

that help support the county Extension agents.

A positive of all Extension programs is that they are all voluntary. Anyone who wants to take part in these programs may, but no one has to take part. Talk about the all-American attitude!

Extension, as we have experienced it, draws upon research-based knowledge and information. In my youth most Extension programs served rural people. Today the opposite is true – most Extension programs touch people in urban areas of the country, a reflection of the changes we have experienced in the last forty or fifty years. And this ability to change with the changing times is what has kept University Extension in front of golf course management in Wisconsin.

University Extension is organized somewhat similar to the University itself, with a chancellor, deans and

associate deans. Professors, in CALS at least, have their time divided into areas of responsibility – research, teaching and extension. Some are assigned no extension time; others are full-time extension (Rossi at Cornell, e.g.).

At any rate, the ability for us to put to use the good research and science coming out of the Wisconsin campus is due largely to our Extension scientists. The “Extension Workers Creed” shown here illustrates the deep feeling and commitment these people have for their work. John Stier has a framed copy hanging in his office on campus.

Please, think about how often our lives and work are affected in positive ways by this great group of educators. ♣

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**I BELIEVE** in people and their hopes, their aspirations, and their faith; in their right to make their own plans and arrive at their own decisions; in their ability and power to enlarge their lives and plan for the happiness of those they love.

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**I BELIEVE** that education is a lifelong process and the greatest university is the home; that my success as a teacher is proportional to those qualities of mind and spirit that give me welcome entrance to the homes of the families I serve.

**I BELIEVE** in intellectual freedom to search for and present the truth without bias and with courteous tolerance toward the views of others.

**I BELIEVE** that the Extension Service is a link between the people and the ever-changing discoveries in the laboratories.

**I BELIEVE** in the public institutions of which I am a part.

**I BELIEVE** in my own work and in the opportunity I have to make my life useful to mankind.

Because **I BELIEVE** these things, I am an extension worker.

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# Dollar Spot

## *Sclerotinia homoeocarpa*



By Kevin L. Hensler, ITM Specialist, O.J. Noer Turfgrass Research and Education Facility, University of Wisconsin-Madison

A major objective of the ITM Program is to disseminate up-to-date research to the turfgrass industry of Wisconsin. In too many cases, research that is published across the country never reaches the end-user. This is knowledge that may, or may not, be utilized by turfgrass managers, but we must first be aware of this information before we can make the decision to utilize it, or toss it. The objective of the following article is intended to add to the already extensive body of knowledge on dollar spot (*Sclerotinia homoeocarpa*)

Dollar spot is a frequent and widespread turfgrass disease with the potential to be devastatingly destructive to utilitarian turfgrass sites, and is common to all cool-season grass species utilized as turfgrass in Wisconsin.

Developing a management plan targeted specifically at the dollar spot pathogen should utilize a multi-dimensional approach. Because it is such a common disease in Wisconsin, a wide variety of strategies should be employed utilizing biological, chemical, and cultural management options.

This article summarizes recently published research on dollar spot control. I would consider none of these to be benchmark works, but that is not what is needed. The industry already has a foundation of understanding accumulated over years of experiences, observations, and research. The knowledge presented here can be utilized to fine tune our present strategies to control dollar spot.

### Composting

An alternative disease management strategy is the use of composts and organic fertilizers for disease

suppression. Several bacterial and fungal species antagonistic to dollar spot have been found in composts, and high levels of microbial activity in the composts have been suspected to be the primary factor in their disease inhibiting properties. Others attribute these properties, wholly or partially, to a slow release of the organic nitrogen component of the compost.

Whatever the source of control, these organic amendments have the potential to reduce fungicide use, and the inherent risk of developing fungicide resistant strains of *S. homoeocarpa*. Research conducted at the University of Guelph in Ontario, Canada, investigated the effectiveness of compost as a suppression for the dollar spot pathogen.

J. I. Boulter and friends (2002) evaluated five commercially available composts applied as a topdressing to a creeping bentgrass putting green. They also looked at application frequencies.

They found that multiple applications (every three weeks) of compost provided disease control equal to that of the chlorothalonil regime,

and significantly superior to the untreated plots, throughout the growing season. This group successfully showed that multiple applications of compost were effective in suppressing dollar spot. Results of this work supported previous findings that composted materials and organic fertilizers can suppress dollar spot development on established turf.

The utilization of compost-amended topdressings as part of your disease management program would not necessarily introduce additional practices or labor into a turfgrass management program (Boulter, et al., 2002). Most golf courses and many athletic field managers already incorporate routine topdressing applications throughout the growing season. The benefits of adding compost to the topdressing mix would be a reduction in frequency and/or application rates of fungicides, and depending on the acceptable damage threshold, fungicide use may be eliminated altogether.

### Nitrogen Source

Utilizing the same thoughts concerning composts as Boulter and

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friends, organic fertilizers, and their impact on dollar spot damage, Davis and Dernoeden of the University of Maryland evaluated nine nitrogen sources and composts for their effects on dollar spot severity.

They evaluated two synthetic fertilizers (urea and sulfur-coated urea), an activated sewage sludge (Milorganite), a composted sewage sludge (Com-Pro), and five organic materials composed primarily of poultry waste materials (Sustane Medium, Earthgro 1881 Select, Earthgro Dehydrated Manure, Ringer Lawn Restore, and Scotts All Natural Turf Builder). The materials were applied to an established stand of Southshore creeping bentgrass maintained at fairway height.

Contrary to the findings at Guelph University, Davis and Dernoeden found no nitrogen source, synthetic or organic, reduced dollar spot over the entire season. They did find that a variety of nitrogen sources (urea, sulfur-coated urea, Milorganite, Sustane Medium, and Ringer Lawn Restore) suppressed dollar spot to within acceptable thresholds into mid-summer, when disease pressure was low to moderately severe. Several materials (sulfur-coated urea, Sustane Medium, and Ringer Lawn Restore) even reduced dollar spot occurrence into periods of moderately high disease pressure, though inconsistently. But beware! Again, contrary to findings by the Guelph group, several of the organic materials (Com-Pro and Earthgro Dehydrated Manure) actually intensified dollar spot during the same period. In fact, none of the natural organic products evaluated in this research significantly reduced dollar spot when compared with synthetic nitrogen sources (urea or sulfur-coated urea).

These researchers speculated that dollar spot suppression was a consequence of nitrogen availability, rather than enhanced microbial activity. This conclusion was based

on a correlation between foliar nitrogen and the presence of dollar spot. As foliar nitrogen increased, dollar spot suppression increased as well. At the same time, there was no correlation between general soil microbial activity and nitrogen source. No nitrogen source was consistently associated with higher levels of soil microbial activity, refuting the premise of many that natural organic fertilizers suppress dollar spot by enhancing soil microbial activity.

What to do? While organic amendments obviously have impact on dollar spot severity, the jury is still out on whether they provide suppression by increasing microbial activity or providing a slow-release form of nitrogen. While these studies can be interpreted as refuting each other, what we already know remains as obvious as before - the timely application of nitrogen can minimize the severity of dollar spot on your turfgrass.

### **Cultural Practices**

#### Cultivar Selection

Dollar spot management can be highly dependent on chemical fungicide applications. The causal fungus has proven the ability to develop resistance to several important classes of fungicides. This has stimulated research into alternative disease management strategies such as development of cultivars that show resistance/tolerance to the dollar spot pathogen.

Chakraborty and friends (2001) at UW-Madison are working on identifying dollar spot resistant bentgrass germplasm. They observed a general trend indicating that dryland, colonial, and velvet bentgrasses were more resistant than the creeping bentgrasses cultivars they were working with. Gregos and Jung (2001) also observed that colonial bentgrasses show an increased tolerance to dollar spot, but also noted that they tended to be more susceptible to brown patch. *For information on cool-season*

*species and cultivar susceptibility to dollar spot in Wisconsin, see NTEP Progress Report 2000 @ <http://www.ntep.org>*

#### Seeding Blends

Turfgrass blends are often recommended to improve disease resistance, the general theory being that blends will dilute susceptibility and spread the risk of succumbing to a greater variety of pests than a single cultivar could. Abernathy and friends (2001) at Texas A&M evaluated monostands, two-way and three-way blends of creeping bentgrass maintained at putting green height. Cultivars evaluated were Crenshaw (most susceptible), Mariner, Penn A-4, Penncross, (all moderately susceptible) and L-93 (most resistant).

As common sense would dictate, blends containing L-93 reduced the level of dollar spot severity, whereas blends containing Crenshaw exhibited an increased incidence of dollar spot. The moderately resistant cultivars did not affect dollar spot severity, and tended to act as a neutral partner, allowing the blends to exhibit the attributes of the tolerant or susceptible component(s). Thus, the susceptibility of individual cultivar components provided a positive indication of how a blend would perform when dollar spot activity was present.

The blends containing Crenshaw showed an ability to reduce dollar spot infections compared to stands of Crenshaw alone. At the same time, three of the four varieties of moderate susceptibility showed an increase in disease when blended with Crenshaw compared to monostands. The message here is that a blending strategy should be used to reduce overall disease incidence of susceptible cultivars, like Crenshaw, **only** when they exhibit traits that no other cultivars possess.

#### Rolling

Am I going to tell you that rolling decreases dollar spot on your putting greens? That three - times-



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weekly rolling, every week for five continuous years will actually reduce the incidence of dollar spot? That a disease that can be spread by maintenance equipment carrying fungal mycelium and infected plant tissue carried from site to site can be reduced by using equipment that does just that? Yep!

Research reported by Thomas Nikolai at Michigan State has shown that rolling greens reduced the number of dollar spot infections by up to 70%. He speculates that rolling one hour after mowing dispersed guttation droplets forming at the tips of cut leaf blades. These guttation droplets are used as a nutrient source by fungal pathogens, and their dispersal reduces the pathogens ability to infect other plants.

### Chemical

#### Curative vs Preventive

The group at Kansas State (Settle, et al., 2001) conducted research evaluating dollar spot severity of four creeping bentgrass cultivars comparing curative and preventive fungicide application strategies.

Historically, several fungicide application strategies have been used for controlling dollar spot in creeping bentgrass putting greens. These include applying fungicides at routine intervals to prevent disease development, applying fungicides only when disease symptoms reach some predetermined action threshold, or making applications on a weather-based disease forecasting system. Settle's group found that the efficacy of each strategy was dependent on the disease susceptibility of the creeping bentgrass cultivar. Greater flexibility in imposing a disease control strategy was afforded by using a disease-resistant (i.e., L-93), rather than a disease-susceptible (i.e., Crenshaw) cultivar.

Curative applications of iprodione and chlorothalonil provided equivalent levels of dollar spot control as preventive treatments, and resulted in acceptable turf quality in the

resistant 'L-93' during dollar spot outbreaks, but with fewer fungicide applications. Considering all cultivars across the three year study period, fewer fungicide applications were made using a curative than a preventive strategy.

*Editor's note: The author has worked in the turfgrass industry for over 25 years, in a wide range of capacities. His current position as ITM Specialist requires the development of a broad-based programming effort emphasizing the total approach to managing turfgrass systems. The ITM philosophy emphasizes an effective, economical, and environmentally responsible management approach to plant health and protection. For more information on the ITM Program, contact Kevin at [hensler@entomology.wisc.edu](mailto:hensler@entomology.wisc.edu), or (608) 845-2545.*

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# Wisconsin Golf Course Superintendents Association

## 2002 Meeting and Education Schedule

- July 15** Wisconsin River Golf Club, Stevens Point, WI
- Host - **Todd Blankenship**, Golf Course Superintendent
- August 13** WTA Field Day - O.J. Noer Turfgrass Research Facility, Verona, WI
- September 9** Fox Valley Golf Club, Kaukauna, WI
- Host - **Scott Bushman**, Golf Course Superintendent
  - Education - Bob Vavrek, USGA, "Year in Review"
- September 30** Pine Hills Golf Club, Sheboygan Country Club
- Host - **Rod Johnson**, Golf Course Superintendent
  - Education - Ron Forse, Forse Design, "To Tree or Not to Tree"
- October 4, 5** Quit-Qui-Oc Golf Club, Elkhart Lake, WI
- Host - **Brian Feldman**, Golf Course Superintendent
  - Vender Host - Bill Vogel, Spring Valley Turf Products
- October 10** WTA Fundraiser - Blackwolf Run (Valley-Meadows)
- Host - **Mike Lee**, Golf Course Superintendent
- November 12, 13** Wisconsin Golf Turf Symposium - The American Club, Kohler, WI
- Topic - "Doing More With Less": Resource, Time and Money Management
  - Sponsor - Milorganite
- December 10, 11** GCSAA Seminars, Ramada, Fond du Lac, WI
- January 6 - 8** WTA Turfgrass and Greenscapte EXPO - Madison Marriott West



# A Cool Spring Leads into Wisconsin's Summer

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

May 19, 2002 dawned white in Wisconsin – frost delays for anxious golfers. While Cheryl and I were with our daughter Christie at the CALS Alumni Breakfast for new grads, golf players were waiting for the sun to warm the air temp to above freezing. Record temperatures were broken twice that weekend in our town and all across Wisconsin, too.

Have you even seen the likes of it? I have been paying reasonably close attention to the weather since I was about ten years old when I became aware of how significantly it impacted the prosperity of my parents and our family farm. I cannot, in the 46 years hence, recall such a constant, and consistently cool spring.

There are many downsides to the kind of weather we experienced. The rounds of golf are way down and many of those rounds will never be gotten back. This ripples through our golf economy – lower employment, less fertilizer and other supplies purchased, reduced new equipment purchases, etc. Call it classic Econ 101.

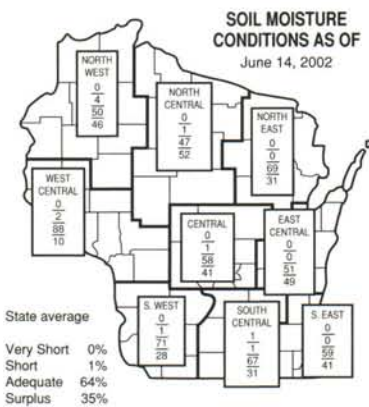
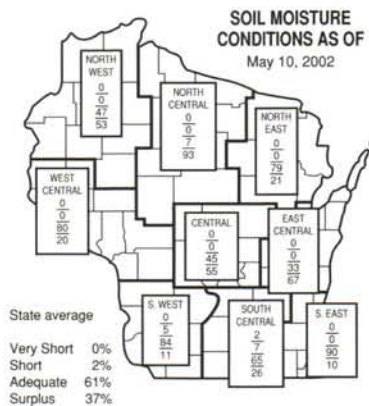
Further, for those of us who aerify in the spring, we had to watch it take several weeks for the coring holes to completely heal. The seeding of annual bluegrass was retarded and extended somewhat, causing bumpy greens for a few more days.

The upside (you always have to look for the positive) was that the flowering crabapples, redbuds and lilac blossoms seemed to last forever, keeping golf courses in full color bloom for three weeks.

Finally, of course it ended with the warm days of early June. With

the normal (or slightly above) amounts of rainfall, it was prime time for cool season grasses. It was hard to keep up and keep courses in top playing conditions, but that is what we get paid to do.

Rainfall stats here are from the Wisconsin Ag Stats Service.



The economic downturn has taken its toll in Wisconsin manufacturing and commerce, so it should not have come as a surprise that John Deere in Horicon will begin laying off 240 workers for five months beginning in late July.

The layoff will be the first time

the company implements a “voluntary manufacturing leave.” During layoffs, employees will receive about 65% of their normal pay, which translates to the rate for employees on medical disability. The option will give workers the opportunity to take the summer or the hunting season off. Deere expects to call employees back in December in time to make machinery for the spring season.

Gosh, I thought he had retired. I was lucky enough to attend a retirement celebration at a downtown restaurant last year. But, as the saying goes, you can't keep a good man down (on the farm).

Dr. Doug Maxwell, professor emeritus of plant (and especially turfgrass) pathology, will serve as interim director of the CALS Center for Integrated Agricultural Systems at the UW – Madison.

The CIAS researches farming and marketing systems that contribute to the environmental, ecological and social well-being of farms, families and communities.

Bright people are capable of many varied responsibilities and Dr. Maxwell has certainly demonstrated that to us.

The Village of Shorewood Hills paid tribute to Dr. Chuck Koval on the weekend of Arbor Day for his two decades as the village forester. He served in the position as a volunteer. Koval Woods is now a part of the village park system, and many family, friends and colleagues were present at the dedication. He treated us to some extemporaneous comments and reminiscences in the rich deep





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