

# TALK TURF

Official publication of the Wisconsin Sports Turf Managers Association

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The Wisconsin Sport Turf Managers Association completed a member survey in 2017 to gain direct input from our members. One of the questions on the survey was to assess services that our membership might need in 2018-2019. This information is valuable to our industry Partners and guides our selection of speakers for our conferences and articles for our Turf Talk newsletter. Another question that was asked was to identify what products and equipment might be purchased in 2018-2019. Again, this information is valuable to our existing industry partners, and helps in attracting new members to our Partnership Program.

The survey also did an excellent job of identifying topics that our members would like to have presented for our educational resources. This information guides our selection of topics and speakers for our conferences as well as guides our selection of articles for our Talk Talk newsletter. Lastly the survey

identified the preferred means of communicating our presentations to our members.

I believe that this information gathered from this survey will guide the Association for the next three years, at which time another survey should be completed. We received 34 responses to our survey, which from a membership of approximately 100 is more than an excellent sample size. Questions 2 through 6 allowed multiple answers to the question.

Below is a sample of the survey, which is continued on page 8.

**1. How many acres of sports turf does your agency manage?**

This information was skewed by the reports. However, it was determined that approximately 47% of our members manage sports turf acreage less than 30 acres.

*Continued page 8*



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## PRESIDENT'S MESSAGE



Greetings,

I hope everyone had a great Thanksgiving and are looking forward to the upcoming holiday season.

We had a great turnout for our fall meeting in Pewaukee! We were very fortunate to have some great speakers, and an awesome turnout of members. Once again, I cannot thank our vender sponsors who continue to support our local STMA chapter.

Most of us will be heading into the “off season” soon. I feel as though this is a great time for networking and continued education. Every one of us has been able to take away new ideas, innovative techniques from vendors with new products coming out. There will be plenty of learning opportunities in the near future. I urge our members to try and attend the national STMA conference and exhibition which will be held January 16th-19th in Fort Worth, Texas. This conference is a fantastic way to network with your peers. The tradeshow that accompanies great education sessions, is one of the best I’ve ever attended. If anyone is interested, you can check out the information at [stma.org](http://stma.org).

The WSTMA board members continue to work hard to bring you quality education opportunities, along with great networking opportunities. We will be hosting our annual winter conference on Thursday, February 15<sup>th</sup> at Neuroscience Group Field at Fox Cities Stadium, Appleton, Wisconsin. Your board has listened to your suggestions, and I think you will enjoy the educational line up. More information about the conference will be out shortly.

We continue to seek new ideas from our members for future speakers and topics. If you are interested in helping your board with ideas, you can contact myself, or Pete Bemis. We are always looking for new info! Also, don’t forget, we have the Roy Zehren Memorial Scholarship! We are happy to help our young professionals with their education in the green industry.

Thank you all for your dedication to our industry. I hope everyone gets a chance to unwind and take a little break this holiday season. I look forward to seeing as many of our members I can at our winter conference.

*Bart Bartelme*

“The spring, summer, is quite a hectic time for people in their lives, but then it comes to Autumn, and to winter, and you can’t help but think back to the year that was, and then hopefully looking forward to the year that is approaching.” Enya

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# WINTER CONFERENCE

## DATE

February 15, 2018

## LOCATION

Neuroscience Group Field at  
Fox Cities Stadium  
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# FROM MOWER TO BLOWER

JOSH VIET, MIDWEST ATHLETIC FIELDS

Like it or not Winter 2017 is now upon us which means it's time to put the lawn mowers away and break out the snow blowers. Almost all grounds managers in the snowy North regions of the US have multiple responsibilities and snow removal probably taking priority over all other.

As building and grounds safety expectations increase every year, the removal and maintenance becomes more intense and more time consuming.

The transition from fall to winter can be difficult, frustrating and time consuming. Setting up your equipment to adequately perform snow removal duties is the most important task of them all.

They are already time consuming enough, so a less than adequate machine can be frustrating. The proper choice of equipment is vital for efficiency and quality.

Maintenance of your machines can be another obstacle, as we are left with little time during a big snow event to ensure that our machines are running and operating properly. Salt, snow, and cold is tough on machines and will force a machine to be maintained more often than regular conditions.

Performing routine maintenance checks on your machines, before the season, during the season, and after the season, will ensure a lot less breakdowns.

As grounds managers in the north; snow, ice and salt are part of our job. Take pride in the work as it is important to the safety of the public that use your facilities. Be mindful of the details, performing the duty in a timely manner, and have fun with it!



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## WSTMA FALL MEETING A LOOK BACK

By: Peter Bemis

The Wisconsin Sports Turf Managers Association's Annual Fall Meeting of 2017 was held in Pewaukee. Our hosts, Keith Hepp and staff did an outstanding job with their facility and hospitality. Many of our partners in industry were present with displays, literature, and advice.

Kelley Woldanski, Director Parks, Recreation & Community Services for Pewaukee reviewed their recent construction of their Sports Complex Park project that includes two softball fields, two baseball fields, a large area for multiple soccer fields, water retention basins, and parking. Every project has challenges and this one has more than their share. Later in the day we were invited to tour the facility and answer questions.

The second speaker of the day was Joel White, Head Groundskeeper of Toyota Park in Bridgeview, Illinois. Toyota Park is home to two professional soccer teams, the Chicago Fire and the Chicago Red Stars. Mr. White spoke of his work with the soccer teams and the many unique events that are held at the stadium. This field won the 2016 "Soccer Field of the Year", as sponsored by the Sports Turf Managers Association. He had a PowerPoint presentation about how the use of protective matting was essential in protecting the field during large concerts. Mr. White stated that when working with concerts, you will gain more by being friendly and willing to negotiate than trying to make ultimate demands. He showed details of his fertilizer product selections and that he seeds and over seeds repeatedly throughout the growing season. His seed of choice is RPR, or, Regenerating Perennial Ryegrass. The Toyota Park also features a heating system and a blower system that allows Mr. White to start the competitive soccer season in March. Mr. White is highly successive due to his dedication to the field and to our profession.

The next speaker was Dr. Paul Koch from the University of Wisconsin, a Professor with the Plant Pathology program and staff member with the O.J. Noer Turfgrass Research Center in Verona, Wisconsin. Dr. Koch started with a review of the disease triangle, showing that three aspects that must be present prior to any pathogen being present in the turfgrass. The host, pathogen, and proper environment must all be present for a disease to establish in the turfgrass. The Turfgrass Research Center takes on a variety of research for turf, with one of Dr. Koch's emphasis being with snow mold controls. Dr. Koch showed the results of his research in addressing the best products for both preventative and curative controls for pink snow mold and gray snow mold, with multiple active ingredients being the most successful. He addressed that timing of application is just as critical as product selection. The Turfgrass Diagnostic Lab in Madison posts all the results of their research online at <https://tdl.wisc.edu/>.

Jeff Schmidt is currently the Territory Manager for PBI-Gordon. The PBI-Gordon company features a line of herbicides, insecticides, fungicides, growth regulators and other products. PBI-Gordon Corporation is a national leader in the professional turf and ornamental management industry. Mr. Schmidt stated that his company is currently working on approvals for a new selective broad leaf control product that does not contain 2-4D, but does contain three other active ingredients for a broad range of weed control.

Another product that will be on the market soon is Vexis, which will provide control of nutsedge and other sedges. The herbicide active ingredient in Vexis will be formulated for use in established cool- and warm-season turfgrass species on residential and commercial sites, sports facilities, and golf course fairways and roughs.

Randy Lusher of BASF Turf & Ornamentals was our last guest speaker. Mr. Lusher spoke of the Intrinsic® Brand Fungicides. This innovative line of fungicides provides superior, broad-spectrum disease control and a strong foundation of plant health benefits that make it easier for turf to handle the toughest pressures. Lexicon Intrinsic brand fungicide is a new chemistry combination for control of the toughest turfgrass diseases, including brown patch, dollar spot, fairy ring, pythium root dysfunction, snow mold, and summer patch, in addition to 22 other diseases. It also increases photosynthesis, strengthens roots and improves resilience to stress.

The fall meeting was a successful event with over 50 people in attendance. Many thanks to our hosts in Pewaukee and to our Board of Directors for their time in organizing this event. We'll see you in February for another exciting and informative winter meeting.



# LEADING THE WAY

WSTMA President, Bart Bartelme preparing the NFL stencil.

Whether you have membership questions, an article idea, or photos from your sports turf job experiences, we want to hear from you!

Email Chapter Manager Peter Bemis at [pbemis@wstma.org](mailto:pbemis@wstma.org)



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Survey results *continued from front page*

**2. Which service(s) does your agency plan on using in the next 24 months?**

Construction services for sportsfields renovation	41.67%
Design & engineering for renovation of existing sportsfields	38.89%
Irrigation design services	27.78%
Design and engineering for newly created sportsfields	22.22%
Construction services for building newly created sportsfields	13.89%
Other (please specify) topdressing and overseeding (1) sidewalk equipment/roadways (1) Maintenance (2) site furnishings (1) regular upkeep maintenance services (1) none or not applicable (5)	33.33%

**3. What products do you plan on purchasing the next 24 months.**

Turfgrass seed	75.00%
Infield mix	69.44%
Field marking paint	66.67%
Fertilizer, non-organic	58.33%
Herbicides	58.33%
Pesticides	52.78%
Topdressing material	50.00%
Topsoil	41.67%
Plant growth regulators	27.78%
Warning track mix	25.00%
Sod	22.22%
Fungicides	16.67%
Fertilizer, organic	13.89%

**4. What types of equipment do you plan on purchasing in the next 24 months?**

Hand tools (shovels, rakes, etc.)	38.24%
Riding mowers, 72" cutting width or smaller	35.29%
Edgers, line trimmers	32.35%
Fencing	32.35%
Aerators	29.41%
Tractors	23.53%
Bleachers/seating	20.59%
Utility vehicles/ATV	20.59%
Fertilizer spreaders	17.65%
Riding mowers, larger than a 72" cutting width	14.71%
End loaders	11.76%
Spreaders/top dressers	11.76%

Large blowers	8.82%
Other (please specify) Irrigation (3) Not applicable (4) Good on equipment (1)	23.53%

**5. Which topics would be beneficial for presentations at our meetings and in our printed publications?**

Scheduling of sports turf maintenance practices	56.76%
Educating your Supervisor/Board on the value of sportsturf mgmt.	43.24%
Soil testing procedures, interpretation, and management practices	40.54%
Grass seed selection basics	37.84%
Basics of nutrient management, fertilizers	37.84%
Sub-surface drainage products and installation techniques	32.43%
Advanced nutrient management and fertilizers	32.43%
Advanced grass seed selection	29.73%
How do I access the resources of the national STMA?	29.73%
Educating your Supervisor/Board on pesticides, herbicides	27.03%
Fertilizer mathematics and calculations for ordering	24.32%
Calculations for fertilizer and application of turf mgmt products	24.32%
Measuring soil compaction and management of compaction in soils	24.32%
Water saving management and devices	21.62%
Selection and application of plant growth regulators	13.51%
Environmental Stewardship and Sportsturf Management	10.81%
Other (please specify) what's new in the marketplace (6) maintenance of synthetic fields (1) recordkeeping (1) remote access irrigation systems (1) drainage (1)	24.32%

**6. What method of learning do you prefer?**

Printed article	67.57%
In person presentation with Powerpoint slides	32.43%
In person presentation with copy of PPT in print or downloadable	62.16%
On-line video webinar	32.43%
Other, please specify Hands-on (2) Networking (1)	8.80%





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# Fertilizer 101: Basics You Should Know

Susan Haddock | Preprinted from Sports Turf Magazine, February 2016

Turfgrass fertility management is a year round task, so a review of fertilizer basics may be helpful. Generally, fertilizer is defined as any substance containing one or more recognized plant nutrients that promote plant growth. Checking with the Department of Agriculture in a number of states results in a mixed bag of definitions. Many states include any substance that controls soil acidity or alkalinity, provides other soil enrichments or provides other corrective measures to the soil in the fertilizer definition. Most states exclude unmanipulated animal or vegetable manure and some states exclude marl, lime, limestone, wood ashes, peat and/or compost that has not

been shown to have value in promoting plant growth.

There can be confusion over the terms natural organic, synthetic organic and organic fertilizer. **Natural organic** refers to products that are derived from either plant or animal products containing one or more elements, other than carbon, hydrogen and oxygen, which contribute to plant growth. These products are derived from living organisms and may include dried blood, composted manure, fish bi-products, bone meal and cottonseed meal.

**Synthetic organic** refers to products that are manufactured chemically from elements or other chemicals. Synthetics go through some sort of manufacturing process, although they may come from naturally occurring mineral deposits. Synthetic products may also be referred to as inorganic fertilizer.

**Organic fertilizer**, in the strict sense of definition, refers to a product containing carbon and one or more elements needed for plant growth, other than hydrogen and oxygen. Organic includes both natural and synthetic products. Hence the confusion, as most who desire an organic fertilizer really want a natural organic or non-manufactured product.

This article will focus on synthetic products.

Important considerations are the expectation on product release rate (how quickly turf greens up), product duration (how long the product produces a greening effect), and environmental impact (product leaching or volatilization). Nitrogen is the most critical nutrient source that promotes turf growth, so turf performance depends on the nitrogen source in the product.

In general, there are three nitrogen release sources: fast release, slow release and controlled release.

That being said, there are many environmental and cultural factors that critically affect the ability of turf to uptake nutrients and produce acceptable turf quality. These factors must be evaluated, monitored and corrected, if necessary, before creating a fertilization plan. Soil tests are the basis for developing a fertilization plan and provide information on what the soil needs or does not need to provide for turf nutrient requirements. Additionally, tissue testing can reveal whether the turf is effectively taking up the nutrients.

Fast release sources are referred to as soluble due to their high solubility in water. Fast release nitrogen sources release nitrogen very quickly and may have a quick greening response that lasts just a few weeks. Multiple applications are usually necessary to maintain turfgrass quality. Nitrogen deficiency symptoms may occur between applications due to the cycling between high and low nitrogen levels. Fast release sources may promote excessive shoot growth and readily volatilize or leach. Common examples include urea, ammonium sulfate, ammonium nitrate and calcium nitrate.


Slow release and controlled release sources provide nitrogen gradually over time and promote more consistent turf quality and fewer deficiency symptoms. These sources also minimize losses due to volatilization, leaching and excessive shoot growth. The terms slow release and controlled release are frequently used interchangeably. Here, slow release refers to uncoated products and controlled release refers to coated products. Uncoated products are homogenous, meaning that the composition is the same throughout particles. Examples of uncoated products include ureaform (UF) and methylene urea (MU). These uncoated products contain about 40% nitrogen and rely on microorganisms to mineralize the nitrogen.

*Continued on page 12*

[www.wstma.org](http://www.wstma.org)

## Fertilizer Facts

What to Look For on the Label Example



Guaranteed Analysis	
Total Nitrogen (N).....	15.00%
15.00% Urea Nitrogen *	
Soluble Potash (K <sub>2</sub> O).....	15.00%
Iron (Fe).....	5.00%
Sulfur (S).....	19.00%

\*7.5% Nitrogen slowly available from Polymer Sulfur Coated Urea.

### How to Determine the Slow Release Component

Divide the slowly available Nitrogen by the Total Nitrogen and multiply by 100:

$$7.5\% / 15.00\% \times 100 = 50\% \text{ Slow Release}$$

### How to Determine the Pounds of Fertilizer Needed to Deliver 1.0 lb. of Nitrogen/1000 sq. ft.

All the components of a fertilizer add up to 100%. Ingredients not listed are inert, help bind or coat the product or reduce product dust.

Divide 100% by the Total Nitrogen %:

$$100\% / 15.00\% = 6.7$$

6.7 pounds of the 15-0-15 fertilizer are needed to deliver 1.0 lb. of Nitrogen per 1000 sq. ft.

For a 3000 sq. ft. area multiple 6.7 by 3:

$$6.7 \text{ lbs./1000 sq. ft.} \times 3 = 20 \text{ lbs.}$$

20 lbs. of 15-0-15 needed to cover 3000 sq. ft.

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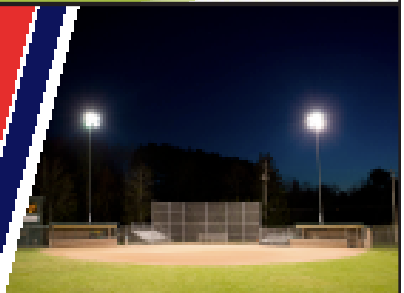


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Because of this reliance on microorganisms the nitrogen release rate can be quite variable, usually between 8 and 12 weeks, depending upon pH, soil temperature and soil moisture. During cool or cold seasons UF and MU may not be the products of choice, as microorganism inactivity will prevent the nitrogen from being released. Another example of an uncoated product is isobutylidene diurea (IBDU), containing 32% nitrogen. IBDU is soluble and releases nitrogen by hydrolysis, like the fast release nitrogen sources, except that it has low solubility and therefore releases nitrogen very gradually over time depending upon soil moisture. Because of the reliance on soil moisture, dry or drought conditions will delay nitrogen release. Additionally, low pH and high temperature will accelerate the release of nitrogen. Since IBDU is not dependent on microorganism activity it is a preferred product for cool season application.

Coated products include sulfur-coated urea (SCU), polymer-coated fertilizers (PCF) and hybrid polymer-coated sulfur-coated fertilizers (PCSCU). SCU is 30 to 40% urea nitrogen coated with sulfur and sealed with, typically, wax. Imperfections, micro pores and cracks in the coating allow water to enter and dissolve the urea rapidly. Once water enters, the urea can release very quickly and is sometimes referred to as catastrophic release. Coating thickness and imperfections control the release rate, so particles release at different rates, usually between 6 to 16 weeks. Microorganism activity is needed to break the sealant to expose the sulfur coating.

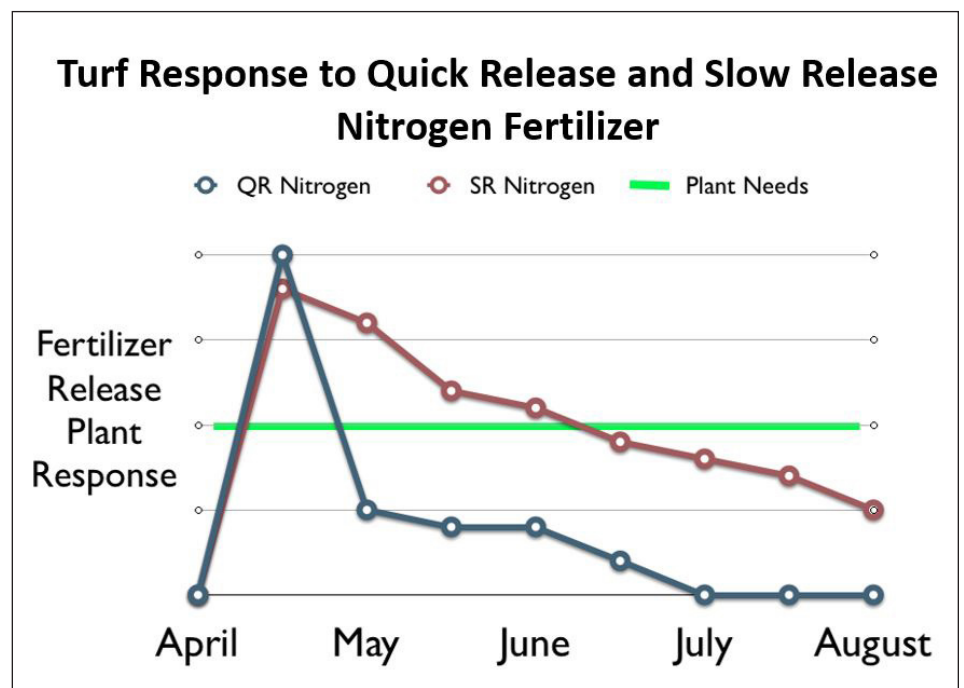
During cool seasons microorganism inactivity and coating variability can cause a mottling effect on turf. When the sulfur coating is too thick, the nitrogen does not release, and is referred to as lock-off. These particles may rely on some physical disturbance, such as mowing, to break the particle and eventually release the nitrogen.

Polymer-coated fertilizers release nitrogen by diffusion through a polymer coating. These products may contain other nitrogen sources such as ammonium nitrate, or other nutrients such as phosphorous and potassium. There are a variety of methods and chemistries used to produce the coating. Regardless, manufacturers are able to produce quite predictable release rates depending upon the number of layers and thickness. Water diffuses

through the coating to dissolve fertilizer inside. The fertilizer then moves out of the polymer coating into the soil. Eventually, over 8 to 52 weeks, all of the fertilizer is dissolved from inside the polymer coating.

Polymer-coated sulfur-coated urea is produced with a polymer layer around the sulfur layer instead of a wax sealant. The polymer layer provides more protection and results in even more

Characteristics of Common Turfgrass Nitrogen Sources					
Fertilizer Source	Nitrogen Content %	Leaching Potential: Beyond root zone	Burn Potential: Due to salt concentration	Low Temperature Response: 50°-60°	Residual Effect: How long it will last
Ammonium Nitrate	33-34	High	High	Rapid	Short
Calcium Nitrate	16	High	High	Rapid	Short
Ammonium Sulfate	21	High	High	Rapid	Short
Urea	45-46	High	High	Rapid	Short
<u>Ureaform</u>	38-40	Moderate-Low	Low	Low	Long
Methylene urea	38-40	Low	Low	Very Low	Moderate-Long
<u>Isobutylidene diurea</u>	31-32	Moderate-Low	Low	Moderate	Moderate
Sulfur Coated Urea	30-40	Low	Low	Moderate	Moderate
Polymer/Resin Coated Urea	24-35	Low	Low	Moderate	Long



predictable and uniform nutrient release. Water must diffuse through the polymer coating, dissolve the urea through imperfections, micro pores and cracks in the sulfur coating and then diffuse back through the polymer coating into the soil.

Another brand layers the polymer coating on the urea granule with a sulfur coating and wax sealant on the outside of the particles. With either production method, release rates are longer and less temperature dependent, and surge growth after application is reduced.

## LABELS

All fertilizer labels will provide a Guaranteed Analysis.

The Guaranteed Analysis is the manufacturer's guarantee for minimum percentage of nutrients claimed for the product. In the guaranteed analysis, nitrogen must be guaranteed as Total Nitrogen (N). If chemical forms of nitrogen are claimed, the forms will be shown in the Guaranteed Analysis. No particular order of forms of nitrogen is required. When a fertilizer contains determinable forms of nutrients that are slowly available and a slowly available claim is made, then the guarantee is shown as a footnote, rather than as a component in the guaranteed analysis. See below. To determine the slow release component or percent divide the slowly available nitrogen by the total nitrogen and multiply by 100.

### GUARANTEED ANALYSIS

Total Nitrogen (N) x%

x% Ammoniacal Nitrogen

x% Nitrate Nitrogen

x% Urea Nitrogen\*

x% Other Water Soluble Nitrogen

x% Slowly Available Water Soluble Nitrogen

x% Water Insoluble Nitrogen

\*x% Slowly available urea nitrogen from \_\_\_\_\_ (nitrogen source material)

Forms of nitrogen and their sources that may appear in the Guaranteed Analysis include:

- » Ammoniacal Nitrogen sources include monoammonium phosphate, diammonium phosphate, ammonium sulfate, ammonium nitrate, urea ammonium nitrate, ammonium polyphosphate, calcium ammonium nitrate and ammonium thiosulfate.
- » Nitrate Nitrogen sources include urea ammonium nitrate, ammonium nitrate, potassium nitrate, calcium nitrate and sodium nitrate.
- » Urea Nitrogen can come from sources that include urea ammonium nitrate, urea, urea triazone, sulfur coated urea and polymer-coated urea.
- » Other Water Soluble Nitrogen can come from sources that include methylene urea, urea triazone, methylene diurea, dimethylenetriurea, dicyandiamide, triazone, ureaform and urea-formaldehyde.
- » Slowly Available Water Soluble Nitrogen sources include methylene urea, urea triazone, methylene diurea, dimethylenetriurea, dicyandiamide, triazone, ureaform and urea-formaldehyde.
- » Water Insoluble Nitrogen sources that include ureaform, isobutylidene diurea, urea-formaldehyde, feather meal, blood meal, corn gluten meal and other natural organic materials.

So, which fertilizer source is the best?

First and foremost, you must practice sound agronomic practices: perform soil and/or tissue testing, improve soil conditions and correct detrimental cultural practices. Plan nutrient management based on environmental and seasonal influences such as temperature, rainfall and/or irrigation, use intensity and proximity to water

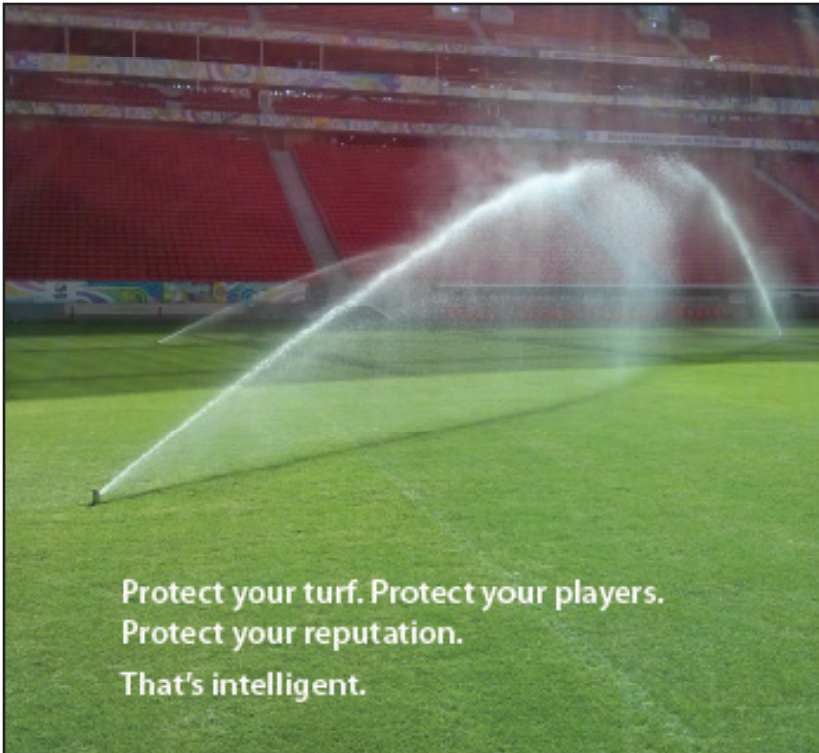
bodies. The type of turfgrass, expected quality and budget also influences management strategy.

In addition to fertilization management, you may wonder if the use of biostimulants will produce higher quality turf.

Dr. Keith Karnok from the University of Georgia says turfgrass managers recognize biostimulants to be a product/material that is non-traditional in that it is not a fertilizer or pesticide per se, but is applied to the soil or plant in hopes of improving turfgrass performance (usually roots and shoots). Humic acid, seaweed extract, salicylic acid and plant hormones are commonly used turf biostimulants. Research has shown that biostimulants may improve turfgrass response to environmental or culturally induced stress conditions; however, it needs to be applied before the stress condition. Predicting stress conditions, such as summer stress, drought or disease may be pertinent in the successful use of biostimulants.

Researchers at Virginia Tech (Drs. Xunzhong Zhang and Richard Schmidt) have performed studies on turf response to various biostimulants in regard to enhanced root and shoot development, drought tolerance, salt tolerance, disease resistance, UV light tolerance and heat tolerance showing that biostimulants can improve turf health and stress tolerance. The consensus regarding use of biostimulants is to research products diligently, avoid products that make boastful claims without evidence from scientific studies performed by independent or university backed research, communicate with other turf managers about products that work, test on small areas prior to widespread application and do not substitute biostimulants for a fertilizer management plan.

*Susan Haddock, B.S., MBA, is an Agent II for the University of Florida, IFAS Extension, Hillsborough County.*



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