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SportsTurf MANAGERS ASSOCIATION

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This form is only valid for first time STMA National members through Sept. 30, 2009 (membership benefits continue through Dec. 31, 2009)

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Sports Turf Managers Association
PO Box 414029
Kansas City, MO 64141

Membership Category:

☐ Sports Turf Manager $55

☐ Sports Turf Manager Associate* (Additional Member(s) from the same facility) $55*

Please select the primary facility type where you are employed:

○ Professional Sports ○ Higher Education ○ Schools K-12 ○ Parks & Recreation

☐ Academic $55

☐ Student (Verification of enrollment) $25

☐ Commercial $148

☐ Commercial Associate* (Additional Member(s) from the same commercial company) $75*

☐ Affiliate (Person who is indirectly or on a part-time basis, involved in the maintenance/management of sports fields) $50

☐ Chapter Dues (Contact Headquarters for amount) $ _____

Chapter Name _____

☐ Contribution to SAFE Foundation (research, education and scholarship) $ _____

Total Amount Enclosed: $ _____

Payment Method:

☐ Check ☐ Money Order ☐ Purchase Order # _____

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Credit Card: Please do not email credit card info, please call 800-323-3875 to provide Exp Date: _____

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*There must already be a National Sports Turf Manager from your facility or Commercial Member from your company before you may sign up in the Associate category.

Phone: 800-323-3875 www.STMA.org

Cut Here

Organics might help with budget concerns

Editor's note: The following is an edited transcript of an interview with Gary Maurer, president of Green Pro Solutions, on using plant-based organic programs for athletic fields.

Any program that reduces the need for equipment can save significant amounts of money.

ST: Why do you think Molloy College (a private school on Long Island) is a good example of your program and the results that can be obtained using organic-based products?

Maurer: Well, there are a number of reasons. First, Molloy is in a densely populated urban/suburban area that is very expensive. Labor, utilities, equipment and equipment maintenance, land, water—everything is expensive. So a turf program that can produce great results with a minimal amount of water can save a lot of money.

ST: You mentioned labor. It is easy to understand why a program that can reduce labor costs would create value. But what about equipment maintenance?

Maurer: Any program that reduces the need for equipment can save significant amounts of money. If a piece of equipment is used less, there are reductions in maintenance costs. Unless all of the services are contracted out, almost every facility has a minimum amount of multi-use equipment, like a tractor with a host of attachments. Minimizing the number of attachments saves on costs for acquisition, maintenance, and storage.

ST: So you are suggesting that a school or organization does not have to buy all kinds of equipment to maintain their fields if they use organic products and, consequently, they can save a lot of money.

Maurer: Let me give you a qualified 'Yes' on that. Molloy College is a good case in point. They have used organic products on their baseball field for the nearly 20 years. Currently, application of the products is managed by Warren Getch, branch manager of Nature's Pro of Long Island; he says year in and year out the only piece of equipment on the field is the mower. Of course, they do have equipment to maintain the clay surfaces, but nothing else goes on the turf.

ST: So, no aeration at all. That seems pretty remarkable.

Maurer: Many in the turf management field would think it impossible. Or, they

would imagine that the quality of the field would be unacceptable. A soil probe provides clues as to why the right kind of organics works. In the spring and late fall of the year, a soil probe will penetrate 15 inches into the soil. Approximately the top 3 inches is topsoil. From there down it is all clay. If I ball that clay up in my hand, it will become a rock in 48 hours as it dries out.

ST: How deep can you probe the rest of the year?

Maurer: If moisture levels are maintained, 15 inches. But the real story is the depth of the grass roots. In the spring, the turf roots can be protruding from the end of the probe, more than 15 inches. Now in cool season grasses we know that some of that stored energy will be consumed by the grass plant during the stressful hot days of summer. The roots may only be 6-8 inches deep then, until the cool weather of the fall. At that point the grass roots will again grow deeper as they begin to store carbohydrates for the next season.

We use liquid aeration. Unlike equipment, which actually causes a certain amount of compaction while it is doing its aeration, liquid aeration products actually cover 100% of the field, not just 5-10% of the surface area. Liquid aeration may not be quite as fast, but it does cover 100% of the surface area and can be done in a fraction of the time at a fraction of the cost. And it is cumulative; every application builds on the previous applications. Many, many dollars can be saved.

ST: How do organic products produce such deep rootzones in what is essentially clay?

Maurer: There are a number of things at work here. Initially we begin with a more advanced soil test that determines nutrient availability and it determines what is functioning. The difference between the two can be very significant. Based on these test results, our special computer program analyzes the data and generates specific instructions on how to make the soil healthier, which we call a "Prescription."

No plant can be healthier than the soil in which it grows. Poor quality turf, compaction, puddling and weeds are symptoms of sick soil. We address the causes, not the symptoms. When we produce healthy soil, the turf automatically responds.

ST: So if your soil is healthy enough, weeds won't grow, is that what you're saying?

Maurer: Turfgrass management is about creating and sustaining a monoculture. The natural order of things is toward greater diversity, so creating a single type or very narrow diversity of plant species is an uphill battle. Weeds have a different nutrient profile than turfgrass. By providing the nutrient components in the correct proportions to optimize turf production, weeds are discouraged from germinating and growing. We create an inhospitable environment for weed growth.

ST: The word "organic" gets thrown around a lot. What does it mean in terms of turf products?

Maurer: There are hundreds of 'organic' products. To me, they fall into two distinct categories. There are products that are associated with animals and products that come from plants. Plants do not, with few exceptions, eat animals. Products made from animals and animal byproducts can be good for plants but they are made up of components that are too complex for plants to utilize. Enzymes and other biological components must be present in the soil to make these animal-based nutrients plant-available. If these biological elements are present in the soil, the animal-based products can produce results. If they are not present, the results can be disappointing. Typically, the presence or absence of these biological elements is unknown. There are also possible toxicity issues with animal by-products.

On the other hand, plant-based products are immediately bio-available to the plant. Plant-derived products are easily and more quickly broken down and available for use. If you think of a forest, it feeds

Turfgrass management is about **creating and sustaining a monoculture.** The natural order of things is toward greater diversity, so creating a single type or very narrow diversity of plant species is an uphill battle.

itself what it needs and it is all plant-based material.

Humates is a term used to describe these natural carbon-based materials that contain humic, fulvic, ulmic and other organic acids necessary for plant health, much as amino acids make up some of the building blocks of the human body. Since Humates are derived from plants, they provide a rich storehouse of energy containing everything the plant and soil need to be healthy, including a full range of nutrients, enzymes, minerals, natural surfactants, biostimulants, amino acids, and essential components to stimulate microbes and mycorrhizae. Humates provide benefits that animal-based products do not have.

ST: So the products you use are only made of Humates?

Maurer: In part. As you know plants need many kinds of nutrients. We make products with humates and other essential nutrients, like calcium and iron. Depending on the Prescription Soil Test Results, we may apply calcium in one of its various forms, or a number of other ingredients. It depends on what the soil needs and the proper proportion in relation to the other nutrients already present in the soil or required by the soil to make it more balanced and productive. To the extent possible and based on the client's wishes, we try not to use man-made nutrient sources.

ST: So you do use N-P-K in your products?

Maurer: There are many formulations of N-P-K. Many of them are detrimental to the soil or to the soil biology. We are very selective in what we use and limit its use as much as possible. Humates chelate nutrients so much lower amounts are needed. Healthy soil has millions of microbes per teaspoonful which do an amazing job at nitrogen recycling. The healthier the soil, the less artificial ingredients are needed, if needed at all. That is our goal. And as the health of the soil improves, the 'symptoms' begin to disappear.

ST: I am still intrigued by the depth of the roots in your soil probe. How do plant-based organic products produce that kind of result?

Maurer: Energy is part of the process

but that is a topic for another time. For now, let me just address altering the physical characteristics of the soil. Humates have the amazing ability to make hard soils like clay more porous. Small cavities are opened through the soil that permits air, water and roots to go deeper. Roots cannot grow where there is no air.

Conversely, when added to sandy soils they become less porous. Humates chelate nutrients, holding them in the rootzone. There is less leaching of nutrients into the ground water and less volatility of nitrogen into the air.

In addition, humic material holds up to 20 times its weight in water, acting like a huge sponge. Therefore, between increased root depth and greater water-holding capacity, less water is needed to have quality turf. Again, significant amounts of money can be saved.

> The healthier the soil, the less artificial ingredients are needed, if needed at all.

ST: Do you have some cost saving numbers?

Maurer: Molloy College applies about 7,000 gallons per watering at a local cost of approximately $30 per application. It is not unusual in the high quality soils that I am discussing to reduce water usage 30% or more. For Molloy that could mean $30-$50 per week, perhaps $1,000 per year for one field. Now geographically Long Island gets a fair amount of rain and a baseball field is larger than a football or soccer field. But you can see how the savings really begin to pile up. The savings would be even more dramatic in drought prone or warmer climates, into many thousands of dollars per year just in water savings, particularly if organics are used campus wide, as they are at Molloy College.

ST: But don't organic products cost more?

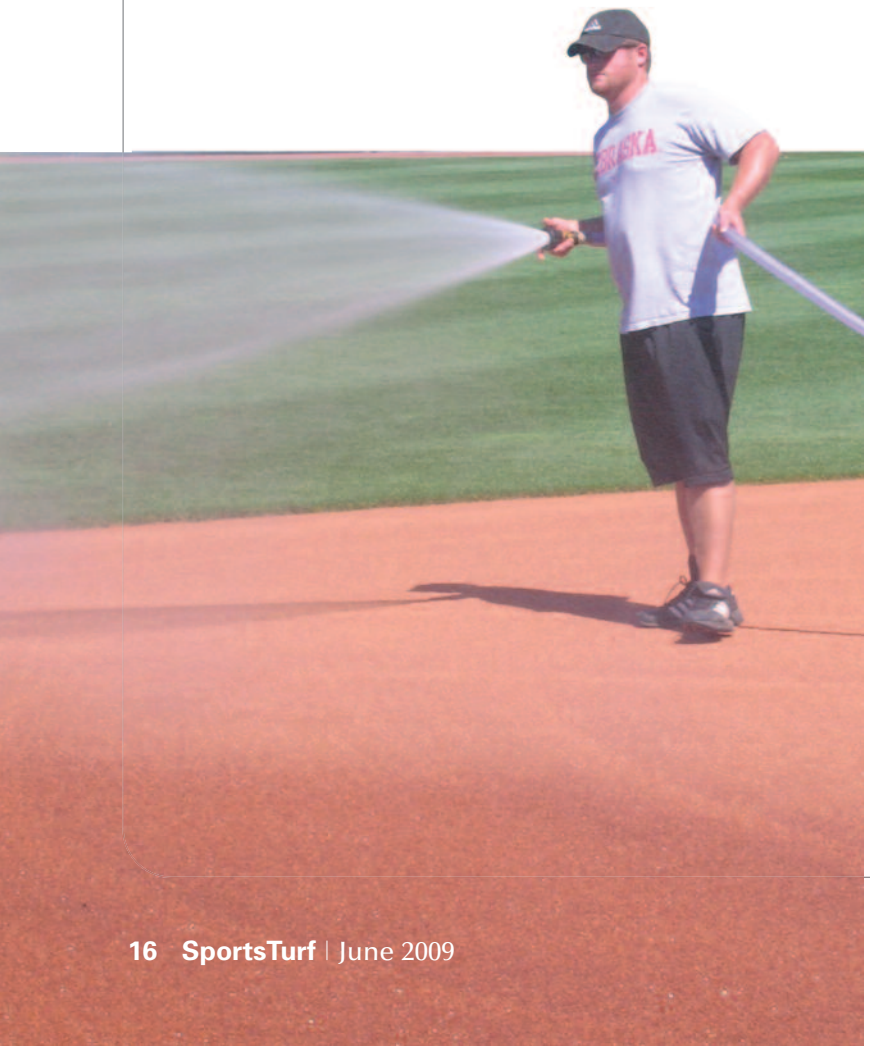
Maurer: Historically that is true, but with increases in chemical, petroleum-derived products, the difference is rapidly disappearing. But that is true only if you compare the product costs and not the program costs. When a school, a business campus or any turfgrass manager compares the annualized cost of all of the components in the complete program, organics can often beat the cost of a chemical program. ■

By Tom Kundrat CIC, CLIA

How to improve irrigation scheduling

THERE ARE MANY FACTORS that determine how well an irrigation system will perform. The core elements considered during the design phase such as head layout, water source information, pipe sizing and sprinkler selection have a profound impact on the system's performance. However, irrigation scheduling, or how long and when we command the sprinklers to run, is often overlooked. Even the best designed systems can be ineffective if the system is run too often or not enough.

So how do we create our irrigation schedule? Once our system is installed we then have the task of creating a schedule that works best in our particular area and for our particular situation. Let's take a look at several things that should be considered when creating an irrigation schedule.



The first thing to determine is how much water needs to be applied to our turfgrass per week. Obviously certain grass types have different water requirements so it's important to research this so you don't under or over water. After you determine how much water your turfgrass requires in a given week, we then work backwards to find out how long we should run each zone of sprinklers. All irrigation manufacturers note the precipitation rate of each sprinkler in inches per hour. This allows us to determine how much water is put down in one hour and is essential in determining how many times we need to run that particular zone to meet our weekly watering requirement. Here is a simple equation from the Irrigation Association that can help you calculate run time:

$$\text{Run Time} = \frac{\text{Gross Water Requirement in Inches of Water}}{\text{Precipitation Rate in./h}} \times 60$$

There are other factors that can determine your water requirement as well. The amount of use your fields are receiving per week, mowing schedule, soil type, root depth and climate conditions are other key elements to include when making this decision. Secondly, determine your start time. There can be many variables that can affect your start time, but three of the most important are temperature, wind and time of day. As the temperature rises during the morning hours so does the wind speed. Temperature can also affect your nozzle performance as the day heats up. This is one of the reasons why early morning is the best time to irrigate. Your turfgrass is also more susceptible to disease by watering late in the evening or at night. By watering infrequently at longer durations you will have much healthier turf.

The third element to effective irrigation scheduling is to abolish the "Set it and forget it" mentally. When the seasons change your watering time should change as well. This is one of the things that can be overlooked the most when maintaining an irrigation system. Many controllers on the market today have a Water Budget or Seasonal Adjust feature that can be used to change the irrigation run times easily by simply adjust-

Temperature can also affect your nozzle performance as the day heats up, so early morning is the best time to irrigate.

ing a water percentage across all zones. This prevents you from having to go zone by zone making countless adjustments. The default on this feature is normally 100%. If you take it up to 110% it will run each zone 10% longer. If you take it down to 80% it will run each zone 20% less. This simple feature can dramatically help the performance of your system.

Finally, consider a Weather Smart system. One of the most important factors in irrigation scheduling is finding the right amount of moisture you need to apply. New advancements have made this process considerably easier. The more accurate systems on the market today work off the principle of Evapotranspiration (ET). ET is the sum of the water lost from the soil surface (evaporation) and water used by the plants (transpiration).

The five factors that make up ET (Evapotranspiration) rainfall, solar radiation, temperature, wind and humidity are the cornerstone elements that can contribute to an effective schedule and they are the benchmark industry wide. Whether you're using a new state of the art ET device or simply using a rain sensor to prevent irrigation during a rain event, you are dramatically affecting your schedule and the health of your turf if you apply these principles. New state of the art technology has made this process a lot easier and new advancements in irrigation controllers seem to be a regular occurrence.

By implementing a few of these rules and methods mentioned above you can dramatically affect the performance of your irrigation system and greatly improve the health of your turfgrass. ■

Tom Kundrat CIC, CLIA is with the Rain Bird Corporation.

By Bob Marcotte

Painting women's lacrosse fields quickly and accurately

Silhouette images courtesy of istockphoto.com

"When the lacrosse women's club president gave me a hand-drawn diagram of the field I was expected to layout, I thought I was in [deep trouble]."

SEVERAL YEARS AGO, when the president of the lacrosse women's club at Texas A&M gave me a hand-drawn diagram of the field I was expected to layout, I thought I was pretty much screwed. The field was made up of two creases (goal areas) formed of circles, half circles, and quarter circles, hash marks along the quarter circle with the end two hash marks hanging out in empty space not crossing any line and a center circle, with hardly a straight line anywhere and no cross lines or boundary lines of any kind.

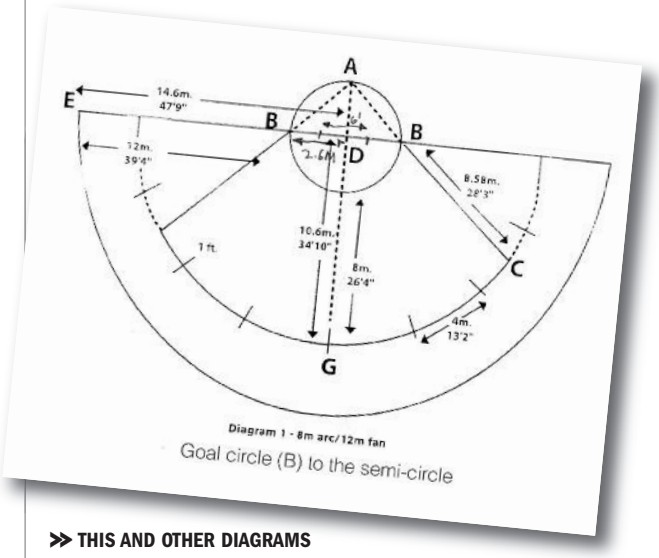
I couldn't make heads or tails of it, and I could hardly believe that a bunch of college kids could lay this out without any professional help. It took hours to lay out one field the first time, and we were called back to make corrections the first three times we painted their field. I began to doubt whether I had a future in this business.

But with practice and developing a couple of tricks, I learned to lay out these fields quickly and accurately. Here is a step-by-step process that, with practice, will allow you to paint a women's lacrosse field accurately and in the shortest time possible. This assumes that the reader is experienced at laying out and painting football and/or soccer fields:

Gather your tools. First, you need a diagram, obviously. I use one provided by the NCAA at http://www.ncaapublications.com/Uploads/PDF/W_Lax_Rules_11_25fb0f2e8d-40e0-4668-a519-00e488777ada.pdf. You also need string, stakes, landscape flags, and quality aerosol field marking paint, as well as three good 100-meter tape measures with metal end rings.

Lay out the perimeters. Do it just like you would for a football field.

Lay out the North Crease. The crease is the most complex and most important part of the field lay out. It must be centered in the field and the dimensions are set in stone. When I first did this, the field had no boundaries whatsoever; it was what I call an "inside out field" because all field elements really radiate out from the cen-



>> **THIS AND OTHER DIAGRAMS** are available on the NCAA website.

>> **LAYING OUT THE NORTH CREASE IS KEY;** it must be centered in the field.

>> **USE AEROSOL PAINT TO MARK THE START AND STOP POINTS** of the 6 foot line where the goal will sit and dot the line between the two points.

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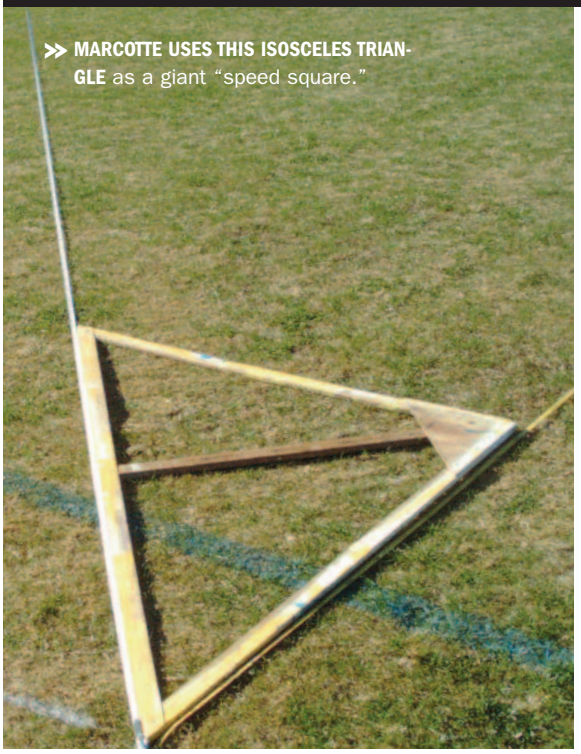

>> **MARCOTTE USES THIS ISOSCELES TRIANGLE** as a giant "speed square."

>> **MAKING** the quarter and half circles.

ters of the creases. We used to stretch a string line directly down the full length of the center of the field. Then we measured and marked the center of the field and the center point of each crease and worked outward from there. As we added boundaries, we just measured out from the centers to get two parallel side lines. Pull a tape across the width of the field at the sideline marks indicating the location of the crease (these should have been marked when you laid out the sidelines). Mark the center of the crease, then using an aerosol paint can, mark the start and stop points of the 6 foot line where the goal will sit and dot the line between the two points.

"Speed square"

Everyone knows how to paint a straight line. You just pull a string from point to point and follow it with a painter. You can't do that with a circle. You start out with a tape staked to the center of the circle, stretching it tight you mark the distance of the radius with your thumb. Taking a can of paint in your other hand, you place your forefinger on the nozzle and line it up with your thumb on the hand holding the tape. Bend over and walk a circle, keeping the tape taut, and spray a dotted line to form the circle. Keep the dots close together to help the paint crew when they follow up to paint the lines. Using this method, paint the 2.6-meter radius inner circle. Next mark the start and stop points on the 12-meter lines, the only real straight lines in the crease.

We found an easier way to lay out the 45 degree angles from the center circle to each end of the quarter circle. One of my students (a construction science major) built an isosceles triangle out of scrap wood strips to use as a sort of giant "speed square." Ten years later we still use it each time we lay out Women's Lacrosse and have found many additional uses for it.

Take the giant speed square and place it at the intersection of the inner circle and the straight line with the hypotenuse of the triangle forming 45 degrees away from the center. Measure along the hypotenuse for 8.58 meters and mark one end of the quarter circle. Repeat on the other side of the inner circle.

Take the tape that is staked to the center and pull it out to the 10.6-meter line. Mark the quarter circle as described earlier, starting and stopping at the points marked in the last step. Then, move out to the 14.6-meter line and repeat the process for the half circle.

Finally, **we need to mark those strange hash marks**. Locate and mark the center hash mark on the quarter circle. Then, **laying your tape measure along the quarter circle**, mark a hash mark at 4 meters in either direction, continuing until you have marked three hash marks in each direction. **Note that the last hash mark on each end is just hanging out in the open**. You locate this hash mark by laying your tape out mimicking the curve until you reach the point for the end hash mark.

Lay out the Center Circle and South Crease. Having completely laid out the north crease, move with one tape to the center of the field and lay out the 9-meter center circle. Next, move to the south end of the field and repeat the process to lay out the south crease.

Start painting. Most of you have experienced paint crews that can stretch a string from point to point and paint a straight line. When you get to the crease just follow the dotted lines like you would a string. The closer together the dots are, the better the curve will look. Don't walk too fast or too slow or you will get a poor curve. A little practice and your paint job will look perfect.