Sports Field Managers Association of New Jersey

Update

July/August 2003 e-mail hq@sfmanj.org website www.sfmanj.org Vol. 3 •No. 4

"Reminder" Next SFMANJ Field Day & Equipment Demo's !!!

WHERE: Paramus Catholic High School
WHEN: Tuesday, **August 5**
TIME: 8:30am to 3:00pm
Registration: 8:00 am Morning Refreshments
Gazebo adjacent to Field #1 gate

8:30 am – 9:00
Indoor / Outdoor Integrated Pest Management (Credits)
Dr. George Hamilton, Rutgers University

9:00 am – 9:30 - *Field #3 – Football stadium*
Cultural Practices for Athletic Field Renovation and Turfgrass Establishment (Credits)
Dr. James Murphy, Rutgers University

10:00 am – 10:30 - *Field #4 - Adjacent to football stadium*
Herbicide Options for Athletic Field Renovation (Credits)
Brad Park, Rutgers University

10:00 am – 10:45 - *Field #1 - Baseball diamond*
Line Painting and Stenciling Demonstration
Bud Perdun, N. Brunswick High School

10:45 am – 11:45 - *Field #1*
Vendor Trade Show

11:45 am – 12:30 pm
Lunch

12:30 pm – 2:30 - Field #2
Vendor Equipment Demonstrations

2:30 pm – 3:00 - Indoors
Pesticides DEP updates (credits)

COST: $35 SFMANJ member
$45 NON-members
Vendor booth space $100 members
NON-members $125
Demo cost - $50 per demo
($5 late fee) after July 25

For more info call 908-730-7770, see pg. 6 & 8

SFMANJ BUSINESS

* ***Next Board of Directors Meeting*** – Aug. 5th after field day and Sept. 10th Wed., 4pm at Storr Tractor Company on Rt. 22, Somerville.
Opening* - *Board of Directors,* under Professional Facility: Interested parties should send a letter of intent with resume to the chapter address on the last page.

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This newsletter is the official bi-monthly publication of the Sports Field Managers Association of New Jersey. For information regarding this newsletter, contact:

SFMANJ at 730-7770 or 908-236-9118
Co-editors
Jim Hermann, CSFM & Eleanor Murfitt

Don't Miss !!!

Rutgers Turfgrass Research Field Days

"The Finest Programs In the Nation"

*Lawn & Landscape Section – Wed. July 30
Adelphia Research Farm

Athletic Field Manager's, your chance to see the latest research on turf, pesticides, and much much more.

*Golf & Fine Turf Research Section – July 31
Hort. Farm II – Ryders' Lane, North Brunswick
Pesticide Recertification Credits both days
See page 6 for more information

2003
SFMANJ BOARD OF DIRECTORS

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TurfCon GSI Consultants, Inc.

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.

Contact us at:

P.O. Box 370
Annandale, NJ 08801
Web Site – www.sfmanj.org
E mail – hq@sfmanj.org
Ph/Fax – 908-730-7770

National Organization
Sports Turf Managers Association

Web Site - www.sportsturfmanager.com
E mail – SportsTMgr@aol.com
Phone - 1-800-366-0391

"Welcome New & Renewed SFMANJ Members"

Currently we have 286 members. If you haven't renewed your membership send in the membership form from this newsletter or call (908) 730-7770.

Tom Allen	Monroe Township
Bill Almendinger	Piscataway Twp Board of Ed
Nancy Bigos	Ridgewood, Village of
Timothy Cronin	Ridgewood, Village of
Anthony DeLuca	Hillsborough Bd of Ed.
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Dennis Murphy	Allendale Borough
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Joe Russo	ZedX, Inc.
Martin Sikorski	Neglia Engineering Assoc.
James Van Blarcom	Westfield, Town of
Charlie Vestal	Profile Products
John Zambrano	Monmouth University

SFMANJ Membership Registration form

*** receive update information by email**

Name_____

Title_____

Employer_____

Address_____

City_____

State_____ **Zip**_____

County_____

Phone_____ **Fax**_____

***E-Mail**_____

Signature_____

***Individual*.....$35**
***Associate*..... $35**

***Organization/Institution*.....$35**
***Additional member from facility*.....$20**

***Commercial/Contractor/Vendor/Supplier*.....$85**
***Additional member from company*.....$25**

***Student*.....$10**

Send with Check or voucher to:

SFMANJ
P.O. Box 370
Annandale, NJ 08801

PRESIDENTS MESSAGE:

Within the last few weeks, SFMANJ mailed, for the first time, a 63 page Directory of important information to our members. It included members' information to help you network with your fellow sports field manager. Also included in the Directory is vendor member information to help our members find products and equipment. When purchasing products please use this directory *first* to show your support to our member vendors. Please note the vendor ads as their support helped make the Directory possible.

If you see a mistake please kindly fill out the form on page 44 and send it to us so we can correct our data base. If you did not receive a Directory, please contact us at 908-730-7770 so we can get one out to you. If you are not a member but would like a directory, fill out the membership form in this newsletter and we will be sure to send you one right away.

We will be sending out an update after we receive all mistakes for you to add to the Directory. Each year you will receive an updated membership list and special information of interest. Use the membership form on page 46 to renew your membership in January or give it to a friend for a new membership. I hope this Directory serves you well. ▲

Eleanora Murfitt, CRS Washington Township Parks & Recreation Coordinator

"Integrated Pest Management Overview"

*Brad Park, Rutgers University

After the adoption of the School Integrated Pest Management Act by the State of New Jersey in December 2002, many questions have been raised concerning the definition of integrated pest management (IPM) and the specific practices and pest control measures that constitute an IPM program.

What is IPM?

Numerous University fact sheets and textbooks have been devoted to defining IPM and instructing sports field managers how to implement an IPM program. There are several common themes that are consistent throughout these numerous resources.

First, IPM attempts to reduce the risk that pest control strategies may have on the environment and people by incorporating all suitable techniques to maintain pests within acceptable limits. Several such techniques include pest scouting, monitoring and record keeping. Making an effort to carefully and routinely scout, monitor, and create records of areas where pest populations have been historically problematic will allow sports field managers to limit the implementation of pest control measures to only those specific problem areas and not to those areas where pests are not a problem.

Secondly, IPM *does not* entail the elimination of pesticide use. A successful IPM program will limit the amount of pesticides applied by using pesticides in a more efficient manner. While scouting, monitoring, and record keeping can help achieve this goal, the implementation of cultural practices that promote healthy turf can also reduce the amount of pesticides needed to solve pest problems. Simple changes in irrigation scheduling, fertilization, and mowing frequency and height can help reduce the incidences of pests and the need for pesticides applications, which consume human and financial resources.

IPM for athletic fields

Given the inherent functional use of athletic fields, and in many cases, the overuse of these fields leading to poor turf quality, some sports turf managers may view IPM programs and subsequent reduced pesticide use as unrealistic and unattainable goals. However, if implemented properly, IPM methods can potentially enhance turfgrass quality and improve sports turf playability.

Scouting, monitoring, and record keeping

The process of scouting and monitoring can take-on many forms for a sports turf manager. For example, yearly soil testing can be conducted on fields that are intensively maintained and are highly visible. While frequent soil testing is always a good idea, fields that are deemed to be less of a priority may only need to be tested every three years. Correct decisions can be made with regard to lime applications and specific nutrient requirements based on the results of soil tests. Note: A soil test will provide information pertaining to levels of macronutrients in soils including phosphorous, potassium, magnesium, and calcium and several micronutrients. However, the soil test will not provide information on existing nitrogen levels.

Understanding the lifecycles of various pests (and being able to correctly identify those pests) can help sports field managers predict when to begin monitoring for specific pests. Crabgrass is a summer annual weed and serves as an example of a pest which conforms to a yearly lifecycle. As a summer annual, crabgrass will germinate in the spring (South Jersey: after April 10; Central and North Jersey: after April 20) and will set seed in summer and die in the fall from early frosts. Sports field managers should note heavy crabgrass populations in the fall and recognize that these fields will likely need to be treated with a preemergence herbicide the next spring if crabgrass control is a goal.

Conversely, in situations where a preemergence product has not been applied in the spring, and there is no presence of crabgrass throughout the summer and fall months, one could conclude that there is no significant crabgrass seed bank associated with the site. As an appropriate IPM strategy in this situation, a sports field manager might consider avoiding a preemergence application to the field in the next year. If crabgrass does become a problem later in the year, a postemergence crabgrass herbicide may need to be applied.

As part of record keeping, sports field managers will find it useful to create maps or devise a numbering scheme to delineate between multiple fields. Updating these records and reviewing previous records throughout the season will make it easier to anticipate future pest problems.

For white grub control in sports turf, scouting, monitoring and record keeping can determine whether or not to apply an insecticide.

Continued on next page.....

Continued from page 4 "IPM".....

The label for the grub control product Merit® suggests basing application decisions on "historical monitoring of the site, previous records or experiences, and current season adult trapping or other methods."
Optimal grub control by the product results when the insecticide is applied prior to egg hatch. Thus, the monitoring of adult insect activity can play a key role as to if and when the chemical control is applied.

Cultural practices affecting pest populations

Turfgrass weed scientists will often say, "The best defense against weeds is a vigorous stand of turfgrass." Achieving an actively growing, healthy turfgrass stand is highly dependent upon employing proper cultural practices.

One of the most frequent cultural practices associated with sports field management (and seemingly the most mundane) is mowing. Simple changes in mowing height and frequency can impact the encroachment of weeds and insects.

A general mowing guide for moderately to intensively maintained turfgrass (such as athletic field turf) is to remove no more than 1/3 of the vertical shoot growth per mowing. Known as the "1/3rd Rule," this guide is widely accepted among sports field managers and researchers. Studies indicate that infrequently mowed turf is less dense than frequently mowed turf, allowing for "voids" in the turfgrass stand and potential sites for weed encroachment. Mowing frequency may need to increase in actively growing turf to adhere to the 1/3rd rule. IPM suggests that a turfgrass stand free of broadleaf weeds and crabgrass will not necessitate that application of postemergence herbicides for the control of those weeds.

Turfgrass species and cultivars within that species have a mowing height tolerance range that provides a satisfactory turf. When turfgrasses are mowed below their tolerance range (scalping), particularly during times of stress, turfgrass stands will tend to thin, and thus provide entrances for weeds to encroach.

When turfgrasses (particularly Kentucky bluegrasses) are mowed above their tolerance level, in combination with excessive water and fertilization, plant biomass production can exceed decomposition resulting in thatch – a layer of organic residue located immediately above the soil surface. An excessive amount of thatch (1/2 inch) can serve as a habitat for insects that feed on turf such as chinch bugs and white grubs. When chemical control of insects is necessary, thatch can bind insecticides and thus reduce their efficacy.

IPM resources

Rutgers Cooperative Extension has a number of IPM resources published on its website at: www.pestmanagement.rutgers.edu. For those sports field managers working at schools, there are links available on the website detailing the School IPM Act and a summation of the key requirements of the Act. There are also IPM Report Cards available for downloading that are meant to act as self-assessment guides for school grounds and sports field managers to determine if their current management regimes fall under an "IPM" plan. While the Report Cards are not hard-and-fast rules that require regulatory compliance, they do provide some useful ideas to implement in an IPM program at a given facility. ▲

**Brad Park is the Sports Turf Research and Education Coordinator at Rutgers, The State University of New Jersey. You can reach Brad at park@aesop.rutgers.edu*

SFMANJ
August 2003 Demo Field Day
Held at Paramus Catholic High
Augus t5th 8am to 3:00 pm
COST: $35 members & $45 non-member
$5 late charge after July 25

*Organization:*_____

Names: _____

_____

_____

Address: _____

_____

Phone: _____ *EMAIL* _____

 # attending_x $_____ = TOTAL $ _

Copy this form (credit cards NOT accepted)
Send voucher or check to:
SFMANJ
PO Box 370
Annandale, NJ 08801
Ph/Fax908-730-7770

CALENDAR OF EVENTS

RUTGERS TURFGRASS RESEARCH FIELD DAYS

July 30*Lawn & Landscape Section –Tours begin 9am
Adelphia Research Farm Reg. 8am
Athletic Field Manager's, your chance to see the latest research on turf, pesticides, and much much more

July 31*Golf & Fine Turf Research Section –Tours 9:30am
Hort. Farm II Ryders' Lane, North Brunswick.
Reg. begin 8:30am

Pesticide Recertification Credits $35 reg. & full lunch.*each days*

CALL Bea Devine 732-821-7134 or Dick Caton 856-853-5973 or Marlene Karasik 732-932-9400 Ext.339

SPORTS FIELD MANAGERS ASSOC. OF NJ EQUIPMENT DEMO FIELD DAY

Aug. 5th_Paramus Catholic High School, Paramus , NJ Indoor & outdoor education and demonstrations with vendor Trade Show. Fliers have been sent to members. See form on this page. Call Eleanor Murfitt at 908-730-7770 for more information.

NEW JERSEY LANDSCAPE CONTRACTORS ASSOC.

Aug. 6th, 1:30 pm, Farmstead Golf & Country Club Fifth Annual Golf Classic – Reg. 12pm. For more info call Betty Wiest at 201-251-2550
Website: wwww.njlca.org

"A Model IPM Policy for New Jersey Schools"

**Ann Waters*

The New Jersey Department of Environmental Protection (NJDEP) in cooperation with the New Jersey School Boards Association, the Commissioner of Education, and Rutgers Cooperative Extension successfully developed a template model policy Integrated Pest Management Policy for schools (published on June 2, 2003).

The New Jersey School Integrated Pest Management Act of 2002 requires schools to implement a school integrated pest management policy. As per this policy, each local school board of a school district, the Chief Administrator of a public school, each board of trustees of a charter school, and each Principal or Chief Administrator of a non-public school as appropriate, shall implement Integrated Pest Management (IPM) procedures to control pests and minimize exposure of children, faculty, and staff to pesticides. _____(Insert school name) shall develop and maintain an IPM plan as part of the school's policy.

Integrated pest management procedures in schools

Implementation of IPM procedures will determine when to control pests and whether to use mechanical, physical, cultural, biological or chemical methods. Applying IPM principles prevents unacceptable levels of pest damage by the most economical means and with the least possible hazard to people, property, and the environment.

Each school shall consider the full range of management options, including no action at all. Non-pesticide pest management methods are to be used whenever possible. The choice of using a pesticide shall be based on a review of all other available options and a determination that these options are not effective or not reasonable. When it is determined that a pesticide must be used, low impact pesticides and methods are preferred and shall be considered for use first.

Development of IPM plans

The school IPM plan is a blueprint of how _____(Insert school name) will manage pests through IPM methods. The school IPM plan states the school's goals regarding the management of pests and the use of pesticides. It reflects the school's site-specific needs. The IPM plan shall provide a description of how each component of the school IPM policy will be implemented at the school. For Public schools, the Chief School Administrator,

Continued on next page.....

Continued from page 7 "A Model Policy".....

In collaboration with the school building administrator, shall be responsible for the development of the IPM plan for this school. For Charter schools and non-public schools, the development of the IPM plan shall be the responsibility of the Chief School Administrator or Principal.

IPM Coordinator: The _____(Insert as appropriate, either local school board, board of trustees, Chief School Administrator, or Principal) shall designate an integrated pest management coordinator, who is responsible for the implementation of the school integrated pest management policy.

Education /Training: The school community will be educated about potential pest problems and IPM methods used to achieve the pest management objectives.

The IPM Coordinator, other school staff and pesticide applicators involved with implementation of the school IPM policy will be trained in appropriate components of IPM as it pertains to the school environment.

Students, parents/guardians will be provided information on this policy and instructed on how they can contribute to the success of the IPM program.

Record keeping: Records of pesticide use shall be maintained on site to meet the requirements of the state regulatory agency and the school board.

Continued on next page.....

Vendors and Demonstrations for Aug. 5th field day, as of July 15th

Aer-Core, Inc. -	Blec Sandmaster Sand Injector, Wiedenmann Deep Tine Aerator
DVH Athletic Turf -	None
Geo.Schofield Co. Inc. -	None
JDL Equipment -	Battery powered field liner,
RotaDairon Emrex, Inc. -	Finn Mini Skidsteer, Thatch Master, OverSeeder
Till Paint Co. Inc. -	Jaydee Driver Liner
Wilfred McDonald -	Smithco Super Rake Infield Conditioner, I-Stripe 22 Infield Mower, Jacobsen Turfcat Rotary Mower.
Storr Tractor -	First Products Aeravator Aerator Seeder, Buffalo Turbine Blower on WM2100, Toro Groundsmaster 3500
Ocean County Utility Authority.-	None
National Seed -	None

Continued from page 8 "A Model Policy".....

Records shall also include, but are not limited to, pest surveillance data sheets and other non-pesticide pest management methods and practices utilized.

Notification/Posting

The _____(Insert as appropriate, either local school board, board of trustees, Chief School Administrator, or Principal) of _____ (Insert school name), is responsible for timely notification to students' parents or guardians and the school staff of pesticide treatments pursuant to the School IPM Act.

Re-entry

Re-entry to a pesticide treated area shall conform to the requirements of the School IPM Act.

Pesticide applicators

The IPM coordinator shall ensure that applicators follow state regulations, including licensing requirements and label precautions, and must comply with all components of the School IPM Policy.

Evaluation

Annually, for public schools, the Chief School Administrator will report to the local school board on the effectiveness of the IPM plan and make recommendations for improvement as needed. For non-public schools and charter schools, the Chief School Administrator(s) or Principal(s) shall report to their respective governing boards on the effectiveness of the school IPM plan and make recommendations for improvement as needed.

The local school board directs the Chief School Administrator to develop regulations/procedures for the implementation of this policy. ▲

Authorizing Regulatory references including definitions

The School Integrated Pest Management Act of 2002
N.J.A.C. Title 7 Chapter 30 Subchapters 1-12
Pesticide Control Act of 1971

**Ann Waters is an Outreach Coordinator for NJDEP Pesticide Control Program Ann.Waters@dep.state.nj.us*

"IPM in New Jersey Schools"

Explaining the policy

**Ann R. Waters*

On December 12, 2002, Governor McGreevey signed into law Senate Bill 137 as the "School Integrated Pest Management Act." This new legislation requires the implementation of Integrated Pest Management practices at all New Jersey public, private and charter schools by June 12, 2004. New Jersey now joins several other states within the U.S. who have signed into law legislation requiring IPM methods for managing pests in school environments, thereby reducing the risks associated with pesticide exposure.

One of the key components of the Act is the development of a **model IPM policy** to be utilized by the schools for the development of their individual policies. In March, a meeting was held to begin work on the development of the model policy. A large group of stakeholders comprised of a variety of school participants as well as industry, non-profit and government representatives provided input on the language and format of the draft document. Eleanor Murfitt and Jim Hermann represented the SFMANJ as part of this advisory group. A smaller working group comprised of representatives of the NJDEP-Pesticide Control Program (NJDEP-PCP), Rutgers Cooperative Extension, New Jersey School Boards Association and the Department of Education completed the development of the final model policy document, which will be made available to all NJ schools.

Continued on next page.....

Continued from page 9 "Explaining the Policy".....

The additional requirements of the Act include the following:

- Appointment of an **IPM Coordinator** by each local school board, board of trustees or principal or chief administrator of each public, private or charter school to implement the school IPM policy.
- **Annual universal notification** to all parents or guardians and staff regarding the IPM policy, IPM Coordinator contact information as well as a listing of any pesticides currently in use or having been used on school property within the previous 12 month period.
- **72 hour prior notification** to all parents or guardians and staff as well as posting of area(s) to be treated of any pesticide with the exception of **low-impact pesticides** as they are defined in the Act.
- **Emergency applications** of non-low impact pesticides may be made when there is a threat to the health or safety of students or staff members without prior notification. Notification would follow within 24 hours of the application.
- Unless specified otherwise on the pesticide product label, a **7- hour re-entry** interval to the treated area must be followed.

In the months ahead, prior to the required deadline for adoption of the IPM mandate by all schools, a **model plan** will be developed to accompany the **model policy** which will provide procedures and methods of implementation of the policy.

Over the next couple months, an **IPM school survey** developed by the DEP-PCP will be administered with the assistance of the Department of Education to all Chief School Administrators to identify pest management practices and levels of IPM implementation currently in existence in New Jersey schools. This survey will be directed to those individuals, in an electronic format, who are primarily responsible for overseeing pest management within each school or school district. The results of the survey will assist in the development of training needs to be provided to school personnel to enable a better understanding of IPM and their responsibilities for compliance with this new legislation.

Anyone, who applies pesticides to exterior areas of a school, including athletic fields, is required by NJDEP-PCP regulations to hold a Commercial pesticide applicator license. For anyone who has never been licensed before or who has lost their certification, the procedure for obtaining a commercial license is composed of two steps. Initially, an individual must attend a basic pesticide training course prior to completing a **Core** exam. In addition to the Core exam, one or more "Category" certification exams must be passed. The Category exams needed depend on the type of pest control that will be done. To be eligible to take a Category exam, the applicant must complete a minimum of 40 hours of "on-the-job training" for each category applied for.

For further information on regulations or licensing procedures, as well as school IPM please contact Ann Waters at (609) 984-5014 or the Pesticide Control program website at www.pcpnj.com. ▲

**Ann Waters is the School IPM Coordinator, Outreach and Training Coordinator-NJDEP Pesticide Control Program*

"Degree-Day and IPM"

**Dr. Joe Russo and Dennis Watkins*

This issue is dedicated to Integrated Pest Management or IPM. The success of most IPM programs depends, in part, on the availability of timely, accurate information on the development and interaction of a pest with its host crop. There are many variables defining the information needs of IPM, but most popular is the concept of "degree-day." The degree-day is derived from temperature observations. Dating back to the 18th century, it is probably the oldest variable used to track the development of pests and crops. Today, the degree-day is in many forms, such as growing degree-days, and heat-units.

When degree-days are summed or "accumulated" over time, they are a measure of the thermal requirements of an organism in order to reach successive "phenological" or life stages. Since the amount of heat varies from day-to-day, accumulated degree-days provide a more accurate unit than summed calendar days to account for the impact of weather on an organism's development and growth. In its simplest "arithmetic" form, a degree-day is calculated by subtracting an average daily temperature from an organism-specific base value. It is then accumulated daily over the organism's lifetime. For most crops, the base is 50 °F. For most insects, bases range from 40 to 55 °F. Other computational forms can be used to calculate daily and accumulated degree-days, such as the "sine-wave," which is also known as the "Allen" method. These more sophisticated forms usually employ an upper limit, which accounts for the fact that an organism's growth is retarded when the environment becomes too warm. A typical upper limit for many agricultural pests is 95 °F.

From the perspective of the sports field manager, degree-days play an important role in turf IPM. By watching the changes in the degree-day-driven phenologies, a manager can identify the best "window" for controlling a pest or amending turfgrass. Diseases such as anthracnose, gray leaf spot (ryegrass), and summer patch can be specifically monitored by degree-day accumulations. Degree-days can be used to track crabgrass emergence and its seasonal development. They can help a manager focus applications for both pre and post weed control at the most favorable dates. The timing of weed and other pest controls can vary as much as three weeks from season to season.

The degree-day approach in decision-making removes much of the guesswork that can result in poor control and put a manager's job in jeopardy. The degree-day approach quantifies the timing of turf and pest events and provides a temporal framework for IPM practices. The use of degree-day-based IPM is some of the best evidence to an employer, the public, and regulatory agencies, that an individual has taken an informed, professional approach to sports field management. ▲

**Dr. Joe Russo is president of ZedX, Inc., and information technology company located in Bellefont, Pa. he has a Ph.D in Agricultural Meteorology. Dennis Watkins is a Turfgrass agronomist located in Loards Valley, Pa.*

"Rutgers Corner"

"Park's Department"

Brad Park is the Sports Turf Research and Education Coordinator at Rutgers, The State University of New Jersey. He is assisting sports turf managers of NJ through education and research to help provide better sports turf for the citizens of NJ. .Ask Brad Park your questions: E-mail us at hq@sfmanj.org

Question: *When selecting a single Kentucky bluegrass variety or blend of different varieties to be included in a seed mixture for an athletic field renovation, what are the major considerations in selection and how would you prioritize those considerations, if at all?*

Answer: There are a number of different factors involved when choosing a Kentucky bluegrass or a blend of Kentucky bluegrasses for an athletic field. For sports turf areas that receive high levels of use, maintaining adequate turfgrass cover is a high priority. The ability of bluegrasses to resist and recover from traffic stresses should be the most significant consideration in selecting a variety or varieties.

The Center for Turfgrass Science at Rutgers University is leading the way to help enable sports turf managers to make these decisions by utilizing its National Turfgrass Evaluation Program (NTEP) Kentucky bluegrass trial to examine the traffic tolerance of Kentucky bluegrass selections and varieties.

A turf manager faced with the selection of varieties should use data provided by NTEP to assist in the decision. Annually, NTEP provides reports on the evaluation of turfgrass species such as tall fescue, perennial ryegrass, and Kentucky bluegrass. Varieties of each species are evaluated at different locations across the country for turfgrass color, density, texture, disease susceptibility, and quality as well as several other parameters. The results are available at www.ntep.org

Additionally, Rutgers Cooperative Extension provides fact sheet recommendations on the varieties best adapted to New Jersey at www.rce.rutgers.edu/pubs

As a method to evaluate the traffic tolerance of Kentucky bluegrass varieties and selections, the Center for Turfgrass Science at Rutgers utilizes a roller to create compaction stress and a machine to simulate wear. Turfgrass quality is assessed for these Kentucky bluegrasses and indicates the overall appearance of the turf. Turf quality incorporates several components including: density, cover, leaf texture (measure of the leaf width), uniformity, and freedom from insect and disease damage. Quality is assessed on a scale of 1-9 where 9=highest quality.

An analysis of non-traffic quality data from the Rutgers' North Brunswick Hort. Farm II location showed the following four commercially available Kentucky bluegrass varieties to have the highest mean turfgrass quality in 2002: Princeton 105 (7.1), Award (6.4), Blackstone (6.3), and Serene (6.3).

When traffic (wear and compaction) was applied to all varieties, the following commercially available Kentucky bluegrass varieties were the top performers for turfgrass quality in 2002: Princeton 105 (7.3), Tsunami (6.9), Midnight II (6.7), Award (6.7), Nu Destiny (6.5), Awesome (6.3), Odyssey (6.2), Total Eclipse (6.2), Barrister (6.2), Ginney (6.2), Cabernet (6.1), Impact (6.1), and Moon Shadow (6.1).

Continued on next page.....

Continued from page 13 " Parks Depart."
Note that Blackstone and Serene were not on the list of top performing commercially available varieties when assessed for quality when traffic was applied to the plots. When traffic was applied to these varieties in 2002, mean turfgrass quality for Serene and Blackstone showed statistically lower ratings compared to the top performing varieties.

While this data represents only one year of research data at Rutgers, Princeton 105 and Award showed excellent turfgrass quality with and without the application of traffic. Research in 2003 will determine whether these varieties continue to tolerate traffic.

Whenever possible, a sports turf manager faced with the decision of choosing a Kentucky bluegrass for his or her field should examine traffic tolerance data as part of the decision-making process as some varieties may provide outstanding turfgrass quality when grown under optimal conditions, but perform moderately or poorly when compaction and wear become part of the equation. ▲

SFMANJ SHIRTS FOR SALE

If you are a member of Sports Field Managers Association of New Jersey, you may be interested in owning a collared knit shirt with our logo. To purchase one of these fine shirts just send a check for $25.00 to SFMANJ Chapter at PO Box 370, Annandale, NJ 08801

"Monthly Field Tip"

**by Jim Hermann, CSFM*

Here is a *formula* that I came up with that will answer every question concerning fertilizer. All you have to do is plug in the known factors to calculate the unknown. Try it!!

Formula: 100 ÷ %N x (R x A) = Q

%N = % nutrient or % active ingredient based on analysis

R = Rate of Application (1 lb. N per th. sq. ft., 1lb. active ingredient per acre etc.

A = Area

Q = Quantity (lbs. tons, of product)

T = Total nutrient or total active ingredient based on quantity

T = (R x A) (when T is the unknown or known factor, T can replace (R x A) in the equation

Examples:

Question: If you have 600 lbs. of 20 –10-10 fertilizer in your shed how much area can you fertilize at 1 lb. N/ th. ?

Formula: 100 ÷ %N x (R x A) = Q

100 ÷ 20 x 1lb./1000 ft^2 x A = 600
5 x 1 x A = 600
5A = 600
A = 120,000 sq. ft.

Question: How many lbs. of 40-0-0 does it take to fertilize a soccer field 360'x210'?
@ 1.5 lb. N per 1000 $ft.^2$**?**

Formula: 100 ÷ %N x (R x A) = Q

100 ÷ 40 x 1.5 x 75.6 th.sq.ft. = Q
2.5 x 1.5 x 75.6 = Q
283.5 = Q

Question: How many lbs. of 20-5-10 fertilizer is necessary to provide 1 lb. N per/ 1000 sq. ft.

Formula: 100 ÷ %N x (R x A) = Q

100 ÷ 20 x 1 x 1 = Q
5lbs. = Q

Question: How many pounds of fertilizer does it take to fertilize 500,000 sq. ft with 31-0-0 at 1.5 lbs. N/1000 sq.ft.

Formula: 100 ÷ %N x (R x A) = Q
100 ÷ 31 x 1.5 x 500 = Q
2419.35 lbs. = Q

If you have a tip or shortcut that you would like to share with your fellow sports field managers write or call us at SFMANJ or email at hq@sfmanj.org ▲

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"Field Marking Paints:

Characteristics and Composition

**by Mark A. Whitlam*

Field Marking has come a long way from the days of lime, chalks and oil based paints used to mark the lines on sports fields. Today, painting with latex based field paints has become the choice method for lining and decorating fields. The use of latex paints has a distinct advantage over its predecessors, being safe for the environment, non-damaging to the turf, having relatively low cost per application, and being easy to clean up.

Today's field marking paints are derived from a mixture of a vehicle, the liquid portion of the paint, and pigments, the solid portion of the paint. Within each of these segments, the paint derives its own characteristics. In field marking paints the vehicle contains three primary ingredients—Included in the vehicle is the solvent (water), the binder (latex resin), and wetting or dispersing agents (the same liquids used in dish soap). The pigments include Titanium Dioxide (the whitest pigment available) used as a primary pigment and filler pigments such as Calcium Carbonates, Silicates, Talc, and Kaolin (clay). All of these materials are combined and ground to form a coating desirable for the decoration or identification of the boundaries.

Latex has become the binder most used in field marking paints due to its unique structure and ability to be reduced with water. Once latex has dried, it forms a complex polymer structure of lattices (hence latex) much like lattice work in construction. However, these lattices build layer upon layer in all directions to produce a paint film. This allows the substrate, in this case the grass, the ability to "breathe". More descriptive, the distance within these lattices allows for oxygen and carbon dioxide interaction. This structure also allows for evaporation of very small water molecules leaving the blade of grass, fueling the grass for continued growth.

Pigments give the paint its color and are generally organic in nature when it comes to field marking paints. Nontoxic organic pigments have been used since man first began drawing on cave walls over 15,000 years ago. Organic pigments or pigment colors, however, have changed significantly in the past 100 years. Only recently have organic pigments been utilized as much as they are today. One reason for the lack of use for organics was its relatively high cost compared with leaded pigments. Today, organic pigments can now be synthetically manufactured, offering the user stronger tint strengths, better lightfastness (ability to keep its color), and in a few cases, new pigment types or color shades allowing for a larger range of colors. With these recent advancements, organics have offered increased value in their use.

Lead based pigments are still used in some field and marking paints even today. You should avoid using lead based pigments in any type of paint due to its toxicity and its ability to be absorbed through the skin. Leaded pigments used in turf paints can also leach from the grass causing ground contamination. Leaded pigments are commonly found in traffic yellows using chrome yellow pigments, greens using chrome green or chromium oxide pigments, reds using red lead, and oranges using chrome orange pigments or "moly orange" (molybdate orange). Be sure to review the material safety data sheets to see whether the paints you are using contain any of these products.

Titanium Dioxide is the choice pigment when it comes to white paints. Titanium Dioxide has the greatest hiding ability and also has the highest level of brightness than any pigment known. Titanium Dioxide is used in everything from plastics to toothpaste. How do you think your teeth get so white? Titanium Dioxide is rarely ever used as the single pigment in a paint coating due to its high cost and very small particle size. Filler pigments are used to reduce the cost and fill in the gaps between the Titanium particles. The use of filler or more commonly known, extender pigments, gives the paint better hiding ability and better reflectance. For example, if you had a jar half full of large marbles (filler or extender pigments) and added smaller marbles (Titanium Dioxide pigments) and mixed them together, the smaller marbles, when properly dispersed, would fill in the gaps to produce tighter grouping – allowing very little light to pass through.

In field marking paints, it is desirable to use larger particle-sized extender pigments in combination with Titanium Dioxide to produce better reflectance and light scatter. This gives the paint coating a flat appearance and allows the light reflecting off the surface to scatter in all directions.

If you were to look at a flat coating under an electron microscope, it would give you and impression of looking down at the snow-covered mountains with its many peaks and valleys. These extender pigments or larger particle sizes form peaks and the smaller Titanium Dioxide particles fill in the valleys, giving the paint its reflectance value and hiding ability. This type of hiding is desirable for both low angle viewing and optimum reflectance under artificial lighting.

Surfactants or "wetting agents" and dispersants are the smallest part of field marking paints. Typically, only 1-2% of the total paint consists of these agents. Surfactants and dispersing agents get their name from how they perform. Surfactants are "surface active agents." Most dry pigments are "hydrophobic" in nature, meaning they fear water. Therefore, these surfactants allow the latex and water to combine with the pigments and stay "wet" in solution. Depending on its nature, surfactants will also aid in the wetting of the substrate or grass. The dispersing agents keep all the ingredients mentioned above in solution and prevent settling out. ▲

**Whitlam Paint Company - www.whitlampaint.com/paintcharacter.cfm*
Read more about paints on their website.

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