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On the cover:
Head sports turf manager Josh Weigel, from the Field of the Year Award-winning Don Gaebelein Field, Wesleyan School, Norcross, GA handles the paint machine while his assistant, David Thrower, hand paints the stencil.

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From the Sidelines

Eric Schroder
Editorial Director

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Work now for better fields next spring

DEPENDING ON WHERE YOU WORK, October is either a string of football and soccer games and spring sport fall workouts, with maybe some field hockey or lacrosse thrown in, or maybe a slowdown from summer baseball and softball leagues, with just a fall league or two still playing. So some turf managers have it easier in finding time to complete work this fall that will make their jobs easier come spring; if you are one of those, read on:

Mike Trigg, CSFM, superintendent of parks for the Waukegan (IL) Park District and former president of the Sports Turf Managers Association, responded to my request for some advice.

"Fall renovations are scheduled at season's end to repair worn turf areas, such as the front of pitcher's mound or goal mouths. Getting turfgrass segments of the field in the best possible condition in the fall gives a much better playing surface for the early spring use when turf may still be dormant.

"A fall renovation can be as simple as edging along the infield arc or base paths to give that crisp, clean finish look. A fall renovation may require the use of an outside contractor for a portion of the project. One such project we scheduled for the month of October is reducing a grass infield skinned area back to proper field dimensions with the installation of big roll sod. Reducing the skinned area back down to proper dimensions also reduces time required for the daily field prep during the season.

"Just as fall is prime time for turf cultural practices, so should it be for field renovations. Taking advantage of the fall months to prepare fields for spring use will be appreciated by many who will play safely because of your prior planning and prudent preparation."

Another idea is to be diligent with herbicide applications for weed control on skinned areas. Backpack applications of Roundup herbicide, with a color dye indicator, control miscellaneous weeds that appear on skinned areas, fence lines, and warning tracks. This is particularly beneficial to ball diamonds that go out of play in August, with no scheduled use until next spring.

No matter what level of turf maintenance now is a good time to identify and correct hazardous conditions that may exist on your facilities. The goal is to reduce frequency and possible severity of player injury and unnecessary accidents through proper field inspection and maintenance.

On a playing field there are many hazardous conditions that can be easily identified because they are visible and obvious. However, there can be problem areas that are not so obvious, and often only detected via a thorough inspection.

Here's an annual inspection checklist that Mike included in an article he wrote for us a few years back:

Maintenance of skinned areas: Inspect infield composition; level worn areas near bases/rubbers; cone build-up between turf and skinned area; check that base anchors are correctly installed; and inspect pitching rubbers.

Maintenance of fencing and backstops: Check exposed concrete footings. Make sure all chain link fencing is properly secured.

Additional safety considerations: Inspect bleachers and player benches, as well as all field lighting installations. ■

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President's Message

Dr. Mike Goatley

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All "treat" for STMA members

MANY ASSOCIATE THE MONTH OF OCTOBER with one day in particular, October 31. Halloween can be scary, somewhat like how a lot of heavily trafficked sports fields can look at this time of year. It also can be fun, and fortunately I see a lot more fun (that is great looking and safe) fields than scary fields, a testament to the expertise and abilities of sports field managers.

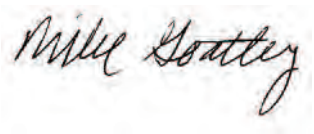
Any "holiday" is an event appropriate for decorating the Goatley house per the direction of Lisa Goatley. Halloween has quickly moved up in the AP holiday rankings at the Goatley house, coming in just behind Christmas but well ahead of Arbor Day and (yes, we are "that house" in the neighborhood). I enjoy the "trick" part of Halloween, because it provides a legitimate opportunity to wear a Scream mask, turn on the strobe light, and make all kinds of scary noises and strange body gyrations through the garage window when the kids walk by on their way for the "treat" that is to be provided at the front door by Mrs. Goatley.

STMA is very much in "treat" mode this fall and there are no "tricks" involved with members receiving the rewards. In particular, please be sure that you learn more about an exciting membership recruitment program developed by your Membership Committee that will not only recruit new members but will also reward current STMA members that recruit those new members. In brief, first-time members of STMA can attend the 2013 Conference and Exhibition for FREE (that is, the conference registration is waived), and if you as a member are responsible for signing up the new member, you receive $100 per enrollee that can be applied to any specific STMA-related expense.

One of the major goals of our Strategic Plan is to increase membership and our Membership Committee felt strongly that this was an opportunity for STMA to spend some money to ultimately grow our association. The reason why? The membership retention rate for members who attend conference is so high—92%—that your Board felt strongly that one of the most effective ways to grow our membership was to get new members to conference. Please reach out to colleagues who you know would benefit and appreciate coming to conference and see if there is any way they can make it to San Antonio.

This issue also features information on our keynote speaker for San Antonio, Dr. Rick Rigsby (see p. 42). Take a look at some of Dr. Rigsby's messages on YouTube. I found his "It's not too late to be great" message to the national Future Farmers of America convention to be particularly good.

So, Happy Halloween. I'm wondering if the Goatley house will be decorated for October's National Mole Day. No, not the furry creature that tunnels on your fields. This celebration runs from 6:02 a.m. to 6:02 p.m. on 10/23. Break out your chemistry books if you need to. Take care! ■



FORM, FUNCTION, FIT: which nitrogen source is right for you?

IT'S TIME TO PICK A NITROGEN FERTILIZER SOURCE for your sports field. How do you make that decision? Advertisements frequently tout nitrogen (N) fertilizer as the "slowest release," "the quickest green-up," or "the most available." Add technical terms such as methylene urea, ureaformaldehyde and controlled-release polymer, and the topic of nitrogen fertilizers starts to get complicated indeed. But, it's really not. The basic chemistries and manufacturing processes behind most of our commonly available N sources fall into five to six major groups, and you can sort out the ones you should use (and when to use them) from there.

Let's discuss the groups:

Soluble sources of N that are manufactured from inorganic (no carbon in the source) N sources.

Sources of water-soluble N include potassium nitrate (13-0-44, this and all other analyses are always expressed as percent N-P_2O_5-K_2O), ammonium sulfate (21-0-0), and, if you can still find it, ammonium nitrate (34-0-0). [Note: Since people are used to buying the analysis '34-0-0', some fertilizer dealers now sell a product with a '34-0-0' analysis that is actually created from urea, or it may be a blend of ammonium sulfate and urea. This is not an issue, it is simply a way to provide an analysis (34-0-0) that people are familiar with without having to deal with the legal complexities now associated with the sale of ammonium nitrate.] Any time you need a rapid turfgrass response, be it greening or growth, a soluble material should be in your spreader or spray tank. Soluble fertilizers provide quick turf green-up, which may

be important when you need turf to grow and fill bare spots. Always apply water-soluble sources at lower rates (0.5 to 1 pound of N per 1,000 square feet per month of active growth) and water them in. This helps avoid the turf burn that can occur with heavier rates of soluble products. Care must be taken to not over-apply, especially if you are managing turf on sandy soils, and to not over-irrigate once the materials are out. Also, check your local and/or state regulations to make sure that you are applying your soluble N during months in which it is permitted.

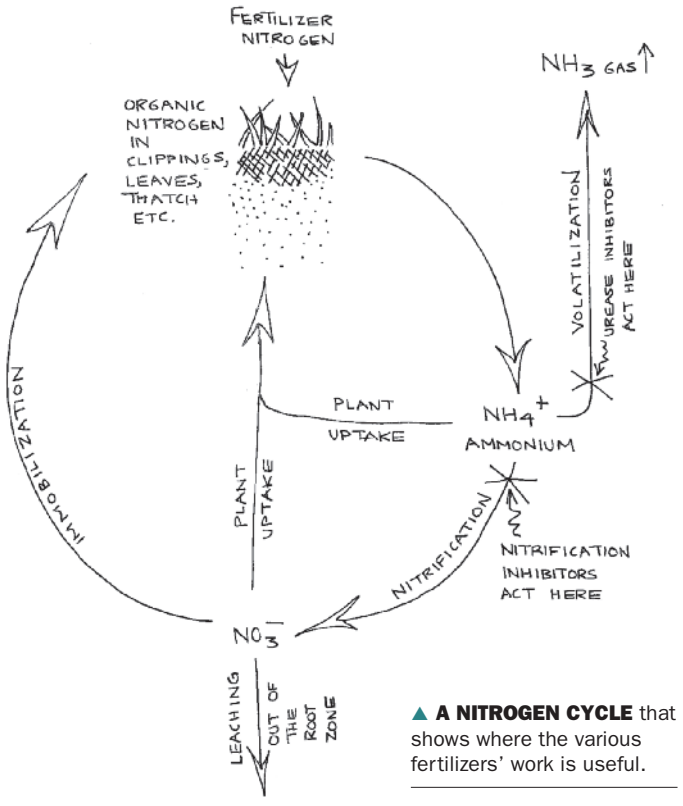
Soluble sources of N that are manufactured from a synthetic organic N source. We have one such source: urea.

Urea gets a separate mention because it is, by the broadest definition, organic (there is carbon in its formula – NH_2-CO-NH_2). But in reality urea can be lumped in with the inorganic soluble N sources, because it behaves like those sources—rapid turfgrass response, immediately available to the plant; watch overapplication as it can cause turfgrass burn and possible negative environmental effects. Urea is often the choice for use in foliar N programs, and it works well for that, with ample research showing that foliarly applied N is readily taken up by the turf, much of it within 12 hours of application. Urea is often the background fertilizer used for many slow-release N sources (discussed below).

Slow-release N sources that are slow-release because there is a physical barrier around a prill of soluble N fertilizer. Often, these are called "coated" fertilizers.

The oldest coated N fertilizer is sulfur-coated urea, or SCU (~32-0-0). Introduced decades ago, it still is a common product, and there are also newer generation materials that are both sulfur and polymer-coated. Sulfur-coated urea is made by spraying molten sulfur onto urea granules. Release of N from the sulfur-coated urea granule depends on the time it takes water and microorganisms to break down the sulfur coating. The thicker the coating, the slower the release rate. Release will be faster in warm, wet soil conditions that favor microbial activity. One problem with some forms of SCU is that the coating process creates larger granules, which are easily crushed or picked up by mowers. Newer micro-prill technologies have helped solve this problem, and SCU products remain a viable slow-release N source for turf.

Polymer-coated-urea (PCU) products have fast become a major part of the slow-release N market. These products work by allowing urea to gradually diffuse through the polymer membrane at a rate that, depending on the exact technology, may vary according to temperature, moisture or coating thickness. These products provide a precise N-release rate, and some can even deliver N for an entire growing season. The release rates are widely variable, and products can have release times ranging from 45 to 270 days. Materials with longer release patterns (180 days or more) can be excellent for producing a long-term greening response without the fluctuations in turf growth that may occur with more frequent applications of soluble N. The science of polymer coating has gotten quite specialized,



▲ **A NITROGEN CYCLE** that shows where the various fertilizers' work is useful.

and while urea used to be the product that was almost always coated, other fertilizer sources may now be coated (such as potassium sulfate).

Slow-release N sources that are slow-release because urea has been converted via chemical processes into a slow-release N source.

Slow-release fertilizers created by chemical reactions all start as urea. The most common product currently on the market in the turfgrass industry is ureaformaldehyde (UF), formed by reacting urea and formaldehyde to produce chain molecules of varying lengths. The length of the chains controls N release, with shorter chains having quicker N release for turfgrass use. Ureaformaldehyde reaction products are also often called Methylene ureas (MU) (as if it was a synonym with UF) but it is really not. Specifically, methylene-ureas tend to be the group of ureaformaldehyde reaction products that are intermediate in chain length, and have an N content of 39 to 41%. In comparison, a ureaformaldehyde that has long been on the market, Ureaform, has the longest chains, and is thus very slow in the release of N for plant use.

Regardless of the chain length, N release occurs as microorganisms break the chains, releasing N which is available for plant use. The release patterns of ureaformaldehyde products are controlled by the length of the chains; the shorter the chain, the quicker the release. Additionally, some short-chain UFs are frequently marketed as liquid slow-release materials, such as triazone. Ureaformaldehyde fertilizers are quite popular in the turfgrass market, and there is a wide variety of products available for your use. Before choosing a specific fertilizer you should consult the fertilizer label to determine the relative N percentages that are rapidly or slowly available for plant use.

The other slow-release N fertilizer that is chemically slow release is isobutylidene diurea (IBDU). A combination of urea and isobutyraldehyde, IBDU does not depend on soil microorganisms for release but is broken down by water (hydrolysis) into urea. The rate of urea release from IBDU varies with particle size, temperature and moisture. The smaller the particle, the faster the release. The higher the temperature, the faster the release. Recent discussions with turfgrass managers reveal that few use IBDU, often because it is difficult to obtain. If available, it is an excellent material for cool-season use for long-term N supply because it does not require microbial activity for N release.

Slow-release N sources that are slow-release because they are a 'true' natural organic material in which the N must be released via the biological process of mineralization.

These natural organic slow-release N sources are generally manufactured from some type of waste material. Sometimes the material is composted to help reduce odors, or the material may be dried and granulated to improve handling and spreading characteristics. Common organic fertilizer waste materials include sewage sludge, poultry litter, meat-processing waste and other animal by-products such as fish or feather meal. Much of the N in such fertilizers is organic N in the form of relatively complex chemical compounds, and is not available for plant uptake until microbes have converted it into nitrate and ammonium.

Soil temperature greatly influences microbial activity and the rate at which N is mineralized from these organic fertilizers. In cold soils, little activity will occur; an organic N fertilizer applied during winter in the northern US will just sit there with little N available for plant use until the soil warms. By contrast, fresh poultry litter applied to turf during hot weather is relatively quickly available, as most of the organic N is rapidly converted to nitrate and ammonium.

Some relatively new N fertilizers on the market are blends of organic wastes, such as fish meal, feather meal or poultry litter, and a water-soluble inorganic N such as ammonium sulfate. Such a product would produce a rapid greening response from the inorganic N and an extended response from the organic N. These "hybrid" materials can still burn turf if you apply them at high rates, and the labels usually have a warning to that effect. Read the guaranteed

▲ **RESEARCH TRIALS** are often conducted to evaluate N release of various fertilizers over time. In this study, different N sources are applied to hybrid bermudagrass, and each week color, quality and clipping yield data is collected from each plot.