

The label indicates that **SPORAX** should be applied within 1 day of cutting. **CELLU-TREAT** is a powder to be mixed in water and then brushed or sprayed onto stumps. The label indicates that **CELLU-TREAT** in water should be applied within 3 days of cutting. Enough powder or liquid is applied to lightly but completely cover the cut surface, exposed wood on sides of stumps, and protruding slivers. Level, rather than sloping, stump surfaces are desired. At rates of application specified on the product labels current as of the date of this publication, one pound of **SPORAX** will cover 50 square feet of stump surfaces, and one-half pound of **CELLU-TREAT** in one gallon of water will cover approximately 400 square feet of stump surfaces. Fifty square feet of stump surface is equivalent to approximately 260 6-inch diameter or 60 12-inch diameter stumps.

Care should be taken to minimize application to areas other than the stump. When spilled or applied to cropland or growing plants, borax may kill or seriously retard plant growth. Do not contaminate water when cleaning equipment or disposing wastes. Applicators and other handlers must take care to protect themselves when using borax. They should wear a long-sleeved shirt and long pants, shoes, socks, and waterproof gloves. Always wash thoroughly after using pesticides.

Stump and root removal

If *Heterobasidion* root disease already has become established, thorough removal of stumps and roots should be considered. Colonized material that is uprooted must be burned or deeply buried to prevent development of fruiting bodies and production of spores. This practice will reduce further spread of the aggressive pathogen, and may allow continued use of the site for growth of conifers.

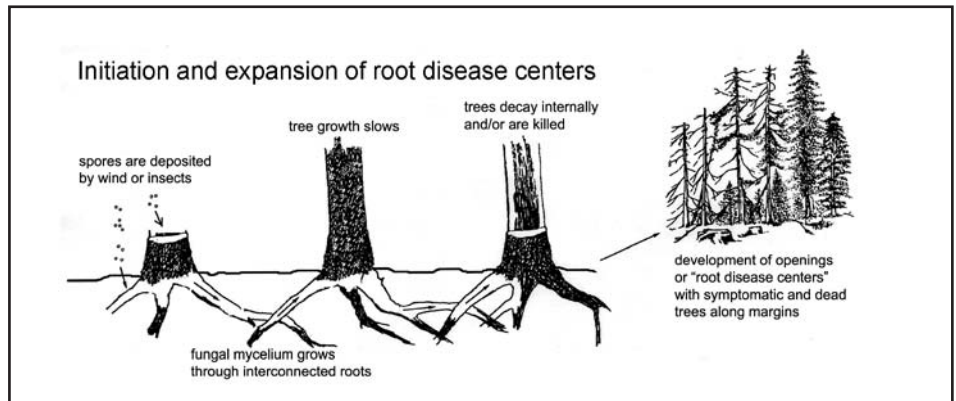


Figure 1. Thin, dying and dead crowns of pines affected by *Heterobasidion* root disease.



Figure 2. *Heterobasidion* fruiting bodies on a pine stump.

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City Life

By **Jake Schneider**, Assistant Golf Course Superintendent, Blackhawk Country Club

When I started at Blackhawk C.C. as a know-it-all (cough, cough) intern seven years ago, I expected the experience to be substantially different than the five years that I'd previously spent at North Shore G.C. in Menasha. Like many interns, I wanted to learn the nuances of another personnel and agronomic management system to further my real world experience. On the surface, both courses seem relatively similar—classic, tree-lined courses with great history and even better conditioning. But, there is one thing that definitively distinguishes the two courses from each other—location, location, location.

North Shore sits on a relatively large piece of property, tucked between Highway 114 and Lake Winnebago. For the most part, the course is surrounded by farm fields and woodlots, but there are a few houses adjacent to the 18th hole. Blackhawk, on the other hand, sits of few short minutes from downtown Madison, and the tight layout is surrounded on all sides by either residential or commercial properties. Additionally, two of Madison's most popular biking/running routes run along either side of the course, and Lake Mendota is 20 yards downhill from hole 16. Blackhawk's location keeps life interesting on a daily basis, and the following is an incomprehensive list of some challenges that city life on the course brings with it.

- 1) Unless you've been living under a rock or are a newcomer to Wisconsin, you're well aware that the political leanings of most Madisonians are shaded sharply to the left. Seemingly year after year, editorials in the State Journal discuss the unscientifically-based evils of turfgrass, and you're shunned if you don't own a Prius. Want to feel as if you are single-handedly destroying the environment? Try spraying the 7th fairway at Blackhawk while droves of commuting bikers glare at you from 100 feet away. While we rarely have any actual issues with said commuters and our ultra-liberal neighbors in Shorewood Hills, you feel a little bit like a lady of the night in church when you're spraying the course's perimeter.
- 2) In the early morning hours, Blackhawk Country Club magically transforms into Blackhawk Dog Park. I'm a reluctant co-owner of a seven pound chewing, barking, and general nuisance-causing canine and have nothing against dogs, per se. Some of their owners, on the other hand... So far, I've learned that unleashed dogs have a magnetic attraction for bunkers, especially if they're freshly raked, and that

the course's garbage cans are terrifically located for doggy doo-doo disposal. With the fertilizer prices these days, we may soon begin a new organic fertility program on our greens.

- 3) Recently, it's become obvious that the course's wildlife isn't very..well, wild. At least one of the turkeys that resides in and around Blackhawk has voluntarily come within feet of our crew members and golfers and even followed a triplex mower for about 300 yards. In years past, the red-tailed hawks would let you approach them without flying off. However, after having their nest taken down from the local smokestack amid a flurry of screamers, I have the feeling that they aren't going to be quite as friendly this year.
- 4) Noise ordinances are the worst thing to happen to work productivity since YouTube. We have seven greens that are affected by the Shorewood Hills noise ordinance. Because of this, no substantial noise can be made around these areas before 7 on the weekdays, 8 on Saturdays, and 10 on Sundays and holidays. Fortunately, we don't have very many early, early morning golfers, but it still creates challenges and necessitated the purchase of an electric triplex for Sunday and holiday mowing. On the positive side, starting at 5 in the morning isn't a viable option, which means I get an extra hour of beauty sleep.
- 5) Last, but certainly not least, you never know when you're going to have your life threatened by a psych ward escapee while mowing the 18th tee bank. It's a long, true story with too many details for this column, but let's just say that I now keep a protective turkey by my side at all times, just in case it happens again. 🌿

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WTA Summer Field Day Has Something for Everyone

By **Tom Schwab**, O.J. Noer Turfgrass Research and Education Facility, University of Wisconsin-Madison

The WTA Summer Field Day will be here before you know it. The date is set for Tuesday, July 27, 2010. This is a wonderful day for you to visit the OJ Noer Facility and see all the new turfgrass research being conducted at the University. There are over 80 studies ongoing this summer and several of the most pertinent ones will be showcased during the morning research tour. The talks in the research tour will describe new research to help managers of sports turf, golf courses, sod production, lawn care, parks, and other commercial turf areas.

Presentations and interaction with the researchers promise to go more in depth than past years. Comments from attendees asked for longer discussions about the research during the educational tour. Thus quality rather than quantity will be the theme for 2010.

For example: Are you interested in saving time and money while making pesticide applications? Come and see new sprayer technologies and disease management strategies that will save you time and money.

Or learn new and improved turf establishment strategies. UW researchers are investigating whether it is possible to uniformly apply seed, fertilizer, and a pre-emergent herbicide in one step, while also stabilizing the soil. Learn how hydroseeding can save you time and money.

One more question to ask yourself is; are you prepared for the new state of Wisconsin regulations on water use. Come to Field Day and learn about how the regulations may affect you. The regulations may require irrigating based on soil moisture. There will be hands-on experience with the latest soil moisture monitoring technology and a discussion of the pros and cons.

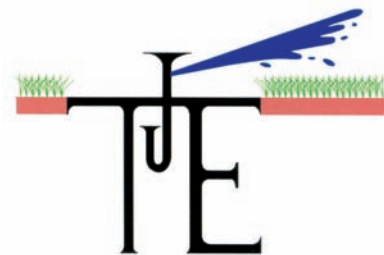
And that's just the beginning. Many other presentations will answer your day-to-day turf management questions. You won't want to miss what the UW Turf Team has been unraveling in their latest research.

In addition to the research tour there is a lawn care workshop in the afternoon providing more valuable education. This workshop was introduced during the 2008 field day to resounding acclaim, so it returns for the third year. The workshop is not included in the field day registration price and requires an additional fee. Attendees from last year commented that it was well worth the additional cost. Space is also limited, thus attendees will be accepted on a first come, first serve basis to provide for a unique interactive experience.

The large and revamped trade show will likewise provide great education. Here you'll learn about all the latest supplies, services, and equipment available to the turf industry from helpful vendors willing to answer questions about all their latest products. Several equipment vendors allow test drives of their products so you can compare between brands.

Summer Field Day is a great way to learn the latest research coming from the UW-Madison, compare the newest commercial offerings from the trade show, visit with colleagues over a great lunch, and to possibly participate in the Lawn Care Workshop. You will surely leave Field Day with many ideas to put into practice back home. Call Audra Anderson at 608-845-6536 if you have any questions or have suggestions of subjects you'd like to see addressed during Field Day.

You will receive your Field Day brochure differently this year. The brochure is being emailed rather than mailed to you. It will also appear in all your association newsletters or can be downloaded from the WTA website - www.wisconsinturfgrassassociation.org. Also new this year, you may pay online if so desired. Field Day 2010 is going to be the best ever, and I hope you can fit it in - July 27. 🌱



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UW researchers are investigating whether it is possible to apply seed, fertilizer, and a pre-emergent herbicide in one step, while also stabilizing the soil. Learn how hydroseeding can save you time and money!



Don't miss the lawn care training session available for an additional fee. Space is limited so register early. Learn from UW faculty and staff how to identify grasses, weeds, diseases, and insects, and calibrate sprayers and spreaders.



Are you prepared for the new Wisconsin regulations on water use? Come to field day and learn about how the regulations may affect you and learn about the latest in irrigation technology.



And that's just the beginning. Many other presentations will answer your day-to-day turf management questions. You won't want to miss what the UW Turf Team has been unraveling in their latest research studies.

Register Online after June 1st at www.wisconsinturfgrassassociation.org

Or call Audra now at (608) 845-6536



Carbon Sequestration in Urban Landscapes

By **Shane Griffith**, Graduate Student, Department of Soil Science, University of Wisconsin - Madison

Editors Note: Shane grew up in Beaver Dam, WI and has worked at Beaver Dam CC, Blackhawk CC, and Whistling Straits. He is currently working towards his Masters under the guidance of Dr. Doug Soldat.

Turfgrass is widely recognized for its benefits including soil protection, temperature moderation, pollutant filtration, and of course its use for outdoor sports and hobbies. But the portion of turf that does not meet the eye, the roots, also provides a benefit worthy of recognition, carbon sequestration, a buzz word that in a world concerned with carbon emissions takes on a lot of value.

Try remembering way back to your days in school when you sat through a lecture about the global carbon cycle. You may or may not remember seeing a diagram that resembles Figure 1. This interconnected system shows that a change in one carbon pool will have an impact on others. Therefore, decisions made by turfgrass managers alter the carbon cycle. What if turf can be managed to effectively capture some of the carbon out of the air and store it in the soil? Furthermore, what if there was an economic incentive to capturing carbon dioxide? The European Union has established a cap and trade system for greenhouse gas emissions. The idea is to limit the total emissions over time, while allowing the free market to decide how emissions are lowered and who has the permission to pollute. If turfgrass could capture carbon dioxide, it is possible that other industries would pay to 'borrow' it. Growing turf to sequester carbon could have both environmental and economic benefits.

Before we get carried away scheming about getting rich by growing grass, let's take a look at what scientists say about turf management and carbon sequestration. A recent article from the University of California-Irvine showed that turfgrass was actually a source of greenhouse gas emissions (Townsend-Small and Czimczik, 2010a). Like Mike McCarthy on a Sunday afternoon, the red flag was tossed, the play challenged, and the call reversed. Turns out the article had flawed calculations, that when corrected did not show a net emission of greenhouse gasses from turf management (Townsend-Small and Czimczik, 2010b). So what's the real story?

Researchers in the Denver, CO area tracked soil carbon changes at local golf courses (Qian and Follett, 2002). Soil organic matter in putting greens and fairways increased for almost 30 years after establishment of turf before reaching a steady state around 4% organic matter. This

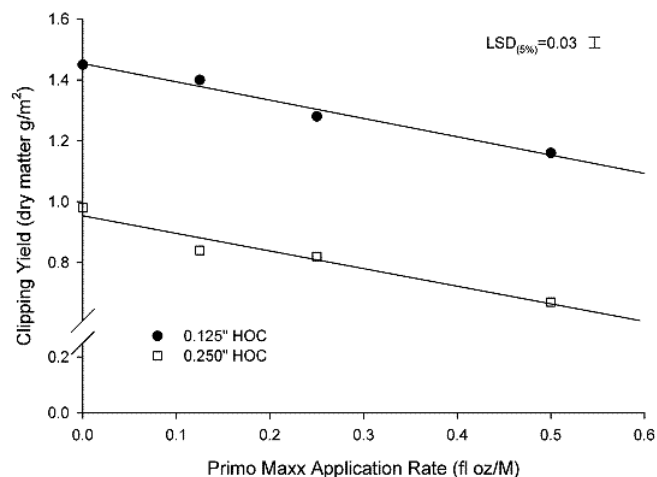


Figure 1. Simplified carbon cycle in a turfgrass system (From Singh (2007))

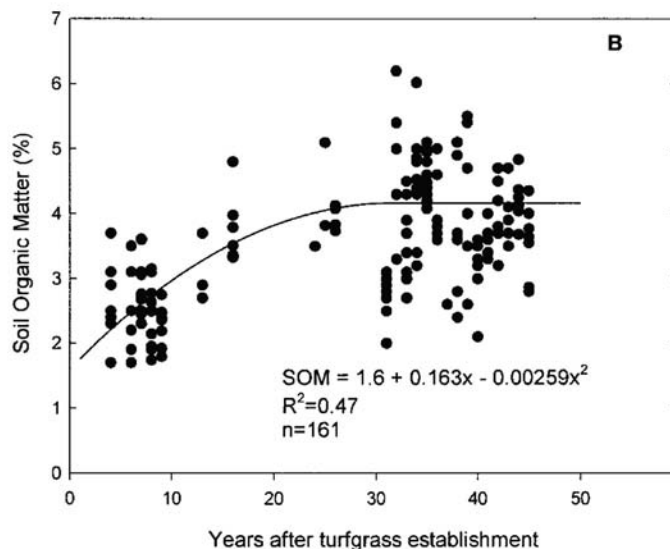


Figure 2. Soil organic matter over time since turf establishment on 13 golf course fairways (From Qian and Follett (2002))

was one of the first reports relating turf in the urban landscape and carbon retention (Figure 2). Computer models have also been used to simulate soil organic carbon in a turf management system over time. Simulations predicted that turf systems would acquire carbon for 30 to 40 years after conversion from native grasslands (Qian et al., 2003a). Furthermore, models estimated that the pool of soil organic carbon would double from 15 tons/acre to 30

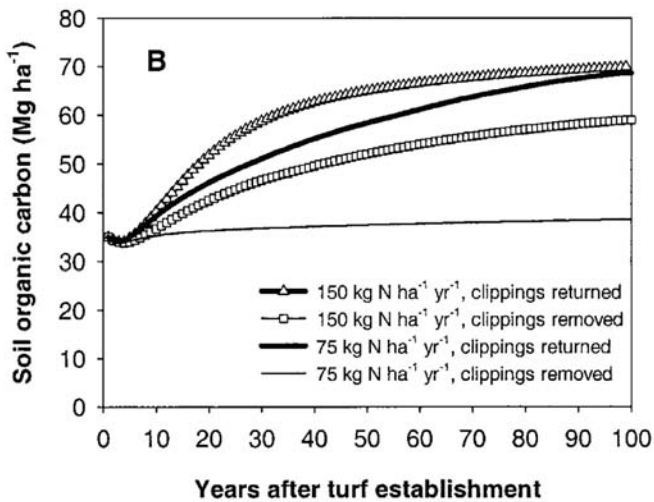


Figure 3. Soil organic carbon predicted from CENTURY model over time since turf establishment (From Qian et al. (2003b))

tons/acre. Carbon sequestration by turf was confirmed in Ohio on a stand of Kentucky bluegrass with variable management regimes (Singh, 2007). The average net carbon sequestration over a 12 year period was 10 tons/acre.

So as a turfgrass manager what can be done to promote carbon sequestration? Research performed at the Ohio State University showed various management strategies to increase sequestration (Singh, 2007). They include (1) Limiting pesticide applications (2) Lowering annual nitrogen rates, particularly when stand is mature (>10 years), and (3) Using organic fertilizers. Generally speaking, fewer inputs result in less carbon required for production, transportation, and application. Now let's face it, lowering inputs is not always an option when exceptional quality is required. But management plans can still be tailored to apply inputs less frequently, purchase items in bulk, or use organic products when feasible.

Other strategies to decrease carbon emissions also exist. Monitor soil moisture and apply water only when necessary because the irrigation system uses electricity. Tune up those old mowers and consider purchasing new ones that are fuel efficient. A final and often overlooked way to help capture carbon is to return clippings whenever it is possible. Not only has this been shown to increase the rate of carbon sequestration but it cuts back on annual fertility requirements too (Qian et al., 2003b).

To make a long story short, turf in the urban environment has the potential to sequester carbon. This is an important benefit that should not be overlooked. Turf managers can tailor their plans to make turf even more effective at capturing carbon. Not only is it the right thing to do for the environment, but it may help with the budget too.

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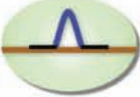
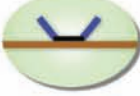

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Blue Birds On The Golf Course

By **Lila Kuta**, Assistant Golf Course Superintendent, Hartford Golf Club

Earlier this season the Bluebird Restoration Association of Wisconsin (BRAW) contacted the Hartford Golf Club to inquire if we would like a Bluebird Trail on our golf course.

With the support of the General Manager / Golf Professional Bill Roebuck we decided to move ahead with the project.

Bob Tamm, Tom Schaefer and Melissa Bruder from BRAW joined me to look over our golf course and stake areas for houses. Selection went well except for some locations they picked I had to explain would not work for the golfers even though they were perfect for bluebirds. But eventually we found homes for 20 nest boxes.

This was a wonderful experience for me because the BRAW volunteers were so enthusiastic and so devoted to their cause of having more bluebirds in our lovely state of Wisconsin. The next week they showed up with brand new boxes built just for Bluebirds and with a mounting system to install them at no expense to us.

The only thing we would have to do is monitor the boxes once a week and document our findings. Then at the end of the nesting season which is usually August we would send our report to BRAW headquarters. Well I really got lucky because Tom Schaefer said he would be our monitor, if he could have the use of a golf cart to do the monitoring of boxes. Since he already monitors 55 other boxes in our area, he could easily add our 20 to that total.

Now I have to tell you about Bob Tamm and his assistant Melissa Bruder. They both were extremely cooperative and understanding about how the nest boxes had to be located on a golf course and appreciated the fact that I had to say no to certain areas. Trust me, their dedication to these lovely birds and their total cooperation with us is a testament to both parties wanting to help wildlife on our golf courses.

Our membership at Harford is just thrilled; we have golfers yelling at us "do we have eggs yet"? On April 30th we had 5 houses with Bluebirds and 19 eggs, and as of May 12 we have 7 houses with 35 eggs, also Tree Swallows in 3 houses with 10 eggs and they are totally acceptable, where house sparrows are not! Hopefully since it is only May we will be still counting midseason since Bluebirds do produce broods twice a year. This project helps to disprove the negative stereotype of golf courses being unfriendly to wildlife.

Overall this has been a wonderful experience. I

highly recommend contacting BRAW or Bob Tamm at 262-679-2068 or viewing the website at www.braw.org. Donations are much appreciated but joining BRAW is not required.

I HOPE ALL OF YOU ARE SEEING BLUE! 🌿



The Bluebird Team Ready to Go Out. Bob Tamm, Melissa Bruder, Lila Kuta, Joe Kuta, Tom Schaefer and Shari Kastner.

The Finished House Ready for Residents



Installation of the posts.





Some Thoughts on the Importance of Putting Green Growth Rate

By Dr. Doug Soldat, Associate Professor, Department of Soil Science, University of Wisconsin-Madison

I often need to remind my non-turf scientist colleagues at the university that we don't manage turf for yield when discussing how turf-grass management differs from that of agricultural crops where yield (or economic yield) is the primary indicator of the success or failure of a particular product of management strategy. The non-turf scientists often need this reminder because yield is relatively unimportant in comparison to aspects like ball roll distance, color, quality, and recuperative potential of a turf-grass stand. Wayne Kusow demonstrated repeatedly that turfgrass managers typically fertilize to achieve only 10-33% of maximum yield, resulting in turf that exists in a state of perpetual nitrogen deficiency. This makes studying and managing turfgrass fundamentally different from agricultural crops. However, I believe turfgrass scientists and managers have been neglecting the importance of growth rate for too long. While turf managers aren't concerned with maximizing growth rate, it is still a very good indicator of the overall health of a stand of turf, and growth rate is a primary determinant of how much nutrients or water a plant will use. For example, most of the benefits of fine fescue (low nutrient requirements, low water use) can be explained by its growth rate relative to grasses like Kentucky bluegrass. Yet, we rarely think of it in these terms.

This summer, graduate student Bill Kreuser will be putting the final touches on a series of studies looking at the effect of Primo Maxx on growth of bentgrass and

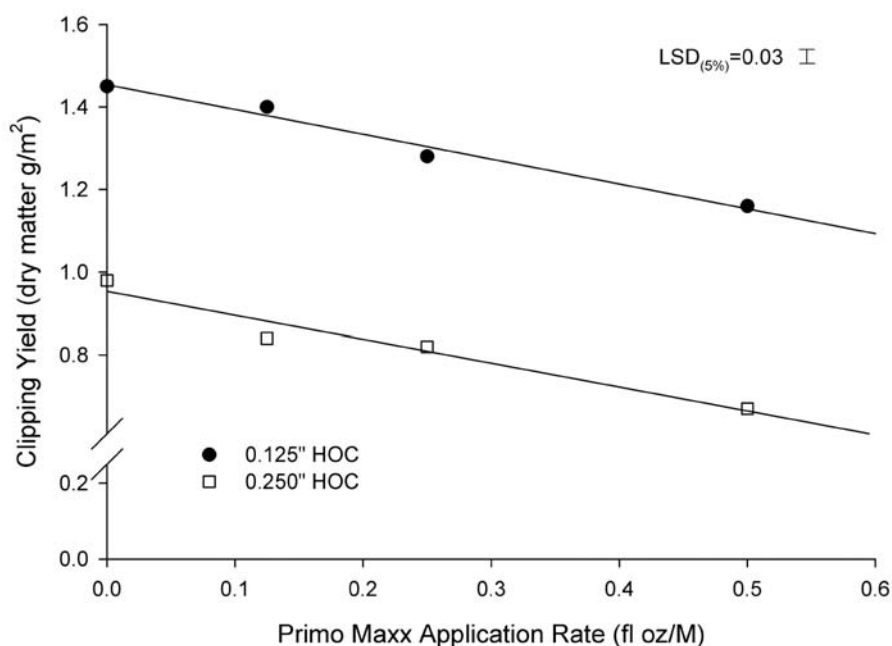


Figure 1. Difference in clipping yield in grams per square meter per day for creeping bentgrass mown at 0.125" or 0.250". The lower mowing height had 50% greater daily growth than the higher height of cut. Primo Maxx decreased growth, but even at four times the label rate the grass mowed at 0.125" was still growing much faster than the untreated grass cut at 0.250". Faster growing grass leads to lower carbohydrates and higher nutrient requirements over a growing season.

Poa annua. Over the past three years, we've studied the effect of different application rates and application frequencies of Primo Maxx on putting green growth. We've even studied the effectiveness of Primo Maxx on different heights of cut. An interesting nugget came out of this last study that is worth discussing. We found that creeping bentgrass mown at 0.125" grows 50% faster than the same grass mown at 0.250". The reason for this is evolutionary; the grass "wants" to have enough leaf area to maximize photosynthetic efficiency. When grass is continually cut at a low mowing height, it tries to rapidly increase leaf area

to replace the mowed tissue. At higher heights of cut, this response is much less dramatic which leads to naturally slower growing grass. In fact, applying four times the labeled rate of Primo Maxx does not even come close to slowing the growth of a 0.125" green to the growth rate of an untreated green at 0.250" (Figure 1). Obviously, no manager would think about bumping up the mowing height to 0.250" this year, but just being aware of this physiological difference may help you make a better decision when stressful conditions arrive.

A 50% increase in growth over a