"It Takes More Than Sneakers" by Jim Hermann[1]

As we explore the area of infield maintenance, we find ourselves inundated with products and procedures designed to provide professional results. When reading these articles and advertisements always ask yourself about the similarities in your field *environment* and the *environment* you are reading about.

A problem with infield maintenance is that many of us are looking for that perfect product that will minimize maintenance along with increasing the quality of the field. In many cases an increase in quality can also serve to minimize maintenance. However, the maintenance that remains becomes more essential.

The quality of your program is not a direct result of the products you use, but more a direct result of how you use those products.

An example of this would be the procedure of modifying the pitchers mound with clay. Damage caused by the pitcher is minimized, thereby increasing the quality of the mound and decreasing the time necessary to maintain it. However the maintenance required becomes more imperative. Once a pitchers mound is modified with clay it should be kept covered when not in play. A higher level of expertise is necessary for maintenance. If the mound is not covered and maintained properly any depressions created by the pitcher become wet and sticky. The only thing worse than wet clay on your cleats is dog *shhhhhhhhame* on me.

On a similar note, if you increase the clay content of your infield mix, you minimize the time necessary to maintain the infield in a safe and playable condition. The clay content causes the mix to become more stable. The mix has less potential to translocate to the perimeters and create that lip we are all so familiar with. On the other hand, the infield mix will have the potential to become much harder when it is dry and hold more water during rainy weather than an infield mix containing a higher percentage of sand. This causes a greater need for a more timely and effective maintenance program.

A great deal of caution and judgment needs to be exercised as you continue to search for effective products. There are many products available that are very effective in accomplishing what the manufacturer states they will accomplish. However, they need to be used within the *environment* for which they are intended in order to be most effective.

Ask yourself these questions:

1. Can I cover the infield when it rains?
2. Can I water the infield when it's dry?
3. Can I roll the infield when it's soft?
4. Can I scarify the infield when it's hard?

Have you ever heard this statement? "We use the same infield mix they use at So and So Stadium." That's like saying "I wear Michael Jordan sneakers." It's just not the same.

It should not be assumed that failure is eminent if the means are not provided to address the four questions posed. What should be understood is that we need to live within our means, so to speak. It makes little sense to anticipate a level of quality that demands a maintenance program that is unattainable. The quality of your program is not a direct result of the products you use, but more a direct result of how you use those products. Take care when purchasing a product or service that you have the ability to provide the *environment* necessary to achieve the benefit that you anticipate.

When you make decisions on the products and procedures you include in your maintenance program remember this, ***"It takes more than sneakers."***

Although it is true, you can't make a silk purse out of a sow's ear. You can have the finest silk available, but without the proper tools, equipment and knowledge; you will never create that silk purse.

The best way to gain the knowledge necessary in making educated decisions on equipment and procedures used in athletic field maintenance is to become an active member of SFMANJ. This membership puts you in touch with people in your area who have similar interests. By networking with these people through involvement in tradeshows, field days and seminars you will have the opportunity to learn first hand what works and also what doesn't work in athletic field maintenance. Involvement allows you to profit from the experience of others. This is an invaluable asset. ▲

[1], SFMANJ Board of Directors

DID YOU KNOW? 17% of the lawsuits concerning the physical condition of baseball/softball fields are due to FIXED BASES.

Utilizing Proper Cultural Practices to Reduce Turfgrass Diseases by Bruce Clarke[1]

Most turfgrass diseases are caused by fungi that are dramatically affected by changes in the environment. This may include natural changes in temperature, moisture, and relative humidity as well as alterations in the environment caused by cultural management practices. Although we can do little to change the weather, turf managers can and should attempt to modify those management practices that affect the incidence and severity of major turfgrass diseases. Virtually everything a turf manager does can affect disease development. Some management practices may intensify turfgrass diseases while others may reduce symptom expression. It is the responsibility of every person who manages turf to accentuate the positive attributes of proper management and to limit those practices that enhance turfgrass diseases.

Nitrogen Fertility Management

Nitrogen, more than any other element, can influence the incidence and severity of turfgrass diseases. Many diseases, such as Gray leaf spot, Cercospora leaf spot, brown patch, pink snow mold / Fusarium patch, Drechslera leaf spot and melting-out and pythium blight, are readily enhanced by the application of quick-release nitrogen fertilizers when they are active. Other diseases, such as red thread, rust, and anthracnose, are frequently suppressed by small applications of nitrogen. Even dollar spot, one of the most widespread diseases of turf, is dramatically affected by nitrogen applications. When dollar spot is active, nitrogen may actually enhance disease development. However, when the disease is in remission, light applications of nitrogen can stimulate the recovery of infected turf.

Quite often, careful selection of the nitrogen source can help reduce symptom severity. For example, Drechslera leaf spot and melting-out can be intensified by spring applications of quick-release nitrogen sources such as ammonium nitrate or urea. However, the use of slow-release products like sulfur-coated urea or IBDU can reduce the melting-out phase of this disease. Research at Rutgers University has also clearly shown that the selection of the nitrogen source is critical to the successful management of summer patch.

Summer patch is caused by the root and crown infecting fungus *Magnaporthe poae*. This pathogen is greatly stimulated by high soil pH. As a result, the application of acidifying fertilizers (i.e., ammonium sulfate and sulfur-coated urea) over several years can reduce patch development 30 to 40% even without the use of fungicides. On the other hand, the use of nitrate-based fertilizers can actually stimulate patch severity by elevating soil pH over time. This relationship has also been observed with other diseases such as take-all patch and pink snow mold. In general, a good target pH for the management of these diseases is 6.0 since the causal agents are stimulated above a soil pH of 6.5.

Compaction/Aerification

Most stress related diseases are intensified by compaction. Soil compaction reduces rooting depth, plant vigor, and water infiltration. Unless alleviated, compaction may favor the development of many diseases such as summer patch, take-all patch, pythium root rot, rust, dollar spot, and anthracnose basal rot. Turf management practices that reduce compaction will, over time, reduce the severity of these diseases. The use of shallow (3.25 in) and deep (7 in) tine aerification has been used to reduce the diameter of summer patch loci 70 to 80% over a three year period. This research has also indicated that spring aerification is often more effective than fall aerification in reducing disease severity. Aerification, however, should not be initiated when the target disease is active.

Thatch and Disease

Most foliar diseases are enhanced by a thick (>0.75 inch) thatch layer. Dollar spot, pink snow mold, Drechslera leaf spot and melting-out, yellow patch, dollar spot, pythium blight, brown patch, gray snow mold, and southern blight are all examples of diseases that are more severe when the thatch layer becomes excessive. Thatch acts as a sponge for water and nutrients and is a protection zone for turfgrass pathogens. Maintaining the thatch layer below 0.75 inch will help reduce this protective cover thus reducing fungal populations and ultimately disease intensity.

Effect of Moisture on Turf Disease Development

There are two types of moisture that can affect turf disease development. Leaf moisture is required by most fungi to infect turfgrass foliage. Diseases such as brown patch, pythium blight, and dollar spot need extended periods (>10 consecutive hours) of leaf wetness to develop into epidemics. Reducing the period of time that turf foliage remains wet should be the goal of every turf manager. One of the best ways to do this is to avoid irrigating turf in the early evening (6 to 10 PM) or late morning (9 to 11 AM) hours. Since turf is often wet because of dew or guttation water from midnight to 9 AM, avoiding the early evening and late morning hours will limit the total leaf wetness period and help prevent many disease outbreaks.

Soil moisture is also an important factor in turf disease development. Many diseases such as dollar spot are actually enhanced by low soil moisture (dry soil) and abundant leaf wetness. Even pythium blight (foliar pythium) is more severe under conditions of low soil moisture and high leaf wetness. Other diseases, including brown patch and red thread are generally unaffected by soil moisture levels.

Mowing Height

Many diseases are more severe at lower mowing heights. Root diseases in particular are often enhanced when turf is maintained below the recommended height of cut for a particular grass species. For example, summer patch is much more serious on golf greens when turf is turf cut below 5/32 inch. Low mowing depletes carbohydrate reserves in the plant thus predisposing it to disease. However, a few diseases (i.e., gray leaf spot) are more serious at higher heights of cut. For these diseases, high humidity associated with higher cutting heights, may actually intensify disease severity. For best results, maintain turf at the recommended mowing height▲.

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DID YOU KNOW? Rutgers Cooperative Extension publishes a "Plant & Pest Advisory" newsletter. For more information see their website at: www.rce.rutgers.edu/pubs/plantandpestadvisory

"Monthly Field Tip"

Know Your Target

Environmentally Sensitive Pest Control by Jim Hermann

The NJ Pesticide Applicator Training Manual defines a pesticide as "a chemical or other agent that will destroy a pest or protect something from a pest." The Applicator Training Manual defines a pest as "an unwanted organism (animal, plant, bacteria, fungi, virus, etc.") This is what a pest is. A surface-feeding pest is not the center fielder for the local t-ball team that single handedly keeps the outfield void of dandelions. An opportunistic pest is not the men's softball team that played without a permit just because the field was not occupied. Some pests like cool wet weather. They are not the girls' lacrosse team. Others can devastate a stand of grass in a few hours. They are not the varsity football team.

If you apply pesticides to the athletic fields and/or grounds you are employed to maintain, you are required to be a certified commercial pesticide applicator, or be working under the direct supervision of a certified commercial pesticide applicator. It has been said, "It's only Roundup, I don't have to be licensed." IF IT'S A PESTICIDE, YOU HAVE TO BE LICENSED.

When applying pesticides follow label instructions, know and understand your **"Target."** (The area, buildings, plants animals, or pests *intended* to be treated with a pesticide application). Be aware of and be concerned with any potential **"Non-target"**: (Any plant, animal or other organism that a pesticide application is not aimed at, but may accidentally be injured by a chemical)

Before making any pesticide applications do three things:

1. ***Identify***
   Know your target. Understand its life cycle and growth habits to determine when is the best time to treat and what is the most effective method of treatment while causing the least amount of environmental impact.

2. ***Quantify***
   Thoroughly inspect the area you contemplate treating of to determine if existing pest populations warrant treatment. Remember, no pesticide is 100% effective. There have always been and always will be pests in the environment. A part of your job as a responsible turf manager is to determine acceptable levels or thresholds of population density below which chemical controls are not necessary.

3. ***Justify***
   Weigh all the factors. Do ten dandelions justify a blanket application of herbicide? Does a lawn moth spotted in the evening justify an insect control application? ▲

"Take it to Hart" by Gerald Henry and Dr. Stephen Hart

Dr. Stephen Hart is an Assistant Extension Specialist in the Plant Science Dept. at Cook College/Rutgers University. Gerald Henry is a graduate student at Rutgers University

You can ask Dr. Hart your weed questions by e-mailing him at sfmanjchapter@netscape.net

Question: We have a lot of white clover on our soccer field. We would like to treat the clover with a herbicide to get rid of it. The problem is the geese have it chewed off to the point where I am concerned that a herbicide that depends on available leaf surface will be less than effective. What can we do?

Answer: White clover, *Trifolium repens* L., is one of the most difficult broadleaf weeds to control in athletic fields. White clover has adapted to survive under moist soil conditions, low nitrogen fertility, soil acidity, and low mowing heights. White clover reproduces by seed (pods) and the rooting of creeping above ground stems (stolons).

The first step in avoiding weed encroachment is to maintain a healthy, dense, vigorous stand of turf. White clover is a legume whose presence in turf usually signifies a nitrogen deficient soil. Applying nitrogen at a rate of 2 - 3 lbs N/1000 sq. ft over one growing season should alleviate this problem. White clover has a shallow root system that is highly susceptible to drought. Proper water management during periods of dry weather can help reduce white clover populations. Also, maintain a soil pH of at least 6.0 with 6.5 to 6.7 being preferred.

White clover is most susceptible to the herbicides clopyralid, MCPP/MCPA, and dicamba. Of these three, clopyralid (a component of Confront herbicide) is probably the most effective. Clopyralid will also be taken up by the roots of white clover and would be the best herbicide to use in situations where the clover has been recently mowed or the foliage has been eaten by geese. Herbicide treatments for white clover control should be made prior to (mid-spring) or following flowering (fall). ▲

"Rutgers Economic Survey"

Rutgers recently mailed out an Economic Survey to many businesses such as Sod Farms & Golf Courses; municipalities such as DPW, Parks & Rec Depts;, schools such as Building & Grounds; and Commercial business in the Green Industry.

If your business or town received a survey Please, Please take the time to fill it out and send it back.

WHY? This survey is very important to the Green Industry. The study will show the economic importance of turfgrass to industry leaders, policy-makers and the general public. Specific objectives are to:

1. Estimate the size of the turfgrass industry by sector
2. Characterize the nature of NJ's turfgrass industry for use by industry professionals.
3. Evaluate factors that will shape the future of the turfgrass industry, including population dynamics, development, state policies, industry consolidation, water regulation, image, policy support, and environmental factors.
4. To create a resource inventory for use by industry, Rutgers will develop GIS maps to identify locations of major demand units.
5. In order to allow industry to strategically plan for its future, 10 year projections of demand for services and products will be developed. ▲