TABLE OF CONTENTS

THE PRESIDENT'S MESSAGE
WEATHER 3

GAZING IN THE GRASS
Syringing: To Cool or Not to Cool 5

PERSONALITY PROFILE
Career Turf Specialist Likes Working With Golf Course Superintendents Best 9

TDL
Leptosphaerulina Leaf Blight of Turfgrasses... Lion or Lamb? . . 15

WISCONSIN ENTOMOLOGY REPORT
BIOLOGY AND MANAGEMENT OF LINDEN BORER: RESEARCH UNDERWAY 19

WTA
Golf Where the Pros Golf at the WTA Fundraiser Brown Deer Park Golf Club 23

THE EDITOR'S NOTEBOOK
We've Had Enough! 25

NOTES FROM THE NOER FACILITY
Who Needs Irrigation Anyway? Thank You Donators 30

WISCONSIN PATHOLOGY REPORT
Interaction of Nitrogen, Plant Growth Regulators and Fungicides on the Control of Anthracnose 33

MISCELLANY
The Next Dutch Elm Disease? 37

JOTTINGS FROM THE GOLF COURSE JOURNAL
Kurth Gift Leads to a Third WDGF in Turfgrass 41

POA TRIVIA
. 64

ABOUT THE COVER

Our tradition continues with the cover of this issue of *The Grass Roots* — the favorite hole of the host golf course superintendent of the State Amateur and the State Open.

The Bog's Tony Gonzales tells us that the Par 3 thirteenth hole offers one of the most breathtaking views on that beautiful golf course. The green is larger that it appears from the tee and challenges players because it normally plays into the wind.

Veteran Westmoor CC superintendent Jerry Kershasky chose the Par 3 fifth hole as his favorite. It has been recently restored to William Langford's 1957 redesign and will offer a championship challenge to players in the WPGA Open in August.

"The grass is not, in fact, always greener on the other side of the fence. Fences have nothing to do with it. The grass is greenest where it is watered. When crossing over fences, carry water with you and tend the grass wherever you may be."

- Robert Fulghum

THE GRASS ROOTS

THE GRASS ROOTS is a bi-monthly publication of the Wisconsin Golf Course Superintendents Association, printed in Waunakee, Wisconsin by Kramer Printing. No part of THE GRASS ROOTS may be reprinted without expressed written permission by the editor.

EDITOR AND PUBLISHER
Monroe S. Miller
Blackhawk Country Club
P.O. Box 5129
Madison, WI 53705
groots@globaldialog.com

EDITORIAL STAFF AND BUSINESS AFFAIRS
Dave Brandenburg
P.O. Box 314
Theresa, WI 53091

Front Row: L-R: Dustin Riley, Mike Lyons, Marc Davison, Brian Zimmerman. Back Row: L-R: Dave Brandenburg, Pat Sisk, Jeff Millies, Eric Jasin, Dave Van Auken

2004-2005 WGCSA OFFICERS AND DIRECTORS

WEATHER

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

One of the most popular topics of conversation is the weather. People are always commenting on "how wet it is" or "how cold it is." Don't you get tired of golfers asking you, "when will it dry up?" or "when will it cool off?" Do golfers really think we have any way of knowing? Of course not, it's just conversation. But have you ever stopped and thought about just how much weather does affect our business?

May was a very wet month and June is following the same pattern! Many parts of the state are at or near record amounts of rainfall. Many golf courses had to close holes during May and June due to flooding. Just think of the revenue impact this has on golf courses. Most of the weekends in May included rain. Public golf relies heavily on weekend play and to get washed out every weekend in a month is a terrible set back. This set back has a negative ripple effect on everything related to golf, such as golf ball sales, food and beverage sales in the clubhouse, cart revenues and greens fees.

Golf car revenue is a huge source of income for golf courses and restricting golf cars from the course impacts the bottom line in a very negative way. But when it is too wet, what can we do? No one wants the golf course torn up and muddy from cart traffic, but most owners don't want to sacrifice golf car revenue either. Having hard surface cart paths is a great luxury, especially during wet periods. Many golf courses slowly add some type of cart paths eventually. Some start with green to tee routes or other high traffic areas and although this concept is great, it doesn't help during prolonged wet periods like we saw in May. Gravel cart paths work well in level areas, but on hills they are a constant headache with the gravel constantly washing out. Pot holes seem to pop up all the time, as well. They hold water and golfers tend to then drive around these rough areas searching for a smooth ride. A continuous blacktop or concrete cart path is ideal, I'm sure everyone would agree.

Sand bunkers and rain don't normally work well together. Heavy rains wash sand off the steeper faces of bunkers. Then we have the very labor intensive job of shoveling all that sand back up onto the bunker faces, hoping it won't rain so hard next time. My staff is getting tired of shoveling sand. With the frequency of rains we received in May, one had to wonder when would it be safe and intelligent to shovel the sand back up?

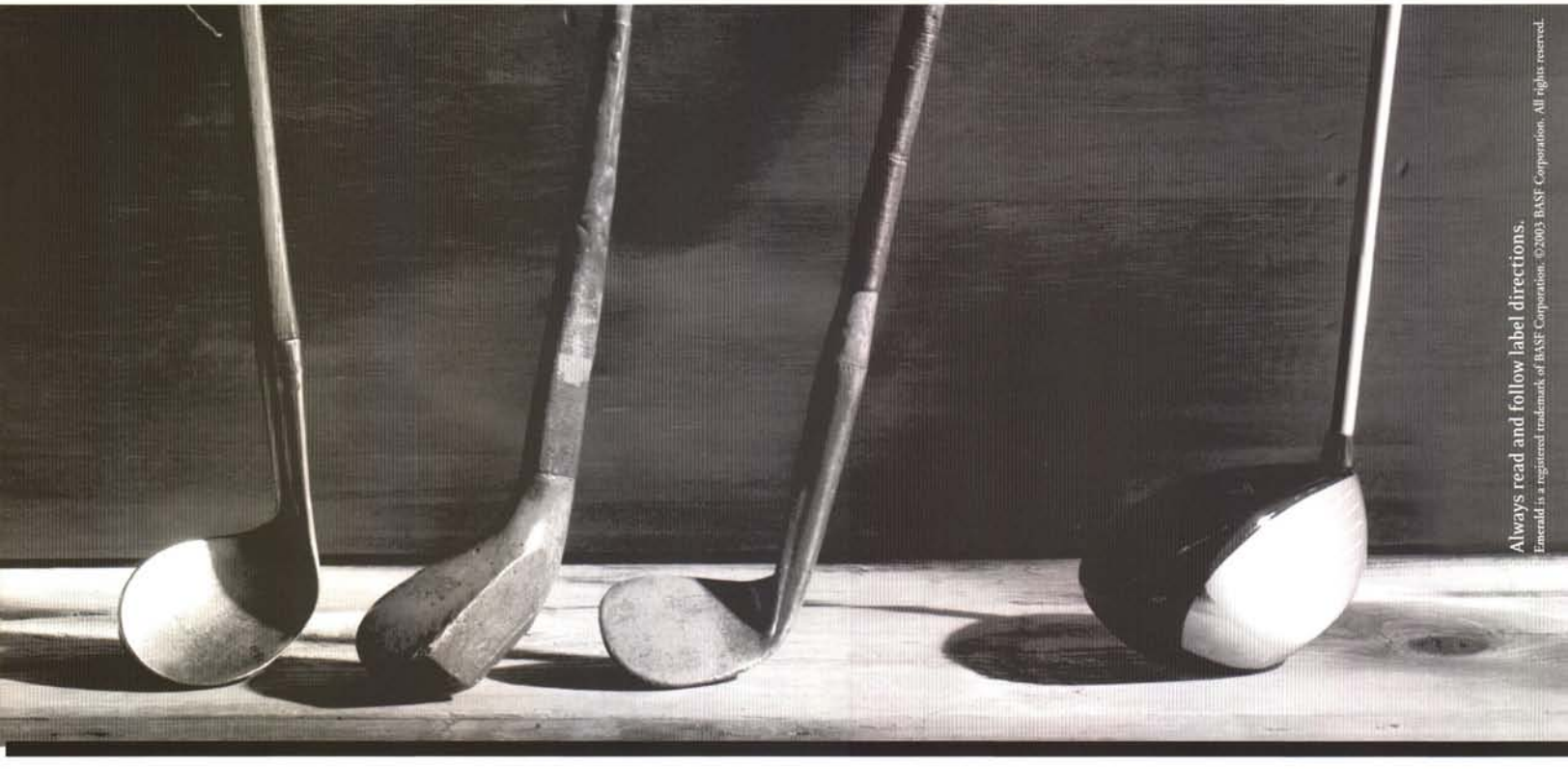
Unfortunately we have numerous walk bridges that wash out each time the creek jumps out of its banks. Last week we retrieved five of these bridges that had floated down-stream and reinstalled them in their proper locations only to see a few of them take off on the following downpour four days later.

During rainy periods, like we saw in May and June, how much time do you spend looking at radar maps? Fortunately, there are many options to view radar these days. DTN (now called Meteorlogix) is very popular at golf courses, not only in the pro shop but also in the maintenance building. There are numerous weather sites on the internet to help us keep up to date on weather patterns and the Weather Channel is still very popular. I remember running up to the clubhouse 20 years ago to try and get a peek at the radar via the Weather Channel. You can spend a lot of time waiting to view radar for Wisconsin or other specific areas on the Weather Channel and with some of the other methods. Big improvement with DTN and the internet! What did you do with your old weather radio? I still have mine but can not remember the last time I used it.

Isn't it amazing how much of a factor weather has on our profession and the golf business? Weather impacts our work schedule every day. So many of our decisions are based on the weather forecast for the week, the day or even the hour. Should we start that new tee project this week even though the forecast doesn't look too good? Do we call the crew off this morning or bring them in? Do we reschedule staff to come back in at 5 p.m. to try and get caught up with the missed mowing from this morning's rain? Should we set the irrigation to run tonight or will it rain? Should we spray wetting agent this morning because it looks like rain is inevitable? The questions related to weather are endless. How often do you guess right? How often do the Meteorologists forecast correctly?

The impact weather has on the golf business is tremendous and we don't have any control over it, so we learn to cope with it the best we can. How often have you heard the saying, "if you don't like the weather stick around a few minutes and it will change?" Well it's time for a change. One and half months of rain is enough for anyone. Let's just pray that July and August are not drought months.

Using technology to increase length and control is a story as old as golf itself.



Always read and follow label directions.

Emerald®
FUNGICIDE

Dollar spot's never seen anything like new **Emerald® fungicide**. **Emerald** is the first all-new class of fungicide chemistry for dollar spot control to be introduced in years. That's good news for superintendents battling resistance issues. **Emerald** sets a new standard for dollar spot control, offering you the first fungicide to reliably control dollar spot for three to four weeks with a single application. If you're tired of losing sleep over dollar spot, now you can rest easy knowing **Emerald** is on the job. It's the only fungicide you can really trust to consistently provide you with dependable dollar spot control for weeks at a time. It's time to make room in your fungicide rotation for the next generation of dollar spot control—**Emerald fungicide**. To learn more, visit **www.turffacts.com**. SETTING A NEW STANDARD.

BASF PROFESSIONAL TURF

We don't make the turf. We make it better.

BASF

Syringing: To Cool or Not to Cool

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

For years superintendents have combated heat stress on their putting greens by syringing. When asked to justify the practice, though, there is surprisingly little scientific data on which to base syringing practices. In fact, the data which exist reveal a disturbing lack of consensus on the value of syringing. In some cases the effectiveness of syringing may be related to other factors such as air and soil temperature or soil moisture.

What is syringing?

Syringing is a light application of water, intended to moisten the leaves but not the soil. Often used for cooling a turf, syringing can alleviate moisture stress for a short time until soil moisture can be replenished. The most obvious case might be where excessive evapotranspiration rates significantly reduce soil moisture during mid-day play: syringing might reduce the need for soil moisture until later in the day. Syringing may also reduce foliar diseases if applied in the morning to knock dew and guttation moisture from the canopy. The disease cycle can be interrupted by removing the nutrient-enriched dew and guttation moisture and by dislodging germinating fungal bodies from the leaves.

How does syringing work to cool a turf?

Syringing will create a boundary layer over the turf canopy and/or around each leaf. The boundary layer consists of moisture-saturated air. A boundary layer normally exists around each leaf assuming sufficient soil moisture and transpiration is present, though syringing can increase thickness of the boundary layer.

Water is a remarkable molecule. One of its many unique properties is its high specific heat, that is, the amount of energy required to increase water's heat. For water it's simple: it takes 1 calorie of energy to heat 1 gram of water 1 degree Celsius. Potentially such a boundary layer can work either by absorbing heat from the leaf or by absorbing heat from sunlight before it reaches the leaf; as the water vaporizes it transfers the heat to the atmosphere and is carried away by wind.

In reality neither mechanism may really be effective where syringing is concerned. If cool water could be applied to turf, syringing could be much more effective. However, as cool irrigation water is propelled into the atmosphere before falling on the turf, the small water droplets begin to equilibrate with the air temperature. In terms of enhancing the boundary layer, the thickness of the boundary layer is often dictated by wind movement and relative humidity—the greater the wind speed and the lower the humidity, the thinner the boundary layer.

What do the data show?

As far back as 1965 researchers showed irrigation applied to a tomato field decreased air temperatures just above soil level by as much as 18°F (Van Den Brink and Carolus, 1965). That same year, Hawes (1965) showed syringing lowered turf canopy temperature 7°F within two minutes of syringing, but canopy temperatures resumed presyringing temperatures within 15 to 30 minutes.

One of the standard turf syringing references was published a year later, titled "Effects of air movement and syringing on microclimate of bentgrass turf" (Duff and Beard, 1966). The authors conducted two field experiments, both primarily designed to document the effect of wind speed on turf temperature. In the second

experiment, syringing was added as a variable. The turf was a 'Toronto' creeping bentgrass maintained at 0.25 inch height (time has seen the demise of both Toronto bentgrass and the 0.25 inch greens mowing height). Turf was syringed at 12 p.m., with air and turf mat layer temperatures recorded at 30 minute intervals during the day over a three day period. Ambient air temperatures ranged from 67°F to a high of 78°F. With a 4 mph wind, mat temperatures were as much as 10°F below the air temperature; at 0 mph wind speed there was little to no difference. The conclusion was that even a slight reduction in turf temperature at mid-day, for a two-hour period, could be important for turf growth and quality. Unfortunately, no data were presented to compare syringed to non-syringed turf.

A follow-up study published 20 years later has received little attention. DiPaola compared syringe rates of 0, 0.002, 0.004, 0.028, 0.055, 0.106, 0.161, and 0.216 inches on a 0.25 inch 'Penncross' putting green turf. The study was conducted on several days in both 1981 and 1982 using a well-defined experimental design. Syringing at neither 11 a.m. or 1 p.m. affected turf canopy temperatures one hour after treatment regardless of the volume of water applied. Rates of 0.055 inch water and greater did occasionally reduce turf canopy temperature within 30 minutes, but the average effect was only 0.25°F. Ambient air temperatures ranged from 90 to 99°F, quite a bit higher than the mid-70°F temperatures in the Duff and Beard study. It is possible that syringing may be more effective at temperatures below 90°F. Relative humidities were both lesser and greater in the DiPaola study compared to the Duff and Beard study making it difficult to draw any conclusions regarding humidity effects on syringing.

So When is Syringing Effective?

There is no question syringing can be an effective management practice. As long as soil moisture and transpirational cooling are not limited, syringing probably will have little effect on turf cooling. When transpirational cooling is limited, though, turf will gain heat because transpiration is the most efficient way of removing heat from the system.

Transpirational cooling slows or ceases when the plant is unable to absorb moisture from the soil because a) soil moisture is depleted, b) the turf root system is negligible, or c) the soil is saturated. The effects of soil moisture depletion should be clearly apparent: if there is no avail-

able moisture for plant uptake, the plant can't absorb water, move it through the plant (absorbing heat as it goes), and emit it into the atmosphere through its stomates. In some cases take-all patch or other root-rotting diseases reduce the effective root mass below critical levels. *Poa annua* greens are particularly susceptible because the majority of their roots are in the upper one inch of soil-sufficient moisture at 2 or 4 inch depth does the turf no good.

Occasionally soil becomes saturated with water, for example, after one or a series of heavy rainstorms. Roots cannot function without oxygen, consequently water uptake slows or stops. If temperature and/or sunlight are at sufficiently high levels, turf temperature will increase. If the temperature increase is much above 105°F or is steadily above 90°F for several days, damage or even death may occur.

Syringing when transpirational cooling is compromised can temporarily reduce heat and water-related stress, both by providing a temporary boundary layer and perhaps by getting a little water into the turf to maintain turgor (stiffness) of the leaves. Since the small amount of water applied in a syringe cycle may quickly dissipate, several syringe cycles may be needed in a single day. Syringing should not be relied upon as a long-term solution to water deficits, however; instead, get soil moisture to an optimal level as soon as possible.

What Else is Needed?

Additional data collection is needed to determine the inter-related effects of air, soil, and irrigation water temperature, relative humidity, sunlight, wind speed, turf type and mowing height, timing, and frequency. For example, the turf was mowed only every other day in the DiPaola study; daily mowing, as is currently practiced, would undoubtedly increase the water loss from the turf system. The complexity of the experiments needed to document the effect of syringing mean a scientific-based answer may be a long-time in coming. Until then, it may be best to rely on experience and gut instinct.

REFERENCES

DiPaola, J.M. 1984. Syringing effects on the canopy temperatures of bentgrass greens. Agron. J. 76:951-953.

Duff, D.T., and J.B. Beard. 1966. Effects of air movement and syringing on microclimate of bentgrass turf. Agron. J. 58:495-497.

Hawes, D.T. 1965. Studies of the growth of *Poa annua* as affected by soil temperature, and observations of soil temperature under putting green turf. M.S. thesis. Cornell Univ., Ithaca, NY.

Van Den Brink, C., and R.L. Carolus. 1965. Removal of atmospheric stresses from plants by overhead sprinkler irrigation. Mich. State Univ. Quarterly Bull. 47(3):358-363.

Chemicals, fertilizer, seed and much more!

United Horticultural Supply is your source for professionals who have the technical expertise and who can provide all the products you need to be a success in today's competitive market.

- ***Fertilizers***
- ***Soil Amendments***
- ***Micronutrients***
- ***Turf Seed***
- ***Herbicides***
- ***Fungicides***
- ***Insecticides***
- ***Plant Growth Regulators***
- ***Adjuvants***
- ***Wetting Agents***
- ***Colorants***
- ***Aquatic Products***
- ***Equipment***

Shawn Hilliard
(608) 516-4006

United
Horticultural Supply.

W W W . U H S O N L I N E . C O M

Career Turf Specialist Likes Working With Golf Course Superintendents Best

By Lori Ward Bocher

"I enjoy being around golf course superintendents. I've hired them, I've trained them, and I call on them now. I deal with them as professionals. They certainly deserve our respect. For the amount of hours they put in, dealing with the stresses and strains brought on by Mother Nature and the challenges of managing golf turf, we're here to support them."

Who is this man with so much respect for golf course superintendents? Tom Wentz, a turf products specialist for Reinders. Tom has seen a lot of action in the sales arena, from selling direct to managing other sales reps; from covering a few counties to covering the entire country. He's lived through mergers and buy-outs and corporate restructuring. And now, in the last decade of his career, he's back to doing what he loves most — working directly with golf course superintendents.

"Working in sales for as many years as I have, I've always believed that if you keep giving to others, they'll give back. If you help enough other people, you'll get the return down the road," Tom says. "For me, sales is really a service business, and I enjoy that."

Roots in farming...

So how did this farm boy from Ohio end up selling turf products? For no particular reason except that it seemed like a good choice.

Tom was raised on a farm near Wauseon in the northwest corner of Ohio. "We milked at most 30 cows, used milk cans back then," he recalls. "We also had some chickens and hogs." When the milk plant required them to put in a refrigerated bulk tank for cooling the milk, Tom's dad sold the cows.

When he graduated from Chesterfield-Dover High School in 1965, he was in the largest graduating class in the school's history — 28 seniors. "I always like to mention this," Tom laughs, adding that this school merged with other small school districts the next year.

Tom went from a class of 28 to a class of thousands when he enrolled at The Ohio State University. "I started off majoring in engineering," he points out. "That lasted about a year and a half. I decided to get out of engineering and into something a little more familiar. Since I was raised on a farm, naturally the agriculture side of business appealed to me. I talked to a few of the guys who were turfgrass majors and said, 'Hey, that sounds kind of intriguing.' So I ended up majoring in agronomy and specializing in turfgrass management. Up to that point I had really never been on a golf course.

"Naturally, when I chose to major in turfgrass management I decided to get some turf background," Tom continues. "So I spent one summer at Sylvania Country Club near Toledo. That's the club where the GCSAA was founded. It does have a significant place in the history of superintendents. I worked there one summer. The next summer I worked for the Scotts Company in Marysville, Ohio. I worked in the research department, in herbicide screening.

"After my two summer experiences, one as an assistant superintendent and one working for Scotts in research, I elected in my last quarter at Ohio State to really get into the sales field. That intrigued me the most of all," Tom relates. So when he graduated in December of 1969, he interviewed with several companies in both agriculture and turf and ended up taking a sales position with Agway, an ag-based co-op that recently had started to sell turf products.

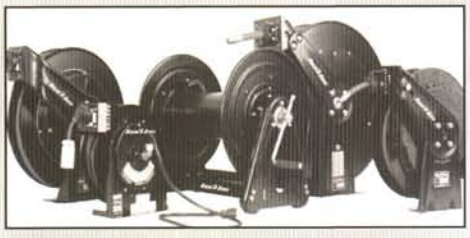
But not so fast. This was 1969 and Uncle Sam had dibs on Tom first. "The Vietnam War was still going strong and they had instituted a lottery system for the draft based on your birth date," Tom explains. "I remember the evening when they were drawing the numbers. I ended up with Number 26, so my odds of being drafted were high. I had already accepted the job with Agway at that time. I told my future boss that I'd enlist in some reserve unit so I'd only have to be gone six months of active duty and then serve five and one-half years as a reservist."

Tom moved out to Syracuse, New York, in January of 1970 and started looking around. The Army, Navy and Air Force Reserve units were all filled. "The only one left was the Marines Corps, so I ended up becoming a Marine," Tom says. "I had six months of active duty with training at Parris Island (South Carolina) and Camp

Place water precisely when and where you want it.

EAGLE™ rotors provide consistent, uniform coverage and offer versatility for any challenge regardless of soil type or water use.

PAR+ES™ controllers are easy to use, provide multiple schedule operation and are upgradeable.



Rain Bird hose reels make watering with hoses faster, safer and more efficient.

RAIN BIRD.

J.D. Huseboe 920-420-3980
Tom Rasmussen 414-313-5244

Reinders is the Proud Supplier of Turf Equipment to the Milwaukee Brewers and Green Bay Packers

www.reinders.com

Reinders

Solutions & Supplies for the Green Industry

MILWAUKEE (262) 786-3306 13400 Watertown Plank Road, (800) 785-3306, Elm Grove
WAUKESHA (262) 524-0200 W239 N390 Pewaukee Road (Hwy. J)
KENOSHA (262) 857-3306 20830A 75th Street (Hwy. 50), Bristol
MADISON (608) 244-0200 4217 Nakoosa Trail
APPLETON (920) 788-0200 900 Randolph Drive, Little Chute
STEVENS POINT (715) 342-3600 3510 Post Road (Hwy. 54 & 51), Plover