

TABLE OF CONTENTS

THE PRESIDENT'S MESSAGE A NEW YEAR BRINGS CHANGE TO WGCSA	3
GAZING IN THE GRASS Plant Growth Regulators and Mowing Reduction	5
PERSONALITY PROFILE Golf Course Management Has Been in His Blood Forever	9
WGCSA Couples Head to Wausau for a Weekend Getaway. .	16
TDL Unwanted Friend at the TDL This Year - Poa trivialis	19
WISCONSIN PATHOLOGY REPORT Recently Labeled Fungicides Add Tools for Resistance Management	23
WGCSA 38th ANNUAL WISCONSIN GOLF TURF SYMPOSIUM	27
WGCSA WGCSA FALL BUSINESS MEETING	31
WISCONSIN ENTOMOLOGY REPORT What Species? What Makes the Difference?	33
MISCELLANY Eastern Bluebirds at University Ridge Golf Course - 1997 and 2003	36
TDL Turfgrass Diagnostic Lab 2003 Season Report	41
WGCSA Chapter Delegates Meeting Report	44
NOTES FROM THE NOER FACILITY We're Getting Close	47
THE EDITOR'S NOTEBOOK A Brave New Year	48
JOTTINGS FROM THE GOLF COURSE JOURNAL Ag Hall Has a Birthday!	52
POA TRIVIA	56

ABOUT THE COVER

Newly elected president of the Wisconsin Golf Course Superintendents Association Marc Davison is featured on the cover of this issue of The Grass Roots. Marc is the 27th president of the WGCSA.

In winter, "we yield to the impulse to huddle, to be enclosed, private, and internal, to enjoy a time of abeyance

while the natural world outside awaits the slow, implicit process of renewal. The long winter will somehow come to an end and spring will take us by surprise, as it always does."

- Justin Kaplan

THE GRASS ROOTS

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A NEW YEAR BRINGS CHANGE TO WGCSA

By **Mark Davison**, Golf Course Superintendent, Green Bay Country Club



The new year is now upon us. I would like to wish you all a belated Merry Christmas and Happy New Year. The holiday season gives us all time spend with family, relatives and friends. One of the great benefits of living in the northern part of the country is we get to experience four different seasons each year. Can you imagine maintaining a golf course in the south and having to work Christmas day? Take time this winter to get re-acquainted with your family. Take some time off this winter and get your home projects done. The winter normally flies by and before you know it you will putting the flagsticks back out on your course. Take advantage of the slower part of our season; now is the time.

As your new association president I look forward to leading our organization this year. I would like to thank our departing board members Brian Ferrie, Jack Tripp and Kris Pinkerton. It has been a pleasure to work with these dedicated individuals and their efforts are greatly appreciated. A big thank you goes to our past president David Brandenburg. David has done an outstanding job the past two years leading our organization forward. David is a very hard working and dedicated individual. It will be difficult for me to follow in his foot steps. I will look to David from time to time for his wisdom during my new term as president.

There are some changes taking place in our association that you will notice or may have noticed already. Our dues renewal form took on a different look last fall. We now have a data based computer program designed specifically for our organization. Each member's information is recorded in this data base and can be easily up dated as needed. The annual renewal forms are printed from this program as well. The main advantage of the program will be when it comes time to generate our membership directory. The directory has always taken a lot of time to compile due to the format our membership record information has been kept in prior years. We have purchased a computer specifically for the membership director. This computer will be passed along to each membership director in future years, making their job much easier then it has been in the past.

The same scenario was put in place for our treasurer. The treasurer now has a dedicated computer used to keep our financial records and generate reports.

There will soon be a WGCSA web site. Director Jeff Millies is working on this right now. The web site



address will be WGCSA.com. The site contents will include seasonal turf information available to the general public. There will also be a "Members Only" area. In this area the membership directory will be available as well as our calendar of events, related links and other pertinent information for us all. As with most web sites our hope is that it will continue to expand as more of our members take advantage of it. More news will follow on this as it progresses.

Winter is a time to get caught up on all your accumulated reading material as well as attend educational events. The WTA Winter Conference is scheduled for Jan. 5th - 7th. The list of speakers is impressive. I hope to see many of you there and lets hope the weather cooperates. The GCSAA Convention will take place Feb. 9 - 14 in San Diego. This is always a great opportunity to take in many educational offerings as well as inspect all the turf equipment and products available to our industry. Take advantage of all the education you can this winter. It is our responsibility to our employers to keep abreast on current trends, new products and techniques allowing us to produce a quality product.

Each year at the GCSAA Convention, the annual meeting and election takes place. This meeting will be on Saturday Feb. 14th at 9 a.m. I represent our chapter as our voting delegate. What does this involve? I vote on your behalf during the election process. Each year we vote for board members and officers as well as any other important organizational changes proposed to the membership. In order for me to carry your vote to the GCSAA election you have to indicate to GCSAA that you wish to be registered to vote with your chapter. You can vote with a chapter or individually. We have 22% or 51 of our members registered to vote individually. This is not a problem but no one exercises their right to vote individually, so their vote is lost. By voting with the chapter via the delegate their vote matters and is counted. By voting with the chapter does not mean you have to agree with the way the chapter is voting. I will carry your vote to the election and cast it any way you wish. If you are registered as an individual voter I will be contacting you to explain your options.

Enjoy your winter, get re-acquainted with your families, take in some education and look forward to spring. It will be here before you know it. ♣

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Plant Growth Regulators and Mowing Reduction

By Dr. John Stier, Department of Horticulture, University of Wisconsin-Madison



Plant growth regulators were initially developed and used to reduce mowing requirements. The first PGRs such as maleic hydrazide (Slo-Gro), mefluidide (Embark) and amidochlor (Limit) often visibly reduced mowing needs but caused unacceptable phytotoxicity to fine turf. Other growth regulators developed and sold beginning in the 1980s included paclobutrazol (Scotts TGR, Trimit) and flurprimidol (Cutless). These PGRs had less phytotoxicity and a different mode of action, reducing cell elongation by suppressing production of the plant hormone gibberellic acid (GA). In the 1990s trinexapac-ethyl (Primo) and ethephon (Proxy) were commercialized for the turf market. Primo also suppresses GA production but is foliar-absorbed, an advantage in some cases over paclobutrazol and flurprimidol. Proxy is foliar-absorbed, but has a unique mode of action. Proxy suppresses foliar growth by inducing ethylene production in the plant, another hormone that restricts cell size.

Superintendents quickly learned that the GA-inhibiting PGRs had the unintended yet pleasant effect of increasing turf quality. Turf treated

with GA inhibitors turns darker green and may increase its overall shoot density as plant energy is put into axillary bud development rather than increased leaf size (Stier and Rogers, 2001). Recently it seems as if the turf quality aspect is sometimes more important than any clipping yield reduction.

Most growth regulators though are still used because they may reduce clipping yields. Numerous projects have been conducted to show their effectiveness at reducing clipping yields (e.g., Ervin and Koski, 2001; Stier et al., 2000). Many authors have used information based on clipping yield reduction to deduce the number of mowings that could be eliminated, providing a reasonable cost justification.

In reality, though, few scientific data are available that document the effect of PGRs on actual mowing requirements. In 2003 we set out to document the effects of Primo and Proxy growth regulators on turf, including their effect on actual mowing requirements.

Materials and Methods

A field experiment was conducted at the O.J. Noer Turfgrass Research and Education Facility

on a mature, mixed stand of Kentucky bluegrass and perennial ryegrass maintained under fairway conditions (0.5 inch, or 12 mm, mowing height). Plots were 3ft x 6ft arranged in a randomized complete block design with four replications. Treatments were applied with a CO₂ powered boom sprayer, using XR Teejet 8005 VS nozzles, at 30 psi, in water equivalent to 2 gal./1000ft². The first treatment applications were made after the second mowing of the season on May 2, 2003. Treatments included Primo Maxx + urea, Primo Maxx alone, Proxy + urea, Proxy alone, Urea alone, and an untreated check (Table 1). All treatments containing Primo Maxx were sprayed on a 14 day interval and all treatments containing Proxy were sprayed on a 42 day interval. Urea alone and in combination with Primo or Proxy was applied on a 14 day interval. Turf density and quality ratings were collected visually bi-weekly on a 1 to 9 scale, with 9 = excellent turf and 6 = minimum acceptable fairway quality. The turf height on each individual plot was measured 3 times per week using a turf prism.

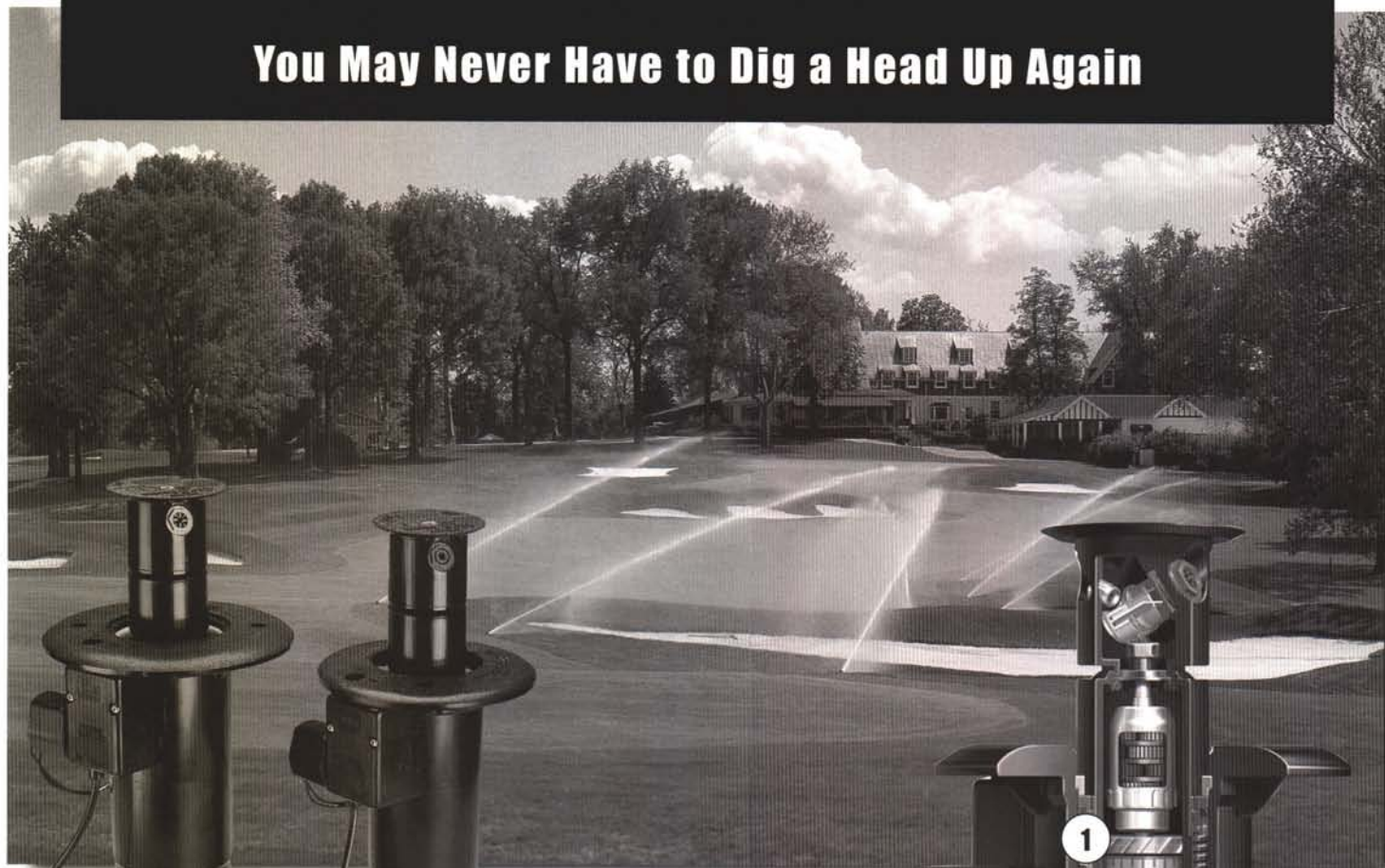
Table 1. Treatments and application interval for PGR and mowing frequency study.

Treatment	Formulation	Rate	Application interval
1. Primo MAXX	1 EW	0.25 fl oz/1000 ft ²	14 day
Urea	46-0-0 granular	0.3 lb/1000 ft ²	14 day
2. Primo MAXX	1 EW	0.25 fl oz/1000 ft ²	14 day
3. Proxy	2 EW	5 fl oz/1000 ft ²	42 day
Urea	46-0-0 granular	0.3 lb/1000 ft ²	14 day
4. Proxy	2 EW	5 fl oz/1000 ft ²	42 day
5. Urea	46-0-0 granular	0.3 lb/1000 ft ²	14 day
6. Untreated check	---	---	---



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Plots were mowed using the 1/3 Rule, i.e. when turf height reached 18 mm. The number of mowings per season was recorded.

Results and Discussion

Both PGR plus urea combinations provided the best turf quality throughout the study (Fig. 1). Urea usually provided similar quality except during late August and September when quality of urea plots declined. Proxy and Primo MAXX without urea provided lower turf quality, similar to the untreated and unfertilized check. These results indicate the importance of providing nitrogen fertility when using PGRs.

As expected both Primo MAXX and Proxy significantly reduced the number of mowings required to maintain turf using the 1/3 Rule of mowing which requires no more than one-third of the foliage height

be removed with any single mowing. Interestingly enough, though, the routine use of urea negated the growth reduction effect of both PGRs. These results disagree with many previous studies, however, many previous studies measured only clipping yields rather than basing the data on the number of mowings required to maintain turf using the 1/3 Rule.

Conclusion

Data suggest that superintendents who use PGRs throughout the season may reduce the effectiveness of PGRs to eliminate mowing requirements in some cases when moderate to high rates of nitrogen are routinely applied. Since data can vary greatly between years, though, and the results presented are from only one year, any conclusions are tentative. Further work should be conducted

to confirm or refute data collected in 2003. Other data are needed to correlate clipping yields with mowing frequency requirements and to better define the best amount and frequency of nitrogen application when PGRs are used.

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- Ervin, E., H., and A.J. Koski. 2001. Kentucky bluegrass growth responses to trinexapac-ethyl, traffic, and nitrogen. *Crop Sci.* 41:1871-1877.
- Stier, J.C., and J.N. Rogers, III. 2001. Trinexapac-ethyl and iron effects on supina and Kentucky bluegrasses under low irradiance. *Crop Sci.* 41:457-465.
- Stier, J., Z. Reicher, and G. Hardebeck. 2000. Effect of the growth regulator Proxy on creeping bentgrass fairway turf. *J. Env. Hort.* 18(1):53-58. 🌿

Table 2. Plant growth retardant and urea effects on mowing frequency of a Kentucky bluegrass:perennial ryegrass turf maintained at 0.5 inch height, Verona, WI, 2003.

Treatment	No. mowings to July 23	No. mowings to Oct. 3
Primo MAXX + Urea	25.0 b†	43.5 c
Primo MAXX	18.8 d	34.3 e
Proxy + Urea	28.0 a	47.0 b
Proxy	21.5 c	38.8 d
Urea	28.3 a	49.8 a
Untreated check	25.5 b	44.5 bc

† Values followed by the same letter were not statistically significant at $P < 0.05$.

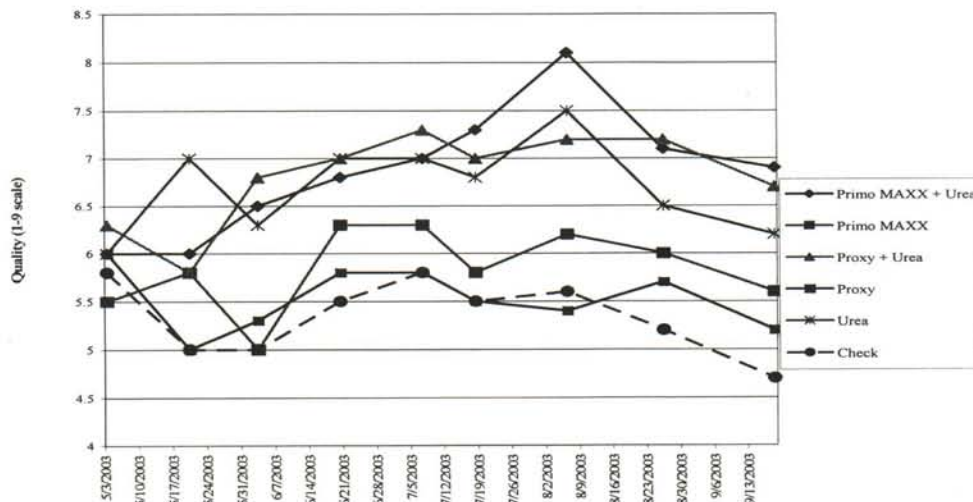


Fig. 1. Turf quality as affected by the plant growth regulators Primo MAXX and Proxy, with and without urea fertilization, on Kentucky bluegrass:perennial ryegrass turf maintained at 0.5 inch height, Verona, WI, 2003.



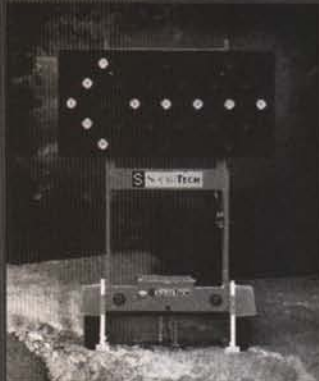
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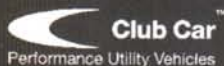
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Golf Course Management Has Been in His Blood Forever

By Lori Ward Bocher

Marc Davison, your new WGCSA president, was literally born and raised on a golf course. There's barely a time when he wasn't linked to a golf course in one way or another. By now, at the age of 45, he has an impressive resume that demonstrates a wide variety of golf course experience. And through it all, he's managed to maintain an easy-going attitude and a bright smile. Maybe that's because he knows he's doing what he was born to do.

As most of you know, Marc is currently superintendent at the Green Bay Country Club, a fairly new course that Marc helped build. He's been a golf course superintendent ever since he graduated from Iowa State University in 1980. But how did he end up in this business? The answer to that goes way back to before Marc was even born.

"It's been in my blood forever," Marc admits. "My (maternal) grandfather, Fred E. Millies, owned and oper-

ated an 18-hole golf course in Hillside, a suburb of Chicago. When my dad (Phil Davison) was in high school, he worked on the course; that's where he met my mother, Lorraine. After they were married, he worked for the telephone company, Illinois Bell. But he continued to work for my grandfather for a little extra income when he could.

"And then they ended up building our house right next to the clubhouse parking lot," Marc continues. "We had the clubhouse on one side of us and the first tee in our back yard. We were right there in the thick of things. They used to drive the tractors right home to our driveway."

A pesky kid on the course...

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