

Water Management-

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What is soil moisture?

Soil moisture is the amount of water present in the soil. Water is held in three different zones in the soil: gravimetric, capillary, and hygroscopic. Gravimetric water is water in the soil pores that moves freely due to gravity. Capillary water is water held close enough to soil particles, so that it does not move due to gravity. Plants remove capillary water from the soil. Hygroscopic water is water held so closely to the soil particles that neither gravity nor plants can move the water. The point between the gravimetric and capillary stages is referred to as the field capacity point. The point between the capillary and hygroscopic stages is referred to as the wilting point.

How do you determine the field capacity and wilting point?

The scientific way to determine the field capacity and wilting point involves subjecting several soil samples to tests

with lab equipment. The approximate field capacity and wilting point can be determined using your soil moisture meter. Here is how you do it:

1. Saturate a patch of turf.
2. Allow the area to dry for two hours.

"The greatest value that is obtained from managing irrigation better in Minnesota is the improvement of turfgrass conditions. The PGA Tour adopted the use of soil moisture sensors about a year ago. Their objective is to improve green firmness and develop uniformity across the course."

-Aaron Johnson

3. Take a soil moisture measurement. This is your approximate field capacity point.

4. Take soil moisture readings about every four hours. For sandy soils, collect readings more frequently. For clay soils, collect readings less frequently.

5. Continue taking soil moisture measurements until you see wilt. This is the wilting point.

6. These steps should be repeated for each soil type, as every soil has a different field capacity and wilt point.

*Caution, it is best to take these measurements until severe wilt occurs, so do this in an area that can sustain damage.

What is the right amount of soil moisture for healthy turfgrass?

The "right" amount of water in the soil depends on management methods, desired conditions, and soil type. Considering the water available to a plant, capillary water, I suggest turfgrass managers initially target the 2/3 mark in capillary water. The 2/3 mark is calculated by subtracting the field capacity from the wilting point, dividing that number by 3, and then subtracting the final number from the field capacity. For example, if the wilt point of a soil is 10% and the field capacity is 25%, then the 2/3 mark is 20%. An initial optimum range of soil moisture for this soil would be 18% to 22%. It is my experience that superintendents lower their optimum value over time.

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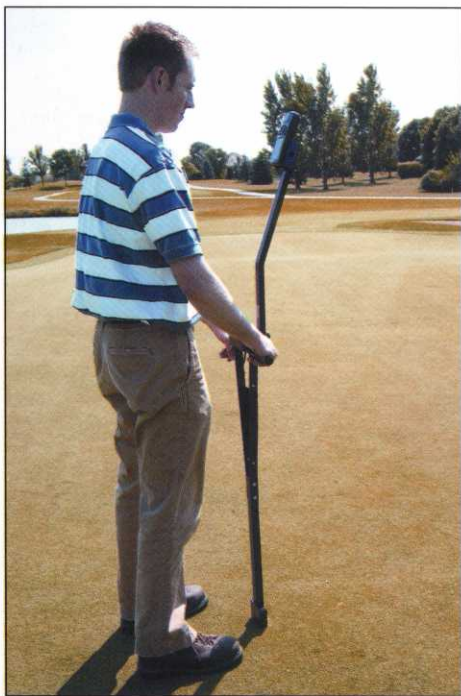
Water Management-

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What are the sensor options?

There are several soil moisture sensor options on the market and a handful of manufacturers. With some exception, one sensor or manufacturer is not better than any other sensor or manufacturer. It really comes down to how the sensor will be used and what features are desired. Soil moisture sensors fall into three general categories: wired, wireless, and portable. Which type you select depends on where you want data, how often you want data, and how you want to use that data.

Wired soil moisture sensors, such as the Irrrometer Watermark, Decagon Echo, and Spectrum Technologies WaterScout, are a sensor buried in the soil and wired back to a data logger. This is the lowest cost option, with individual sensors costing \$75 to \$250 and data loggers costing \$200 and up. The negative of wired soil moisture sensors is the wire running under ground. Not only does the sensor have to be removed for certain maintenance practices such as aeration, but also the wire. In addition, depending on the data collection method, data must be recovered in the field and it is generally not available on the internet. If you want to collect soil moisture measurements below 8 inches in the soil, wired soil moisture sensors are your best option.



Using a portable soil moisture sensor with gps unit to map soil moisture on a green.

Photo by Scott Lemke



An example of a wired soil moisture sensor and the associated data logger.

Photo courtesy Spectrum Technologies

Wireless soil moisture sensors, such as the Toro TurfGuard and UGMO system, are a sensor placed in the ground that wirelessly sends data back to a base station. Both Toro TurfGuard and UGMO Systems relay data to the internet and record temperature and salinity. These features are very valuable, but they come with a higher cost. Base systems start at \$4,000 and additional sensors start at \$1,000. These sensors must still be removed from the soil for certain maintenance practices. In addition, wireless soil moisture sensors are not intended to be placed in the soil below 8 inches.

Portable soil moisture sensors, such as the Spectrum Technologies TDR300, Dynamax TH20, and Campbell Science Hydroprobe, configure a sensor so it can be inserted from the soil surface. The data is displayed on the meter and some models store the data for future downloading to a computer. These meters are not permanently installed in the field, so maintenance issues are eliminated. However, a user is required to collect data and data over time is not as accessible. The cost for these sensors is \$750 to \$2,000.

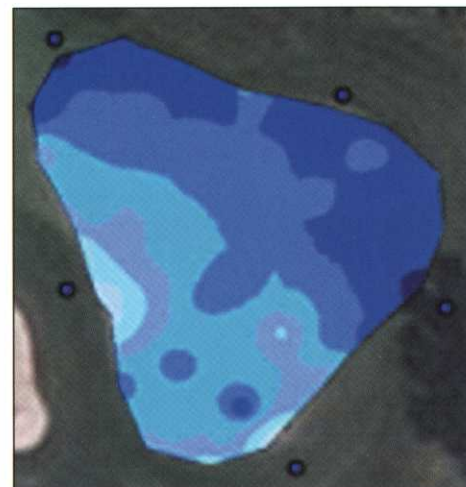
How do I use this thing?

Soil moisture data is best used for scheduling irrigation, handwatering, and labor inputs portable meters can be used. Irrigation scheduling involves using the desired low and high marks. With these, allow the soil moisture to fall to the low mark. Once it reaches the low mark, schedule the next irrigation to return the soil moisture to the high mark. Irrigating in this manner requires fine-tuning initially and slight changes over the growing season.

Handwatering with soil moisture sensors has proved to be a good training tool

and improved the consistency of greens at PGA golf tournaments. Portable soil moisture sensors are really the only sensor option for scheduling handwatering. I have seen two methods for this: (1) Someone collects soil moisture measurements and highlights areas on a map that are near the low mark. This map is used by a handwaterer to determine where to apply water. (2) The handwaterer probes greens for dry spots and immediately waters those spots until they reach the high mark.

Detecting soil moisture problems is done by mapping soil moisture. Data across a site is collected with portable soil moisture sensors. This data is downloaded into a software program, similar to attach-



A map of soil moisture on a golf green.

Photo by Aaron Johnsen

ing an e-mail. A map is produced, which can be used to detect irrigation performance issues and developing localized dry spots.

Soil moisture sensors provide another data point on water use and availability, which is useful for both reducing expenditures and improving turfgrass conditions. There are several options on the market. Choosing a sensor depends on one's budget and anticipated uses. No matter which soil moisture sensor is selected, investing in a soil moisture sensor will reap many benefits.

*I will offer to visit anyone's site with my portable soil moisture meter to demonstrate the benefits and the value that can be obtained with one.

* * * * *

(Editor's Note: Aaron Johnsen is a Professional Product Advisor with WinField Solutions and an adjunct lecturer at the University of Wisconsin - River Falls. He can be reached at arjohnsen@landolakes.com or 651.895.2601.)

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The Importance of Public Relations

By **BILL GULLICKS**
*Bellwood Oaks Golf Course
MGCSA Public Relations Chair*



Many superintendents tend to stay away from having to deal Public Relations. For me personally, public relations wasn't something that I thought about daily. That was until elected to the MGCSA Board of Directors and appointed by Paul Diegnau, our president, to be the Public Relations Committee chair for the MGCSA. Public Relations is important toward the image that we create outside of our industry and as well as within our industry. Many great things are happening daily at golf courses and the sharing of those happenings can only better our industry. We need to take Public Relations off the so called "back burner" where it is placed for a variety of reasons.

What makes PR such a scary term to many people? I think that public relations makes us step outside our comfort zone, and that is not an easy task for anyone. Having to do a presentation to a Greens Committee, Board of Directors, an owner, or an interview with the local media isn't a task that many people would volunteer for without some hesitation. Most of us would much rather be spending our time using our agronomic skills. That is what we were trained for and where our specialty lies. However, when we risk stepping outside of that comfort zone, we grow professionally. We discover things about ourselves as well as others.

What many of us don't realize is that we use PR skills daily in very simple ways. Whenever we interact with anyone outside of our crew we are using PR skills. All those daily chats with golfers on the putting green, dealing with some type of inspector or taking time to meet with a salesperson are all examples of our PR skills being put to use. Those people are developing an opinion of us and our facility with every interaction we have.

Our industry has come a long way since its beginning. Just as the agronomic part of our job has evolved, so have the many other challenges that we face. We are called out on many issues that become very sensitive to the public eye. From water usage to pesticides and fertilizers we are constantly under a watchful eye. Now more than ever we need to increase the emphasis of PR skills on a day to day basis.

This column will bring some new ideas on how we can better our PR skills in the work place. It is my goal to have topics and share stories that will be great resources for all superintendents. I welcome any topics or stories that you may wish to share. With my first month's writing under my belt I already feel a little more at ease about my own personal quest to develop and further my own public relation skills.

DeGrio, Hendrickson, Miller, Paulus Win MGCSA Assistants Spring Mixer at Eastwood Golf Club

The Minnesota Golf Course Superintendents' Association held its annual Assistants Spring Mixer at Eastwood Golf Club in Rochester on May 26. Fifty-five players teed it up on a warm day. The previous day the course received 2.5 inches of rain in 25 minutes.

Host Superintendent Jeff Minske and his staff had the course looking very nice and had the bunkers back together before we played. Eastwood is the tale of two sides. The older side has the northern feel with all the spruce trees. The new nine has the modern feel. The course had 18 original holes but a highway went through part of the nine. Jeff Gorman, PGA Professional along with his staff helped make our Assistants Mixer fun and successful.

Guest Speaker Steve Randall, GCSAA, gave valuable information to the assistants on their career advancement path. Steve ran a very interactive session with the attendees on a variety of topics. The assistants received some interesting things to think of.

The team of Charles DeGrio, Monticello CC, Craig Hendrickson, Oak Ridge CC, Charlie Miller, Goodrich GC and Gregg Paulus, The Ponds at Battle Creek won the Spring Assistants Mixer by shooting a 19-under par score of 123. Finishing in second place was the team of Tim O'Driscoll, Rochester G&CC, Eric Pearson, Rochester G&CC and Scott Turtinen, MGCSA. The fourth player came by blind draw, Larry Engwall, Brackett's Crossing CC help this team climb the scoreboard.

As always, a big thanks to the following companies who generously are sponsoring our 2010 meetings. Bayer Environmental Science, Becker Underwood, CycleWorks Golf Supply, Duinick Golf, Excel Turf & Ornamental, Hartman Companies Inc., MTI Distributing Inc., Par Aide Products Company, Precision Turf & Chemical Inc., Superior Turf Services Inc., Syngenta Professional Products, The Tessman Company and Versatile Vehicles Inc.



CHAMPIONS AT 19-UNDER-PAR

From the left: Craig Hendrickson, Oak Ridge CC, Gregg Paulus, The Ponds at Battle Creek, Charlie Miller, Goodrich GC and Charles DeGrio, Monticello CC.



THE HOST'S GROUP

Host Superintendent Jeff Minske, second from left, along with guest speaker Steve Randall, left, Randy Ryski, MTI Distributing Inc., and current MGCSA President Paul Diegnau CGCS, far right.



THE EASTWOOD GC GROUNDS STAFF was busy grooming bunkers after receiving 2.5" of rain in 25 minutes the day before the MGCSA Assistants Spring Mixer on May 26.

PHOTO BY LEIF ERICKSON

PHOTO BY LEIF ERICKSON

Musing the Minutes

By MATT MCKINNON, MGCSA Secretary



The MGCSA Board of Directors met on April 21, 2010 at Brackett's Crossing Country Club in Prior Lake.

After President Paul Diegnau, CGCS called the meeting he stated that he wrote a letter to Northern Turf Seed Council supporting their request for a grant.

Treasurer Paul Eckholm, CGCS said the MGCSA finances look good.

Arrangements Chair Tom Proshek reported that the 2011 MGCSA March Mega Seminar will now be held on March 9-10 at The Legends Club. St Cloud Country Club dropped out. Victory Links has been contacted. Ruttger's has been contacted about the Championship and Forest Hills has accepted the 2011 Research event. The 2010 meetings are all set. Proshek said last year's Fall Mixer registration was \$10 and would like to raise it to \$20. The Board approved the increase.

Executive Director Scott Turtinen reported that 2009 Tax information has been filed. The MGCSA did not owe any money for 2009 but will pay quarterly installments this year. The MGCSA March

Mega Seminar made a profit of \$1,912 with \$12,735 income and \$10,823 in expenses. Syngenta Professional Products was a major sponsor of the event. Current MGCSA membership dues totals are: Superintendents 538 paid, 68 not paid. Affiliates have 109 paid and 25 not paid. 2011 donations are at \$2,895 as of April 20. Turf Research Benefit has 21 clubs. The Northern Green Expo speakers and schedule have been finalized. GCSAA's Steve Randall (was the) featured speaker at the Assistants Spring Mixer at Eastwood GC.

Editorial Chair Brian Brown talked about *Hole Notes* and on-line possibilities vs. a printed copy.

Fundraising: Next year's Orlando hospitality event will be at Tommy Bahama's.

Human Resources: Roger Stewart, CGCS, said survey results were printed in *Hole Notes*. A new survey will be prepared and about whether *Hole Notes* be forwarded to members electronically or hard copy. Stewart will write an article on the ELGA Award.

Minnesota Turf/Government Affairs:

Eckholm talked about Water surcharge bill. Opposition killed the piece. Last year's summer sur-charge went into the general fund. It should be taken out of there and put where it was supposed to go. The bill should be re-written and not clump everyone together.

Membership: Discussion on new members. Re-class dates for SM to A members.

MTGF Report: Discussion on the three grants given by the MTGF that totaled \$65,000. Endowment fund received some money.

Scholarship: Jake Ryan gave us the 2010 Scholarship Committee. The committee is made up of two affiliates, two assistants, two Superintendents and two mechanics. Need new revenues to be able to give a turf scholarship.

Old Business: The Board discussed logo appraisal. SOP's are needed from Committee Chairs.

New Business: BMP's for pesticides, water usage and fertility. GCSAA creates templates for all states to follow. Horgan is on the GCSAA Committee. The MGCSA President's Award will be awarded at the awards banquet.

Northland CC research project: Funding is needed for turfgrass research being done at NCC. USGA is pulling current funding away. Dr. Balogh is looking for funding for 2012. Nutrient testing needs \$12-15,000 of funding.

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Overtime is Time and a Half After 40 Hours ...Right? Maybe Not Anymore

By PATRICK McGUINNESS
Zlimen & McGuiness, PLLC.

If you have been in the business for any amount of time, you know that it is impossible to avoid paying overtime to your groundskeepers and mowers. In fact, many of you may fondly remember earning overtime hours when you were younger. But now, money is tight and there is pressure to save money wherever you can. What if you no longer had to pay overtime at time and a half and you could simply continue to pay the hourly base rate for all hours worked. That may soon be a possibility due to a case that was recently handed down by the Federal Court for the Northern District of Illinois.

Background: The Fair Labor Standards Act (FLSA) was passed in 1938 with the intent of providing better paying, safer, and increasing the number of workers in the workforce. In addition to limiting the age at which a child could start working full time, the FLSA also lays out the minimum amount an hourly worker must be paid, as well as when and how much overtime must be paid.

So when exactly must overtime be paid? After 40 hours of work in any workweek, overtime must be paid. The FLSA defines a workweek as seven consecutive 24 hour periods. There is no requirement that it is Sunday through Saturday or Saturday through Friday. It can be Tuesday through Monday or whatever other set of days a company elects to have as their "workweek". The only limitation on this is that a company cannot continually change the set "workweek" with the intent or effect of depriving employees of overtime pay. Finally, averaging the hours of employees over the course of a pay period may not be done to avoid paying overtime.

How much must be paid for overtime hours? The FLSA requires all hours worked over 40 in a workweek to be paid at base rate times 1.5, also known as time and a half. There are no requirements that overtime be paid for nights, weekends, holidays, or any other time, unless the hours worked on those days are greater than the allotted 40 hours for that workweek. Overtime pay for those situations can be agreed upon between an employer and employee, but the law does not

require it.

There is also no requirement for "doubletime" pay under the FLSA. However, once again, an employer and employee can agree to a "doubletime" pay arrangement for certain types or hours of work.

Can an employee waive overtime pay? No. Regardless of whether an employee wants, or doesn't want overtime, they must be paid overtime. The law functions this way to prevent the mistreatment of workers that may not know their rights, or may be so desperate for the work that they will agree to almost anything.

What about all of the exemptions to overtime pay? There are many exemptions to the FLSA's overtime requirements, encompassing positions such as insurance adjusters, outside sales employees, executives, and many more categories. Golf course grounds workers generally must be paid overtime due to the nature of the work they do. What the government considers blue collar work is rarely exempt from overtime.

The Seasonal Exemption

There is also an exemption from the FLSA's overtime pay requirements which is called the Seasonal Exemption. This is an exemption from the minimum wage and overtime provisions of the FLSA for "any employee employed by an establishment which is an amusement or recreational establishment, if (A) it does not operate for more than seven months in any calendar year, or (B) during the preceding calendar year, its average receipts for any six months of such year were not more than 33-1/3 per centum of its average receipts for the other six months of such year." This exemption has often been used by establishments such as amusement parks that shut down for the winter.

Because the language of the statute refers to receipts for any six months (not necessarily consecutive months), the monthly average based on total receipts for the six individual months in which the receipts were smallest, should be tested against the monthly average for six individual months when the receipts were largest to determine whether this test is

met. Confusing, I know.

Recently, the Department of Labor sued the Rich Harvest Farms Country Club, just outside of Aurora, Illinois, for failing to pay overtime to their employees. Rich Harvest argued that they fell under the seasonal exemption and was successful in getting the suit dismissed. This means that they no longer will be required to pay overtime to their employees (provided the Department of Labor does not appeal the case and win).

Does this mean your golf course no longer needs to pay overtime? Not necessarily. Other courts in other parts of the country have held the opposite from this case, and a lot of it may depend on what other facilities your club provides. According to some cases, golf courses within a resort do not qualify because the purpose of the course is to attract people to stay at the hotel. What this means is that some courses will fall under the category of a "recreational establishment", while others will not.

As with many laws, there is rarely a cut and dried answer here. Whether or not you have to pay overtime under the FLSA or may be exempt as a recreational establishment will depend on the unique circumstances of each course.

If this area of the law interests you and you would like to talk more about it, feel free to contact me to tell about your course!

This article provides general information on employment & overtime matters and should not be relied upon as legal advice. A qualified attorney must analyze all relevant facts and apply the applicable law to any matter before legal advice can be given. If you would like more information regarding Employee Compensation and overtime issues, please contact Patrick McGuiness at 651-206-3203.

(Editor's Note: Patrick McGuiness is one of the founding partners of Zlimen & McGuiness, PLLC. His law practice focuses on assisting members of the Green Industry. He is also part owner of One Call Property Care, LLC a Minneapolis landscaping & property management company. He can be reached at pmcguiness@zmtorneys.com

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