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We brought in a lot of soil and ran soil tests and we were focused on organic matter content and were hoping for at least 2.5-3% which we were able to find, the pH was where we wanted it but the core chemistry needed some help.



## The soil profile: Lindbergh High School

*Editor's note: This is the newest installment of a series that is accompanied by soil test audits of a selected field. Our goal is to evaluate the soil and water tests from a selected sports field and build a fertility program based on the soil profile. We encourage all sports field managers who would like to be interviewed for this piece to contact the magazine. Logan Labs and author Joel Simmons will provide free soil test work and consulting to the selected site.*

**WHAT DOES IT TAKE** to build a premium high school sports field? It takes a good plan, a lot of soil, and many pieces of heavy equipment. There is grass, miles of irrigation piping and drainage lines. Fertilizers, soil amendments, time and hard work are in the recipe, but perhaps the most important aspect to building a quality field, one designed for longevity, is the vision and leadership of a large group of people. This is exactly what happened when Lindbergh High School in St. Louis

set out to reconstruct their original football field, one that dated back to the 1940's.

A project to add an Early Childhood Learning Center on campus forced them to undertake the responsibility of constructing a large stormwater retention basin. The location of the stormwater basin facilitated the need to rebuild their original football field. As anyone who has worked in a public school setting knows a project of this size involves many people and too often this means conflicts, confusion and a lot of finger pointing.

That didn't happen here; the school board hired Rich Moffitt of Moffitt and Associates to oversee the project. Moffitt is a former STMA President and has many years experience in the management and construction of sports fields including a long stint as the Director of Grounds at St. Louis University. Moffitt had a lot of ideas as to how he wanted to build this field. "I really wanted the field to be natural grass and when the district discovered the cost of a synthetic field they made the decision to allow to us to go forward with a 90/10 turf type

tall fescue and bluegrass field." Anyone who has grown cool-season grass in St. Louis knows that it is a challenge to keep it alive through the heat of the summer. "The field was going to be used primarily for soccer so I thought the best choice was to go with cool season grasses knowing that the opportunities for easier maintenance and recovery would be better," Moffitt said.

Moffitt described the process they went through to get the field built and commented on how the school really understood that quality was an investment, not a cost. "To get a group this size in a public school system, with all the political ramifications, to create the vision and to complete a project like this was magnificent," Moffitt said.

Construction of the field began in the summer of 2010; the track that circled the field was dug down to 3 inches and rebuilt with a new rubber running surface. "The native soil in

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## Soil Report

<i>pH of Soil Sample</i>		7.30
<i>Organic Matter, Percent</i>		4.56
<b>ANIONS</b>	SULFUR: p.p.m.	121
	Mehlich III Phosphorus: as (P <sub>2</sub> O <sub>5</sub> ) lbs / acre	437
<b>EXCHANGEABLE CATIONS</b>	CALCIUM: lbs / acre	4388
		Value Found 4568
		Deficit
	MAGNESIUM: lbs / acre	464
		Value Found 786
		Deficit
	POTASSIUM: lbs / acre	503
	Value Found 498	
	Deficit -5	
	SODIUM: lbs / acre	64
<b>BASE SATURATION %</b>	Calcium (60 to 70%)	70.79
	Magnesium (10 to 20%)	20.30
	Potassium (2 to 5%)	3.96
	Sodium (.5 to 3%)	0.87
	Other Bases (Variable)	4.10
	Exchangable Hydrogen (10 to 15%)	0.00

## Saturated Paste Report

<i>Bicarbonate (HCO<sub>3</sub>)</i>		ppm	273
<b>ANIONS</b>	<b>SULFUR</b>	ppm	41.62
	<b>PHOSPHORUS</b>	ppm	< 0.1
<b>SOLUBLE CATIONS</b>	<b>CALCIUM</b>	ppm	76.12
		meq/l	3.81
	<b>MAGNESIUM</b>	ppm	22.16
		meq/l	1.85
	<b>POTASSIUM:</b>	ppm	18.16
		meq/l	0.47
	<b>SODIUM</b>	ppm	31.66
		meq/l	1.38
<b>PERCENT</b>	Calcium		50.74
	Magnesium		24.62
	Potassium		6.29
	Sodium		18.35

In evaluating the current soil tests it is clear Moffitt was right about the native soil and as can be seen by the soil profile the magnesium level on the standard soil test is very high and is driving the pH upward. It becomes difficult to manage a soil profile where all three major nutrient levels, calcium, magnesium and potassium, are high because we can't effectively apply one to knock the other off the soil colloid.

the area is not always great for sports, nor is the water, and the old field was tight and over-used making maintenance hard and costly,” Moffitt said. “We brought in a lot of soil and ran soil tests and we were focused on organic matter content and were hoping for at least 2.5-3%, which we were able to find; the pH was where we wanted it but the soil was a little tight and the core chemistry needed some help.”

The field was amended with EarthWorks Renovate Plus, a construction amendment that contains dry kelp meal, compost and humic acids to aid the digestion of carbon in the soil. This product also uses rock minerals to provide sustainable phosphorus, potassium and trace elements, and provides porosity to allow air and water to move through the profile.

“We didn’t do a lot of pre-plant work, we used Renovate Plus and a good starter fertilizer, we could have gone at this with a little less expense but the school district saw the value in the pre-plant program and we had a great establishment,” Moffitt said. The field was sodded with big rolls of a fescue/bluegrass seed blend from a local sod producer in the fall of 2010 and will be ready for play by this spring.

In evaluating the current soil tests it is clear Moffitt was right about the native soil and as can be seen by the soil profile the magnesium level on the standard soil test is very high and is driving the pH upward. It becomes difficult to manage a soil profile where all three major nutrient levels, calcium, magnesium and potassium, are high because we can’t effectively apply one to knock the other off the soil colloid. Often when magnesium is high it is at the expense of calcium and limestone can be used to knock off the excess Mg and bring the soil into balance. What can be seen on these soil tests is that both sulfur and sodium are high (ideal levels of both are in the low 20 ppm’s for sulfur and low 20 lbs/acre for sodium) which is an indication of the potential for a tight, compacted soil profile.

When reviewing the water soluble

paste extract a few “red flags” show up specifically the very low phosphorous readings, high bicarbonates and the very high sodium to potassium percentage. The phosphorous was addressed at pre-plant with the sustainable rock phosphate but will need to be a focus from a soluble standpoint when the maintenance program is established. High sodium levels, especially when percentages of sodium

are higher than the percentage of potassium can lead to sodium induced wilt and root dysfunctions. Bicarbonates can seal the soil surface leading toward localized dry spots and poor air movement through the root zone.

A maintenance strategy using a flushing program of a high quality liquid humic acid product, 10 lbs per 1000 square feet of gypsum along with a good penetrating soil surfac-



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**Monitoring the soil testing data will allow for the appropriate adjustments to be made to maintain the high quality standards expected here at Lindbergh High School.**

tant as often as monthly, will be a big help in keeping the sodium and bicarbonates at bay and keeping this exceptional field where they want it to be. Retesting a new field at least a few times per season is very important because there are so many changes happening as the pre-plant works through and the grass continues to establish. Monitoring the soil testing data will allow for the appropriate adjustments to be made to maintain the high quality standards expected at Lindbergh High School.

"We had originally designed it to be a sand-based field but the cost was restrictive. The soil we brought in was good but a little tight and we knew with a little amending we could build a product that will provide the school district what they wanted for the long term," Moffitt said. "I am a believer in the use organic-based fertilizers along with some synthetics when needed, this has been the approach we've taken on most of our projects and it has provided great results. We try to make a fertility program that simply lasts and doesn't run out all at once." ■

*Joel Simmons is the president of EarthWorks Natural Organic Products and Soil First consulting and teaches the Soil First Academy all across North America. He holds a Masters Degree from Penn State University and is a former Penn State county extension agent and instructor of soils at Rutgers University. He may be reached at [joel@soilfirst.com](mailto:joel@soilfirst.com).*

# JOHN MASCARO'S PHOTO QUIZ

John Mascaro is President of Turf-Tec International

*Can you identify this sports turf problem?*

**Problem:** Brown spots on turf  
**Turfgrass area:** Baseball Field  
**Location:** Fargo, North Dakota  
**Grass Variety:** Bluegrass

**Answer to John Mascaro's Photo Quiz on Page 33**



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# Turf managers at increased risk of skin cancer

*Editor's note: Thanks to STMA Board member Jeff Fowler, Penn State extension office, and the Pennsylvania Cancer Control Consortium (PAC<sup>3</sup>) for supplying this article.*

**A**S THE GROWING SEASON APPROACHES, sports turf managers will be hard at work outdoors. Turf managers face many potential hazards in their line of work from machinery injuries to chemical exposures from fertilizers and pesticides. One danger that may not be as visible comes from the sun's ultraviolet rays. While turf managers rely on the sun for grass and plants to flourish, they often don't realize too many of these invisible rays may damage their skin, leading to skin cancer, premature aging of the skin, and suppression of the immune system.

## MELANOMA NEEDS EARLY DETECTION

This year more than 1 million new cases of skin cancer will be diagnosed in the United States. Recent studies prove a link between sunburn and increased risk for melanoma, the deadliest form of skin cancer. One person every hour dies from melanoma in the United States. The good news is that melanoma is highly curable if detected on the skin at an early stage. The risk of melanoma can be reduced by protecting the skin from the sun and its harmful ultraviolet rays.

Sunlight consists of two types of harmful rays: ultraviolet A (UVA) rays and ultraviolet B (UVB) rays. UVA rays (which pass through window glass) penetrate deeper into the dermis, the thickest layer of the skin. UVA rays can cause suppression of the immune system, which interferes with the immune system's ability to protect you against the development and spread of skin cancer. UVA exposure also is known to lead to signs of premature aging of the skin, such as wrinkling and age spots. The UVB rays are the sun's burning rays (which are blocked by window glass) and are the primary cause of sunburn. A good way to remember it is that UVA rays are the aging rays and UVB rays are the burning rays. Excessive exposure to both forms of UV rays can lead to the development of skin cancer.

The U.S. Department of Health & Human Services has declared ultraviolet (UV) radiation from the sun and artificial sources, such as tanning beds and sun lamps, as a known carcinogen (cancer-causing substance).

## MEN MORE AT RISK

Men are more likely to die from melanoma most likely due to late detection. Common locations where melanoma can develop include the back, arms, neck and shoulders. Women get more melanomas on their legs. Turf managers with years of outdoor sun exposure are more likely to develop a form of melanoma that occurs more commonly on the head and neck region. This type of melanoma can resemble a large, dark freckle with irregular borders.

The Melanoma International Foundation urges everyone to examine their skin regularly, and your loved ones, too. This means looking over your entire body including your back, your scalp, the soles of your feet, between your toes and the palms of your hands. **If there are any changes in the size, color, shape or texture of a mole, the development of a new mole, or any other unusual changes in the skin, see your primary care physician or a dermatologist as soon as possible.**

## WEAR LIGHT-COLORED CLOTHING

Since turf managers spend a great deal of time working outdoors, it's important for them to understand the many ways to protect their skin so that they can reduce their chances of developing skin cancer. Clothing protection is most important in protecting the skin.

Hats can protect the most vulnerable head and neck areas from the sun's rays. While baseball-type caps will protect the top of the head, they don't protect other important areas including the ears, nose and neck. Turf managers should wear wide-brimmed hats. The recommendation is to wear a hat that has at least a 4-inch brim. Long-sleeved shirts and long pants will help protect the arms and legs. Wearing tightly woven lightweight and light-colored fabric can actually keep the body cooler in the sun and will protect against cancer-causing rays. There are many companies that manufacture high quality, sun-protective clothing. And there is a sun-protective solution by Rit Dye that you can wash into everyday clothing to make it protective.

## CHOOSE WATERPROOF SUNSCREEN EVEN ON CLOUDY DAYS

You should apply sunscreen every day to exposed skin—and not just if you are going to be in the sun. While UVB rays cannot penetrate glass windows, UVA rays can, leaving you prone to these damaging effects if unprotected. For days when you are going to be indoors, apply sunscreen on the areas not covered by clothing, such as the face and hands. Sunscreens can be applied under makeup, or alternatively, there are many cosmetic products available that contain sunscreens for daily use.

Don't reserve the use of sunscreen only for sunny days. Even on a cloudy day, up to 80% of the sun's ultraviolet rays can pass through the clouds. Sunscreen should be applied to dry skin 15-30 minutes BEFORE going outdoors.



Sun lotion illustration ©istockphoto/touc

When using sunscreen, be sure to apply it to all exposed areas, and pay particular attention to the face, ears, hands and arms. Coat the skin liberally and rub it in thoroughly; most people apply only 25-50 percent of the recommended amount of sunscreen. One ounce, enough to fill the palm of your hand, is considered the amount needed to cover the exposed areas of the body properly. Don't forget that lips get sunburned, too. Apply a lip balm that contains sunscreen with an SPF of 15 or higher. Be sure to toss outdated sunscreen, as it will have lost its effectiveness. Reapply sunscreen frequently during the day.

There are so many types of sunscreen that selecting the right one can be confusing. Sunscreens are available in many forms, including ointments, creams, gels, lotions, sprays and wax sticks. The type of sunscreen you choose is a matter of personal choice. Creams are best for individuals with dry skin, but gels are preferable in hairy areas, such as the scalp or male chest. Sticks are good around the eyes. Creams typically yield a thicker application than lotions and are best for the face.

Ideally, sunscreens should be water-resistant,

so they cannot be easily removed by sweating or swimming, and should have an SPF of 15 or higher that provides broad-spectrum coverage against both UVA and UVB light. Ingredients to look for on the sunscreen label to ensure broad-spectrum UV coverage include: oxybenzone, octyl methoxycinnamate, cinoxate, sulisobenzone, octyl salicylate, menthyl anthranilate, titanium dioxide, zinc oxide, avobenzene (Parsol 1789), ecamsule (Mexoryl SX)

Although working outdoors when the sun is less intense, before 10 a.m. or after 4 p.m., may not be feasible, sometimes rescheduling chores where exposure is lessened can be achieved. Seeking shade may have obstacles, but creating shade where you work with an umbrella or an awning is a great idea. You certainly now see more mowers, carts and utility vehicles with a canopy to protect the operator from exposure to the elements.

If you notice a mole on your skin, you should follow the simple ABCDE rule, which outlines the warning signs of melanoma:

- **A**symmetry-One half does not match the other half.

- **B**order irregularity-The edges are ragged, notched or blurred.

- **C**olor-The pigmentation is not uniform. Different shades of tan, brown or black are often present. Dashes of red, white and blue can add to the mottled appearance.

- **D**iameter-While melanomas are usually greater than 6 mm in diameter when diagnosed, they can be smaller. If you notice a mole that is different than others, or if you notice a mole that changes, itches or bleeds, even if it is smaller than 6 mm, you should see a dermatologist.

- **E**volving-You should always be suspicious of a new or changing mole on your skin.

It's never too late to protect yourself from the sun and minimize your future risk of skin cancer. Understanding how to best protect your skin from the sun can help prevent melanoma, the deadliest form of skin cancer.

### FOR MORE INFORMATION

Melanoma International Foundation,  
www.melanomaintl.org

American Academy of Dermatology,  
www.aad.org ■

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>> BRIAN WINKA, CSFM, president of the Gateway Chapter.

## Hosting a successful STMA local chapter event

**W**e all know that the local chapters are the lifeblood of the Sports Turf Managers Association and that each individual chapter is unique. One thing that most chapters have in common is that we host events to help educate members on a local level that may not get the opportunity to attend the STMA National Conference. With that said, one of the common questions that I kept hearing in Austin from members from all over the country is, "How do we get more members involved in our local chapter events?"

With this question in mind I wanted to share some ideas that have worked for our chapter on the local level. The Gateway Chapter had worked hard to provide educational events that were beneficial to our members, but we were still getting mixed results regarding attendance. As a board we collectively sat down and brainstormed on ways to improve our events. We wanted to make sure we were giving the membership what they wanted. We came up with a number of things that we were doing right and wrong.

### SOMETIMES LESS IS MORE

A couple of ideas that came from our brainstorming were implemented and we had one of our best years to date. We found out that sometimes less is more. The chapter focused on fewer events but with more quality. The membership had mentioned that it was hard to make it to monthly meeting or outings. We scaled back to quarterly meetings and attendance went up.

"With the busy schedule that I have, it is hard to make it to all of the monthly events. Going to a quarterly system enabled me to attend more events this year than in years past," said Keith Labitska, grounds supervisor for Saint Louis University.

One of the other ideas was to get our Commercial Members involved with the educational events. The commercial people in the

chapter have a wealth of knowledge and are willing to share; they are one of our best resources. Many of them once worked on the other side and can relate to many of the issues that face sports turf managers.

The commercial vendors can also promote the chapter and its events to a large audience. Many of our vendors will carry flyers about upcoming events in their trucks to hand out or leave them on the counter in their shop. Many of our commercial members also will sponsor an event in some way or another, or they will provide the meals or help defray the cost of bringing in a speaker from outside the area.

As a result of the commitment we get from our commercial members, one of the things we do as a chapter for them is to host a Vendor Day at one of our sites which is free to all dues-paying commercial members. This is a great way for our vendors to get out and show off their products, and it also provides the members a "one stop shop" experience to try out any equipment or to get a look at a number of products all in one place.

Glenn Kraemer from GR Robinson Seeds & Service said, "The best thing that happened for me and my small company was meeting prospective customers. I actually sold some product at the event, but better yet, gained a very valuable customer because of the show. The show only cost me some time, but the value was beyond what I thought possible. It's

## Forming a chapter

**IF YOU ARE INTERESTED** in exploring the possibilities of forming a local STMA Chapter, there are many resources available, including the key "Chapter Compliance and Procedures Manual." The STMA Chapter Relations committee developed it with input from many of the leaders of STMA's current affiliated Chapters. This manual will help guide you step by step through the process of starting and maintaining a local STMA Chapter.

Begin the process by calling your fellow sports turf managers, those that share the same enthusiasm and who want to be involved in the foundation of a new STMA local Chapter. STMA Headquarters can provide you with a list of STMA members in your area to add to the list of your own networking contacts. Building a strong foundation of these enthusiastic, committed individuals will give you the nucleus to support a vibrant, active local STMA Chapter.

There are several other key individuals ready, willing and able to help you as you get started: the Chapter Relations Chairperson and Board Contact. Don't hesitate to contact them at any time with your questions or concerns. They'll share their expertise, giving you input on their successes and some of those "not so successful" steps they've made as well. Currently the Chapter Relations Committee Co-chairs are **Amy Fouty, CSFM, 517-355-0323, fouty@ath.msu.edu**, and **David Pinsonneault, CSFM, CPRP, 781-274-8355, dpinson@ci.lexington.ma.us**

Starting a new chapter takes time. New chapters generally take between 6 months to one year to become affiliated. Be patient, be persistent and have fun! It will come together. If you think you are ready to begin forming an STMA Chapter, or if you would like to discuss the possibilities of doing so, please call **Kim Heck, the Chapter contact at STMA HQ (1-800-323-3875)** for the basic background information to start you in the right direction. ■



Kim Heck,  
Chapter contact at STMA  
**1-800-323-3875**