

## Latest Developments In Turfgrass Disease Research

Dr. Houston B. Couch  
Department of Botany and Plant Pathology,  
The Pennsylvania State University

During the past decade, all along the front of turfgrass production technical knowledge has increased at a rapid rate. The range of selection of types of fertilizers is much broader than it was ten years ago. Weed killers are more numerous and have higher degrees of selectivity for unwanted grass species. Diseases and insects that once were considered "necessary evils" are now easily brought under control. As the result, management specialists of today can produce grass with a far greater assurance of constancy of high quality than ever before.

The purpose of this paper is to highlight some of the more recent developments in turfgrass disease research, and to relate these findings to disease control in the field.

### Chemical Control of Turfgrass Diseases

At the turn of the century, Bordeaux Mixture (copper sulfate + lime) was coming into general use in the United States for control of many plant diseases. By the end of World War I, this combination had found its way into some golf course management programs. Used primarily as a dust, more than one hapless golf course superintendent discovered too late that while the material was a fairly good fungicide, Bordeaux was more



The discovery that Thiram was an effective fungicide for control of grass diseases was the first real breakthrough as far as disease control without grass burning was concerned. It was soon found that not only did this material have a fairly wide plant safety range; but it was also effective in reducing the phytotoxicity of other fungicidal materials. Combinations of Thiram-mercurous chloride, Thiram-Semesen, etc., became increasingly popular. The use of these combinations marks the beginnings of high quality turfgrass disease control. Today, Thiram is still the most popular basic ingredient in commercially prepared broad spectrum fungicides.

program, Captan, Phaltan, Maneb, Zineb, and Dyrene have been added to the basic list. At present, some 14 chemical compounds are employed either as sole active ingredients, or in varying combinations as turfgrass fungicides. Proper use of these fungicides will provide effective control of almost all of the common fungus-incited turfgrass diseases, without impairing the quality of the grass. New materials now under field tests show promise of even higher levels of disease control with much greater plant safety.

### Nematodes and Turfgrass Diseases

Perhaps the most outstanding single advance in turfgrass pathology this past decade has been the development of the awareness of the importance of nematodes in grass disease development. This awareness is due in part to the increase in quality of disease control provided by newer fungicides. Free of the more frequently recurring foliar diseases, turfgrass, in many instances was still not responding properly to irrigation and fertilization practices. Subsequent investigations revealed that root-feeding nematodes alone are capable of causing loss of major portions of stands of turfgrass in sections of the United States formerly though unsuited for their development. At present time, some 47

portive and grateful the turfgrass industry was.

From this time on, Dr. Couch started focusing on the new field of turfgrass pathology and was soon after formally appointed to a turfgrass pathology assignment by Dr. Burt Musser who was his department head at that time. Dr. Couch and Dr. Frank Howard at the University of Rhode Island had become the first full-time university turfgrass pathologists. Since he was new to turfgrass, Dr. Couch relied on help from Dr. Musser and often interacted with O.J. Noer and golf course superintendents including Joe Valentine and Marshall Farnham. Dr. Couch always emphasized the history of turfgrass pathology and acknowledged the contributions of men such as John Montieth, Arnold Dahl (both graduates of the Plant Pathology Department at the University of Wisconsin) and the "father of turfgrass pathology," Charles Vancouver Piper, for their early contributions to the field.

In his early years as a turfgrass pathologist (Fig. 2), Dr. Couch focused on very important diseases of the time such as rust, melting out of Kentucky bluegrass, Pythium blight, Rhizoctonia brown patch, Sclerotinia dollar spot, and root knot nematode. A major aspect of Dr. Couch's research at this time focused on abiotic factors that contribute to individual diseases such as soil moisture, pH, and plant nutrition. Dr. Couch's research took into account the pathogen in conjunction with the physiological state of the plant at a time when most plant pathologist focused primarily on the pathogen. The first edition of his book *Diseases of Turfgrasses* was published in 1962 and was the first book on the subject.

Dr. Couch received national recognition for his work describing Fusarium blight, a new patch dis-



No respecter of authority, dreaded *Fusarium* blight strikes even the high and mighty, as evidenced in this 1964 photograph. From time to time, coverage of Lyndon Johnson's walking news conferences would show the President, Lady Bird, their two beagles (Him and Her), presidential aides — including former White House press secretary Pierre Salinger — and the entire press corps strolling along a White House grounds sidewalk, unwittingly serving as the foreground for a full acre of highly photogenic patches of blighted bluegrass.

Figure 3. Photo of White House lawn with *Fusarium* blight with the caption showcasing some of Dr. Couch's trademark humor. *Golf Course Management* 53(10):18-28.

ease of turfgrasses. The disease received a lot of attention because it devastated the White House lawn and many sports fields in the early 1960's. Nineteen sixty-four was a particularly bad year for Fusarium blight at the White House and photographic coverage of president Johnson's walking news conferences often, as Dr. Couch put it, "unwittingly served as the foreground for a full acre of highly photogenic patches of blighted bluegrass." There were also several articles written about how concerned the president was about what was at that time an incurable disease (Fig. 3).

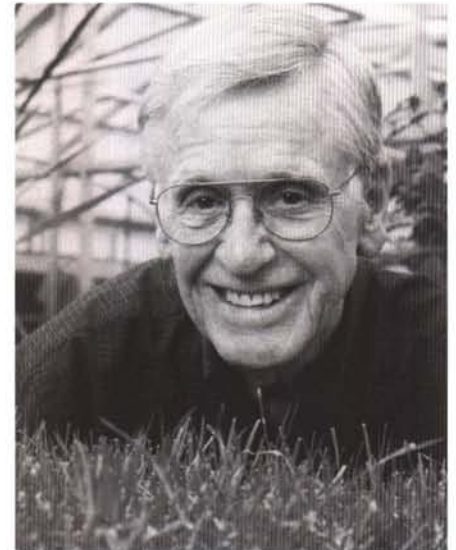
In 1965, Dr. Couch accepted a position as head of the Plant Pathology and Physiology Department at Virginia Tech and moved to Blacksburg, Virginia. While serving as department head, Dr. Couch remained busy researching disease control methods, writing a series of extension publications, revising *Diseases of Turfgrasses* for the 1973 second edition, and teaching several courses including Plant Pathology, Principles of Plant Disease Development, and Turfgrass Pathology. Dr. Couch stepped down as department head in 1974 because the administrative duties of the job were distracting him from his primary interest of turfgrass disease research. Dr. Couch began focusing on patch diseases, bacterial wilt of C-15 bentgrass, senectopathic disorders, and turfgrass disease control. Some of the aspects of disease control he investigated were the effects of formulation, dilution, nozzle pressure, nozzle type, pH, and length of storage on fungicide efficacy (Fig. 4). More notably, Dr. Couch is recognized as developing synergistic combinations of fungicides for Sclerotinia dollar spot and Pythium blight, which provided excellent disease control using less total fungicide and



**Figure 4. Dr. Couch and laboratory specialist Phil Keating rating spring dead spot plots in May, 2002.**

reduced the risk of fungicide resistance in the pathogen.

Diseases of Turfgrasses underwent a major revision for the third edition in 1995, and nearly ten years later is unarguably the most comprehensive turfgrass pathology text available to researchers and professionals. In 2000, Dr. Couch authored a new book entitled *The Turfgrass Disease Handbook* that is more portable and geared more for industry professionals than researchers. Dr. Couch formally retired from Virginia Tech in 2003, one day short of his 79th birthday. His retirement was in name only, as he continued come into work nearly every day and give several talks across the nation until he suffered a heart attack in July of 2004. Dr. Couch has received the R.D. Cake award from the Virginia Turfgrass Council, the Distinguished Service Award from the GCSAA, the USGA Green Section Award, and had the 63rd Massachusetts Turfgrass Conference dedicated in his honor (Fig. 5). In his 50 years of teaching students and professionals, Dr. Couch wrote over 150 scientific papers and spoke at over 500 industry conferences. He estimated in 2002 that he had taught over 4,000 golf course superinten-



**Figure 5. Dr. Couch soon after receiving the USGA Green Section Award in early 2003. USGA Green Section Record May-June 2003.**

dents through GCSAA seminars.

Teaching is where Dr. Couch excelled. Whether it was one on one with a graduate student, in a classroom, or at a GCSAA seminar, Dr Couch prided himself on the success of his students. He taught difficult subjects with a lot of information to learn, yet his teaching style motivated the students and stimulated discussion. He nurtured critical thinking skills that are useful to students in all aspects of life, not just plant pathology. He also taught students to stand up for what they

knew and to learn through academic debates with others who held contrary opinions (Many of you have probably heard of Dr. Couch's ability to challenge theories he believed were not accurate).

Equally, he was aware of the trouble one could get into if they spoke too much about what they didn't have a strong grasp of, saying that "every man is wise until he speaks." If a student was not doing well, Dr. Couch took it as a personal challenge and spent extra time with them until they were back on track. A large part of Dr. Couch's success as a teacher had to do with his ability insert humor into his lectures. Dr. Couch had a great sense of humor that was never vulgar or out of line. During a lecture or seminar, if he felt the students or superintendents were getting a little overwhelmed or uninterested in the subject matter, he would either use a funny catch phrase or tell a humorous story that almost always lead back to the point he was trying to get across. For example, if he was talking about a fungicide that has the potential to be phytotoxic, he would say that it was "rough as a three-cornered cob," or "hot as a two-dollar pistol." Moreover, if he was speaking of grass that looked like it was in poor health, he would describe it as looking like "death eating a cracker".

It was these sayings, his entertaining stories, and his vast knowledge of the nature of turfgrass disease that made Dr. Couch one of the most sought after speakers in the industry. His humor was also very evident in the advertising that he did for his research program. The Virginia Tech turfgrass pathology logo has the Latin motto *semper graminis morbidus* which translates to "always grass disease" (Fig. 6). He even had bumper stickers made that said "support your local turfgrass pathologist." Dr. Couch's engaging manner led many in science and industry to support the growing field of turfgrass pathology.



**Figure 6. The Virginia Tech Turfgrass Pathology logo.**

With all of his professional accomplishments, it is hard to believe that Dr. Couch had time for an active personal life; however, this could not be further from the truth. Dr. Couch's Christian faith was a very strong influence on his personal life, which carried over in the way that he treated people in his professional life. Many people who have known Dr. Couch for years are unaware that he was ordained as an interdenominational minister in 1967. Moreover, Houston and Billie Couch founded the New Life Fellowship, which resulted in the establishment Christian bookstores in Blacksburg and nearby Christiansburg. The New Life Fellowship became the Dayspring Church and Academy, which began offering Christian-based private schooling in the early 1980's. Dr. Couch has performed

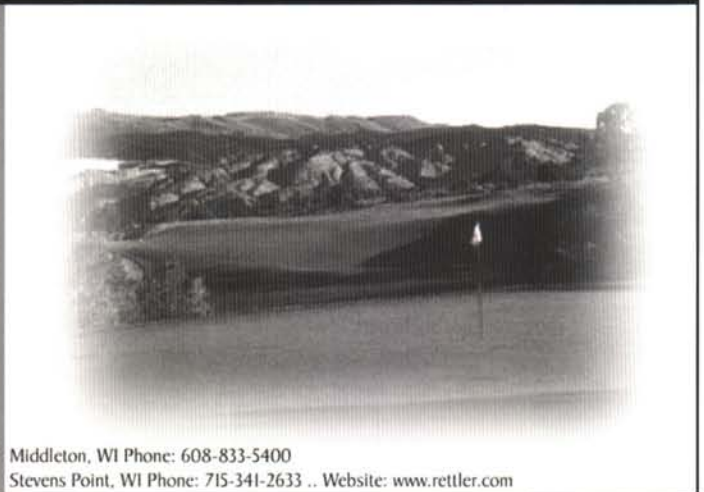
over 80 marriages of Virginia Tech students and has offered marriage counseling for them and other students as well.

Additionally, Dr. Couch performed over 300 baptisms for students who had converted to Christianity while at Virginia Tech. The most important part of Dr. Couch's life was his family. Houston and Billie Couch were married for 58 years and had five children and numerous grandchildren and great-grandchildren. Dr. Couch always beamed when talking about his family, and was always eager to share pictures and stories about them.

Dr. Couch touched the lives of everyone who knew him whether it was for his heroism in World War II, his turfgrass research accomplishments, his teaching ability, his talent as a public speaker and preacher, his sense of humor, his service to the community, or his love of his family. People felt very comfortable around him because he treated everyone he met as good friends. It is fitting that Dr. Couch's final comforting words as his large family gathered around him were "I'm going to see my Lord Jesus. I'll see all of you back home." 🌿

## Rettler Corporation

Golf Course  
Architecture  
Landscape  
Architecture  
Engineering  
Land Surveying  
Site Construction  
Management  
Site Maintenance  
Irrigation Design



Middleton, WI Phone: 608-833-5400  
Stevens Point, WI Phone: 715-341-2633 .. Website: [www.rettler.com](http://www.rettler.com)



BOB F.

BRETT

CHRISTINE

JEREMY

KARI

BOB M.

SHARON

**SAME GREAT  
PEOPLE.  
SAME GREAT  
SERVICE.  
MORE  
EXCELLENT  
PRODUCTS  
THAN EVER.**

FINES FREE  
TOPDRESSING®

NORTH FACE  
BUNKER SAND®

7:2:1® BLEND

# **WAUPACA SAND**

**A N D S O L U T I O N S**

CART PATH GRANITE

NITROGREEN SAND®

BEST BUNKER SAND

CUSTOM MIXES

[info@waupacasand.com](mailto:info@waupacasand.com)

**(715) 258-8566**

Waupaca | Oconomowoc | Black River Falls | Antioch | Rockford | Morris



# Junior Agronomist

By **Jacob Schneider**, Senior Turfgrass Student, University of Wisconsin-Madison

The opportunity to travel with one of Wisconsin's premier turfgrass experts was even better than it sounds.

Thanks to the USGA, I was afforded the chance to accompany Bob Vavrek for a week's worth of Turf Advisory Service visits and other, informal visits.

Each year, the USGA Green Section selects eighteen outstanding students to travel with their agronomists on visits to courses throughout the United States.

As part of the selection process, universities with turfgrass programs nominate one student to compete for the regional internships. In my case, I competed against students from the University of Minnesota and Michigan State University, respectively.

The goal of the program is to broaden students' perspectives of the turfgrass industry and the path that they take with their educations and careers. I can tell you that it does exactly that.

During the week of travel, the USGA picks up all hotel and meal expenses, and the students also receive a small stipend to make-up for lost time at work.

My week with Mr. Vavrek brought us to courses from Browns Lake to Chenequa Country Club. With this, I was able to learn about a variety of challenges that superintendents face on a daily basis.

With a relatively easy summer throughout most of southern Wisconsin, many of the problems that were discussed had nothing to do with agronomic issues or with turfgrass at all. It should come as no surprise to most of you that shrinking budgets and political dealings were frequent topics of conversation. Moss and algae seemed to be the peskiest agronomic issues that we hear about.

When we weren't making official advisory visits, Bob showed me some of the perks of the job. In mid-week, Mike Lee was gracious enough to show us around a post-PGA Whistling Straits. Later in the day, Tim Venes treated us to a round of golf at Blue Mound. That certainly was the icing on the cake.

Overall, the internship was an unbelievable experience. It was great to be able to visit courses that were so diverse in terms of both quality and ownership. My week with the USGA taught me a lot about what it takes to be a superintendent, and I'm grateful to them for providing students with this unique opportunity. ♣



**Jake Schneider, 2004 recipient of Green Section scholarship, North-Central Region.**



**A view of Lake Michigan from Whistling Straits.**



**The beautiful Blue Mound Golf and Country Club.**

# **BREATHE NEW LIFE INTO YOUR TIRED TURF EQUIPMENT.**

**KOHLER. Repower Kits get your equipment performing like the day you bought it – maybe even better.**



## **KOHLER REPOWER KITS:**

- **Are cost effective.**
- **Deliver advanced engine performance.**
- **Provide worldwide customer support.**
- **Offer unconditional Kohler Quality.**
- **Are easy to install.**

**With Kohler Repower Kits,  
your equipment isn't rebuilt...  
It's reborn.**

**For more information, call today.**

**KOHLER** engines  
**BORN TO RUN™**

**Seek the innovation.™ Demand the power.™**  
**www.kohlerengines.com 1-800-544-2444**

# 2004 WGCSA Tournament "Legendary"



By **Dave Van Auken**, Golf Course Superintendent, Golf and Arrangements Chair

At least two "Legends" came together on September 27th, for the always competitive Wisconsin Golf Course Superintendents Association Annual Golf Tournament. The competition featured an overall Champion in addition to "A" and "B" Flight winners and a Peoria victor, but there is much more to the story.

The tournament was held at The Legend of Brandybrook, a recently opened private course that has been nominated for *Golf Digest's* Best New Private Course for 2004. Judging from the many accolades shared amongst the well fed participants afterwards, The Legend at Brandybrook has a good shot to finish at or near the top of its class. Nestled within the rolling hills in this part our beautiful state, contestants basked in a gloriously sunny autumn day, walked and (in some instances) played through stands of majestic oak trees and delighted in the wild turkeys that graced the par 3, 16th hole. Jake Renner had the golf course in fantastic playing condition for our tournament and the scores reflect that there is a definite challenge on nearly every tee box.

The other Legend comes in the form of one Robert W. Musbach. Bob first joined the Wisconsin Golf Course Superintendent's Association in 1954 and is the ninth WGCSA member to receive his 50-year plaque. Bob served as President of our association in 1970 while at North Hills CC and officially retired in 1995 but remains a member in good standing. We are all the better for Bob's involvement and wish him continued good health and joy for many years to come.

A few other legends may be in the making as the separation of winners, runners-up and close calls was a matter of just a stroke or two. Following is this year's WGCSA Tournament champions and runners up.



## Overall Gross Champion:

Mike Skenandore - 76

## A Flight -

**1st Place:** Jeff Millies - Net 71

**2nd Place:** Marc Schwarting - Net 72

## B Flight -

**1st Place:** Dave Van Auken - Net 71

**2nd Place:** Tom Merkel - Net 72

## Peoria Flight -

**1st Place:** Charles Ocepek 65

**2nd Place:** Alan Nees 70.6

Congratulations to all and a reminder that attendance at WGCSA monthly meetings not only allows for professional networking and educational opportunities, it also allows you to work on your game. ♣

*New Course Construction  
Renovation and Restoration*

**GOLFCREATIONS**

Marengo, IL 815.923.1868



**Insecticides**

- Chipco® Choice™
- Chipco® TopChoice™
- Chipco® FireStar™
- DeltaGard®
- Sevin®
- Merit®
- Dylox®
- Tempo®
- Nemacur®\*

**Fungicides**

- 26GT®
- ProStar®
- Banol®
- Chipco® Signature™
- Compass®
- Bayleton®

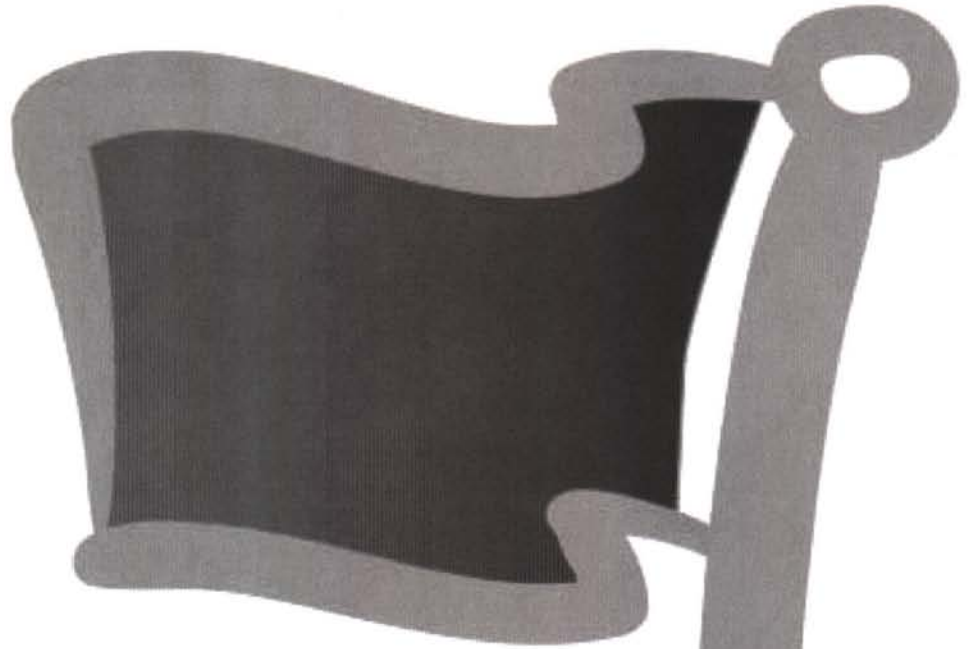
**Herbicides**

- Ronstar®
- Prograss®
- Acclaim® Extra
- Illoxan®
- Finale®
- Sencor®
- Revolver®

**Plant Growth Regulator**

- Proxy®

\*Nematicide



# Keeping Golf Courses Green

*with effective, responsible controls*



Kerry Anderson  
Sales Representative  
(847) 910-3130







# Golf Course Santa

By **Monroe S. Miller**, Golf Course Superintendent, Blackhawk Country Club

Most of Wisconsin's golf course superintendents are happy to see the golf season come to an end. Winter isn't dreaded by us; rather, we welcome it and the respite it brings to our lives.

That is especially true for longtime WGCSA member Lars Helgeson. "Those of us who trace our ancestors to northern Europe have cold weather and snow in our genes. We like few things more than a snowy, windy mid-winter blizzard, and suffer greatly in the mid-summer heat and humidity."

Lars is a fifth generation Norwegian. His great great grandparents immigrated into Wisconsin from near the Romsdahl Fjord in western Norway. The family has been successful in west central Wisconsin since the mid- to late 1800s, building a large and successful dairying operation. Descendants own thousands of acres today, but Lars took his college training in soil

science a different direction - golf course management. He has been the superintendent at the Old Norway Golf Club near Trondheim, Wisconsin for 35 years. Few are held in higher regard and esteem than this bright, quiet and kind man.

Like many with Norwegian blood coursing through their veins, Lars started to turn gray when he was twenty, and by the age of forty he was nearly white headed. "Probably better than the alternative," he winked as he looked at me at while back.

And many times Lars has noted that there aren't many tall and skinny Norwegians, at least in Wisconsin. "We're stout," Lars would say with a smile as he helped himself to another serving of Scandinavian meatballs and gravy, and a double helping of lefse to enjoy with his strong black coffee.

When cooler temperatures of autumn arrived, Lars

# GOOLF

## We're Part of the Game



**Premium, Professional Fertilizer.**

Visit us at [springvalleyusa.com](http://springvalleyusa.com) or call us at 1-800-635-2123

quit shaving. By Christmas time he had a beautiful snow white beard. It matched his personality perfectly.

A few years ago - five or six, I'd guess - the club president at Old Norway GC very carefully and politely asked Lars if he would consider playing Santa Claus at the club's Christmas party for kids. Lars thought about it for a day or two and contemplated the fact that he was considered a candidate because he was more round than chiseled. Rather than being insulted, the idea really grew on him. He loved Christmas, he loved the winter weather, and he loved kids. "Actually," he recalled to us later, "the notion of playing Santa really appealed to me."

He called the club president and responded with a "Ho! Ho! Ho!"

Lars was hooked by that first Christmas experience as Santa at the club. He loved playing the part, and the kids were wild about him. When he opened his pay envelope there was a nice check and a note of thanks individually signed by all the board members and officers of the club. He put it in the offering plate of the Trondheim Lutheran Church.

The next summer he got his daughter, who lived in town with her family, to do a web search for - what

else? - Santa Claus schools. They were all surprised at how many there were. Lars contacted one in Minnesota, found the cost to be reasonable, and enrolled for the three-day session in late September.

He kept it quiet because he didn't know how some people would react. He knew if Bogey Calhoun found out too soon, there would be suffering a plenty.

When school started in that third week of September, Lars could hardly contain himself; he was so excited. He drove over early in the day and from Trondheim it was only a six-hour trip.

"I wouldn't say that the classes were exactly rigorous," Lars told us, "but it was clear there was more to being a good Santa Claus than you'd ever think there could be."

"We studied the history of Santa Claus and how he evolved from legends and stories and cultures. This was a fascinating part of the education," Lars explained.

"The basics of being Santa were, from a practical point of view, the most helpful," Lars said. You are taught how to make the visit from Santa memorable and positive. A lot of time was spent on how to arrive and how to welcome children. Since I am doing this for kids, this part of the training was really important."

Bogey Calhoun, Tom Morris, Steady Eddie Middleton,





It is the heat of the summer, and your preventative strategy for managing turf disease is working. Your next application includes Medallion® fungicide, with a novel mode of action to help manage a broad spectrum of pathogens including anthracnose and brown patch.

**For more information on Medallion, call your local Syngenta representative, Jim Shone, at 708-217-8509.**



Elm Grove • Madison • Waukesha • Appleton • Stevens Point • Kenosha



[www.syngentaprofessionalproducts.com](http://www.syngentaprofessionalproducts.com)

Important: Always read and follow label instructions before buying or using this product.  
©2004 Syngenta. Syngenta Professional Products, Greensboro, NC 27419.  
Medallion® and the Syngenta logo are trademarks of a Syngenta Group Company.