipe drains, strip drains, and sand slit drainage.

Pipe drains have been used for years in agriculture. They are primarily used for lowering the water table in an area and eventually allowing the surface to dry. Originally these systems used clay tile and more recently, corrugated plastic pipe. They range from 18 inches to 3 feet deep. The trench is filled with gravel or course sand to within 6 inches of the surface. The top of the trench is then capped off with topsoil.

From our experience, while many sports fields have this type of drain system, few of them are effective in removing water from a field at an acceptable rate. The soils will tend to get saturated above these drains before water will start to move into them. And if the soils above them are too deep or heavily compacted, they are ineffective. Fields with pipe drains installed on 15-foot centers must often wait 2 to 3 days after a signif-