

tently in the range of 9 to 10 feet. A target speed range of 7 to 8 feet was easily achieved by mowing at 0.2 to 0.218-inch.

Maintenance of putting green speed within a very narrow range is an exercise in futility. Speed can vary significantly and unpredictably with time of day and weather. There is a pronounced trend for speeds to increase as the season progresses. As an example, over a 3-year period speeds averaged 9.4 feet in May and increased to 10.5 feet in October even though the greens were consistently mowed at 0.156-inch.

Significant (> 0.5 foot) temporary increases in putting green speeds for member-guest days and tournaments are best achieved

with double cutting of the greens. Other practices such as rolling are less reliable when it comes to significantly increasing green speed. The impact of all these practices on putting green speed decreases with increasing heights of cut. Even at a mowing height of 0.156-inch and green speeds of around 9 feet the increases in green speed may be more illusionary than real.

There are numerous costs that arise with the maintenance of fast greens. Mowing at 0.125-inch or less curtails tiller production and root growth. Thin grass cover enhances speed, but fast greens are much more prone to damage from traffic, favoring invasion by *Poa annua*, quite possibly leading to the need for a *Poa* control pro-

gram and frequent overseeding or even regrassing. With reduced root growth, irrigation practices may have to be modified and hand watering instituted. Frequent, light sand topdressing is required to prevent scalping. Algae invasion is almost assured, triggering control measures.

Given these added costs arising from maintenance of fast greens and seemingly ever declining golf course maintenance budgets, perhaps the time has come for at least some superintendents to sit down with club members or customers and have a frank discussion about what costs of meeting their expectations for fast putting greens does to maintenance budgets and the cost of a round of golf. 🌱

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Learning to Use Natural/Organic Fertilizers

By Dr. Doug Soldat, Dept. of Soil Science, University of Wisconsin-Madison

Natural/organic fertilizers have been relegated to a niche market in golf turf management since synthetic fertilizers became widely available post-World War II. However, resurgence in the use of natural/organic fertilizers is probable given the volatility of the prices of synthetic fertilizers and the developing “green movement” in the US and beyond. For example, a bill likely to be passed by the WI legislature this legislative session will ban P applications to turfgrass unless a need is indicated by a soil test. However, the bill will likely contain an exemption for biosolids (like Milorganite) or manure-based organic fertilizers. That means if your soil test P levels are high, a natural/organic fertilizer will be your only legal option for applying P. Because turf managers will almost certainly use more organic fertilizers in the future, I have decided to share what I have learned from my research and others about using organic fertilizers to get the best results.

The most obvious observation is that one pound of N from an inorganic fertilizer never produces the same result as the same-sized application of an organic fertilizer. Figure 1 illustrates the effect nicely. Each point on the figure represents the visual color rating of a plot where half was fertilized with an inorganic fertilizer and the other with the same rate using an organic fertilizer. Notice that when the color rating is 7.8 with inorganic fertilizer, the rating is around 7.5 for the organic fertilizer side. These data were collected and analyzed by Dr. Wayne Kussow.

The explanation for the findings described above is shown in Figure

2. This figure shows the percent of N in a widely used natural/organic fertilizer that is converted to plant available N over a period of 40 days at two different temperatures. As you can see, even with soil temperatures at 90°F for 40 days, only half of the N in the organic fertilizer was converted to plant available forms.

At a more reasonable temperature, only a quarter of the N became plant available. This indicates that 2-4 times more natural/organic fertilizer would need to be applied to equal the response from an inorganic fertilizer. This is not a new concept to farmers, who only consider 30% of the total N in manure

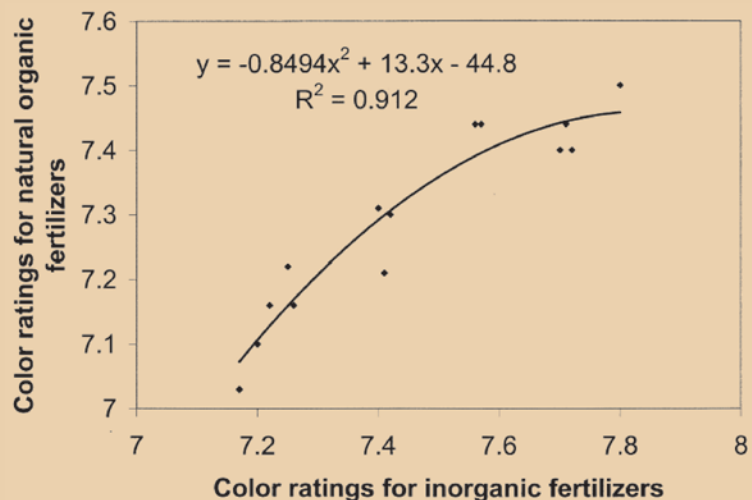


Figure 1. Color ratings for turfgrass fertilized with inorganic fertilizers are always greater than when organic fertilizers are used.

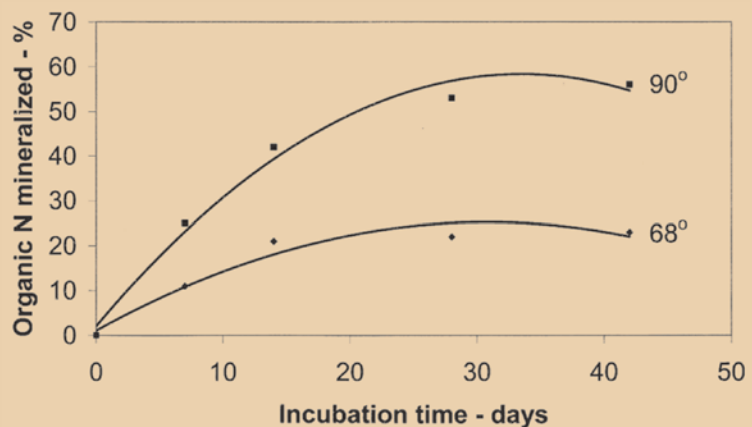


Figure 2. The amount of N converted to a plant-available form over time at either room temperature or 90 F. Even when soil temperatures are 90 F for forty straight days, this widely used organic fertilizer only relinquished roughly half of the N that was applied to the turf. This data was collected and graphed by Dr. Wayne Kussow.

to be plant available in the first season, and 5% of the total is assumed to become available in the second season. If a farmer wants his corn crop to receive 160 lbs N/A, he will apply manure at a rate of 533 lbs N/A. Why shouldn't we make the same assumptions for natural/organic turf fertilizers?

Finally, all natural/organic fertilizers are not created equal. I used to think that the color response differences from one organic fertilizer to the next were impossible to predict and was related to the particular quality of the manure or biosolids used to make the fertilizer. However, the results from a natural/organic research trial this summer really caught my eye. The predictive value was staring me in the face: the soluble N content of the natural/organic fertilizer listed right on the label. The label of natural/organic fertilizers are often ignored because they usually contain 100% insoluble N. However, in this study we used natural/organic fertilizers with a fairly wide range of soluble N contents. As you can see in Figure 3, the higher the proportion of soluble N, the quicker and greater the color response is to the application. In fact, for most of the season, the fertilizer with a nearly 50-50 mix of soluble and insoluble fertilizer performed similarly to the Scotts Turf Builder fertilizer. Milorganite contains 10 - 15% soluble N, and out performed the two fertilizer without any soluble N. If you want to apply a natural/organic fertilizer in spring or fall, having an appreciable soluble N content will provide a quicker green-up than a 100% insoluble N product.

As legislative mandates and the public desire for organic everything continues to increase the use of natural/organic fertilizers for golf management, keep these points in mind.

1. To get a similar response, you will need to apply organic fertilizers at nitrogen rates at least double what you would normally consider for an

inorganic fertilizer application.

2. For quicker green up and probably more efficient use of N, use a natural/organic fertilizer that

contains some proportion of soluble N. This is especially important for applications made in the spring and the fall.

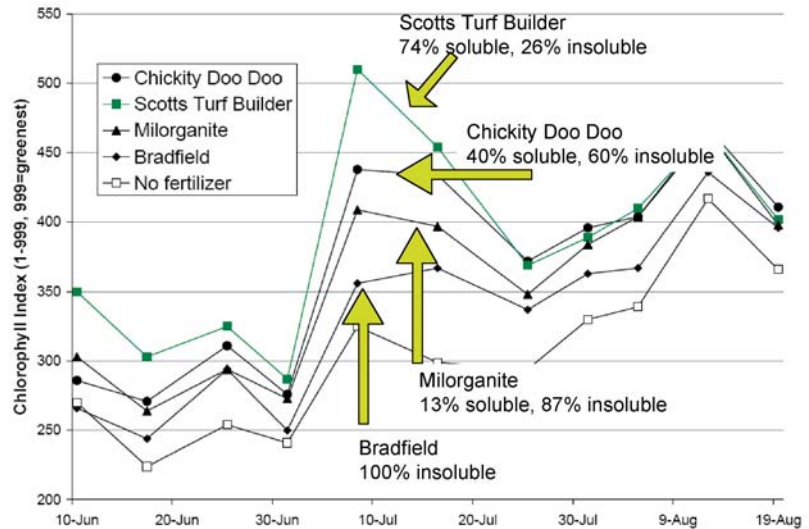


Figure 3. The amount of soluble N in natural/organic fertilizers gives an indication of how quickly the a greening response will occur. All of these fertilizers were applied at 1 lb N/M on June 5 and July 1, 2008.

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Unseasonable Greetings

By Bob Vavrek, Senior Agronomist, USGA Green Section

On Santa's golf course the transition from fall to winter is always accompanied by a consistent, gradual decrease in temperatures. Once the turf fully hardens off, a deep, fluffy layer of snow insulates and protects the playing surfaces until spring. The white snow on the greens is akin to rich whipped cream on top of your hot chocolate as you sit by the fire and dream about sugar plums, the early arrival of a mild spring, full memberships, and record rounds of golf next season.

Then the phone rings and it's abruptly back to reality from your daydream. The crew needs to salt the parking lot and entrance to the clubhouse immediately, if not sooner, because the temperature just dropped nearly 50 degrees during the past 12 hours. To make matters worse, the dreamy whipped cream snow cover that the golf course accumulated during the past few weeks has melted and frozen into a solid sheet of ice. Instead of concern regarding the potential turf damage caused by the toboggans, sleds, and snowmobiles; you now shift your concern to keeping the figure skaters and hockey players off your Seth Raynor punchbowl green.

Circle December 14th on your turf calendars. A fast moving cold front races across the north central tier of states. Temperatures across Wisconsin that plummeted overnight from an unseasonable 50 degrees to a frigid 4 degrees are nothing to joke about, especially when rain and warm temperatures melted nearly all of the heavy snow cover just prior to the drop in temperature. Standing water and slush had very little opportunity to drain off low areas of the course before freezing. This long-winded description of an extreme weather event can be summarized to turf managers in two words: crown hydration.

The upper Midwest experienced a similar, though less severe, sequence of weather events last winter during late January. As a result, numerous courses were affected by winterkill across low lying, poorly drained areas of greens and fairways where water pooled before freezing. The recovery from turf damage was agonizingly slow due to an unusually cool spring.

What can you do? Going out today and applying black sand or Milorganite to melt the ice cover will not minimize any turf damage that accompanied the December weather. On the other hand, applying a darkening agent across dense ice cover on greens wouldn't hurt if you anticipate heavy snowfall in the immediate future that could prevent this early ice accumulation from melting



Dye used on a putting green as a darkening agent to melt ice pack.

before spring. Then again, the Grinch might say that you can't kill grass that is already dead; so why risk frostbite and the chances of causing additional mechanical damage to crunchy turf by a knee jerk reaction to remove ice in mid-December. It's a tough call. Will December ice melt or will it remain intact for the 70 to 90 days needed to cause injury to *Poa annua*?

Documentation and communication are always worth the effort. Every turf manager should have a digital camera. Today would be a good time to bundle up and take pictures of ice cover on turf, especially areas of greens and fairways that have a history of being affected by winter injury. Should winterkill appear next spring, compare the pattern of damage to the pattern of ice accumulation seen on the December photos. The memory of a night's severe weather will fade over time, more so if the current ice cover melts or is covered by snow. Photos documenting or at least strongly suggesting the cause and effect of rapid ice formation and turf damage may provide the foundation for rebuilding or re-grading problem greens in the future.

Even Scrooge ended on a positive note. Research indicates that cool season grasses will have the maximum potential to withstand low temperature stress during early winter and that levels of winter hardiness will decrease over time. Consequently, healthy turf has a better chance of surviving a severe thaw/freeze event during mid-December versus mid-March. We can hope for the best...and what better time to have hope than during the Christmas season. 🌱

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Happy? New Year

By **Jacob Schneider**, Assistant Superintendent, Blackhawk Country Club

Call me overdramatic, but in exactly two weeks, my life will change forever. I've never been this nervous about the New Year, but this year is different. Usually New Year's Eve is just a good excuse to get together with friends, enjoy a few beverages, and act as if I won't regret those few beverages the next day. However, come 12:00 AM on January 1, 2009, I'll officially become the assistant golf course superintendent at Blackhawk Country Club, and I'm not sure if it can't come soon enough or if it's coming too soon.

It's the holiday season, and I shouldn't be worrying. The golf season is done for the year, and seven days from now, I'll be opening presents, spending some quality time with the family, and stuffing myself full of sugar cookies, fudge, spritz cookies, homemade caramels, chocolate-covered pretzels...well, you get the idea. All of my Christmas shopping is done, and I managed to avoid the insanity of the Madison malls by buying all but one present online. Come December 24, I'll have almost three weeks off due to unused vacation days from this year and a trip to Mexico with the missus shortly after the New Year. No worries, right?

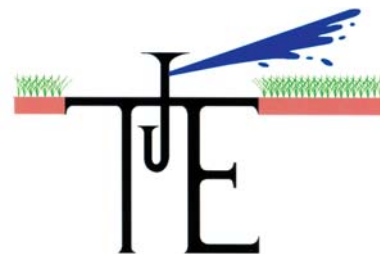
Wrong, I am worried. Although assistant superintendent sure does sound a lot better than *second* assistant superintendent and the accompanying pay raise will be nice, I'm worried about the additional responsibilities that will come with this new role. Truth be told, it's been pretty easy taking orders from one or two people since I was a scrawny teenager ten years ago. Soon, I'll be the one giving the orders to fifteen or so employees. Besides that, there will be diseases to diagnose, irrigation breaks, economic issues, and members to deal with. My palms get a little sweaty just thinking about it.

I'd like to think that I've done everything possible to prepare myself for this new role. I've worked hard under the tutelage of two of Wisconsin's best superintendents, in Scott Schaller and Monroe Miller. I was able to obtain a first-class education at UW-Madison under the guidance of Drs. Kussow and Stier. Six-and-a-half years of school should count for something, right? And, I've had a year as a full-timer at Blackhawk to learn some of the nuances of the irrigation system and to familiarize myself with spraying. Besides all of that, I'll be working with what is, in my opinion, one of the best, most-experienced crews in the state. On paper, it's a perfect situation, but I'm still worried.

All of the preparation and experience in the world won't mean squat if I'm not able to keep the course looking as great as it always has. If only Monroe hadn't set such high standards for Chad and me...

At this point, you're probably thinking that I'm a "glass is half empty" type of guy. Well, I'm not. Truth be told, I'm ten times more excited than I am worried about January 1. I guess that I like a good challenge. Besides, everything that I've done over the past couple of years has been to prepare myself for this new role. Plus, I'm sure that almost all of you had the same worries when you first became an assistant or, better yet, a superintendent, and for the most part, you're no worse for the wear. Soon, I'll be able to implement some of the ideas about course maintenance and people management that I've accumulated in school and on the job, and to me, that's exciting.

The only person that I can control for sure after January 1 is myself, and there's no doubt that I'm going to work as hard and as smart as I can to get Blackhawk looking as good as it ever has. I can't help but be excited. Hopefully, with a little luck and a whole lot of determination, I'll be worrying about my first day as a superintendent in a couple of years. 🌱



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Wee One Foundation: History and Update

By **Rodney Johnson**, Certified Golf Course Superintendent, Pine Hills Country Club

On behalf of The Wee One Foundation Board of Directors thanks to *The Grass Roots* for the opportunity to update the members of the Wee One Foundation and also in some cases introduce the Wee One Foundation.

Wayne Otto, CGCS will be remembered as the long time and highly respected golf course superintendent at Ozaukee Country Club. He was a good friend to all in the golf industry and a very close friend to many. After more than 4

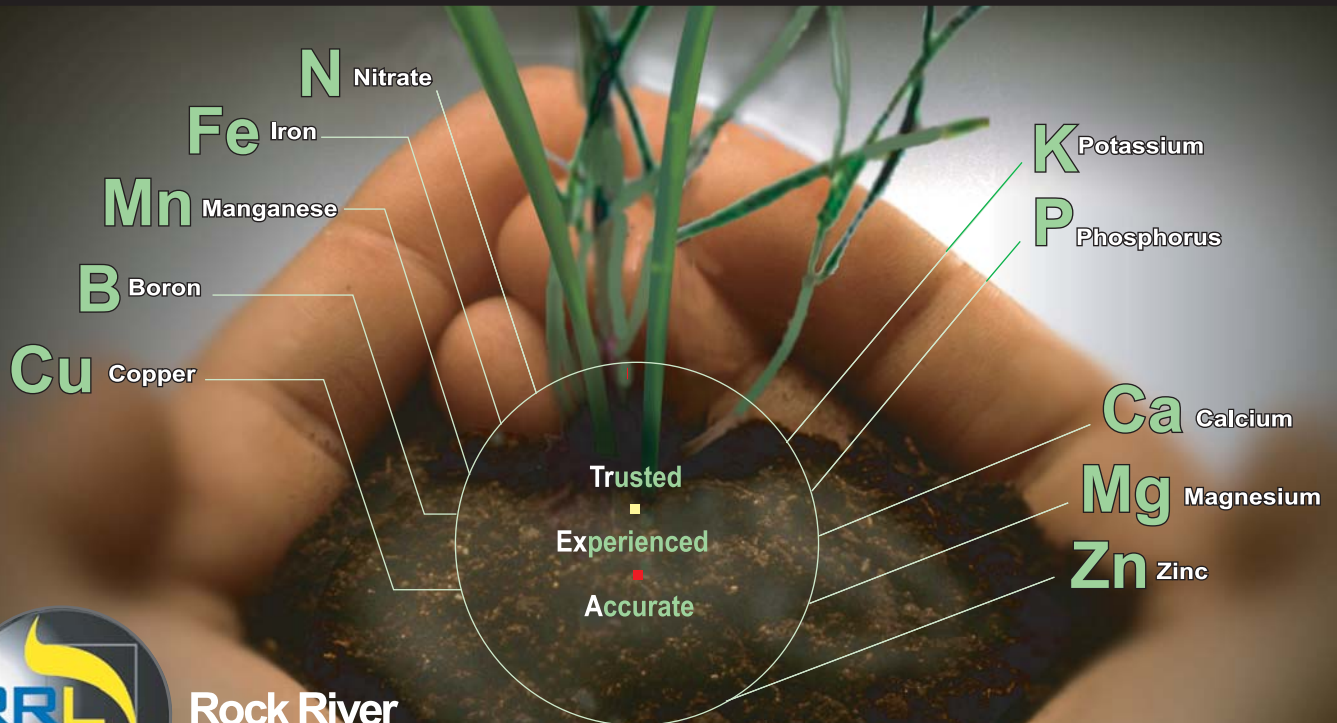


The Wee One, Wayne Otto, CGCS 1939-2004

years since his passing my fingers struggle to tap out words to describe the admiration felt by so many. The Wee One Foundation is a tribute to Wayne and his seemly never ending willingness to befriend and help anyone.

Wayne was diagnosed with pancreatic cancer in June of 2004. We were shocked and dismayed by the grim news for such an apparently healthy person just beginning to enjoy retirement and starting a second career as a turf consultant.

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Joe Sell putts out on Pine Hills 4th Green with Todd Marten, Todd Fregien and Brad Marks watching. Hole 5 is in the background.



Rick Weiterman studies the next hole while Kristopher Pinkerton and Steve Schmidt talk strategy.



Pine Hills Country Club's 8th Hole with the clubhouse above.



Andy Devinger, Ed Devinger Jr, John Feiner, Bruce Hanson, Ed Devinger Sr and Mark Hjortness on Pine Hills 4th green.

Pancreatic cancer has an incredibly small survival rate. It is referred to as a silent killer that goes undetected until usually at a stage when treatment options are limited and have a low success rate.

The Wee One Foundation had humble beginnings with 6-8 guys gathered for lunch at Conejitas. Conejitas is a not so stylish but very authentic Mexican restaurant at 6th and Virginia in Milwaukee. It was Wayne's favorite and a favorite of many golf course superintendents who even know the place exists and venture there. Conejitas serves the best enchiladas in the world on paper plates. Ask for sour cream and you are likely to be called a gringo. The initial focus of the Wee One Foundation, before it was a foundation was Wayne and his needs.

A golf outing to raise funds to help Wayne in his fight against pancreatic cancer was organized. Knowing the low success rates of any available treatments in the United States, Wayne had sought alternative experimental treatments in Germany. Obviously those treatments were not covered by insurance.

We learned that as a group with a very popular cause we can be very good at raising funds but unfortunately the harsh reality is we are not capable of beating disease.

A good friend of the group and GCSAA past-president, Bill Roberts said to me "you know these things are going to keep happening". The fact that these things are going to keep happening and have happened is exactly why the Wee One Foundation was officially formed - has continued - and grows.

The name of the foundation was chosen from one of those great Wayne Otto stories that just happens to coincide with a Scottish caddy story. Wayne, Danny Quast, Stan Zontec, and Patrick O'Brien were on a golf trip to Scotland. While negotiating bets before teeing off the caddies were consulted on their opinions on the possibilities. One of the caddies whom I am sure Wayne was already on a friendly first name basis stated bluntly "My monies on the Wee One"

The Wee One Foundation is inspired by the many fond memories of Wayne. The Wee One Foundation has been favorably blessed by the IRS with 501C3 tax status allowing dues and donations to be deductible.

The Wee One Foundation now exists to lend support to others in the golf industry that are faced with financial burdens brought on by catastrophic illness or injury to themselves or their dependents. Through the generous support of many all tolled from that first

meeting at Conejitas we have gifted more than \$230,000. This is real money to real people at a time when they really need it. This is quite an accomplishment for a group formed less than 5 years ago.

Wee One Foundation has gifted cash with no strings attached to individuals in Wisconsin, Michigan, Iowa, Illinois, Kansas, North Carolina, Virginia, and Arizona. Our business is full of individuals with tremendous self pride who feel they can work things out on their own. We operate under the radar so to speak and have a policy of not publicly using the names and problems of the individuals helped. We have gifted cash to superintendents, assistant superintendents, dependents of superintendents, and industry reps as well.

Far too many in this business are uninsured or underinsured. Even with adequate insurance the financial burden of a major illness or injury is overwhelming. The Wee One is a friend in the business. Our gifting of cash has helped get people through some tough times. We are not the able to solve all problems or cure disease but the Wee One has been a friend to lessen the load so to speak.

Our sources of income continue to be Industry donations - annual individual memberships - and net funds

from the annual golf outing. The 6th annual fundraiser is scheduled for Monday, September 21, 2009 at Pine Hills in Sheboygan and hopefully we will have a great turnout and great weather again. I will continue to host the golf outing as long as allowed and as long as it continues to be viable popular site. Last years golf outing drew 180 players, a large but still manageable group. The field will be "maxed-out" at that number so plan on entering in a timely manner.

If you haven't, consider playing in the golf outing. We have had a great run with growing participation each year. 180 players seem like a lot and it is but we use a selective drive/alternate shot format that keeps play moving along. It is a casual laid back day with an 11 AM shotgun to allow for travel. Lunch is served on the golf course at a Brat Stand and a Taco Stand. I've been told some play in the event just for the Tacos.

Industry support of the Wee One Foundation has been incredible. Industry support in the form of tee sign donations at the 2008 golf outing alone was more than \$16,000. Thank-you for your generosity and we'll be in touch for this year.

Those of you who have attended the golf outing know that we have some real nice golf and raffle prizes.

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