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UPDATE Sports Field Managers Association of New Jersey

Fall 2011
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EXPO 2011

A Strong Program is Slated for this Year's Show in Atlantic City

by Brad Park

(Editor's note: This article was adapted from materials provided by Sports Turf Managers Association)

It's time to begin planning your trip to Expo 2011. The New Jersey Green Expo Turf and Landscape Conference will be held at the Trump Taj Mahal in Atlantic City, NJ on December 6-8, 2011. How can you convince your employer to send you?

Continuing education and industry connections are crucial to your success and the success of your sports fields. Here are some suggestions to help your employer understand how your attendance at Expo 2011 can add value to the overall operation of your facility.

EDUCATE YOURSELF ON THE CONFERENCE AND EXHIBITION

Provide an overview of the size and scope of Expo 2011. It may be helpful to give your employer a copy of the brochure. This edition of *SFMANJ Update* provides the Sports Field Managers Program for Expo 2011.

Pinpoint specific sessions you plan to attend, and tie their relevance to your sports facility. As part of the Sports Field Managers Program in 2011, presentations

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An attendee-packed SFMANJ-sponsored Trade Show was among the highlights of the 2011 Rutgers Lawn, Landscape, and Sports Turf Field Day.

Dr. Steve Hart, Rutgers University, discusses nonselective herbicide efficacy during the Rutgers Lawn, Landscape, and Sports Turf Field Day held at the Rutgers Adelphia Research Farm on July 27, 2011.

Welcome! New and Renewed SFMANJ Members

Currently we have 213 new and renewed members. In January 2011, SFMANJ mailed invoices for 2011 membership dues to all current members. If you did not receive an invoice, please contact us at 856.514.3179 or download the membership form available at www.sfmanj.org. Mail membership dues direct to SFMANJ, PO Box 205, Pennsville, NJ 08070.

Scott Beachy . . . . . *Twp of Millstone*
Bill Butler . . . . . *Lakewood Blue Claws*
Marc Demario . . . . . *Student*
Barry Draycott . . . . . *Tech Terra Organics*
Thomas Elder . . . . . *Ewing Twp*
Kieth Fisher . . . . . *Opening Day Sports Fields*
Mark Fletcher . . . . . *St. Rose High School*
Dennis Gronahan . . . . . *Dryject, Inc.*
John Hughes . . . . . *Old Bridge Twp*
Mark Kellet . . . . . *Old Bridge Twp*
Ed Lucid . . . . . *Middlesex County Parks Dept.*
William Mateka . . . . . *Old Bridge Twp*
Janet Meisner . . . . . *Byram Twp*
Jeffrey Miles . . . . . *Fairleigh Dickenson University*
Tim Moore . . . . . *The Lawrenceville School*
Mark Ozoroski . . . . . *City of Summit*
Laura Varner . . . . . *Geese Chasers*

This year's weather did a number on all of us! But we'd like to see how you handled it!

There is still time to enter the 2011 Field of the Year contest!

ELIGIBILITY:

- Must be a current member of SFMANJ
- Only school and parks/recreation natural grass fields are eligible

AWARD WILL BE BASED ON:

- Playability and appearance of the playing surfaces
- Description of your maintenance program and what you did to improve your field
- Description of your yearly budget for this field

AWARDS:

The winner will be honored with a plaque at the New Jersey Turfgrass and Landscape Conference and Expo in December 2011 and will be featured in an article in SFMANJ's Update newsletter.

The winner will also receive a free stay at the Trump Taj Mahal, Atlantic City and free registration to education courses and trade show at Expo.

SUBMITTING YOUR ENTRY:

- All entries are to be submitted by mail or e-mail and must be received by September 30, 2011.
- Entries are limited to 10 color photos. Please include the name, location and owner of the facility, along with your name, position, and contact number.

MAIL ENTRIES TO:

SFMANJ 2011 F.O.Y. Contest • P.O. Box 205, Pennsville, NJ 08070
OR E-mail to: mail@sfmanj.org

Photos will not be returned and may be used on SFMANJ website and promotional settings

2011 SFMANJ BOARD OF DIRECTIORS

MISSION STATEMENT

Committed to enhancing the professionalism of athletic field managers by improving the safety, playability and appearance of athletic fields at all levels through seminars, field days, publications and networking with those in the sports turf industry.

Contact us at:
PO Box 205 • Pennsville, NJ 08070
Web site: www.sfmanj.org
Email: mail@sfmanj.org • Phone/Fax: 856-514-3179

National Organization
Sports Turf Managers Association
www.stma.org
Email: stmainfo@stma.org • Phone: 800-323-3875

INSIDE THIS ISSUE

This newsletter is the official quarterly publication of the ***Sports Field Managers Association of New Jersey.***

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Question & Answer with Rutgers University

Dr. Jim Murphy

Q: Is there a recommendation for a slow growing or "no growing" turf for business campuses converting lush full sun lawns to solar arrays with a need for turf cover underneath?

A: The best adapted grass seed would be one that includes fine fescues - 100%, by weight. Fine fescues will have the lowest mowing requirement. Hard fescue and sheep fescue will be the lowest growing and have the least need for mowing (once a year). The down side to these is sensitivity to vehicle traffic in the summer. Mowing these grasses in September or October is usually what is done in naturalized areas on golf courses. If there is an need to mow sooner, you need to wait for seedhead initiation and elongation of the flowering culm (April through May) but get the mowing done before summer stresses begin.

There are various names used to market these seed mixes such as "ecology mixes" and "naturalized mixes" and these all contain a lot of (if not only) fine fescues. I would emphasize hard fescue (30% or more) in the seed mix. Sheep fescue is another good component followed by Chewings fescue. Strong and slender creeping red fescues would be okay but I would keep these as minor components in a seed mix (25% combined).

Tall fescue will have good tolerance to shade under solar arrays but this species will require more mowing. So, you may want to avoid in a seed mix if mowing needs to be minimal. If you use tall fescue, you must avoid forage types and buy turf-type tall fescue.

Other grasses could be included but these will also add to mowing requirements and won't be as shade tolerant, so keep these as minor components: Perennial ryegrass (10% or less); Kentucky bluegrass (10% or less).

Q: Does the grass grow faster if you mow high or mow low?

A: If you mow too low, that stresses the grass, which makes it grow slower essentially because it is not healthy. Long term, mowing at too low a cutting height ends up encouraging a lot of weeds to invade and overtake the grass. Conversely, mowing higher keeps the grass healthier, which allows it to grow (which I would call normal not "faster" growth) and keeps the weeds from invading. Therefore, low mowing to "slow down" the growth of the grass is NOT a beneficial practice; it is a counterproductive practice that damages the grass.

Q: Does bark mulch use nitrogen when it is in the process of decomposing?

A: Yes. Bark mulch does result in reduced nitrogen availability to plants. Microbes are very active at decomposing the carbon in the bark mulch; in the process, the microbes have a high demand for nitrogen and scavenge it from the soil much faster than plants can acquire it. This is one reason why mulch is so effective at controlling weeds; there is a reduced nitrogen availability to the weeds, so those plants do not grow as vigorously. .

Dr. Jim Murphy is Extension Specialist in Turfgrass Management, Rutgers University and SFMANJ Advisor

A Message from The President

By Don Savard, CSFM, CGM

"In preparing for battle I have always found that plans are useless, but planning is indispensable."

Dwight D. Eisenhower

When I look at my sports fields after a hot summer and an intense fall sports preseason, I think about what I did right and what I would like to do different next year. Late summer tells the story of how well my turf plan worked. Good plan or bad plan, it is the time to find out why and learn from the outcomes.

For many of us, fall is the time when we prepare our budgets for the next fiscal year. A budget is nothing more than a strategic plan expressed in dollars and cents. Careful planning now will help us formulate the ways and means of getting the job done on time and on budget. Safe playing fields don't just happen; they come about as a result of a well thought out program and smart utilization of precious resources.

Speaking of planning ahead, we are planning a Fall Field Day on November 9, 2011 at the Middlesex Vocational Technical High School in East Brunswick, New Jersey. This afternoon event is FREE for SFMANJ members and will be hosted by our own resident infield expert, Ray Cipperly. We will feature a demonstration of a new infield dirt renovation amendment product and process and have a Q&A discussion of infield improvements that you can make this fall, before winter and the next baseball/softball season begins. Brad Park will also be on hand with updates of the new Nutrient Management laws that will soon be in effect. Stay tuned for more information on this.

Don Savard

Don Savard is a Certified Sports Field Manager (CSFM) and Certified Grounds Manager (CGM); Director, Athletic Facilities and Grounds, Salesianum School; and President, SFMANJ.

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EXPO 2011

will be delivered on pest management for school grounds, synthetic field maintenance, practical solutions to failed sports fields, Rutgers research update, and a panel on doing more with less.

Highlight the trade show and cite suppliers and equipment manufacturers you plan to meet.

Discuss the networking opportunities you will have with peers who share challenges similar to the ones you have.

Note that NJ DEP pesticide recertification credits will be applied for, including tough to acquire Category 13 Credits.

Explain how innovations in products, new research, and cutting edge management techniques continually change, and why it is important to stay abreast of those changes.

Reinforce how the success of your sports fields ultimately depends upon the continued professional development of you and your staff.

KNOW THE COST

Make a case for efficient and effective use of your facility's training dollars. By attending Expo 2011, you will be exposed to the most relevant education and technology in one place, making it the most effective use of training dollars.

Research travel times and hotel costs. While Atlantic City is feasible day trip from almost anywhere in New Jersey, the New Jersey Turfgrass Association does its part to negotiate reasonable room rates at the Trump Taj Mahal to make staying a night reasonable. Expo 2011 will feature online registration at www.njturfgrass.org

HAVE AN ACTION PLAN

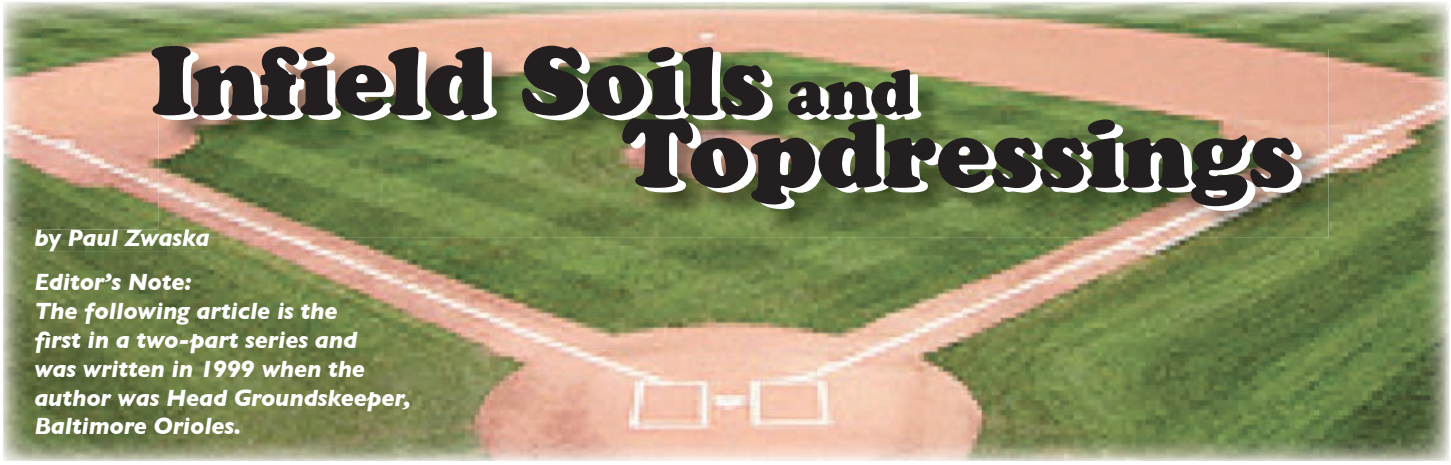
Develop a plan for how operations will continue in your absence. Make sure you are accessible by phone (please turn off or set on vibrate during sessions!!!!) to address any concerns that might arise in your absence.

Consider preparing and presenting a report on the information you learned and how you plan to put it into practice at your facility.

Demonstrate how you will share the technical information learned with your staff for their continuing educational development.

SEE YOU IN ATLANTIC CITY IN DECEMBER!

Brad Park is Sports Turf Res. and Ed. Coor., Rutgers Univ., SFMANJ Board Member, and Editor, SFMANJ Update



Infield Soils and Topdressings

by Paul Zwaska

Editor's Note:
The following article is the first in a two-part series and was written in 1999 when the author was Head Groundskeeper, Baltimore Orioles.

Baseball is a unique sport in grounds management. It's the only major sport that is played on a field that has both turf and exposed soil for a playing surface. Ballplayers scrutinize the playability of your skinned areas more closely than you're turf areas. Your reputation as a groundskeeper will depend on the skin you keep.

This is not to say that the turf areas on a baseball field are unimportant. But if you think about it, 75% or more of the game occurs on the skinned areas of the field. Unfortunately, this crucial subject is avoided by the academic institutions that teach many of today's up and coming athletic field managers.

With no written guidance, new groundskeepers must resort to trial and error if they haven't been lucky enough to learn from another groundskeeper in the business.

GOALS FOR A QUALITY INFIELD SKIN

Traction: Most players desire the same quality in an infield skin: traction. That's the reason for the spikes in their shoes.

Nothing makes a player happier than a firm infield skin that is moist and cork-like, not hard and baked dry. The cleat should penetrate the skin and leave a perfect imprint. Very little soil should be disturbed or displaced. When players plant their feet to throw, field the ball, or run, the soil should not give way under them. The traction in your infield skin comes from its base soil. Choose your mix carefully. Many companies that sell infield skin mixes know nothing about their proper function.

Many mixes are too sandy. Soils that don't firm up (high sand content of 75% or higher) are more mobile. This creates low spots in high-traffic areas (around bases and fielders' positions) more quickly, especially as the field dries out. The loosened material is more likely to be carried to other portions of the field to create high spots and huge lips at the infield skin/turf interface.

These sandy infield mixes increase infield skin maintenance problems. The loose soil also causes unstable footing for ballplayers, increasing the risk of foot, ankle, and hamstring injuries.

Drainage: The proper drainage on your infield skin dictates how quickly you will resume play after a rainfall. About 95% of the water that falls on the skin should run off the surface.

Good surface grade and proper maintenance techniques will give you the best results. Your infield skin should have a minimum 1-1/2-inch fall from the front of the skinned area to the back. Percolation rates on a good, firm infield skin should be 0.03 to 0.05 inches of rain

per hour. Only in rare, special problem areas should a sandy infield mix be used to help drainage problems.

Drainage lines installed under the infield skin are a waste of time. If you use the proper soil for the skin, it will never perk enough rain to reach the drain tile. A drain line is more appropriately positioned five to 10 feet behind the infield skin in the shallow outfield. Here it will capture water that runs off of the skinned areas.

Amending infield soils with various miracle materials to enhance drainage throughout the skinned area usually proves unsuccessful. At best, these amendments provide a very short-lived remedy.

Topdressing: Choose the proper topdressing to work with your base mix. Think of your skin as a two-tier profile: the top 1/4- to 1/2-inch consists of your topdressing, and the remainder consists of your base infield mix.

The topdressing on the skin provides a cushion for the players. It creates a buffer zone between the players' cleats and the moist base soil mix, and prevents the soil from sticking. The topdressing layer also helps you endure light rain showers during games.

Don't go any thicker than a 1/2-inch layer of topdressing on the surface of the skin. A deeper layer will cause the ball to skid under infielders' gloves instead of taking the proper hop. It can also drastically influence a ballplayer's traction.

INFIELD BASE SOILS

Testing: If you don't know the percent breakdown of sand, silt, and clay in your skin base mix, have it tested to give you a reference point for comparisons. Send a sample of your soil to a private testing lab or county extension office that performs particle size analysis or soil texture analysis work. These labs will give you the composition percentages, and they'll show you where your soil fits into the soil texture triangle. A simplified home version of the test is also available. It can give you a ballpark figure of your percentages.

There is a simple way to get an estimate of the percentages of sand, silt, and clay that are in your base mix. This experiment provides a nice, cheap way of checking soils if you are looking around and can't afford to do a lot of testing.

DETERMINING SOIL TEXTURE

Step 1. Obtain a quart mason jar with a lid, like the ones used for canning. Fill it a little more than half way with the soil you wish to test. Fill the rest of the jar with water, and attach the lid tightly.

Step 2. Shake the jar vigorously for a couple of minutes to fully separate and wet the soil. There should be absolutely no lumps of soil left when you're finished agitating it.

Step 3. When you feel that the soil is fully dispersed in the solution, set the jar down and begin timing. After 45 seconds, mark a line on the side of the jar with a grease pencil or White-Out where the top of the layer of sand has settled out in the jar. Next, put a mark at the top of the next layer after three hours have passed; this is your silt layer. After 24 hours, your clay will have settled out as well.

Step 4. Measure the total depth of soil in the mason jar. Then measure the thickness of each of the three layers using your marks on the jar.

Step 5. Calculate the percent of sand, silt, and clay in your soil sample with the following procedure:

1. Divide the thickness of the sand layer by the total depth of the soil in the jar.

2. Follow the same instructions for both the silt and clay layers.

3. Multiply each of the three figures by 100, and you will have the percentages of sand, silt, and clay in your sample.

Step 6. You can now check the soil texture triangle to see where the intersection of the three values places you on the triangle (see Figure 1). Remember that this is an estimate. If you need a more precise test, it is worth your while to have a professional test done by a private lab or a county extension office.

Soil testing labs use a couple of different quantitative methods to determine relative amounts of soil separates. Once the relative amount of sand, silt, and clay are known, you can determine the soil's textural class using the soil texture triangle provided. Each side of the triangle represents the relative content or percent of one of the three soil particle size classes.

General Guidelines: Remember that soils differ greatly around the country and they react differently to many things. The following gives generalizations as a guide for base mixes. Soils in your area might not always fall into these guidelines.

You want to keep the sand fraction of your base soil between 50% and 75% (normal base mix). Soils with higher sand content normally become too loose and mobile. The soil becomes loose with play and is transported to other areas of the skin by the dragging process or by play.

You may think you'll gain drainage if your base mix has high sand content. In fact, it creates more maintenance headaches.

The mobile soil rapidly develops high and low spots in the skin, and lips at the skin/turf interface. Those low spots and high lips interfere with the surface flow of rainwater draining off the skin, and large puddles develop.

In base mixes with higher sand content (> 75%), there is not enough binder (clay and silt) to hold the soil firmly together. As a game progresses, the skin becomes more loose in the high-traffic areas. This reduces traction and increases risk of injury to feet, ankles, and hamstrings.

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Quick Facts:

2011 New Jersey Fertilizer Law

Dr. James A. Murphy and Dr. Stephanie L. Murphy

The New Jersey Fertilizer Law was conceived to protect all New Jersey surface and ground waters from impairment by minimizing nitrogen and phosphorus loading that may be derived from lawn fertilizer. Generally, excess nitrogen is a threat to coastal water (estuaries) quality while excess phosphorus is a greater concern for fresh water quality. Both nutrients are also important for plant growth and health.

This law:

- Establishes statewide fertilizer standards, pre-empting the multitude of local municipal ordinances.
- Requires professional fertilizer applicators to undergo training and become certified.
- Limits the time that fertilizer can be used: fertilizer may not be applied during the "blackout dates" of November 15th – March 1st for consumers, and December 1st – March 1st for professionals.
- Prohibits fertilizer application during or just before heavy rainfall, onto an impervious surface, or onto frozen ground.
- Restricts the amount of nitrogen used per application as well as the total for the year:
  - Professionals: can apply no more than 0.7 pound of water-soluble-nitrogen per 1000 sq. ft. per application, and the total nitrogen applied cannot exceed 1 pound of nitrogen per 1,000 sq. ft. per application. The annual total for all applications should not exceed 4.25 pounds nitrogen per 1,000 sq. ft.
  - Consumers: fertilizer products, when applied according to label directions, will apply no more than 0.7 pound water-soluble-nitrogen per 1000 sq. ft. per application, and the total nitrogen applied cannot exceed 0.9 pound of nitrogen per 1,000 sq. ft. per application. The annual total for all applications should not exceed 3.2 pounds of nitrogen per 1,000 sq. ft.
- Restricts fertilizer content:
  - Fertilizer sold as consumer/retail products must have at least 20% of its nitrogen-content in slow-release form.
  - Fertilizers that contain phosphorous can not be applied to turf except when:

    1. A soil test, no more than three years old, indicates the need for phosphorus;
    2. Establishing turf and vegetation for the first time;
    3. Repairing or re-establishing turf;
    4. Applying liquid or granular fertilizer under the soil surface, directly to roots; or

5. The fertilizer consists of manipulated animal or vegetable manure sources. In this case, phosphorus can be included if no more than 0.25 pound of phosphorus per 1,000 sq. ft. is applied, when used according to instructions on the container.

- Stipulates that fertilizer bag label language follows AAPCO standard for turf fertilizer label to avoid the issue of a NJ only turf fertilizer label.
- Establishes buffers. Fertilizer containing nitrogen or phosphorus can not be applied to turf within 25 feet of any waterbody, except where a drop spreader, rotary spreader with a deflector, or targeted spray liquid is used, then the buffer may be reduced to 10 feet. A professional applicator may apply one "rescue treatment" annually to turf in a buffer as per rules above.
- Sets fines for noncompliance: $500 fine for the 1st offense and up to $1000 for the 2nd and each subsequent offense for professional applicators. Municipalities may set fines for noncompliance by residents (homeowners).
- Exempts commercial farms and golf courses, except that no person, other than a certified professional fertilizer applicator or a person trained and supervised by the certified fertilizer applicator, may apply fertilizer to a golf course.

When will specific parts of the law go into effect?

- Effective Immediately: Sections 1: Definitions; Section 2: Prohibited fertilizer applications when: raining, on impervious surfaces, before March 1st or after December 1st or any time ground is frozen, and Section 9: Authorization for DEP in consultation with Department of Agriculture to adopt rules.
- Effective January 5, 2012 -One (1) year from date of signing, the bill will go into effect requiring: All professionals to be certified; Setting limits of nitrogen content to be used by consumers and professionals and banning the use of phosphorous without soil test.
- January 5, 2013 –Section 11 (label and content requirements) shall take effect two (2) years after the date of signing outlawing fertilizer products that do not meet the new content standards set by the law.

When will the certification program be available?

- A model for the certification program has been selected and stakeholder meetings are underway to finalize the details of the program by the end of June 2011.
- The proposed program will be an online auto-tutorial format for training. The certification test will also be available online with an automated registry into the publicly available online list of certified fertilizer applicators (as required by the law).
- The plan is to have a functional online certification program by fall 2011. Stay tuned - more news to follow.

Questions or Comments about this topic?

Visit the NJAES Soil Testing Lab at
http://njaes.rutgers.edu/soiltestinglab/
or Frequently Asked Questions at the FAQ website
http://snyderfarm.rutgers.edu/fertilizerlawFAQ.html

Dr. James Murphy is Extension Specialist in Turfgrass Management, Rutgers University and SFMANJ Advisor

Dr. Stephanie L. Murphy is Director, Rutgers Soil Testing Laboratory

New Jersey Green Expo – Turf and Landscape Conference

Trump Taj Mahal Casino-Resort, Atlantic City, NJ

2011 Sports Field Managers Expo

Program

TUESDAY, DECEMBER 6, 2011 . . .

1:00 – 1:45 **Low impact pesticides to control weeds on school grounds**
Dr. Douglas Linde, Delaware Valley College

1:45 – 2:30 **White grub control strategies for school grounds using entomopathogenic nematodes**
Dr. Albrecht Koppenhofer, Rutgers University

2:30 - 3:00 **Controlling turfgrass diseases in a school environment**
Steve McDonald, Turfgrass Disease Solutions, LLC

3:00 – 4:00 **Sports field management in accordance with the NJ School IPM Law**
Rich Watson, Pine Hill Schools

4:00 – 7:00 **Trade show**

WEDNESDAY DECEMBER 7, 2011 . . .

Wednesday AM

7:30 - 8:30 **Early bird sports field managers**
Networking roundtable

8:30 – 9:30 **Annual Business Meeting with SFMANJ Legislative Update**

9:30 - 10:30 **Practical solutions to failed sports fields**
Dr. Norm Hummel, Hummel & Co., Inc.

10:30-11:30 **Maintenance of a synthetic infill field**
Shawn Mahonski, Towson University

Wednesday PM

2:30 – 3:30 **Research-based turfgrass variety selection**
Brad Park, Rutgers University

3:30 – 5:00 **Doing more with less: Surviving the Problem**
Panel Moderator: Don Savard, CSFM, CGM
Tom Carter, Purchasing Manager, Cherry Hill Public Schools
Tom O'Donnell, Director of Buildings and Grounds, Pine Hill Public Schools
Brad Pastrick, Sports Field Manager, North Brunswick Parks
Bill Foelsch, Director of Parks and Recreation, Morris Township

Photo Recap of SFMANJ-Sponsored

Trade Show and Equipment Demonstrations at Rutgers Lawn, Landscape, and Sports Turf Field Day,

By Brad Park

July 27, 2011, Rutgers Adelphia Research Farm, Freehold, NJ

Infield Soils and Topdressings

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Soil texture affects many properties of soil. Compactability, porosity, bulk density, water-holding capacity, and drainage are all affected by the makeup of the soil.

Soils high in sand normally hold very little water and drain rapidly. Soils high in clay normally hold large amounts of water and can drain variably, depending on structure.

Soil texture refers to the percentage of sand, silt, and clay particles in a soil. These particles are defined by their size.

To tighten up a high-sand base mix, till in a nice clay loam soil. Add several tons at a time, till it, work it, let it settle, and pack and see how it reacts before you add more.

High-clay and high-silt soils create a different problem: compaction and hardness. Generally speaking, the combination of these two materials should not exceed 40% to 50% of your soil mix. Too much of either of them can inhibit intake of water into the skin due to lack of pore space from compaction.

The result is a hard field that is unable to take up moisture to help soften it. The best solution is tilling in calcined clay to help reduce compaction and increase pore space. But be careful not to blend in too much material.

Again, add your calcined clay by a couple of tons at a time. Till it, work it, let it settle, and pack and see how it reacts before you add more. The alternative is to replace the base mix with a new mix.

Rocks and pebbles in an infield base mix can be a major problem. Your base soil should be able to pass through a 1/4-inch screen, or at the very least a 3/8-inch screen, to eliminate any rocks or pebbles.

For Oriole Park at Camden Yards, I use a 60% sand, 20% silt, 20% clay base mix. This translates to a borderline sandy loam and sandy clay loam. I've used it since the day we moved here. It's a very stable soil with little mobility. Low spots on my infield are rarely a problem, but that is also partially due to the management of the skin.

The lesson to be learned here is don't just pick any old soil for your base mix. Know what you are getting by asking for a soil particle size analysis.

And whatever you do, don't purchase a mix just because some salesman says that he has "x" ballclub and "y" ballpark using it. Most of those people have zero knowledge of what kind of soil creates the best infield skin.

INFIELD TOPDRESSINGS

In general, there are four types of topdressings on the market today. Calcined clay is probably the most widely known.

Calcined Clays: Quality calcined clays are usually made from the montmorillonite family of clays. They are fired to about 1200 degrees, a point where the clay particles become stable. Stable particles will not become soft or melt into a slimy clay when wet. Instead, they

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Infield Soils and Topdressings

Continued from page 12

maintain their original shape and hardness. The firing process evaporates the moisture in the micro pores of the clay particles, making them extremely absorbent. Particles will release absorbed moisture, but at a slower rate. Calcined clays work exceptionally well as a topdressing for high-sand infield mixes. The firing process gives the clay particles a light bulk density. This prevents too much clay from sinking into the sandy soil. It also helps hold moisture at the surface. Normally, large pore spaces in high-sand base mixes allow gravity to pull moisture out.

Calcined clay also works on normal infield mixes, but at times it can hamper field preparations after a rain. Particles that are on the field when rain comes absorb the water to their field capacity. When you're trying to dry out the skin, the particles continue to release moisture. You have to add more calcined clay to the field to dry it up, and suddenly you have too much topdressing on the skin.

Vitrified Clay: Vitrified clay topdressing is made from the montmorillonite and illite clay families. These clays are fired to 2000 degrees, causing the particles to expand. The process creates macropores and reduces the amount of micropores. Thus, the vitrified clays absorb much less water then a calcined clay. If you're looking for absorption, the finer grades will work a little better than the coarse grades.

Vitrified clay topdressings are not to be used on infield base mixes with high sand content. Vitrified clays have a heavier bulk density then calcined clays, and the topdressing will sink fairly quickly as it is agitated by play and regular maintenance.

However, vitrified clays work tremendously well on normal or high-clay/silt infield base mixes. They can be used straight, but they work even better when mixed with a calcined clay in approximately a 60:40 or 70:30 vitrified to calcined ratio.

Vitrified clay in these base mixes creates a buffer zone between players' cleats and the infield base mix. This allows you to wait a little longer before you cover the field for a light to moderate rain. Vitrified clay sheds water as it gets wet. It allows the water to roll through to the base mix until it has absorbed all that it can handle. Any excess water will run off if the grade on your infield is correct. A small amount of calcined clay in your mix will help increase your water holding capacity a little.

Unlike calcined clay, vitrified clay won't absorb water to field capacity and extend your drying time by releasing the moisture.

Because of its lack of moisture-absorbing micropores, vitrified clay products will not work as a drying agent during a game. Also, it's not highly recommended as a soil amendment for tilling into your base mix.

Crushed Aggregates: The third type of topdressing material, crushed aggregates, combines various crushed stone products with crushed brick. These materials absorb minimal amounts of water, and they have a heavy bulk density.

Again, because of the bulk density, crushed aggregates should not be used on any high-sand base mixes due to rapid migration down into the mix. They can be used on normal infield mixes, and even high-clay/silt mixes, but only as a topdressing.

Continued next page

Infield Soils and Topdressings

Continued from previous page

These topdressings perform better when enhanced with some calcined clay. Don't till these materials into your mix, or you may eventually wind up with something similar to concrete.

Diatomaceous Earth: The fourth and final topdressing material is diatomaceous earth. It's made of sedimentary rock composed of fossilized skeletal remains of diatoms (microscopic, single-celled plants). The material is very high in silica (between 86% and 94%). During processing, it is crushed, dried, and calcined to remove any organic contaminants. It becomes a very porous product that can absorb large amounts of moisture.

Diatomaceous earth works well for drying a field after rains, but it's very expensive and creates several major problems. First, it has a very light bulk density. This allows it to easily blow off your field in the wind, causing major problems with lips where your skin meets the turf edge. Also, when incorporated into the soil, diatomaceous earth tends to float back to the surface in time. It breaks down very rapidly from friction wear (dragging the infield). And finally, due to the high content of silica, it has a funny color and has shown some problems with glare on sunny days. For Oriole Park at Camden Yards, we currently use a mixture of 80% vitrified clay and 20% calcined clay as a topdressing for our infield. We maintain approximately a 1/4-inch layer of topdressing on our skin areas.

MAINTENANCE ISSUES

Base Mix: Here, the key is moisture, moisture, moisture.

Moisture is what will give your base mix the corky feel that the players desire. Try to keep your infield skin as moist as possible. Soak the skin deep in the evening after the last game has been played. It then has all night to perk as deep as it can into your mix without evaporation stealing too much away from it.

During the daytime, add water as time and weather dictate. I can't stress enough how important it is to keep your field moist as long as possible. When it dries out, it takes a long time to reestablish a good moist base again.

If your base mix is getting too tight or hard, you might decide that you want to open it up to introduce some pore space into it. You want to till it; I prefer to save rototilling for when I'm adding an amendment to the soil mix and I want to mix it really well. Otherwise, I think a rototiller adds too much air to the base mix at one time. You have to spend too much time with a roller trying to firm the base mix back up.

I like to use a greens aerator to open up my infield mix. It increases pore space while maintaining most of the integrity (firmness) of the base mix. Unless you want to use it to amend the base mix, scrape off your infield topdressing or pull it to the side before you start.

I might go over it once or twice, depending on how much pore space I want to create. Always soak the infield the night before, or do this procedure after a rain so the skin base mix is not hard and dry. Moisture will determine this method's success. Of course, you still re-roll the skin once you've dragged the infield after this operation.

One caution: never till or aerate your skin with the intention of leaving it open to help moisture soak deep. I have seen too many people end up with a quagmire because of this. Always roll your base first before adding water. There will still be plenty of pore space left.

When I open the skin with an aerifier, I usually re-level my infield skin mix at the same time. When you are re-leveling your skin, you are basically rechecking the grade of the base mix from front to back to ensure that it's a smooth grade with no high or low spots.

When doing this, it's important to have your topdressing removed to allow the soil you add to properly adhere to the existing infield base soil. A nice, deep spiking of the skin works well to loosen the top inch or so to make it easy to cut down high areas. It also allows any soil you add to low areas to mix and bind better with the existing base mix.

You should re-level your infield at least once a year, and twice if it receives year-round play. At Oriole Park, we level our base mix three to four times per season. Frequency should be based on how mobile a base mix you have, the level of activity the field receives, and your manpower and time availability.

RE-LEVEL YOUR SKIN PERIODICALLY TO PREVENT DRAINAGE PROBLEMS CAUSED BY HIGH AND LOW SPOTS.

Re-leveling allows you to cut down any high spots and fill any low areas. These areas can develop for two reasons: high concentrations of play (around bases and players positions), and dragging/grooming patterns you use on the field.

We check our grade by running a tight string line from the turf edge at the front of the infield to the turf edge at the back of the infield. It's important to remove any lips at the turf's edge before you run your string lines, since they can seriously throw off your grade reading. Roll and soak the base once you've completed the re-leveling project.

Topdressing: When you initially put your topdressing over your base mix, it should be spiked into the top 1/2 to one inch of the base mix. Once you're finished working this in, drag it and water it. Adjust your topdressing application so that you have about 1/4 to 1/2 inch of loose topdressing on top, and maintain that throughout the season by replenishing when necessary.

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SETTING YOUR LINES RIGHT WITH THE EMPHASIS ON STENCILING

Don Savard, CSFM, CGM

Whether it is for function or decoration, lines and logos personalize your fields and give your team the home field advantage. Almost all sports and games played on turf or packed clay require some form of lines or markings to help define boundaries, and assist the officials in making correct calls. Lines help the participants perform best by bringing order and strategy to the game. These markings are usually painted or marked with a non-caustic pulverized limestone. Here are some things that I have learned from other sports field managers that help me set lines.

Measurements: Sports require accurate measurements. Tape measures are more precise than measuring wheels. Surveying instruments are the most exact and may be required at the higher levels of the sport. "Square" or 90°corners can be made without surveying instruments by using the 3-4-5 method. Where you want to make a corner, make one line perpendicular to another. On one line, measure out from the corner 30 feet. On the adjacent line, starting from the same point, measure out 40 feet. Draw a line from your 30 foot mark to the 40 foot mark. The result should be 50 feet. If not, adjust either line so that there is a 50 foot measurement from the 30 and 40 foot marks.

Dry Line Marking: For human safety, always use a non burning, non caustic marking material such as pulverized limestone. Avoid marking turfgrass with a dry marking material as it might injure turf, modify the soil or over time, create a ridge on the playing surface that could become hazardous to players. Dry marking materials work best on bare soil or "infield dirt". Dry line markers are similar to a drop fertilizer spreader. The marking apparatus features a narrow opening that is the width of the line and can be operated by one person. Other types of markers include a trough type that can be several feet long for marking base paths or shorter for marking batters boxes. These are usually used in the higher levels of baseball or softball and can require 2 people to handle.

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STENCILING

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Field Marking Paint: Paints consist of liquid (or solvent), color (or pigment), sticker (or binder) and other additives such as a fast drying agent. Sports field marking paints are usually water based latex acrylics. Petroleum distillate based paints or volatile organic compounds (VOC paints) can be injurious to plant tissues. Field marking paint is available the forms of aerosol spray paint in inverted cans and bulk paint in 1-5 gallon pail containers. Bulk paint may be premixed ready to use or it may need to be diluted with water in some ratio.

Painting Equipment: The most basic field paint equipment is the paint brush and roller, simple and effective but time consuming. Many sports field managers with only a few sports fields use the inverted aerosol spray paint can holder machine. This is a tool that no sports field manager should be without. It is helpful for touchups, for painting contrasting colors quickly and as a backup for when the primary paint machine breaks down. Most sports field managers use some form of a powered paint machine. These include sprayers ranging from a CO2 tank units to gasoline powered compressor or pumps to electric pump models. Push, self propelled and riding paint machines are available. Be sure that your machine is kept clean; in good repair and have spare parts are on hand.

Preparations for painting: For best results, mow the turf (at least where the lines are) before painting. In dry weather, avoid painting right after mowing unless you give the turf some water. This will help prevent a burning effect. Avoid painting wet grass. Paint does not adhere well to wet grass. To remove dew, connect two 100 foot water hoses and with a person on each end, start in the end zone and drag the hose the length of the field.

Paint Can Tips: Before shaking, tap the can with your hand to gently break the marble loose, then shake vigorously to thoroughly mix the paint. If you store aerosol cans upside down, it will make it easier to break the marble loose. Avoid temperature extremes. In cold weather, fill a 5 gallon pail with hot water, and put the aerosol cans in to keep them warm. Some brands of spray paint have adjustable tips on the can that can rotate to make a wide or narrow line.

Mixing Paint: Dilute (if necessary) your paint per the paint or sprayer manufacturers recommendations. Mix paint by pouring bucket to bucket, or, use a drill powered mixing device or use a bulk paint dispenser with agitation mixing. For best results, always strain the product before adding to the paint sprayer.

Paint Application Tips: Always string your lines for the best results. If you are painting lines on dry infield dirt, first moisten the dirt with water. This will prevent the paint beading up in the dust. Remember that when painting lines, your gait will influence not only the quality of the line (straightness, brightness and width) but also how much paint you will use.

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Infield Soils and Topdressings

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Spike your infield on a regular basis to smooth out cleat marks and other imperfections. You shouldn't have to cut deeper than 1/2 inch. Follow-up by dragging and watering the skin. Again, keep that skin moist as much as possible during the season.

Special pure clays are used in the batter's boxes, catcher's box and the pitcher's landing area. Topdressing these areas takes a little more care. This clay is chewed-up by cleats and eventually spread around into the topdressing, so it's a good idea to sweep off and replace this topdressing on a regular basis.

When that clay mixes with the topdressing, it inhibits the flow of moisture and makes the topdressing very sticky. This makes it hard for deep watering of the mound and home plate skin areas. At Oriole Park, we usually replace ours after every third game.

If you use dry line chalk to mark your foul lines and batter's boxes, it's a good idea to scoop up what's left of the lines after the days games. This will prevent the chalk from becoming part of your skin mix, which can cause discoloration, a change in your soil texture over time, and a decrease in the flow of moisture into the base mix.

Finally, as you head into winter, when the field will be unused for several months, either scrape the topdressing off the field and remove it, or create a catch basin an inch or so deep in the skin wherever the skin meets the turf. This prevents large amounts of topdressing from blowing into the turf edge and creating large lips during the windy months of winter. Here at Oriole Park, we do both as a good preventative maintenance practice for lips.

Remember, these are just guidelines to help you make better decisions when building, renovating, or maintaining an infield skin. There are many variables, especially when it comes to soils.

It's the responsibility of each groundskeeper to know what makes an ideal skin and to apply that knowledge. Use the resources available to you. You may not have the time or dollars to create the perfect skin infield, but you can't improve what you have unless you know what you're working towards.

Paul Zwaska is General Manager, Beacon Athletics, Middleton, WI.; and Member, Sports Turf Managers Association (STMA)

Sports Field Managers Association of New Jersey

2011 CALENDAR OF EVENTS

NJ State League of Municipalities
96th Annual Conference
November 15-17, 2011
Atlantic City Convention Center
609.695.3481
www.njslom.org

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STENCILING

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both common. Other tools include hash mark sleds and batter's box frames. Some sports field managers use planks as straight edges for painting along wide out of bounds lines or along end zone letters. If number stencils become warped, place on concrete and allow the sun's heat to warm and flatten them in a couple of hours. When dotting stencils, use an aerosol can to do it. This way the paint will dry faster. When painting logos, paint a white base coat first and allow it to dry. Then paint colors on top. Don't go by the rule "If a little paint looks good, a whole lot of paint will look great!" Too much paint can be harmful to turf. On most logos and letters, a border around each will make your work stand out on the field.

Paint Removal: If you a make a mistake, be sure to keep an aerosol can of green paint or some turf colorant handy as an "eraser". I use a long handle, soft bristle truck washing brush and some mild soapy water as well as water hose for paint removal when necessary.

Sports field graphics make the game easier to play on and watch. Sharp looking field graphics draw the eyes away from field imperfections such as wear. It helps to create team pride, brings out the beauty of your field and showcases the talents of you and your crew.

Don Savard is a Certified Sports Field Manager (CSFM); Certified Grounds Manager (CGM); Director, Athletic Facilities and Grounds, Salesianum School; and SFMANJ President

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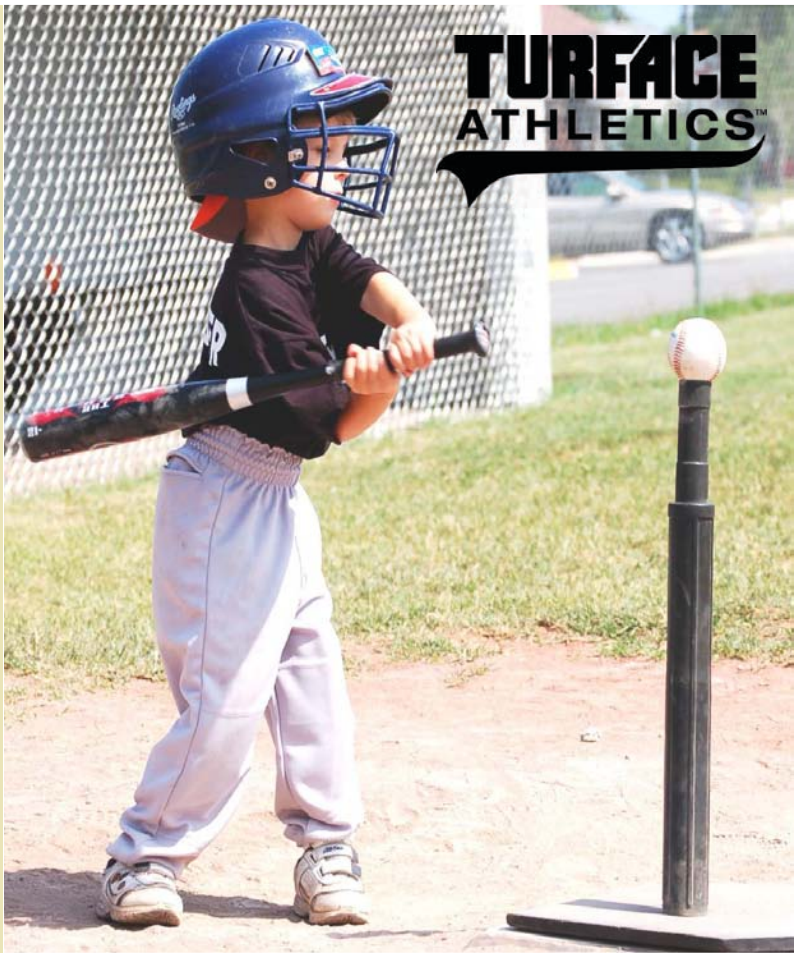

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