Turfgrass—First-Aid for the Earth

"People have a love affair with grass. Lawns, meadows and prairies have all played a significant role in our cultural development. If you have only one thing when planning your outdoor space, grass areas are the most appreciated."

Carol R. Johnson, ASLA
Landscape Architect

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- Reduces Sports Injuries
- Relaxes People
- Absorbs Carbon Dioxide
- Filters & Purifies Water
- Provides a Fire Buffer
- Increases Property Values

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Poor soil structure results in recurrent drainage and disease problems, excessive irrigation and spraying needs, and unnecessary maintenance expense.

University and field tests show AXIS improves infiltration, increases available water, reduces compaction, and improves soil structure to promote healthy root growth.

You can keep treating symptoms. Or improve your soil structure once and for all with AXIS.

**AXIS amends soil for turf that's more resistant to recurring problems.**

It's basic. Healthier turf handles stress and fights off disease better. And it all starts in the root zone. AXIS is a superior all-natural inorganic soil amendment that makes a permanent structural improvement in virtually any soil profile to make it easier for you to grow healthier turf.

**Proven effective in USGA greens.**

Ohio State University testing showed AXIS increases both readily available water and water retention in USGA root zone mixture, while increasing permeability in most cases.

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<tr>
<th>% of Readily Available Water In USGA Fine Sand Mix</th>
<th>10% Sand</th>
<th>80% Sand</th>
<th>70% Sand</th>
<th>60% Peat</th>
<th>50% Peat</th>
<th>40% Peat</th>
<th>30% Peat</th>
<th>20% Peat</th>
<th>10% AXIS</th>
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<tr>
<td>Readily available water (as %)</td>
<td>40cm, 1.69 m</td>
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**Effective for the Cleveland Browns**

The Cleveland Browns used AXIS to help improve soil structure during a recent field renovation. Turf conditions have never been better. Even players on opposing teams noticed the difference. One visiting player commented, "Usually the Cleveland turf is soft and soggy with all kinds of divots. This is the best I've ever seen it, by far."

AXIS helps the Browns grounds crew by increasing permeability, reducing compaction, and raising drought tolerance for dense, healthy turf that provides firm footing, even for 300-pound linemen under a full head of steam. "AXIS makes agronomic sense," says Browns Head Groundskeeper Vince Patterozzi. "It helped us upgrade the performance of our field."

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Modify soil structure by filling aeration holes with a 50% AXIS, 50% sand mix. For renovation and new construction, till 10% AXIS into the top 6" of the soil.

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Improve your soil structure once and for all with AXIS. It's the surest, safest, most basic way to grow better athletic sports turf.

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**AXIS Improves Soil Structure**

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AXIS is manufactured by Eagle-Picher Minerals, Inc., Reno, Nevada.
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Thanks, STMA

I sit here trying to think of something really impressive for my first presidential message. After much soul searching, I can only say thanks to all of you who have been a part of STMA. I am humbled and honored to have been elected to serve as the president of this fine organization. We continue to grow, and I know our founding fathers are proud of the direction in which we are heading.

I do want to take a moment to say a very special thank you to two people without whose efforts STMA would not have come as far as we have.

The first is Dr. Gil Landry. Gil has been a longtime board member as well as president and past-president. Thank you, Doc, for your patience and dedication.

The second person I would like to thank is our immediate past-president, Greg Petry. Greg and I have known each other a long time, and his dedication and persistence has helped carry us through. Thanks, Greg, for all you’ve done. I look forward to your counsel during my tenure.

I would also like to thank those people at Smith, Bucklin & Associates who have helped carry the association for the past few years, especially Bret Kelsey, who served as our executive director.

As we begin the new year, we are also welcoming a new management firm to our organization. Welcome to our new executive director, Steve Trusty, and to Suz and Stephanie of Trusty & Associates. These three are not newcomers to our group. They have been involved in our organization for the past few years, and we look forward to new growth and new services for our members under their direction.

I look forward to the future and will make myself available to listen to your concerns, problems and suggestions. Please don’t hesitate to contact any of us on the board. We can only continue to grow and prosper through your active participation. Become a doer, not a sideline observer. You’ll get much more out of the organization if you do.
Covering The Bases

It's an irony of the magazine business that, as an issue goes to press, a newsworthy event occurs. A case in point is this issue, which will be printed as STMA's 7th Annual Conference & Exhibition is being held. If we could stop the presses, we would, but since we can't, we'll cover the event next issue. Hopefully, most readers will attend and won't need our report.

If you attend, we hope you catch one of Floyd Perry's seminars. Chris Turner's article this issue accurately describes his classes as fun and instructive. Perry's two books are much the same way — fun because they keep to a minimum the pangs of learning, through simple step-by-step wording and color photos. Book I, *Pictorial Guide to Quality Groundskeeping: Covering All The Bases*, teaches mound and home plate repair, edging, dragging, lip reduction, water removal, making equipment and other techniques for maintaining a field. Book II, *Pictorial Guide to Quality Groundskeeping: There Ain't No Rules*, includes additional techniques for football, softball and soccer facilities; Little League, minor league, college and high school facilities; and maintaining curbsides. The color photos make the books expensive, over $36 each, but as an idiot's guide to foolproof maintenance, they're what some of us need.

One of Floyd's seminars, titled "Playability vs. Liability," focuses on what some people in the industry describe as a "hot topic" these days: the million-dollar lawsuits sports-related accidents generate. Floyd takes a case-by-case approach showing the current status of the law and some of the minimum standards an athletic complex must meet to protect itself. Often, posting clearly visible warnings like: "For your safety: • Please be alert at all times; • Keep your eyes on the playing field; • Flying balls, bats & other objects leave the playing field" — is all it takes to guard against the preying hands of lawyers.

In upcoming issues, we'll reveal more legal shields for sports turf managers through special articles on field safety and legal issues. In the meantime, as the signs of the times say, "For your safety, please be alert at all times." Keep your eyes on the playing field and either rectify or plaster with warnings anything other people can bump, fall or step into to their detriment.

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**February 1996**


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26 Annual Lawn Care Seminar and Show, sponsored by the University of Massachusetts Extension and the Massachusetts Association of Lawn Care Professionals. Sturbridge Host Hotel, Sturbridge, MA. CEUs available. Contact: Karen Connelly, (508) 287-0127 or Mary Owen, (508) 892-0382.


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For a Bermuda that stands up to test after test, hit the Jackpot.
Preparing Ball Diamonds For Spring

Compiled from information supplied by sports turf managers Mike Trigg, Mike Hurd, Mike Matherne, Jesse Cuevas, Mike Andresen, Chris Bunnell and Steve Wightman.

Before the first softball or baseball player takes the field, sports turf managers must complete a packed agenda of preparations. While coaches and players obviously want to begin practice as soon as weather permits, getting the field into safe, playable condition must be the first priority.

To make the job easier — and avoid potential liability — develop a pre-season checklist. List all areas that must be addressed, note work done, when, and by whom, problems identified and actions taken to rectify those problems. When multiple fields are involved, crews equipped with such checklists can handle routine maintenance procedures and alert supervisory personnel to problems that need further attention.

**Structures**

Take advantage of decent early spring weather to inspect and repair any structures that are involved in the softball or baseball program. The sports turf manager may be responsible for upkeep of bleachers or stands, dugouts, restrooms, concession stands, press boxes and player's locker rooms.

Set priorities for such indoor work as painting, wall or floor repair, updates or repairs on utility service areas and equipment, and remodeling. Fit these tasks into the schedule on days when outdoor work is impractical.

Prepare a detailed, item-by-item checklist for each structure. For example, the bleacher checklist could include: structural integrity, entrance and exit ramps or stairs, floors and walkways, railings, seating, signage, lighting, water, other service connections, perimeters and overall appearance.

**Parking Areas**

On paved parking areas, check for uneven spots as well as actual damage during the pre-season cleanup. Schedule any needed repairs or repainting of lines and special access areas. On rock or graded parking areas, grade to correct high and low spots and bring in additional materials as necessary.

Inspect medians and barriers, and parking area perimeters, including curbing, gates, and entry or exit walkways.

**Fencing**

Combine cleanup and inspection of fences, instructing crews to perform a section-by-section security and safety check.

On chainlink fences, make sure posts are "seated" properly and solidly and positioned accurately. Check all fence connection points. Find and fix any loose, protruding, bent or missing wire. Inspect fence tops, including any added security or safety features.

On wooden fences, check for structural integrity and solid installation. Find and fix any rough, cracked, broken or missing boards. Schedule painting or application of preservative materials if necessary.

**Lighting**

Outdoor lighting systems for sports fields should be designed and installed by lighting professionals familiar with all applicable electrical codes and equipment options, and with practical knowledge and experience in outdoor lighting. These professionals will help establish a maintenance program for crews to follow.

Pre-season and routine maintenance should cover all of the lighting system components for the lighted field — electrical, fixtures and structural. Regular diagnostic tests also should be scheduled to identify problems that are not easily discerned by visual inspection. Secure the services of a qualified electrician for testing and repairs.

**Irrigation System**

Temperatures will dictate when irrigation systems can be activated for the season. Follow precisely the instructions for your own below or above ground system. For in-ground systems, check heads for correct "seating" after the freeze-thaw cycles of winter and off-season field activity. Once systems are operational, check water "throw" patterns for even distribution. Make repairs and corrections before the playing season begins.
Once systems are activated in colder climates, provisions must be made to protect sensitive components from damaging late spring freezes. Even a hairline crack can destroy a unit.

**The Field**

Ideally, many field preparations, such as “lip” removal, will have been completed in the fall. If weather and scheduling haven’t made that possible, extra time must be allocated in early spring.

Remove any “lip” — that section where infield material builds up in the turf along the infield and outfield edges of the skinned basepaths. With regular daily attention in-season, lip buildup can be minimal. For minor lip buildup, cut a trench at the edge of the grass line. Then roll the area and tamp down the turf. For greater lip buildup, use a sod cutter to remove a strip of turf along these edges, along with approximately four inches of the underlying soil mix.

Remove any remaining excess material and reset the existing sod, or replace it with new sod. Remeasure proper field dimensions and edge the turf.

The skinned material of baseball fields varies in composition depending on individual preferences and the availability of funds. Frequently this mix contains clay, sand and specialized commercial infield mix, in varying percentages.

Prepare new infield material in the same proportions as the existing skinned area material. The new material will need to be moist, but not overly wet. It should be wet enough to “bond” with the existing material, dry enough to keep from sticking to equipment, but not so dry that it continually needs rewetting.

The skinned area needs to be firm to support player activity, but not too hard. It must have a consistency so that, during play, it can be kept moist enough to inhibit dust, but not so moist that the players have problems making the twists, turns, starts and stops that are so much a part of the game.

There should be no difference in the level between the turf soil surface and the skinned area, or of the “feel” of the area as the player moves from the turf to the skinned surface and back again. Also, level skinned areas give the ball a “true” bounce, whether it hits a turfed or skinned spot.

Use a scarifying drag that penetrates one to three inches into the skinned area to break up the surface and loosen any areas of compaction. Add new material as necessary. Use a leveling drag to move material from high points to low points, and to create a level surface. Roll or tamp the area to create a solid base. Continue adding new material, “spiking” or scarifying, rolling or tamping, until the desired level is reached. Keep leveling drags eight to 12 inches from the edge of the turf to avoid creating a lip. Use rakes and tamps to level the areas next to the turf. If desired, work a higher percentage of commercial infield mix into the top quarter inch of the skinned area. Use a rake or broom to remove any infield mix from the turf edges. “Finish” the area with a mat drag.

Inspect the heavily used homeplate area. The top of homeplate should be flat and level with the surrounding soil, with the edges buried, even when a plate with beveled edges is used.

Measure the precise pitching mound location and dimensions according to the level of play which will take place on the field. Rework the mound, making repairs as necessary. The pitching rubber should be flush with the “dirt” surrounding it. The area in front of the rubber and the area where the pitcher “lands” following a pitch generally need the most attention. Pack materials well to ensure a firm, smooth surface.

Prepare the bullpen mounds to the same specifications and standards as the pitching mound.

Inspect the turf in the infield and outfield and in surrounding areas used by the general public. Remove any debris. Repair spots damaged by heavy snows, standing ice or water, equipment traffic or winter use. Level and repair any low or high areas.

Take soil samples for testing. Pull turf plugs from several segments of the field. Check the plugs for root development, crown health and any signs of soil problems. Schedule changes in cultural practices if necessary.

Begin the regular turf maintenance program. This may include mowing, aeration, overseeding, fertilization and topdressing.

Make sure equipment is in good condition and operating properly. Check supply levels. Order materials as required to meet coming needs.

Review procedures with experienced personnel. Use hands-on demonstrations to train new personnel.

Begin regular in-season maintenance procedures, including painting or chalking lines, prior to the first practice or game.

A playable, attractive and safe field has its roots in a pre-season checklist, allowing the sports turf manager to complete all necessary tasks well before players take to the field.
Spring Seeding Update

By Steve and Suz Trusty

Spring seeding fills many roles. A newly constructed or rebuilt field may be seeded in the spring in preparation for play in the fall or the following spring. Bare and badly worn areas of existing fields may be seeded in the spring to augment sections seeded in the fall where the grass didn’t develop as well as expected.

Spring seeding may be the first opportunity to repair bare or damaged areas of fields used late in the fall. It may be used to repair sections of turf damaged by winter use, weather conditions, or equipment traffic. An existing field may be overseeded to thicken sparse turf or to add grasses with specific characteristics lacking in the established turf.

The initial question sports turf managers must answer is why a problem exists. Unless the seeding will be used to establish a new or rebuilt field, an assessment of current turf conditions will be needed. Why does the field, or a specific section of the field, need seeding? Some damaging situations are beyond the sports turf manager’s control; others may be altered by adjusting cultural practices or field use schedules.

If the same areas need reseeding every spring, alternative practices should be explored. Perhaps late season football and band practices could be moved off the game field to a different section of turf. Maybe games could be rescheduled if heavy fall rains create conditions sure to damage the turf if play takes place. Excess snow could be piled in a different area. Construction equipment could travel a different route.

Consider cultural practices to strengthen turf against winter stress, such as more frequent aeration, aeration later in the fall, adjustments in the irrigation, fertilization or topdressing programs or changes in fall seeding programs.

Sports turf managers next must decide what they can accomplish with spring seeding. While aesthetics are important, field playability and player safety are the prime concerns. Expectations must be realistic, taking into consideration existing conditions, pre-seeding preparation requirements, anticipated weather patterns, irrigation capabilities, and the time needed for seed germination and establishment.

All this must be compared to the preliminary schedule for field use. Again, shifting practices and games to alternative sites may allow sufficient time for turf establishment. If space allows, practice fields can be temporarily laid out differently — perhaps running two fields north to south instead of one field east to west, or moving the field several feet in one direction — to allow small seeded areas time to become established.

When fields are in good shape, with regular aeration, fertilization and irrigation programs in place, but play is frequent and heavy, many sports turf managers time overseeding applications to keep viable seed on the field throughout the growing season. As turf is worn and damaged by the action of play, seed is in place to fill in bare and thin spots.

Other sports turf managers keep small batches of pregerminated seed on hand for crews to apply as necessary during the post-game field inspection.

**Sport Grasses**

Seed producers have made great strides over the past several years in developing varieties suited for sports turf. Specific desirable characteristics can be gained by selecting bluegrasses, perennial rye-grasses, turf-type tall fescues and seeded varieties of bermudagrasses with those attributes.

Kentucky bluegrass is the most widely used cool-season turfgrass. The individual, fine-to-medium-bladed plants spread aggressively by sending out rhizomes which form a dense, strong sod with the holding power to withstand sports activity. Bluegrasses are relatively cold-hardy, coloring early in the spring and holding color into the fall. They respond well to consistent fertilization and irrigation programs. They may enter a semi-dormant state in response to intense summer heat, combined with a lack of moisture.

Perennial ryegrasses are quick to establish and produce a medium-bladed, uniform, bunch-type turf with good shoot density. They have fairly high wear resistance. They exhibit relatively good heat and cold tolerance; coloring early in the spring and retaining color into the fall.

Turf-type tall fescues are bunch grasses with medium to medium-wide blades. They're very drought and salt resistant, and have fairly good heat resistance. They tolerate lower fertility levels than bluegrasses and perennial ryegrasses. Many varieties are deep-rooted and stand up well to heavy activity.

Bermudagrasses are the preferred warm-season grasses for sports turf. They are fine-to-medium textured, aggressive grasses that spread by both stolons and rhizomes, forming a tight-knit, dense sod. They thrive in heat, but go dormant as temperatures cool in the fall and don't begin spring growth until soil temperatures approach 60 degrees F. Their aggressive growth requires regular fertilization. They can tolerate short periods of limited moisture. Once established only by sodding or sprigging, new seeded varieties have become available.

Because bermudagrasses on athletic fields go dormant in cold temperatures, they often are overseeded in the fall with perennial ryegrasses. The perennial ryegrasses produce new growth through the cushioning base of the bermudagrass and bring green color back to the field. As temperatures warm in late spring, the sports turf manager uses cultural practices to encourage the bermudagrass and discourage the perennial ryegrass. Seeded bermudagrass applications may be made to these fields in the late spring as temperatures reach the proper levels for optimum germination. On high-profile, high-budget fields, the turf may be removed and replaced with bermudagrass sod or sprigs.

Within each of these grass types are multiple varieties that exhibit such characteristics as dwarf or semi-dwarf growth patterns, dark green color, resistance to heat, cold, drought, specific diseases, or insects. Some will withstand wear better and recuperate faster than others. Some