

Mar./Apr. 2002 sfmanjchapter@netscape.net www.geocities.com/sfmanj Vol. 2 • No. 09

# "Problem Solving" - Spring Field Day - Held by Sports Field Managers Association of New Jersey

#### Wednesday, April 3, 2002 8:30 am registration Plainsboro Township Community Park (20 Woodland Dr.) 'Rain or Shine'

It is with great pleasure that the Sports Field Managers Association of New Jersey (SFMANJ) announces it will host a Spring Field Day. This field day will provide attendees with information on athletic field & turf management. Who should attend? Sports field managers, DPW & buildings & grounds crew members, coaches, athletic directors, parks & recreation directors, administrators and supervisors are encouraged to attend.

Attendees can meet vendors, see new products, and watch professionals demonstrate various aspects of athletic field management. O/A Session. TOPICS:

#### For Your Turf

- Developing a fertility strategy
- Field specific maintenance and renovation
- Turf blankets, you be the judge
- Cool season weed control
- Pesticide safety recertification points
- Irrigation problems

#### For Your Infield Skin

- Home plate construction
- Pitchers mound construction
- Developing a field specific grading plan
- Lip reduction and maintenance
- Field layout
- Breakaway base installation
- Grooming technique

### Mail in Pre-Registration – call for directions

### After March 27 Register on-site

SFMANJ Member: \$30.00 - After March 27th ......\$35.00

Non Member: \$40.00 - After March 27<sup>th</sup> .....\$45.00 (\$10.00 applicable toward new SFMANJ membership)

### SEND CHECK OR VOUCHER TO: SFMANJ, PO BOX 370, ANNANDALE, NJ 08801

### Field Day Participating Vendors -To Date

Finch Turf Equipment JDL Equipment Company Fisher & Son Kifco Irrigation Lesco National Seed Wilfred Mac Donald Storr Tractor Company The Terre Company Till Paint Company

### Field Day Door Prizes Donated

Cover Tech	Turf Blanket
JDL Equipment Company.	One dozen golf balls
Fisher & Son	3-gal. poly sprayer
SFMANJ	One free membership to STMA
SFMANJ	. Compendium of STMA Sports Turf Topics
Storr Tractor Company	
Wilfred Mac Donald	Husky string trimmer

#### Items Donated

Profile Company	
Hinspergers Poly Industries	LtdEvergreen Blankets
Tee Jet Calibration Field Day m	Rulers, to the first 100 people who show up
	romotional Pens, to the first 50 who show

### SFMANJ BUSINESS

Next Board of Directors meeting – Tuesday, March 26, 3:30 pm at Rutgers University. Horticulture Farm 2, Geiger Conference Room, Ryders Lane, New Brunswick.

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This newsletter is the official bi-monthly publication of the Sports Field Managers Association of NJ. For information regarding this newsletter, contact: SFMANJ at 908-236-9118

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"SFMANJ Update" Newsletter co –editors Jim Hermann & Eleanora Murfitt

#### MISSION STATEMENT

Committed to enhancing the professionalism of athletic field managers in New Jersey 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.



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### <u>SFMANJ</u>

April 3 – Hands-on Field Day at Plainsboro Twp. – 8:30am to 3pm. Call (908) 236-9118 for questions or see the front of this newsletter.

### RUTGERS

March 28 Adamsville Project Field Day. See page 8. To register. Call (908) 730-9419.

July 31 - Rutgers Landscape Turf Field Day, Adelphia Plant Science Research Station, Adelphia, NJ. (732) 932-9711 ext. 135.

### NEW JERSEY REC & PARK ASSOC.

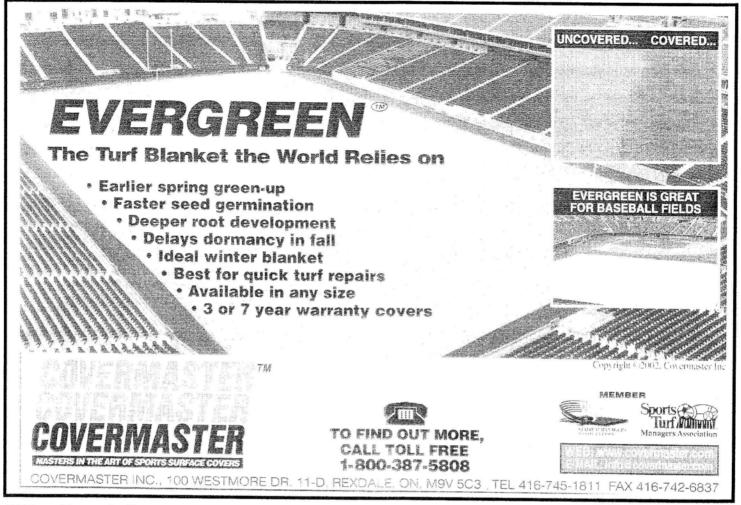
March 17-20 – 27<sup>th</sup> Annual Conference & Trade Show – Bally's Park Place Hotel, Atlantic City, NJ. Call (732) 568-1270 for details.

May 9 to 11 – Certified Playground Safety Inspector's Course – Middletown, NJ. Call (732) 568-1270

**Did You Know?** An annual plant does not necessarily live its entire life in the same vear. Example: Annual Bluegrass.

### REMEMBER TO RENEW YOUR 2002 MEMBERSHIP

SFMANJ Membership Registration form		
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Title		
Employer		
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Phone Fax		
E-Mail		
Signature		
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Associate\$35		
Organization/Institution\$35		
Additional member from facility\$20		
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Annandale, NJ 08801		



## "Give Your Infield A Passing Grade" by Jim Hermann

If the first task of the morning is to pull the cover off your Infield, don't read this article. If your crew does a routine to the tune of YMCA as they drag the infield in the fifth inning, don't read this article.

This article is directed to the maintenance personnel who maintain fields with limited budgets.

It is increasingly upsetting to hear people say "if you want your infield playable after a rain you have to buy this product. If you have standing water you need this product." Buy this product! Buy that product! Buy another product!

Most soil conditioners are recommended to condition the playing surface of an already well-maintained field. If you depend on internal drainage or soil conditioners to eliminate ponding on your infield, you can also depend on rainouts and upset coaches. An infield mix with adequate clay (or particle size distribution) for stability will not allow for adequate internal drainage under normal environmental conditions.

The most economical step you can take toward maintaining your infield in a safe playable condition is to prevent water from ponding. There is no product available that will prevent water from ponding on your infield. You have to depend on surface drainage to prevent standing water. Probably the only rule in athletic field maintenance that has no exceptions is this; WATER RUNS DOWN HILL. If you maintain adequate slope to the perimeters of your infield skin, excess water will run off.

When you resolve yourself to ridding your field of chronic water problems you have to accept the fact that it won't happen over night. There is no quick fix. There is no magical product. Every field is different. Every field has its own individual problems. It may take a number of attempts to finally get a passing grade (get it, grade?)

The very first task you should accomplish when beginning the work on any infield is to document the elevations of different areas of the infield, using a transit level or some other means. Try to get a picture of where the water is or is not currently moving and where it can move to if adjustments are made.

A transit is nothing more than a fancy level that provides the relative height of different locations within a given area. Individually these elevations mean absolutely nothing, but when they are plotted on a drawing they can give you an invaluable picture of the high and low areas (topography) of your infield.

Once the transit is properly positioned and leveled, readings are taken by sighting a leveling rod, which is positioned at different locations on the field. The leveling rod is a long measuring stick marked off in feet and inches. The higher the reading on the leveling rod, the lower the ground level is. Example: If you take a reading of 4' 4" at

pitchers mound and a reading of 5' at home plate, the pitchers mound is 8" higher than home plate.

The first reading you should take is a benchmark. This is a reading, typically taken off the field that won't change over time and can be used later as a reference point. You have to remember that each time you reposition your transit the readings you take will be different. The benchmark allows you to relate current readings to your prerecorded readings. Example: Today your benchmark reads 4'. You take all the readings on your infield. A week from now you come back to the field to continue your project and with the transit set in another location, that *same* benchmark reads 4' 6". All you have to do is add 6" to all your existing readings rather than reshooting the entire site.

Take readings at each of the base inserts, home plate, and the pitchers mound. Next take readings every 10 or 15 ft around the outside perimeters of the infield on the turf just beyond any obvious lip that will be removed during the renovation process. In addition to the readings you take just beyond the lip, take another row of readings 20 feet or so into the turf area on all sides.

These readings, when compared to the readings taken just beyond the lip will allow you to determine if water has the potential to run onto the infield or if it has some means of avoiding the infield. When the outside lip is removed you don't want problems you didn't have prior to your renovation. This can be extremely embarrassing. (Not that I would know.)

If it is a turf infield, also take readings on the inside turf perimeters of the baseline. If you have a skinned infield, take readings 20' or so off of the pitchers mound. Take these readings directly across from your outer turf readings so that slope can be determined from inside to outside. In addition, take readings of any obvious depressions on the infield that are holding or could potentially hold water.

In order to keep water from ponding on your infield skin you should have a minimum of 1% slope to the turf perimeter of the infield skin area. A 1.25% slope is equivalent to 1/8" drop or rise per foot. For ease of calculations use 1/8" (.125") per foot when figuring slope.

If you have a distance of 50' from the pitchers mound to the outfield radius, a 1.25% slope would make the outfield radius 6.25" lower than the ground level at the mound area prior to construction of your pitchers mound. (50 X .125 (1/8") = 6.25.) If your transit reading is 5' at the pitchers mound, your reading at the outfield radius would be 5' 6  $\frac{1}{4}$  "

When grading a turf infield, if you don't have adequate slope from the infield to the outfield, it may become necessary to slightly crown the skinned area to allow for water movement in two directions.

Care should always be taken to position base inserts at the proper elevation. If your infield has adequate slope toward the outfield, base inserts should be positioned lower than the infield turf. On a little league field with a 9' radius from the base to the infield turf, the base would be positioned approximately an inch lower than the infield turf (1/8" per foot X 9' = 1 1/8") in order to maintain adequate slope. If you don't have adequate slope to the outfield turf at 2<sup>nd</sup> base or adequate slope to the foul territory turf at 1<sup>st</sup> and 3<sup>rd</sup> base, raising the base insert may give you enough elevation to allow for water movement. Base inserts should never be positioned level with the infield turf. This will inevitably cause standing water problems in front of the base.

On a turf infield, if your base paths don't slope to the foul side, it may be necessary to slightly crown the base paths to minimize the potential for standing water. On a skinned infield you may have to add material to the inner areas of the infield to create a crown to the entire infield.

Home plate should have a minimum of 1/8" per foot slope to the turf.

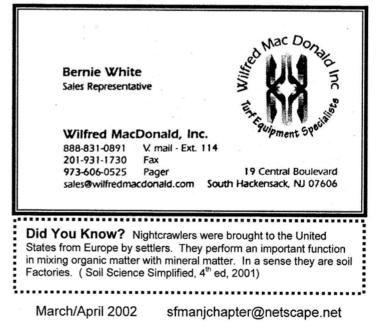
It is sometimes possible to adjust the elevations of the turf perimeters by leaving a portion of the lip to add elevation to a given area. Leaving a portion of the lip can aid in preventing water from running onto the infield in certain situations. This should only be done if the end product results in a safe playing situation. An abrupt change in elevation caused by a lip is one of the most potentially dangerous conditions of a poorly maintained infield.

Once your field is graded properly, make a drawing of the infield and include all the elevations you have taken along with the location and elevation of your benchmark. This drawing is known as an "as built" design and should be filed away for future reference.

### **Tilling or Solid Tine Aerification**

In the early spring it can be noticed that the top inch or two of mix is almost entirely sand. The winter freeze and thaw along with the rainfall and wind throughout the previous season have caused much of the silt and clay in the upper portion of your mix to wash or blow away. I believe a portion of it translocates deeper into the soil profile. This theory has however met with some resistance.

Compaction of the Infield skin is another problem that creates a large impact (literally) on baseball infields. The cause of compaction is obvious. The results of compaction are many. *Cont.* 



Sports Field Managers Association of New Jersey

A beneficial practice is to till the infield mix a couple of times during the season to relieve compaction and reincorporate existing silt and clay into the upper portions of the soil profile. This procedure alone, when done in conjunction with proper grooming technique, can provide many benefits.

Compaction relief is a major benefit of tilling or aerating the mix. A second benefit gained by compaction relief is an increase in moisture holding capacity. A hard infield does not allow moisture to permeate the mix and be held in the pore space between the infield particles. Since the moisture holding capacity of unmodified infield mix is largely controlled by the amount of sand, silt and clay, (particle size distribution) tilling and reblending the mix aids in this area.

Much of the initial benefit derived from the incorporation of soil conditioners is partially the result of the tilling process and not solely the result of the amendment itself as is generally thought.

Care should be taken during the tilling process so as not to bring up rocks or native soil from below the infield mix. A soil probe can be used to determine the depth of the infield mix in various locations to help insure this doesn't happen.

A solid tine aerifier with vibrating tines sometimes referred to, as an aeravator would be considered an option to tilling the infield mix. This piece of equipment is already a part of many equipment arsenals due to its dual-purpose usage potential. (Turf and Infields)

It should be mentioned that the moisture holding capacity of an infield mix can be a double-edged sword. The benefits of moisture holding capacity are derived from very specific amounts of water strategically applied over time to maintain moisture and compensate for evaporation. The flip side is a waterlogged mix that takes time to become playable after a rain. Covering the entire infield between games greatly increases the benefits of modifying an infield soil. Desired moisture does not evaporate as readily and excess moisture caused by rain is minimized.

After tilling or aerifying the infield mix, it should be regraded, smoothed, rolled with a roller and then groomed to return it to the proper grade and consistency. A small one-ton roller is suggested. If the roller is equipped with vibration, care should be taken not to run the vibration. This creates too much compaction. If this type roller is not available, a small water filled roller is generally adequate to firm the infield mix.

After the infield mix is rolled, the top quarter inch can be worked up with a nail drag or other means to provide a firm yet cushioned playing surface. If this procedure is completed in the spring there is generally ample moisture available. If you decide to till your infield in the summer between seasons you should wait until there has been adequate rain fall, or water the infield prior to tilling.

Once you have drawn an "as built design" for water management, removed any lip, reset the base inserts as needed, tilled, graded and groomed the infield to eliminate the potential for ponding water, you are ready to play ball.

The subject of infield grading along with grooming, lip removal and base installation will be

addressed at our April 3<sup>rd</sup> Spring Field Day at Plainsboro Twp. Bring your field specific questions with you, as there will be time allocated for questions and answers.

### Maintenance; Extra Credit for a Passing Grade

In an attempt to prioritize different procedures and products available to the field manager, maintenance is divided into three levels of intensity. Level I:

You have recently acquired the responsibility for the maintenance of your field.

**Rule 1:** Take the rakes away from the volunteers unless they are interested in learning proper maintenance technique.

**Rule 2:** Put any soil amendments or drying agents under lock and key. These products are abused more than any other products in the industry.

**Rule 3:** Give one person ownership of the field. Give one person the responsibility to cancel games if conditions warrant. Give one person responsibility for implementing the maintenance strategy.

 When raking baselines and perimeters always rake parallel to the grass line. Raking the baselines back and forth perpendicular to the turf creates a belly in the baseline. This belly is a potential for ponding water and the improper raking technique is a portion of the cause for an inside and outside lip at the turf perimeter. When raking stay a minimum of 6" away from all turf perimeters. This will further minimize the potential for lip buildup at the turf perimeter. Cont.

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- Always rake the first and third baselines and the base areas by hand, taking care to fill any depressions and lower any high spots created during play. Be careful to maintain the proper base elevations. Infield mix tends to accumulate under certain types of bases. This accumulation can cause the base to lift and interfere with surface drainage.
- A specific area of concern is the area around each base. Without exception, daily play creates a depression at each base. These depressions should be filled and smoothed by hand raking on a daily basis. If left unchecked, these depressions become deeper and more difficult to eliminate. They are a candidate for ponding water after each rain. The ability to effectively maintain these areas is critical in a successful program.
- When raking or dragging the infield, vary your start and stop point along with altering your drag pattern so as not to repeatedly add or take mix away from the same areas.
- Never pull an infield drag into the turf.
- Always remove any infield mix that has accumulated on the drag, carry the drag off the field.
- Maintain the pitchers mound and home plate areas by hand raking the entire areas. Fill any depressions and cut any high spots that have accumulated.



New Field Design & Construction

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- Tamp the batter and catcher's boxes. Do the same to the wear area and landing zone in front of the pitcher's rubber to provide a smooth surface.
- If you have access to water, dampening the pitchers mound and home plate area along with covering them between games will improve playing conditions. Covering alone does create condensation under the covers and can provide much needed moisture to the infield mix and minimize evaporation.
- Applying water and covering base areas is another step in improving playability and quality. In most maintenance situations applying water has much more benefit if the area can be covered and the water is allowed to evenly penetrate the infield mix so as to allow for proper moisture during the game.
- Under normal playing schedules the turf perimeters should be broomed, washed or blown off two to three times a week to minimize the buildup of infield mix in the turf and the creation of a lip. This is one of the most important procedures in infield management for both low and high maintenance fields.
- A specific area to be concerned with when maintaining the turf perimeters is the turf adjacent to third base. Infield mix is typically blown out into the turf by base runners rounding third.
- If you line the base lines and batters boxes using a pulverized lining material repeatedly throughout the season you will inevitably acquire a buildup of lining material on the infield. This material should be removed periodically to minimize buildup. Under wet conditions this material turns to gue and can compromise otherwise playable conditions. An accumulation of this material also has a negative effect on the quality of your infield skin.
- After rain, nail drag your infield to decrease the drying time. When the mix is dry to the touch, drag with a mat or hand rake to prepare the surface for play.

### Level II:

Once you have a strict maintenance schedule and are taking good care of the pitchers mound and home plate area, some level of relief in labor intensity along with a marked improvement in quality and playability can be accomplished by modifying these two areas with clay. Modification is generally limited to the wear area and landing zone in front of the pitchers rubber along with the batter and catcher's boxes at home plate. It should be stressed at this time that this procedure is designed to minimize existing maintenance, not eliminate potential maintenance.

### Level III:

At this level you have modified the pitcher's mound and home plate areas with clay. You cover the bases, home plate area and pitchers mound between games and apply water to the entire infield prior to games. You have no standing water and are looking to go to the next level of

quality and playability. At this time soil amendments may be indicated. These amendments are very beneficial in moisture management and infield conditioning. If you are watering your infield these soil amendments will minimize the time spent watering and increase the effectiveness of the water you do put down. These benefits are maximized higher levels at of management and severely compromised at lower levels. ;)

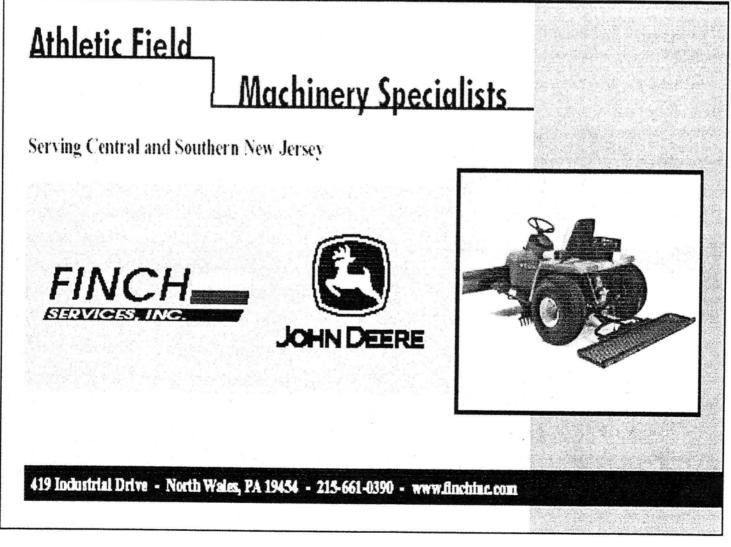


# "Welcome New SFMANJ Members"

John Geiger Jr. Athletic Field Maintenance Inc. Borough of Savreville Buena Reg. School Dist. Cranbury Twp Fisher & Son Co., Inc.(2) Hammonton Board of Ed J C Landscape Const. Manag. Co. Lindenwold Board of Ed Manalapan-Englishtown Regional Middle Twp Public Schools Monmouth University Rutgers, Pathology Dept. Cook College Shearer/Penn South River Board of Ed Spring Lake Heights Borough Springfield Twp Recreation Township of Manalapan Union Parks & Recreation (2) Westfield Board of Ed

Aqua Mist Irrigation Borough of Mendham Bridgewater/Raritan Reg (4) Complete Lawn Service, Inc. Cranford Board of Ed Greater Egg Harbor Reg Hardyston Twp JDL Equipment Lofts/Pennington Seed Manasquan Board of Ed Millville City Matthew Conti Saul Bros. Landscaping (2) Shearon Sports Sports Field Mamt System Springfield Board of Ed (3) Township of Denville Twp of Medford Recreation Washington Twp, Morris Co.

If you or anyone you know changed addresses, let us know. Have you renewed your membership for 2002? Call (908) 236-9118 to find out.



# **"RUTGERS CORNER"**

*Managing Sports Turf* by Dr. James Murphy, Specialist in Turfgrass Management

Maintaining a dense, vigorous, and well-groomed turfgrass cover is a primary requisite for high-quality athletic field playing surfaces. Turfgrass appeals to spectators and boasts community pride. Of greater importance, however, may be the soft, resilient surface, which provides a cushion to protect athletes against injuries and not only helps maintain footing, but is ideal for various athletic activities. It also eliminates the nuisances of dust and mud. For a turfgrass cover to fulfill these functions satisfactorily, proper establishment and maintenance practices must be used. Investments in establishing, renovating, or reconstructing athletic field turf are wasted unless an adequate maintenance program is established.

Effective turf maintenance requires an integrated program oriented toward producing favorable conditions for the development and growth of a vigorous healthy turf. All too often, only certain aspects of turf maintenance receive attention, due to budget limitations or interests of the people responsible for its care. A suitable maintenance program requires a budget that supports the materials, equipment, and personnel, including a conscientious and knowledgeable supervisor, to accommodate a variety of procedures. The maintenance program should include attention, at minimum, to the following factors.

**Soil Test.** Soil test results are required to determine the need for liming, the rate of lime, the appropriate ratio of nitrogen, phosphorus, and potassium for the fertilizer grade used (e.g., 4-1-2, 2-1-2, 2-0-1, etc.), and the rate of fertilizer application (pounds of product per 1000 square feet of turf). Soil test results provide the information needed to select the fertilizer that will provide the appropriate balance of essential nutrients.

**Mowing.** Proper mowing height and frequency is critical to the stress tolerance of turf. Mowing operators should be thoroughly trained for proper operation and be able to recognize the need for mowing adjustments.

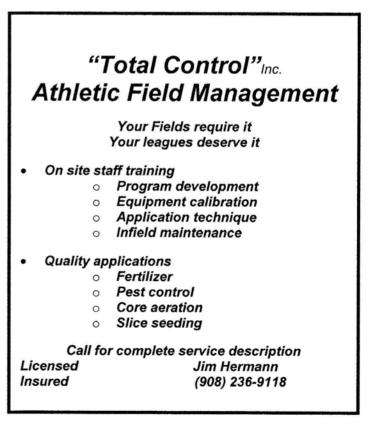
**Watering.** Where irrigation is available, apply water as infrequently as necessary to maintain proper soil moisture and avoid drought stress. A thorough watering once or twice a week during drought periods is preferable to light daily sprinkling. Keep in mind that watering is of little or no value if liming, fertilizing, and mowing are neglected or done improperly.

Aerification/Cultivation. Regular cultivation is necessary on athletic fields subjected to intense traffic, especially when the soil is susceptible to severe compaction. Use equipment capable of extracting ½- to ¾-inch diameter cores of soil to a depth of at least 2 to 3 inches. Frequency of aerification is determined by the intensity of field use and severity of compaction. Highpriority fields that receive intensive use will most likely benefit from two to four aerification treatments per season. Spring and fall are the best seasons to implement this procedure. ;)

## 'Rutgers Adamsville Project' FIELD DAY – March 28 – Bridgewater, NJ Call (908) 730-9419 To Register

Rutgers University in cooperation with Sports Field Managers' Association of New Jersey will be holding a field day at Bridgewater Raritan School Districts-Adamsville School located on Route 28 in Bridgewater [exit 13 Interstate 287]. The event will be held on March 28<sup>th</sup> from 9:30am to 1:pm.

This cooperative athletic field renovation project was initiated in the summer of 2001. The goal of this project is to educate school systems, parks & recreation departments etc.. on cost effective renovation procedures for modest budget athletic fields. An additional goal of this project is to educate stakeholders on the importance of creating a team environment among the maintenance staff, administrators and the coaches as a cost-effective method to enhance the playability of athletic fields. The field day will include a review of the previous renovation procedures along with discussions on maintenance schedule for the coming year. Issues such as integrated pest management, fertility, irrigation and field design to maximize playability will be reviewed and discussed. Speakers will include Dr. Jim Murphy, Turfgrass Extension Specialist and Dr. John Grande from Rutgers University along with Fred Castenschiold and Jim Hermann, Sports Field Managers Association of NJ, Board of Directors. ;)



## "Give It What It Needs"

# 'Using Soil Test Results to Develop a Fertility Strategy' by Jim Hermann

As previously discussed, soil test results provide the basic information necessary to maintain optimum soil fertility. Soil test results should be considered a barometer of the effectiveness of your fertility program.

Along with soil pH, these results quantify and rate the availability of the major nutrients, P, K, Mg, & Ca. The rating system is generally divided into 5 levels of availability such as low, medium, good, optimum, and above optimum. It is important to recognize these availability ratings when formulating a fertility strategy.

If the soil pH is less than optimum you will be given a lime recommendation. Lime can be applied at any time of year. For ease and effectiveness, pelletized lime should be considered. If large quantities of lime are required, bulk applications are the most cost effective. Due to the gross weight of the vehicle, an application of this nature should only be anticipated when the ground is extremely dry or frozen. It should be noted that applications made on frozen ground have the potential to cause some temporary turf damage. This localized damage is caused by the weight of the vehicle breaking off or in some way causing damage to the frozen blades of grass. This will cause the tire tracks to turn brown and remain unsightly until new growth occurs in the spring. If the area to be limed is small or the amount of lime needed does not justify a bulk application, bagged material can be applied utilizing a tractor mounted spreader or walk behind unit. Trust me, a walk behind spreader is not the way to go.

If calcium levels are below optimum, but the pH is optimum, gypsum is sometimes recommended as a source of calcium.

Along with lime or gypsum, a recommendation is made for fertilizer. Nitrogen, phosphorous, potassium and magnesium (if needed) are typically included in this recommendation. Rates may vary depending on the maintenance level or status of the turf, such as new seeding, established turf etc. The results should also state if phosphorous and potassium can be applied as a single application or be split. Generally speaking, once P & K receive a "high" or "optimum" rating in the soil any P & K recommendation is considered a maintenance application and can be applied in one application.

Fertilizer recommendations are generally given as a yearly turf requirement. It is then the job of the turf manager to determine the basic formulation of the fertilizer and also the seasonal nutrient requirements of his/her turf program.

The easiest way to establish a fertilizer formulation is to contact a reputable fertilizer dealer and supply him with a copy of your soil test results. There are standard formulations available through any dealer, which can readily be adapted to your program. Rutgers Soil Testing Laboratory will provide in its test report some example fertilizer grades (formulations) that meet the requirements for balancing soil fertility. It is however, the responsibility of the turf manager to familiarize him/herself with typical nutrient sources along with the benefits and potential cost differences. As an educated consumer you will be better equipped to make budgetary decisions based on the information provided to you.

Intensely used turf such as athletic fields should be fertilized a minimum of three times a year. An easy way to remember timing is Memorial Day, Labor Day and Thanksgiving. These three holidays coincide reasonably well with the appropriate timing for fertilization.

When developing your fertility strategy it is essential to remember the important functions of the major fertilizer components. N-P-K, nitrogen, phosphorous, potassium, up, down, all around. Nitrogen: up, top growth. Phosphorous: down, root development. Potassium: all around, stress tolerance. (This is an over simplified, and therefore limited description of plant nutrition).

Your fertility program should be designed to give the turf what it needs, when it needs it without over stimulating or promoting unnecessary top growth. As has been stated, nitrogen stimulates top growth. Four pounds of nitrogen per thousand square feet, per year is a good ballpark figure (get it "ball park"?). Turf should receive most of its nitrogen in the fall. It should be understood at this time that every program should be site specific. Adjustments may need to be made based on usage and or budget.

#### Fertilizer selection:

The source of nutrients in a fertilizer is a large portion of what determines cost. Different nutrient sources have different release patterns. These differences have the potential to greatly affect cost and effectiveness. It should not be assumed however that a fast release product is somehow inferior to a slow release product. Release pattern is entirely relative to desired effect and should therefore be of major concern when determining the components of your fertility program.

Another cost factor is the percentages of nitrogen, phosphorous and potassium. A higher percentage of these nutrients will normally increase cost, however keep in mind you use less pounds of product and may be able to apply less frequently (less labor).

Although not usually considered, the source of potassium can also affect cost. The two products most widely used as granular sources of potassium in agriculturally oriented fertilizers are Sulphate of Potash, which is not as "salty" and generally more expensive per unit of potassium than Muriate of Potash, which has a higher salt index but somewhat less expensive per unit of potassium.

Fertilizer salt index is typically not a major consideration unless the EC (electrical conductivity) of your soil has been tested and existing salt levels are considered too high. The other consideration for a high salt index would be when you are using high rates of fertilizer that can stress (burn) your turf if care is not taken to wash in the fertilizer with rain or irrigation. *Cont.* 

Sports Field Managers Association of New Jersey

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In general, no more than 1 pound of nitrogen per thousand square feet should be applied at one time using a fast release product. Note: Typically, fertilizer applications should only be made when environmental conditions favor turf development. Some fertilizer components are highly volatile and can loose 25 - 30% of their effectiveness if not watered in within a reasonable period of time.

Iron is a component of some fertilizer formulations. It is one of the soil micronutrients and is typically readily available in most soils. Additional iron however does have the ability to stimulate a greener turf without creating excessive growth. Use of iron in an athletic field management program should in most cases be considered purely discretionary and not absolutely necessary.

### Application Timing

Spring (Memorial Day):

If your turf received a late fall (Thanksgiving) application of fertilizer It should break dormancy, green up and have a surge of growth which will typically last thru April into early May before slowing down to a manageable rate of growth. It is at this time that you want to give the turf a little boost (I didn't say shove) to help it through the stress of summer.

In the spring, the turf is using up nutrients it stored over the winter to push top growth. This green top is necessary for the manufacture growth of carbohydrates. The leaf produces these carbohydrates for the survival of the plant but must supply its own needs first. Any additional carbohydrates are then translocated to the roots to maintain the health of the plant. Over stimulation of the top growth caused by excessive nitrogen can cause an imbalance. The turf cannot produce enough carbohydrates to supply both the leaf and the roots so the root system suffers and less root development may occur. Reduced rooting decreases the ability of the turf to withstand the stress of summer. Generally 1/2 to 3/4 lb. N (50% slow release) per thousand square feet is adequate to supply the needs of the plant. Turf color and growth intensity can be good indicators, and should be used as a reference for nitrogen requirements at this time of year.

The concept of conservative spring fertilizer goes against reason. You would think that after winter dormancy it would benefit the turf to receive a substantial application of fertilizer when in reality, within limits, less is better.

In addition to nitrogen, if phosphorous or potassium levels are less than optimum ask your fertilizer supplier for a formulation that will also supply 1/3 to  $\frac{1}{2}$  the yearly P & K recommendation.

#### Early Fall (Labor Day)

Typically, at this time of year the nights are cooling down and the turf has started to come back after the summer stress period. Now is when the turf starts to build up its reserves for the next season. At this time of year the turf generally shifts its growth pattern to more lateral development. Now is when you can give it a shove instead of a boost.  $1\frac{1}{2}$  lb. N (50% slow release) per thousand square feet along with 1/3 to  $\frac{1}{2}$  the yearly P & K can be applied at this time.

### Late Fall (Thanksgiving)

At this time of year the top growth has ceased but the root system is still continuing to develop. This application of fertilizer can also be timed for late October and early November.

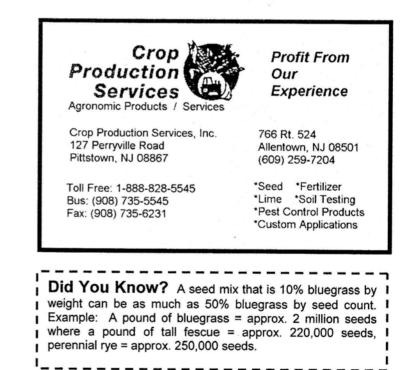
Another 1½ lb. N (50% slow release) along with any necessary P & K will help prepare the turf for the next season. This application along with the September application will help develop a deeper and denser root system. This is a very important aspect of effective athletic field management.

It should be noted at this time that the example given is a ballpark maintenance program (last time, I promise). In a more intensely managed or irrigated situation, rates and timing can be adjusted to accommodate a higher degree of efficiency and or turf quality.

Your fertility program will only be as successful as your cultural practices allow it to be. Compaction can render a quality fertility program less effective. Effective and timely aeration, seeding and pest control are just as important and should not be overlooked when developing an overall management plan.

#### This subject will again be addressed at our "Spring Problem Solving Field Day", on April 3<sup>rd</sup>, at Plainsboro Township Community Park.;)

If you have any questions or comments (good or bad) on this or any other articles that have been submitted, you can e-mail your comments to jimtc@worldnet.att.net or fax us at (908) 236-9118.



# "Annual Summer Grassy Weed Control in Athletic Turf" by Jim Hermann

Annual summer grassy weeds are weeds such as crabgrass, which start and end their life in the same year but produce seeds for future generations. One plant can produce thousands of seeds and these seeds can remain viable in the soil for many years.

Crabgrass and other annual summer grassy weeds are not normally competitive with a dense healthy stand of desirable turf. Therefore, the best line of defense in summer grassy weed control should be to provide an environment favorable to desirable turf.

First, and foremost follow the recommendations presented in your soil test results. Grassy weeds such as crabgrass flourish, and therefore are more competitive, under dry compacted conditions of infertility and low pH.

Second, periodically aerate your fields to relieve compaction and promote desirable turf.

By maintaining the proper soil pH, supplying the turf with the nutrients it needs and aerifying to relieve compaction you are evening out the playing field. (Get it, playing field?) That is, you are giving the desirable turf the environment it needs to be more competitive.

Pre-emergent products (products which interfere with seed sprouting) are typically the most widely used products for the purpose of summer grassy weed control. These products are applied prior to seed germination. They generally require rainfall or irrigation to become established in the root zone Post-emergent products (products which control existing plants) are another option. Spot treatment with a post emergent product utilizing a backpack sprayer or other application equipment, is sometimes a very practical and environmentally friendly option to a blanket application (application on an entire area) of a preemergent product.

There are also products available that have both pre and post emergent control characteristics. By controlling early germinating weeds which have already emerged from the soil and providing control of late germinating seeds that have not yet sprouted, products in this category broaden the window of opportunity for application and control.

Keep in mind; most products with preemergent control characteristics also effect desirable turf seed development. These products should never be used in conjunction with overseeding desirable turf, nor should

they be used if seeding is anticipated in the near future. It is sometimes recommended that seeding be delayed as much as 16 weeks after making preemergent applications. Always refer to product label instructions prior to application when contemplating overseeding.

The chemical Siduron is a preemergent grassy weed control that can be applied in conjunction with seeding of cool season turf.

If you have an area or field in particular, which in the past has proven to produce heavy populations of *cont*.



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annual grassy weeds, preemergent control may be indicated. It is recommended that applications using this type of product be made at least two weeks prior to the onset of conditions that are favorable to weed seed germination. These favorable conditions are typically thought to be when soil temperature reaches 55-60 degrees for an extended period of time in the spring.

It is sometimes recommended that preemergent applications be made based on certain environmental indicators. One such indicator is "when the forsythia blooms in the spring". Another may be when the new foliage emerges <sup>3</sup>/<sub>4</sub> inch on the oak tree. These are only indicators and not hard, fast, do or die rules.

Turf cover and density can have a very great effect on the timing of conditions favorable to seed germination. Crabgrass will germinate in dry, bare areas weeks in advance of areas with existing turf cover. It is typically recommended that preemergent products be applied by the 15<sup>th</sup> of April.

As the daily temperatures rise and the soil becomes drier, later in the spring season, applications carry more risk of volatilization (loss due to evaporation into the air) than do applications made earlier in the season when conditions are more cool and moist

Many turf managers apply preemergent grassy weed control as soon as the ground thaws. Preemergent products only remain effective in the soil for a certain period of time. This period of time can vary based on weather conditions. Excessively wet or excessively dry weather can affect the effectiveness of a product. Applications made early in the season will sometimes require a repeat application later in the season at a reduced rate to remain effective. This application technique is sometimes referred to as a split application.

Because many of these products are impregnated on various fertilizer formulations, it is sometimes appropriate to incorporate grassy weed control with an early spring fertilizer application. This should only be done when there is a predetermined need for both early spring fertilizer and preemergent weed control and not as a matter of course

When considering a dual-purpose application such as fertilizer and crabgrass control, it is necessary to select a product that is formulated to supply not only the proper amount of pesticide but also the proper amount of fertilizer. Remember, fertility should be your #1 priority. In most situations on athletic fields, heavy populations of grassy weeds are confined to areas of increased traffic and decreased existing turf density. In these situations crabgrass may be better than no grass.

In some situations, tank mixing a post emergent grassy weed control product with a broadleaf weed control product can be an effective option. When incorporated into a renovation program, post-emergent weed control applications made in early July help to prepare an area for fall overseeding by eliminating competition. It should be mentioned at this time that summer applications of broadleaf weed control products might not carry as high a percentage of control, as do applications made in the late spring or fall when broadleaf weeds are growing more actively.

By taking a leisurely walk out across your field and spot treating existing weeds, you will be taking a positive step (actually quite a few steps) toward a program, which incorporates the principles of IPM (Integrated Pest Management). By treating your field in this manner, you will be surprised to see how much more aware you become of the individual problem areas in your field.

Summer grassy weed control should not be viewed as just another step in a four or five step program that is applied just in case, whether it is needed or not, in order to guarantee the overall success of the program. Summer grassy weed control is nothing more than another tool available to the athletic field manager. Its use should be scrutinized and evaluated in the same way the use of any other tool is evaluated. Effective use of all the tools available to you will ultimately determine the success or failure of your program.

The use of this tool and others will be discussed in more detail at our Spring Field Day on April 3<sup>rd</sup> in Plainsboro.

(Continued on next page 'Annual')



Before making an application always read the label instructions to be sure the product is labeled for:

- The site you are treating (athletic field, park, school, etc.)
- The pest you are attempting to control (crabgrass etc.)
- The varieties or types of grass that make up the desirable turf (rye, blue, fescue, cool season, warm season, etc.)

Whenever mixing pesticides always follow label instructions and wear protective clothing and eyewear Always mix a small sample (jar test) to determine the compatibility of the products prior to mixing a whole batch. Who was it said "there's always room for jello"? I hate when that happens.

Products labeled for the control of summer grassy weeds are pesticides and therefore should only be applied by a licensed pesticide applicator. If you are interested in becoming licensed contact your local Rutgers Cooperative Extension County Office or contact the Pesticide Control Program At (609) 530-5199.

More information may be acquired by reading the publication entitled Crabgrass and Goosegrass Control in Cool Season Turfgrass, written by Dr. Stephen Hart, specialist in weed science at Rutgers. This publication may be accessed at:

www.rce.rutgers.edu/pubs/pdfs/e233.pdf Or you can request publication #E233 at your local Rutgers Cooperative Extension County Office.

## **Murphy's Law**

Dr. James Murphy is an Associate Extension Specialist in Turfgrass Management for Rutgers, Department of Plant Science. Ask Dr. Murphy your questions: E-mail us at:

sfmanjchapter@netscape.net

**Question:** Soccer and lacrosse teams want to utilize the playing fields early in the spring before the grass is actively growing. Is there any way to jump start the turf in the spring?

**Answer:** There are a couple management techniques that can be used to stimulate early season growth of turf in spring. Late season fertility is one practice that can pay big dividends on fields that receive use in early spring. A good starting point for late season fertility would be two applications of fertilizer, once in September (around Labor Day) and another in October, that applies a total of 2 to 4 pounds of nitrogen per 1000 square feet. If necessary, a third fertilizer application around Thanksgiving can provide even greater stimulation of early season growth.

A turf cover or blanket is another technique that can be used effectively to stimulate early season growth. It is

important to understand how to use turf blankets since the practice can be misused and result in disastrous effects. Regardless of when you put the cover on the turf, a manager needs to monitor turf growth under the cover regularly, particularly during mild weather. Mild winter weather will stimulate considerable shoot growth under a cover; if this occurs, the covers will need to be removed to avoid over stimulating growth and possibly allow mowing. Greater disease incidence can also occur under a turf blanket during relatively warm wet weather. Thus, the cover may need to be moved off the turf occasionally to avoid stimulating disease. Once a cover is removed from the turf the stimulation of growth will begin to wane as the soil temperatures cool and return to "normal". Therefore, moving the cover off and on the turf will be necessary to achieve the greatest effects on early season growth stimulation without encouraging excessive growth or disease. Covers also have the disadvantages of extra labor needed to move the cover on and off the turf as well as storage space when the cover is not in use. Covers may be difficult to hold in place during windy conditions especially on open exposed fields. ;)

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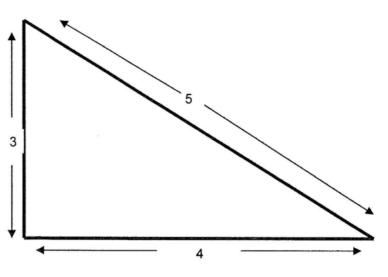
# **"Monthly Field Tip"**

## Squaring Your Field is as Simple as 3,4,5 by Jim Hermann

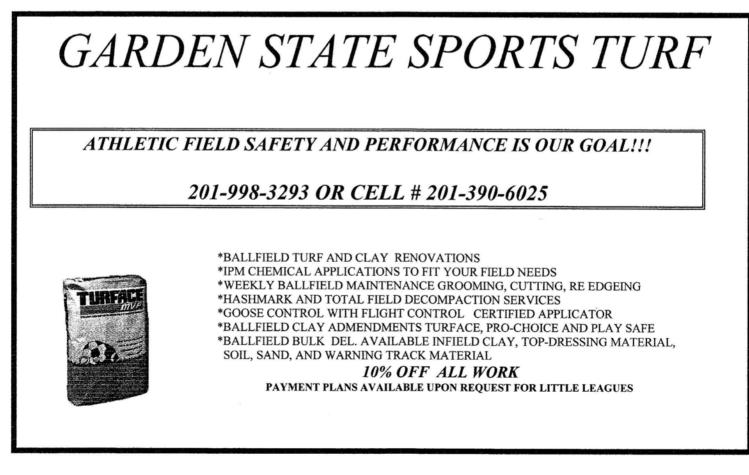
To square your 60' infield, pull a string down the  $3^{rd}$  base line from the back point (apex) of home plate. Remember, the  $3^{rd}$  base line should cross the outside edge of the  $3^{rd}$  base. Measure from the apex of home plate down the string 30' and drive a pin. Do the same on the  $1^{st}$  base line measure 40 ft. down the string and drive a pin. If the field is square, the measurement between the pins will be 50 ft. The measurement from the furthest outside corner of  $1^{st}$  base to 127'3 12/4".

To locate the middle of  $2^{nd}$  base it is easiest if you have two tape measures. Simply pull a tape measure from the furthest outside corner of  $1^{st}$  base down the base path toward  $2^{nd}$  base. Do the same from the furthest outside corner of  $3^{rd}$  base toward  $2^{nd}$  base. The point at which 60' intersects both tapes is the center point of  $2^{nd}$  base. This point should also measure 84'10 1/4" (127' 31/4" on a 90' field) from the apex of home plate. Once you have squared the 1st and  $3^{rd}$  base lines, extend the lines to locate the outside edge of each foul pole.

This equation will work with any multiple of 3,4,5 on anything from a sand box to a parking lot as long as it contains a right angle. On baseball fields with 60' baselines use 30,40,50. On baseball fields with 90' baselines use 60, 80,100. On soccer and other large fields use 120,160,200. The larger the multiple, the more accurate the layout.



Note: A steel tape measure should be used for this procedure due to the fact that it will not stretch.



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