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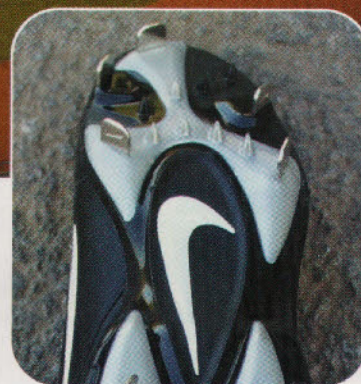
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On the cover: Baseball season is here!
Altoona Curve southpaw Josh Shortslef warms up for
the Altoona Curve, who play on this year's STMA
Professional Baseball Field of the Year.



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From the Sidelines

10 minutes with the Iron Man



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Like many of you, my trip to San Antonio for the Sports Turf Managers Association Conference wasn't easy (see "Travel Travails" below). Due to be there at 5 PM Tuesday, I instead found myself Thursday afternoon at the SA airport, finally, impatiently waiting for my checked bag. I was afraid the delays were costing me a chance to interview Cal Ripken, Jr., who was appearing at Jacobsen's booth later. The company's reps had generously set aside a few minutes in his schedule that day for us to talk.

After locating my bag in a pile of luggage 40 feet from the carousel (at least it was there), I dashed to the hotel suite, just in time to accompany the entourage to the exhibit hall. Ripken, baseball's Iron Man, had recently been elected to the Hall of Fame on his first ballot, and now runs his business interests, including ownership of several minor league teams.

I was sure my first question was a good one, and as we climbed into the back of the Town Car I served it up like a Jose Lima hanging curve: "Who are you going to have introduce you at the Hall of Fame ceremony and why?" Ripken replied, "That's football. For baseball I believe the Hall of Fame officials introduce us." A big swing and a miss!

Cheeks now red, I asked a much less penetrating question but one that at least the man could answer, about his favorite and least favorite playing surfaces. "I valued consistency. Both Camden Yards and Memorial Stadium were maintained very well when I played," Ripken told me. "The Jake in Cleveland and the new ballpark in Texas were great, too."

"Fenway Park, despite its ambiance and museum-like qualities, was erratic," he said. "In Yankee Stadium you couldn't see the outfielders from the dugout the slope was so off. But it played pretty true."

I asked him what his proudest moment was on the field, as well as off it.

"Number one is catching the last out in the [1983] World Series. It was the best feeling in the world to have ended it," Ripken said, smiling. "And number two would be the 2131 lap. At first I was worried that it might delay the game, but once I started it was such an incredible one-on-one experience that I didn't worry about anything. It was such a wonderful outpouring of love directed to me."



Travel Travails Contest

The STMA is having a contest to find the Conference attendee with the "best" travel nightmare story. If you think your travel problems to San Antonio were worth a free, full registration for next year's STMA Conference in Phoenix, please send your story in 200 words or less to STMA HQ by March 31. See more details on page 46.

Eric Schroder

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President's Message

Serious professionalism

With all due respect to the numerous turf conferences around the county, including our just completed and awesome conference in San Antonio, I have a passion for attending management seminars. In our jobs we need to be experts on playing fields and competition sites, but our success may be even more dependent on communication and our people management skills. Not many people understand what we really do nor do they understand the "why or how" parts of our profession. It is common perception that sports turf managers are very busy, hard working and committed to our tasks.

On one hand we like the portrayal of that gruff, dedicated individual, but it's time we focus on the team element and the softer skills at which so many successful sports turf managers excel. One small example of how we're all getting the message is just by remembering the casual dress codes from conferences years ago. It's rare now to not see members dressed in business casual attire when 10 years ago a ball cap and tee shirt were much more common.

I trust that when we work at our facilities we're also selling that same professional appearance to our co-workers. If we want to be welcomed to the administrative board and meeting rooms it's our responsibility to be seen as compatible with that environment. When an administrator comes to our shop dressed in a white shirt and tie it's obvious that person isn't going to be taken seriously as "one of us." When I show up in his office in muddy shoes, tee shirt and baseball hat, he's going to identify that I don't fit in that environment.

STMA has worked hard and will be working even harder to align with your administrator's national associations. We'll work hard to sell your skills, your dedication and your professionalism. STMA can carry the message on this level better than you or I can individually. Even more important than any message STMA can carry is the message you and I carry to our workplace every day. If I want to be taken seriously as part of the management team at my facility it's my responsibility to be identified as part of that team. We're blessed that our bosses and the public already see us as exceptionally hard working and dedicated. If that part of the equation was broken it would be nearly impossible to sell any other image. I'm not saying we don't do a good job already, but as our association works hard to sell a positive image and professionalism on our behalf, each of us needs to work equally hard each day on those softer skills to ensure the message resonates properly.

We're not considered professionals simply due to our agronomic skills. We're judged by someone every minute of the day. If we want to be recognised as professionals, it's our challenge to live as professionals.



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"Micromanaging" your sports turf

By Dr. Beth Guertal

Recently, I spent the better part of my week engaged in e-mail exchanges with soil scientists from all over the country. The topic that held us in such extended discourse? The micronutrient cobalt and whether or not this micronutrient deserved the ranking of "essential element."

What makes an element essential? In general, to be considered essential for plant growth and development, an element must 1) be required for a plant to complete its life cycle, 2) not be substituted by any other element and, 3) be directly involved in the plant's nutrition.

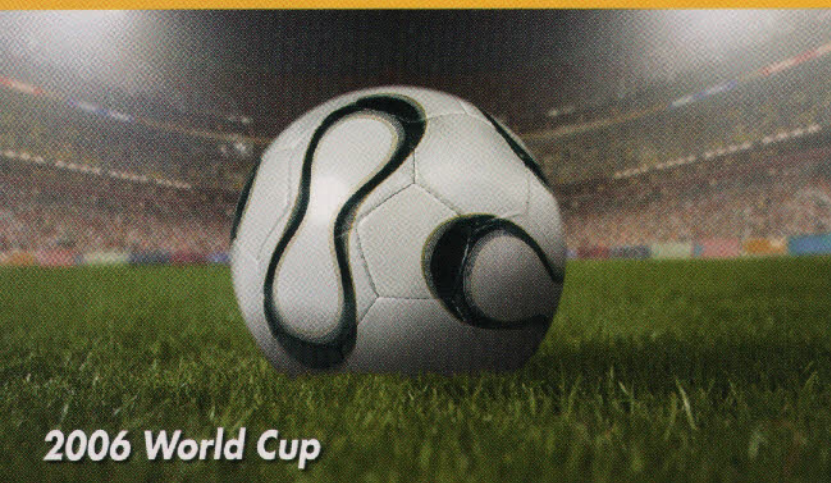
Plant scientists pretty much agree on the essentiality of our macronutrients, which are needed in larger amounts by growing turf. Those macronutrients are nitrogen (N), phosphorus (P), potassium (K), calcium (Ca), magnesium (Mg), and sulfur (S). Nitrogen, P, and K are typically applied via fertilization, while Ca and Mg are supplied through liming (if lime is needed), or application of non-lime materials such as gypsum, epsom salts, or other fertilizers.

When compared to our general agreement about the number of macronutrients, the number of micronutrients that are considered



Auburn University's Jordan-Hare Stadium in the offseason. Photo by Dr. Guertal.

The Barenbrug Advantage



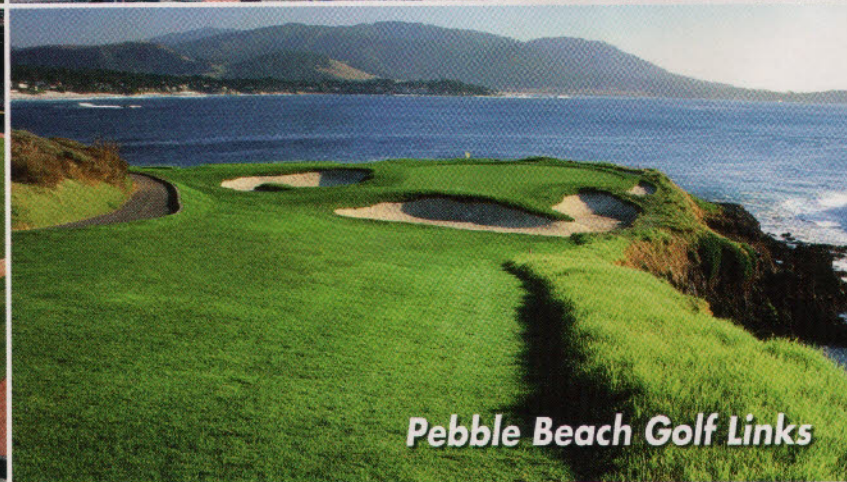
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“essential” is still under discussion, as aptly demonstrated by my recent cobalt debate. In general, plant scientists agree that the micronutrients iron (Fe), manganese (Mn), boron (B), zinc (Zn), copper (Cu), molybdenum (Mo), chlorine (Cl) and nickel (Ni) are considered essential. The micronutrients cobalt (Co), silicon (Si) and sodium (Na) are what many call “quasi-essential,” which roughly means that some plants, but not all, have shown a need for that element (Epstein and Bloom, 2005).

For example, we have seen some turfgrasses (Saint Augustinegrass) respond to application of Si fertilizer (Datnoff, 2005). However, the positive response is because Si adds resistance to some turf diseases, and not because the turfgrass could not live without the Si.

So, if iron, manganese, boron, zinc, copper, molybdenum, chlorine and nickel are considered our essential micronutrients, should you be running out to apply these nutrients to your sport fields? In a short answer: mostly no. In a longer answer, let's take a look at each micronutrient separately, and figure out how it works in your sports turf fertilization program.

Iron

The one micronutrient that does not fit the general “no” offered above is iron. Iron is the only micronutrient that is routinely recommended for application to sports turf. This is because iron can provide temporary turf greenup without stimulating additional tissue growth. In fact, some turf managers will use iron application as a part of their striping program, alternating sprays every ten yards to enhance striping on their football fields.

Iron fertilizer sources include ferrous sulfate (~19% Fe), iron chelates (~5-10% Fe, varying with chelate type and manufacturer), and organic forms of iron such as iron humates (~10% Fe). A “humate” is a mined organic deposit, typically containing a wide variety of micronutrients and usually a little bit of N as well. Chelated and inorganic sources can be applied at light and frequent rates as foliar sprays (1/2-1 lb. actual Fe per acre) (Carrow, et al., 2001). Typically, such applications are made monthly, as the greening

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Total Nitrogen (N)	8.00%
1.76% Ammoniacal Nitrogen	
0.04% Nitrate Nitrogen	
3.20% Water Soluble Nitrogen	
3.00% Water Insoluble Nitrogen	
Available Phosphate (P2O5)	4.00%
Soluble Potash (K2O)	5.00%
Calcium (Ca)	7.0000%
Total Magnesium as (Mg)	0.7000%
0.70% Water Soluble Magnesium (Mg)	
Sulphur (S)	3.0000%
3.00% Combined Sulphur (S)	
Boron (B)	0.0200%
Chlorine (Cl) Not more than	0.1000%
Cobalt (Co)	0.0005%
Copper as (Cu)	0.0500%
0.05% Chelated Copper (Cu)	
Iron as (Fe)	0.1000%
0.10% Water Soluble Iron (Fe)	
Manganese as (Mn)	0.0500%
0.05% Chelated Manganese (Mn)	
Molybdenum (Mo)	0.0005%
Sodium (Na)	0.1000%
Zinc as (Zn)	0.0500%
0.05% Chelated Zinc (Zn)	

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effect is short-lived, and frequent mowing will remove the Fe-treated leaves.

Rates of Fe application can vary widely, with granular organic Fe sources safely applied at rates up to 10, or even 20 pounds of Fe per acre. This high rate, however, is for organic products where the iron is derived from humate or waste sources (such as biosolids). Such materials will have a much slower color response, and may not provide the rapid greening provided by soluble sources of Fe. At Auburn we were able to safely apply humate-based iron sources to hybrid bermudagrass at rates up to 20 lbs. Fe per acre. However, when chelated and inorganic sources (iron sulfate) were applied at higher rates (in excess of 5 lbs./acre) we observed significant phytotoxicity.

A good rule of thumb for the inorganic or chelated sources is between 1/2 and 2 pounds of Fe per acre, per application. The exact rate will vary with grass species, humidity, and air temperature. Be careful, because the chance of

injury (a noticeable black-green discoloration) increases as air temperature increases. Research in Georgia on centipedegrass (a turf sensitive to Fe) showed that iron sulfate or iron chelate applied as foliar sprays at rates of 0.8, 1.6, or 2.7 lb. Fe/acre improved turf color, but phytotoxicity increased as it got hotter. When the air temperature was 70-88 degrees, the highest Fe rate could be sprayed with minimal damage, but when air temperature increased to 85-99 degrees, only the lower rates of Fe could be safely applied (Carrow, et al., 1988).

Manganese

Recently you may have read about Mn fertilization for the suppression of some turf diseases. Research has shown that Mn has some potential for reducing the disease take-all patch (caused by *Gaeumannomyces graminis*), when it was applied to bentgrass putting greens at a rate of 2 lbs. Mn/acre (Heckman et al., 2003). These results, however, are still specific for one turfgrass species, and one disease, and additional research is needed to see the long-term benefits of Mn fertilization for disease suppression.

In general, the majority of our sports field soils supply more than enough Mn for your turf needs, and additional Mn fertilization is not needed. The application of manganese (1 lb. Mn/acre as a foliar $MnSO_4$ spray) might be warranted if you are growing turf on very sandy soils, or if you have a newly constructed sand-based field that is very low in organic matter. You might also see a Mn response if your soils have a high pH, or have a high phosphorus soil-test. Otherwise, your native soil will provide more than sufficient Mn, and additional Mn is not needed.

The rest of the team

If you were a pecan grower or a sweet corn grower, at this point I might discuss your Zn fertilization program. Likewise, I could spend a few sentences talking about B fertilization of your cotton, soybean, broccoli, or alfalfa crops. In other words, there are specialty crops for which we do make micronutrient recommendations, and the crops will respond and grow when these