Looking For an Engineer
Experienced in Building Athletic Fields?

by Eleanor Murfitt

As I began interviewing engineers for designing my township's 60-acre site, I wondered how many engineers write effective specifications for athletic field construction? How many use broiler plate DOT specifications? How many directors like myself know the difference? What are effective specifications? When looking at previous projects the engineer was involved in, would I be able to determine who was....

Welcome New & Renewed SFMANJ Members

Currently we have 286 members. If you did not see your name this year call (908) 730-7770. Renewal forms will go out into the mail the end of November. Please Take Note: This year you can not renew with STMA, the National Chapter.

James Chimento
JC Landscape Construction/
Management Co.

Yves Delpeche
Orange Township DPW

Pieter Dykstra
Individual

John Helton
Cinnaminson Board of Ed.

George Lynch
Red Bank Borough

Jeffery Marcason
Northvale, Borough of

Paula Redmond
Pemberton Township

Chuck Reynolds
Reed & Perrine

Don Savard
Salesianum School

Ronn Seamon
Aspenn Environmental Services I

Craig Tolley
County College of Morris
School IPM – It’s the Law – What You Need to Know
(Core points)
Ann Waters, NJDEP

Thursday, December 11, 2003
12:30 – 2:30 pm
SFMANJ Business Meeting - Elections

Field Preparation for the Super Bowl
George Toma, NFL Field Consultant for Super Bowl;
Appearance Courtesy of Lofts/Pennington Seed

Topdressing: Benefits, Materials, & Techniques
Dr. Andrew McNitt, Penn State University

Meeting the Challenges of Sports Field Management
Kevin Meredith, National Soccer Hall of Fame

Specifications for Contracted Maintenance Services
James Hermann, Total Control, Inc.

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Calendar of Events

**NJ Turf Grass Association**
Dec. 8 – 11 Expo 2003 Atlantic City, NJ
Athletic Field Educational Session ½ day Dec. 10 &
full day Dec. 11. For information call 856-853-5973
or 732-821-7134

**Rutgers University Athletic Turf Classes**
* February 24-26 Athletic Field Construction and
Maintenance course
* March 9th The Importance of Understanding
Athletic Field Soil
* March 16th The Importance of Understanding
Athletic Field Turfgrass
* March 23rd Understanding Athletic Field Project
Specifications
Information call 732-932-9271

**NJ Landscape 2004 27th Annual Trade Show &
Conference**
February 25th, Wed. 8:30am to 4:30pm. Meadowlands
Exposition Center in Secaucus, NJ. Booth spaces
available. For information call 201-664-6310 or
www.njlca.org

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November/December 2003
Nominations Wanted for SFMANJ
Board of Directors
2003/04

Here is your chance to have a voice in 2003-05 leadership of the SFMANJ. We are now accepting nominations for Board of Directors. No experience necessary.

There are 12 people representing Parks & Recreation, Schools, Colleges, Professional DPW, Facilities, Education/Extension, Commercial/Contractors and Buildings & Grounds who serve on the chapters’ Board of Directors. Each Director serves a two-year term beginning January 1, 2003. There are six openings. A nomination committee will select members based on the following criteria:

1. Have been interested and active in SFMANJ (a member in good standing)
2. Are proven leaders
3. Are representative of the entire organization, both professionally and geographically
4. Are willing to commit time to the development of our organization
5. Understand when accepting this nomination you are expected to attend one meeting a month (evenings, minimum of 8 meetings), be a Chairperson of one committee, report on that committee at the monthly meeting and help with field days.

If you or someone you know are interested in serving on the Board of Directors fax or send the name, address, biography and phone number. E-mail or fax by November 30, 2003 to:

SFMANJ
PO Box 370
Annandale, NJ 08801
or fax to 908-730-7770, E-mail, hq@sfmanj.org

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On a beautiful early-fall day at the Rutgers Snyder Research and Extension Farm located in Pittstown, NJ, Rutgers University in cooperation with Sports Field Managers Association of New Jersey (SFMANJ) sponsored the October 2003 Sports Turf Workshop.

After a great lunch and introductory remarks made by Eleanora Murfitt, President, SFMANJ; Dr. John Grande, Director, Snyder Farm; and Dr. Bruce Clarke, Director, Rutgers Center for Turfgrass Science, 73 participants began a tour of sports turf demonstration plots.

The tour consisted of field demonstrations created for the purpose of conveying practical and applied information to sports turf managers. Brad Park, Rutgers University, described his broadleaf weed control herbicide demonstration as well as the concept of including a plant growth regulator in turf marking paint. Dr. John Grande and SFMANJ-sponsored student intern, Rob Shortell, Rutgers University showed the results of seeding different turfgrass species at multiple soil depths as well as seeding turfgrasses in early winter. Dr. James Murphy, Rutgers University, illustrated the need for frequent mowing when turfgrass is intensively managed as part of a turfgrass mowing and nitrogen fertilization demonstration conducted on both perennial ryegrass and tall fescue.

The final stop of the field plot tour was an interactive description of baseball/softball infield mixes recently installed at the Snyder Farm. The infield mix plots afforded the sports field managers in attendance the opportunity to view different mixes they might encounter and be responsible for managing as part of their job responsibilities. Jim Herrmann, Vice President, SFMANJ, took part in the demonstration by describing strategies and management practices required to maintain infield mixes.

As part of a presentation that carried 1 Core NJDEP Pesticide re-certification credit, Geoff Slifer and Bob Hasse, Rutgers Snyder Farm, showed proper techniques for storing and handling pesticides as well as the process of calibrating a sprayer.

Turfgrass diseases are often overlooked in sports field management. Dr. Bruce Clarke ended the October workshop by delivering a talk on how cultural practices in turfgrass management influence disease severity.

A special thanks goes out to all those who attended the 2003 October Sports Turf Workshop at the Rutgers Snyder Farm.

Bruce Clarke, Director, Rutgers Center for Turfgrass Science, 73 participants began a tour of sports turf demonstration plots.

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Introduction and Rationale

Management and potentially selection of an infield mix are an integral part of a sport turf manager’s responsibilities if he or she is required to oversee the maintenance of a baseball or softball field. In many cases, a field manager will only be familiar with his or her infield mix and be unaware of the variety of mixes that are available on the market. In Summer 2003 we created plots at the Rutgers Snyder Research and Extension Farm for the purpose of demonstrating different infield mixes.

Our goals in selecting mixes were to choose various mixes that fell within American Society for Testing and Materials (ASTM) standards as well as choose materials that did not meet ASTM specifications.

According to ASTM specifications utilizing sieve designations, no more than approximately 7% of an infield mix may contain gravel (particle sizes greater that 2.0 mm) and 80-94% of the mix should be comprised of sand. The remaining portion of a mix should be silt and clay.

However, the ASTM standards contain a passage, which states, “In the absence of particle size data to assess materials, a reasonable approach would be to prepare a mixture using 15 to 30% clayey soil and 70-85% sand ....”

Using these criteria, we designed the Summer 2003 demonstration that included a total of 5 mixes; two falling within ASTM standards, and three falling outside ASTM standards.

Materials and Methods

A uniform, non-sloped, well-drained site was chosen and three pits (approximately 30 ft x 10 ft) were excavated by rototilling to a depth of 3.0 inches and removing the loosened soil with a front-end loader. Large stones were removed from the pits and the base of each pit was scarified to a depth of 1.0 inch and rolled.

Two pits were individually filled with two mixes that generally fell within ASTM specifications at the high and low end of percent sand composition. Approximately 0.5 inch of mix was added to a pit, rolled to create a firm surface, and additional mix was added and rolled at 0.5 inch increments.

Mix 1: 88% sand, 12% silt/clay
Mix 2: 70% sand, 21% silt/clay, 9% gravel
We divided the third pit into three equal 10 ft x 10 ft sections and filled each section with a mix that clearly fell outside the range of acceptability as defined by the ASTM standards.

Mix 3: 95% sand, 5% silt/clay
Mix 4: 66% sand, 17% silt/clay, 17% gravel
Mix 5: 50% sand, 44% silt/clay, 6% gravel

Mix 3 (excessive sand) was prepared by modifying Mix 1 with additional sand. The volume of a 10 ft x 10 ft pit was determined and a calculated volume of sand was added to a known volume of Mix 1 to completely fill the 10 ft x 10 ft pit. Using similar methods, additional gravel was added to Mix 2 to create Mix 4 (excessive gravel).

While Mix 5 falls outside of ASTM standards due to excessive silt/clay, it must be noted that this mix is acceptable for use in the construction of pitchers’ mounds and batters’ boxes.

Maintenance Regime & Discussion

Following installation, the infield mixes were left uncovered and therefore exposed to weather conditions ranging from heavy rainfall to prolonged dryness.
In order to maintain a “game-ready” infield surface under dry conditions, it was necessary to supply moisture to Mixes 1, 2, 3, and 4 several times daily followed by hand raking. We define a “game-ready” infield surface as being firm yet cork-like (using one’s thumb to create an imprint in the mix) and can be worked with a rake or other scarification tool to create a loosened “cap layer” of mix.

While the addition of moisture to Mix 3 (excessive sand) added some stability to the mix, because of the excessive sand content and subsequent inability to retain moisture, we deemed Mix 3 to be commercially unacceptable.

Mix 5 (excessive silt/clay) was extremely difficult to manage and was rarely game-ready. During dry weather, this mix became rock-hard and cracked. Following rainfall, Mix 5 was soft, slick, unplayable, and an illustration of another commercially unacceptable mix.

Mixes 1 and 2 (both conforming to ASTM specifications) showed differing moisture requirements and drying times following exposure to dry and wet conditions, respectively. Under dry conditions, Mix 1 (88% sand) required the addition of more moisture compared to Mix 2 (70% sand) to bring to game-ready conditions. Following heavy rains and subsequent dry weather, Mix 1 required less drying time to become “workable” with hand rakes and thus easier to prepare for a game-ready surface.

Under all conditions, Mix 4 (excessive gravel), displayed identical characteristics (wetting and drying) to Mix 2, indicating the additional gravel had minimal impact on the behavior of the mix. The 17% gravel content comprising Mix 4 (ASTM standards suggest 7% maximum) presents a significant safety hazard and, in our opinion, mixes similar in composition to Mix 4 should not be used as infield playing surfaces.

After several weeks of allowing the mixes to be exposed to variable weather conditions, we made the decision to cover the mixes with tarps. We made this decision, in part, by noting that the ASTM specifications say, “When budget allows ... areas should be covered with an appropriate impervious cover when not in use. Such covers prevent evaporation in dry weather and protect the area from excess water during rainfall or general irrigation of an infield.”

We made this decision, in part, by noting that the ASTM specifications say, “When budget allows ... areas should be covered with an appropriate impervious cover when not in use. Such covers prevent evaporation in dry weather and protect the area from excess water during rainfall or general irrigation of an infield.”

Considering Mixes 1 and 2 (both conforming to ASTM standards), following rainfall, the covers kept the Mixes dryer and reduced the amount of time necessary to prepare the mixes for game day conditions. Despite covering the mixes, Mix 1 (88% sand) continued to require less time to prepare compared to Mix 2 (70% sand) following rainfall.

Conversely, Mix 2 retained moisture longer compared to Mix 1 following prolonged dry weather and removal of covers. As part of this demonstration, we estimated that infield mix maintenance inputs were reduced by as much as half as a result of covering the mixes.

As part of the Sports Turf Workshop held on October 2, 2003 at the Rutgers Snyder Farm, we allowed 1/3 of each mix to remain uncovered for approximately 2 weeks, and the other portion of the mixes to remain covered until the morning prior to the Workshop. We prepared the covered portions of all the mixes to game-ready conditions on the morning of the Workshop. The advantages of covering were evident on October 2 as the covered areas were game-ready whereas the uncovered sections were rock hard.

Additional Considerations

The infield mix plots at the Rutgers Snyder Farm demonstrated concepts described by the ASTM specifications, most notably the fact that management of an infield mix is affected by relative percentages of sand and silt/clay in the mix. According to the ASTM standards, “… top mixes with 6 to 10% silt/clay [90-94% sand] are better suited in rainy climates due to greater internal drainage. In dry periods, they will
require frequent irrigation to minimize
dust and to provide a firm surface.”
Whereas, “…the presence of clay is
desirable from the standpoint of
providing both a firm and stable surface
for good footing … top mixes 11 to 20%
silt/clay [80-89% sand] will drain more
slowly but will retain more water.
Frequency of irrigation will be less.
These mixes will be more cohesive and
will be more difficult to loosen when
they compact.”

Sports field managers should
consider their budgets, availability of
labor, and typical environmental
conditions (dry climate vs. moist
climate) when choosing an infield mix.

Infield mix maintenance has often
been considered as much an “art” as it
a “science.” While the ASTM
standards provide a starting point from
which to choose a particular mix, and
we effectively demonstrated three
mixes that are not acceptable (Mix 3,
4, and 5), the quality of an infield
playing surface is most significantly
affected by the actions and decisions
made by the sports field manager.

“It has often been observed that
the skills of the grounds manager are
a greater contributing factor to high
quality skinned areas than the
materials used to construct these
areas. Successful grounds managers
must select management practices that
are appropriate for the field at hand,
or modify field conditions to match a
given maintenance program.” –
ASTM Standards F 2107-01

Acknowledgements

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Field Managers Association of New
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project and Jim Hermann, CSFM, for
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maintenance and installation.

Additionally, the authors would
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and Partac Peat Corporation for
donating materials used in this demo.

Literature Cited

Construction and Maintenance of
Skinned Areas on Sports Fields.
Volume 15.05: Designation F 2107-01.

continued from page 2

responsible for the outcome? Did the
engineer oversee and enforce the contract
properly? Did the contractor follow the
specifications to the T? Did the
administration cut
corners to save
money and meet
their time-line?

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yourself these
questions? How
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had great projects
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*Eleanor Murfitt is the director of
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Monthly Field Tip - Crabgrass Control
by Jim Hermann, CSFM*

Now is the time to inspect your turf and determine the need for spring pre-emergent crabgrass control. Dead and dying annual grassy weeds, such as crabgrass, are easily distinguished from desirable grasses.

For some, crabgrass control may be an aesthetic application determined by unsightly clumps of incompatible coarse bladed grass. For others the need for crabgrass control is brought about by a desire to promote a more durable playing surface. Competition developed as crabgrass populations increase cause the deterioration and thinning of desirable grasses. Whatever your reasons, make the decision now.

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