



Hole Notes

The official publication of the MGCSA

Water: an unlimited resource?

Vol. 48, No. 8 September 2014

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**October 7
Shoot Out
Minnesota Horse and Hunt Club
Host Mike Manthey**

**October 13
The Wee One
Brackett's Crossing Country Club
Host Tom Proscheck**

**November 19
Assistant's Professional Forum
Pinz Bowling Woodbury
Host Casey Andrus**

**December 3
Advanced Agronomic Forum
Medina Golf and Country Club
Host Erin McManus**

**January 15
Beer and Pretzel Social
Northern Green Expo
Hosts 27 Hole Challenge Affiliates**



How big Tim Fleegel?



EDITOR

DAVE KAZMIERCZAK, CGCS
DAVE@PRESTWICK.COMCASTBIZ.NET

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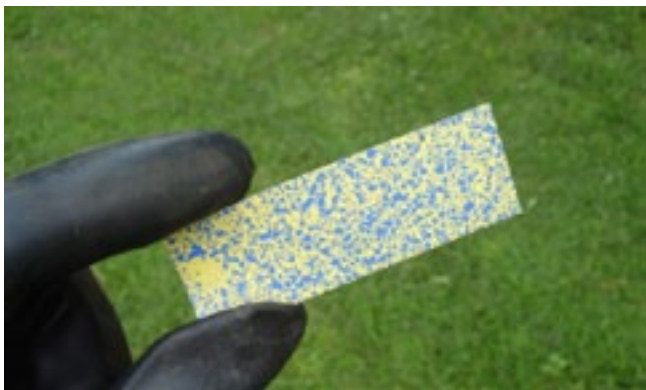
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Covered?

Hole Notes (ISSN 108-27994) is digitally published monthly except bimonthly in November/December and January/February by the Minnesota Golf Course Superintendents' Association, 10050 204th Street North, Forest Lake, MN 55025. Jack MacKenzie CGCS publisher. Please send any address changes, articles for publication, advertising and concerns to jack@mgcsa.org.



Presidential Perspective

by Roger Stewart, CGCS Superintendent at TPC Twin Cities

I finally got around to reading a backlog of trade magazines this morning and while there were the usual compliment of technical articles and advertisements, there was also the section in GCM that lists all the member job changes that have come in since the last issue. I always seem to peruse these to see if there is anyone I know or if there has been a change at a course I may be familiar with. I have worked in four different states and have around 20 or so former assistants who are scattered around the country and I like to follow their careers, so this is a great way to do it. This exercise reminded me how quickly things can change and you need to keep up.

It is really a demonstration of the importance of staying connected. Everyone now relies on social media to stay connected and I guess if you are on Facebook or Twitter, you can pretty much accomplish that most of

the time. I noticed a friend of mine from the east coast who lost his job a couple years ago and has been looking ever since finally landed a superintendent position all the way across the country. I noticed that a superintendent (who I don't know) who was at a former TPC facility landed the job at Davenport C.C. and realized that a few other people from TPC facilities didn't get that same job. I doubt I would have known those things even if I was on Facebook, and nothing like this usually shows up on Twitter.

What does that mean? Well for me, it means that there is still more to networking than social media. Staying connected in this profession yields so many opportunities in addition to job opportunities. Then I realized why the BOD of MGCSA is so adamant about providing those opportunities for face to face networking for our members. When the economic downturn started in 2008, everyone hunkered down,

didn't leave their course for anything, lost funding for education and thus networking, and just plain did everything to keep their job. We, as a profession, and MGCSA as a professional organization, lost something when that happened. We have been able to resurrect the networking, camaraderie and personal exchange of information. But like the golf business itself, we never got it all back. Take some time this fall, now that the hustle and bustle of the season is behind us and get together with other members at the Wee One event or the Fall Shoot and reconnect, recharge and participate in something we are all proud to be a member of, MGCSA.

Here's a topic that face to face networking could yield some really valuable information about, the Minimum Wage increases. Next year, in August, the minimum wage goes to \$9.00/hour. I recently surveyed a number of clubs in the metro area about their current situation and what their plans were for the impending minimum wage. Most responded that they would

be raising their entry level pay to meet the minimum wage and most likely be raising the wages of at least their laborer staff a commensurate amount. Most of the respondents indicated a .50 raise would be what they anticipated.

Good information. But if I would have been able to speak to them face to face or in a discussion with several of them at the same time, I might also have learned what the estimated impact to their budget would be, whether they thought they might not be able to have the same number on their staff next year, or whether they thought that the increased wage would provide better, more stable seasonal workers, or how they felt about now being a minimum wage employer. Instead, I got raw data which was very helpful and in some cases revealing, but didn't provide some of the details I could have gotten out of a conversation at a MGCSA event. For me, there is still great value in the MGCSA "get togethers".

Just sayin'



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FUNGICIDE CHEMISTRIES AND MODES OF ACTION

This seminar will provide a review of the major classes of fungicides used for disease control on golf courses. Mode of action, systemicity and resistance development will be a focus for the talk. The best uses for the control of key diseases will also be covered. This seminar will also highlight new fungicide products and how they can be best used.

POA ANNUAL DISEASES – BROWN RING PATCH, ANTHRACNOSE, & SUMMER PATCH

This seminar will highlight information on three key diseases of annual bluegrass used as golf course turf: brown ring (*Waitea*) patch,

anthracnose, and summer patch. Identification, timing and key cultural and chemical controls will be discussed. Integrated management of these diseases in seasonal programs will be featured.

DISEASE MANAGEMENT TIPS FOR HARD TO CONTROL DISEASES

This seminar will highlight information on “hard to control” and emerging diseases of golf course turf. Tips and tricks for the control of fairy ring, fungicide-resistant dollar spot, and bacterial diseases will be highlighted. Cultural and chemical controls will be discussed, including the development of seasonal control programs.

BIOGRAPHY

Frank Wong, Ph.D., is a technical specialist and part of the Green Solutions Team at Bayer Environmental Science. He is based in the Washington, D.C. area and focuses on the Mid Atlantic and Northeastern U.S. Prior to joining Bayer, Dr. Wong was an associate professor and turf disease specialist at the University of California, Riverside, from 2001-2011, where he had statewide research and extension responsibilities. He earned a B.S. in Biochemistry from the University of California, Davis and a Ph.D. in Plant Pathology from Cornell University. Dr. Wong currently has national responsibilities for technical service for Bayer’s fungicide portfolio for turf grass use. He has been an



Dr. Frank Wong

associate editor for Plant Disease and editor in chief of Plant Disease Management Reports. In addition to participation in many state and regional turfgrass conferences around the United States, he has also lectured internationally on turfgrass disease identification and management. He has been a GCSAA faculty member since 2003 and is an instructor for the warm season turf disease course.

USGA RULES OF GOLF AND HOW THEY AFFECT COURSE MAINTENANCE

Golf course maintenance and the Rules of Golf should work hand-in-hand with each other. However, they can be at odds with each other if not handled properly. This session will offer superintendents and administrators a look at

how to improve day-to-day maintenance procedures (e.g. course signage, hazard marking, etc.) while also affording the golfer a proper field to play on.

BIOGRAPHY

Tyler Riggan is a graduate of The University of Tennessee and has 11 years of experience

in golf administration with The Golf Association of Philadelphia, The Pennsylvania Golf Association, and United States Golf Association. Riggan is currently Director, Regional Affairs - Great Lakes Region (representing 7 states).

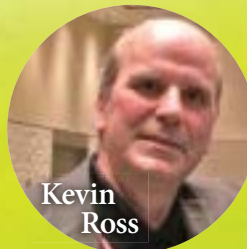


Tyler Riggan

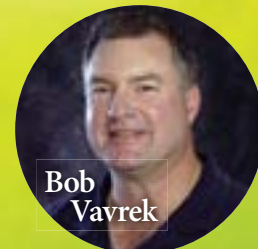
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In Bounds

by Jack MacKenzie, CGCS

On your behalf, over the last two and one half years I have

had the opportunity to pursue and develop positive relationships with influential individuals who work at our state agencies in the Departments of Natural Resources, Agriculture, Pollution Control and the Bureau of Water and Soil Resources. Prior to these partnerships our industry was synonymous with mineral mining in northern Minnesota and viewed as a spoiler of finite natural resources, simply for a recreational pastime.

Heads lifted when told the “good economic story of golf”; the 2.4 billion dollars of economic impact and the 35,000 jobs maintained annually by our industry, the 75,000 acres of green space, wildlife and pollinator habitat, the responsible attitude adopted when utilizing water, applying nutrients and plant protectants and the willingness to partner with public entities for the betterment of our community at large. Not only do heads lift, but also they

spin real quickly once the positives of golf are touted.

It has been hard work, but the Environmental Stewardship Committee, led under the direction of Scottie Hines CGCS and Superintendent at Windsong Farm, has continued to creep forward with baby steps as they have learned that nothing moves fast when working with state agencies. It has been an education, with each department having their own special requests for consideration.

The catalyst of everyone’s concern is water; its distribution, allocation and availability. It has been said often that the land of 10,000 lakes couldn’t possibly have issues with water, yet we do, because much of the water that drops from the sky eventually runs off our state to the Hudson Bay in the north, the Atlantic Ocean to the east or the Gulf of Mexico via the Mississippi River. We have clean water, the best in the country. Yet without the ability to create a reservoir system, the state agencies have taken the attitude that everyone must take care of and not

waste what we have stored in aquifers or whatever flows from our land.

Both the Departments of Pollution Control and Agriculture are very concerned that golf courses are in compliance with state regulations. In an effort to maintain standards and educate golf turf managers, the MDA has gone so far as create a new industry specific “Golf Course Regulatory Compliance Bulletin” which has been in the last three issues of Hole Notes Magazine. They have also requested an assessment be completed to, “take the pulse of the golf industry in Minnesota.” They want to be educated on water, nutrient and pesticide use, soil types, plant communities and physical logistics of a large turf management operation.

They want a study that has never been done in our state before...until now.

Sam Bauer, UMN Extension Turf Educator and member of the ESC, has been hard at work creating a web-based module to be completed by a pilot group of courses to develop a

baseline of the industry. It is thought that in time the survey would be available to all state courses for their input. This material, combined with existing and current scientific studies, will help satisfy and assure the MDA and the public that golf course superintendents are true professionals, environmental stewards, and that golf

courses are not toxic waste sites.

The Department of Natural Resources is primarily concerned with water availability whether underground or surface.

With the reduction of water levels in many lakes across our state and frequent light flow in streams, the DNR was mandated by the legislature two years ago to develop a strategic plan to better manage our water. The MGCSA’s presence at the table during these discussions has made us important partners in the decisions which will be made in the future, however there are a few you must consider today to protect your projected water source. This is especially important if you are a surface water user.

“Forewarned, forearmed; to be prepared is half the victory.”

Surface users, or approximately 20 percent of all courses in the state, must evaluate their water supplies because the current law states that once a specific low level is attained or limited stream flow achieved, the water use permits will be pulled for everyone (except consumption and energy) as there soon won't be water to pull. However, there are measures that can be taken to soften this suspension.

In this issue of Hole Notes are four case studies of courses that have reduced or eliminated their use of fresh water. Superstar environmental stewards, they simply opened their minds to the possibilities and chose, with the help of agencies and communities, a different method of capturing and containing water for irrigation. Read about their successes and consider any change you can make at your club to be proactive.

Consider local businesses that use water to cool their plants or wash their products. Could you capture and reuse this resource? What about a low capacity well, under 10,000 gallons per day or 1 million gallons a year so you don't need a permit, to be used to irrigate your greens and tees

when, not if, surface water permits are suspended. Combined with a large pond to contain stormwater, your course may never enter a crisis period.

Recently I was contacted by the Minnesota Department of Health, because they are curious as to why so few golf courses are using effluent water. They too have been prodded to do more with less water available and create alternate resources for existing industries. In the near future, you will be asked to complete a survey on effluent water use upon your course. Better think carefully about your answers, as in time there may be very few options.

“Forewarned, forearmed; to be prepared is half the victory”, a quote by Miguel de Cervantes is appropriate when contemplating our growing partnership with our state agencies. A modern day axiom would be, “Proper planning prevents poor performance.” Either way you say it, your association leaders are taking steps to protect your viability as a golf and employment destination. However, to assure your club's success, you have to become involved and begin thinking outside the box for solutions to very difficult challenges.

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contributed by Dr. Bob Milligan



occupational hazard of observing employee performance remained. Two points jumped out from those observations. First, there was great variation in performance among employees within each business. That is to be expected.

More importantly, though, there was a large variation in the level of employee performance between businesses. Employees in one cafeteria we frequented were uniform in their poor performance. By contrast every employee at the hotel we stayed at the last night was proactive in serving us and seemed to do everything perfectly and effortlessly.

Was this dramatic difference due to the quality of the employees at the two business? I think not! Instead, my observation is that the quality of the leadership and supervision was dramatically different!

The second observation concerns how those in our group responded to poor employee performance. Many were upset and blamed the employees. This is where my occupational hazard kicked in. I started

to Banff. We stayed in six hotels/ lodges and ate at numerous restaurants and cafeterias.

Although I did a great job of not working on this vacation, the oc-

thinking about WHY the employee performance was so poor. I was thinking about what leadership had failed to do that prevented employees from performing effectively.

Those who blamed the employees were reacting to symptoms. By asking WHY, I was looking for real or root causes.

Let's return to our poor employee performance cafeteria and look specifically at the cashiers. They were mostly unenthused, slow, and often incapable of pricing meals that were not entirely routine. Clearly, the easy conclusion from observing their behavior – the symptom – is that the cashiers were lazy, unwilling to focus, and unmotivated.

Let's further analyze what I observed and suggest some possible real or root causes:

- **Motivation:** The employees are in fact lazy and do not have sufficient self-motivation to perform. (Although this is possible for individual employees, it is not likely the root cause for all of the employees.)
- **Staffing:** The recruitment and selection processes were inadequate resulting in employees who do

not possess the attributes – skills, knowledge, experience, attitudes – to succeed in this position. (Unlikely here as these are definitely entry level positions.)

- **Training:** The employees were not sufficiently trained in menu items, pricing policies, and customer service. (I believe this was a big part of the real or root cause.)
- **Supervision:** The employees were not being provided clarity – “chalking the field” – and feedback – positive, redirection, negative. (I am pretty certain this was a key root cause. The root cause of the poor supervision was likely lack of supervisory training.)
- **Authority:** The employees had insufficient decision-making authority to effectively make needed decisions. (I saw this as cashiers often had to wait for a supervisor to authorize a charge.)

In this example I trust you have seen the power of identifying the real or root cause of employee problems. You have also seen several of the most common root causes for employee problems.

We conclude our discussion of employee problem root causes with three amplifications to assist you in

determining employee problem root causes.

1. The Fundamental Theorem of Attribution – a key tenant of organizational behavior – holds that when we as human beings are analyzing a problem we caused, we tend to blame the problem on the situation – not on what we did. On the other hand, when we are analyzing a problem someone else created, we tend to blame the person. For employee problems, the Theorem of Attribution is a powerful force keeping supervisors and leaders from seeking real or root causes. It is easier to treat the symptom – blame the employee – than seek root causes that likely will lead back to the supervisors and leaders.

2. The conclusion that an employee problem is caused by the employee should result in some form of employee reprimand – negative feedback. After determining root causes, where the cause was not under the control of the employee, a redirection feedback would be in order. With redirection feedback we provide the employee the training, feedback, authority, clarity, etc. needed to successfully perform. As

we have often discussed, one of the easiest ways to decrease employee trust in their supervisor is to provide a negative feedback when the employee believes he or she should have received redirection feedback. Treating symptoms rather than root causes often creates this disastrous situation.

3. One word – WHY – was prevalent in our discussion of root causes. That is because the key to finding root causes is to ask WHY. Why did this problem happen? In fact a simple and effective tool for determining root cause is called “Five WHYS.” Ask WHY until one or more root causes are found. It is called “Five WHYS” because a root cause is normally found by asking WHY five or fewer times.

A concluding comment: The next time you observe an employee problem, use the Five WHYS and the process we used in the cafeteria cashier example to determine the root cause or causes of the problem. Do not act hastily and respond to symptoms.



Pre-registration closes on November 12, 2013

Advanced Turf Agronomy Forum

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Medina Golf and Country Club

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Host Superintendent: Erin McManus



Advanced turf management theories for the Golf Course Manager.

The MGCSA welcomes Dr. Dave Kopec, University of Arizona, and Dr. Bill Kreuser, University of Nebraska, to discuss the pros and cons of current cultural practices including aerification and topdressing for managing thatch. In the afternoon each will touch upon current projects they are pursuing.

This should be a great day of discussions. Register today.

<i>7:00am - 8:00am</i>	<i>Registration/Networking with assorted pastries and coffee</i>
<i>8:00am - 10:00am</i>	<i>Dr. Dave Kopec: Standard and Specialized Aerification Techniques for Thatch Management</i>
<i>10:00am - 10:15am</i>	<i>Break</i>
<i>10:15am - 12:00pm</i>	<i>Dr. Bill Kreuser: Long Term Topdressing Programs for Thatch Management with Relation to Ball Speed</i>
<i>12:00pm - 1:00pm</i>	<i>Lunch</i>
<i>1:00pm - 2:00pm</i>	<i>Dr. Dave Kopec: ET Driven Irrigation Management with Field Test Catch Techniques</i>
<i>2:00pm - 3:30pm</i>	<i>Dr. Bill Kreuser: Iron Oxide Layers in Sand Based Greens, Winter and Summer Desiccation Prevention and Recovery</i>
<i>3:30</i>	<i>Cash Bar Available</i>

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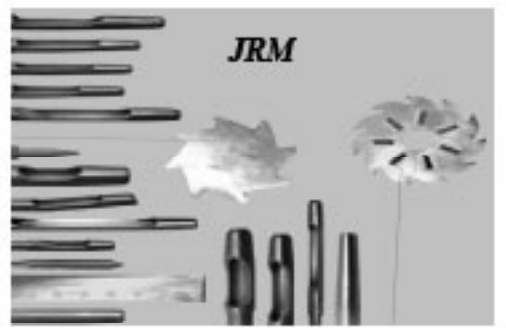
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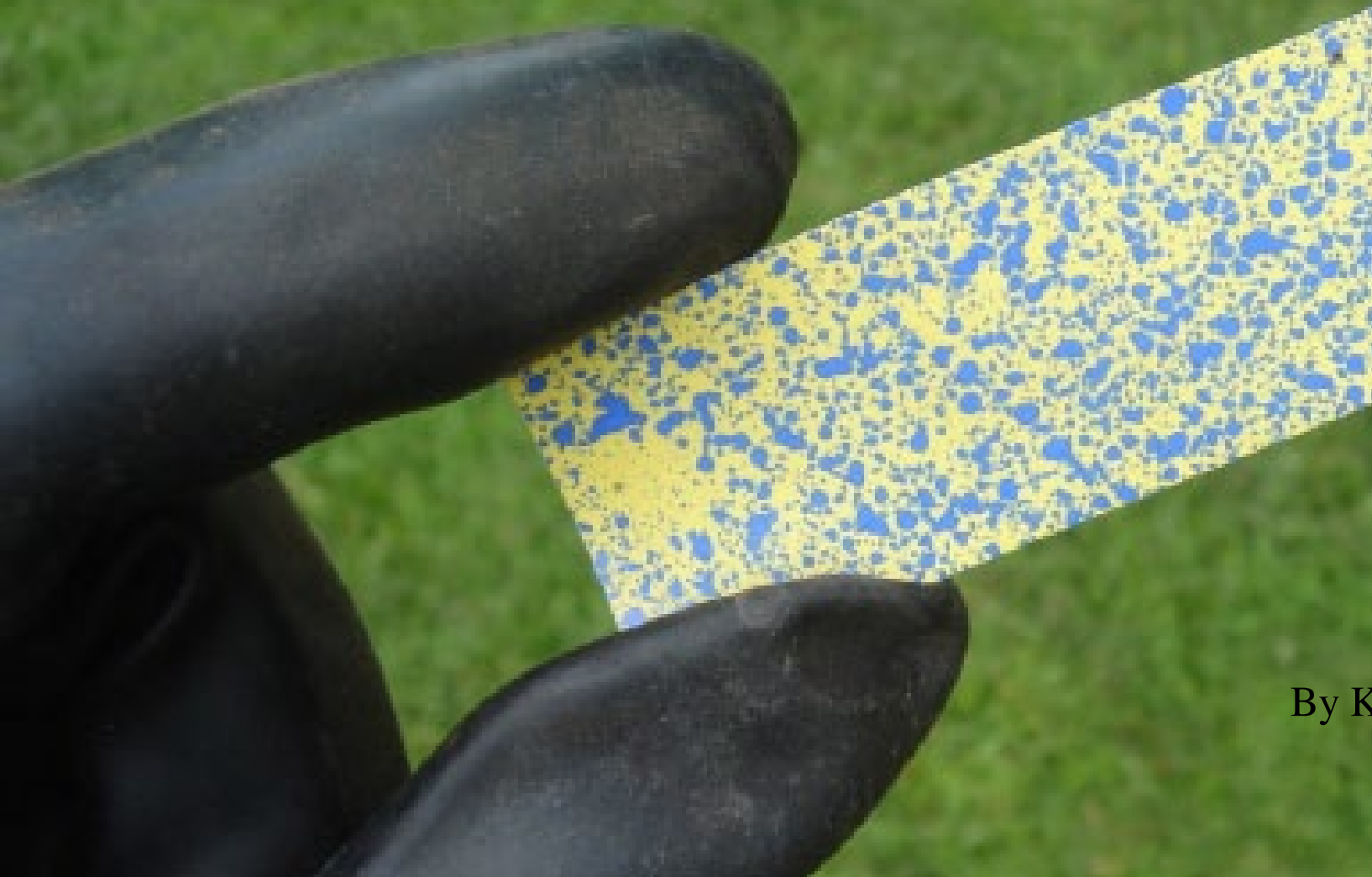
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Effective Spay Patterns, Are You R

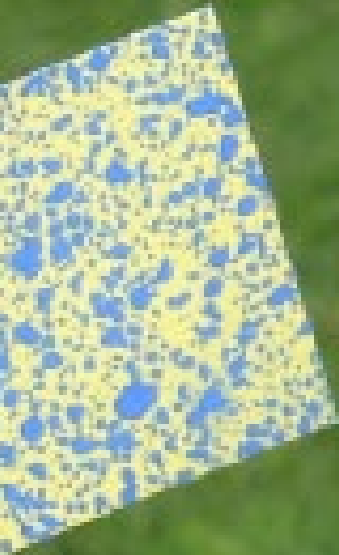


By K

Having the answer may not be a difficult as you think. Universities, chemical companies and spray nozzle manufacturers use laser or doppler equipment to analyze droplet size from different nozzles in a controlled laboratory environment. The information gathered from this equipment is

detailed, accurate and critical to the development of new technologies. However, outside the laboratory where we live, there is a big world with lots of variables and a more practical method of spray coverage measurement is necessary. This is where water sensitive paper (WSP) comes in handy.

Really Covered?



Ken Rost, Frost Services

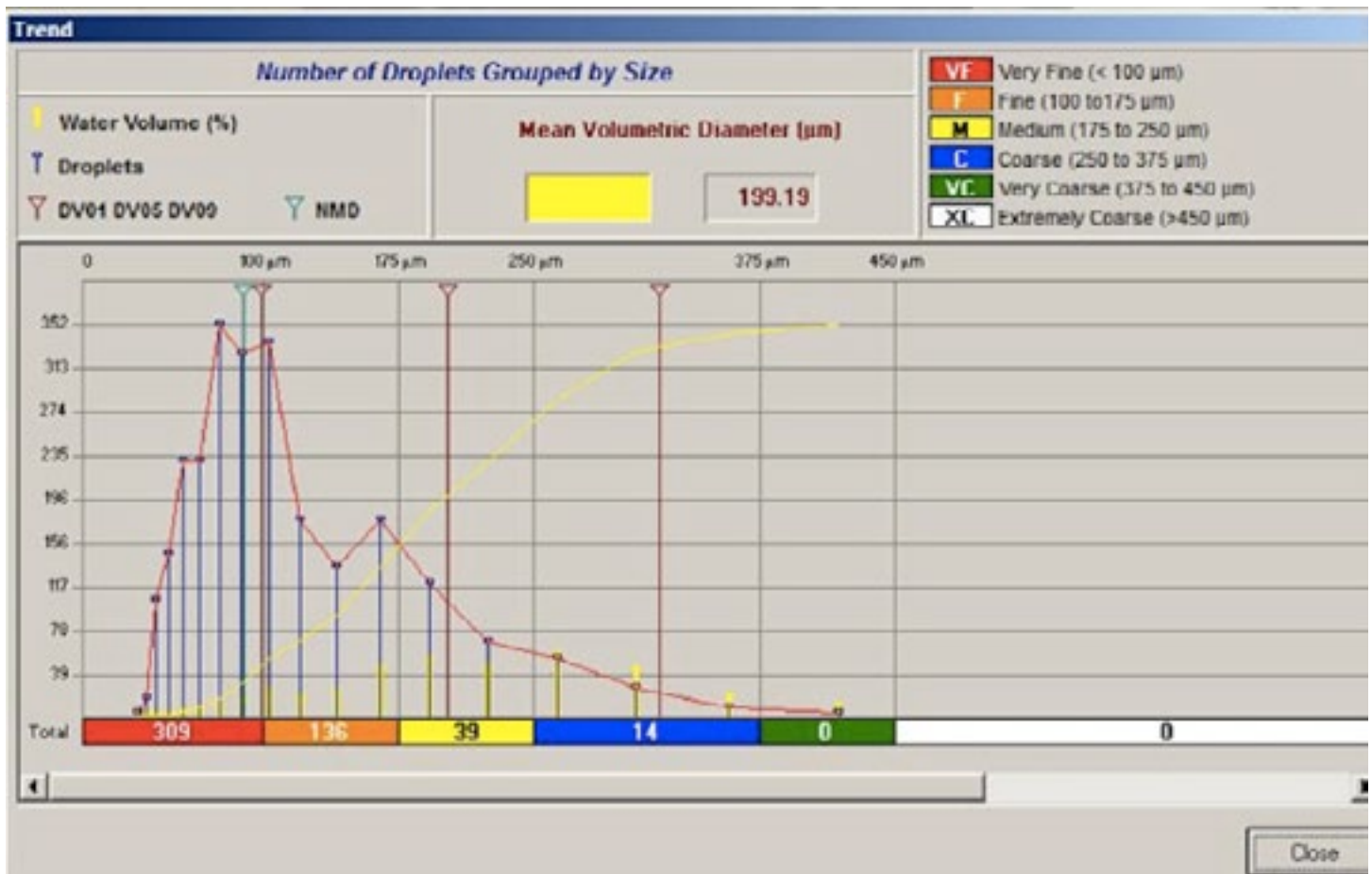
WSP is a special paper with a yellow film on one side that turns to blue color when it gets wet. It was developed by Syngenta over 30 years ago and it is widely available through spray parts suppliers. When droplets hit WSP they form a blue dot relative to the size of each droplet. This gives us an indication

of the droplet sizes that are coming out of the nozzles. The number of drops and the total blue area on the paper gives us an indication of the volume of liquid applied over a specified area. We can compare this applied volume to the rate of application from the sprayer and see how efficient the application was. We can also use WSP just to indicate the presence of droplets. An example is to check if drift is occurring in a no-spray area. Here are a few ways that WSP can be used:

Checking Droplet Size – Labels on spray products include a recommendation of droplet size. To maximize the efficacy of the product, we need to be within the range of their recommendations. We can check this by positioning the WSP flat on the ground and simply spraying over the paper with the spray boom. After the droplets dry on the paper we can look at the size of the blue dots to determine the relative droplet sizes. There is a ‘spread factor’ for the size of the blue dots that corresponds to what liquid is used. Water has a known spread factor but a full tank mix of spray product may have

another unknown spread factor. I recommend doing these tests with just water. There are two methods of determining the relative droplet sizes from the WSP. The first is to simply compare the size of the blue dots to a known standard of measured droplets. These comparison samples are usually supplied with the WSP. The second method is to scan the card and use specialized software to analyze the droplet sizes. Not everyone needs to have this software, but a professional spray consultant ([Frost Inc.](#)) should have it and be able to analyze your WSP samples.

Checking Volume Applied – The methods for checking the actual volume applied are the same as above, except that there is no comparison method and we need to use the software to analyze the volume. We also need to add the speed of the sprayer into the equation. If we know the sprayer applied rate, we can compare it to the measured applied rate on the WSP to find out how efficient the application was. Variables such as mid-air evaporation and drift prevent us from ever achieving 100% efficiency, but a good indication of relative efficiency can



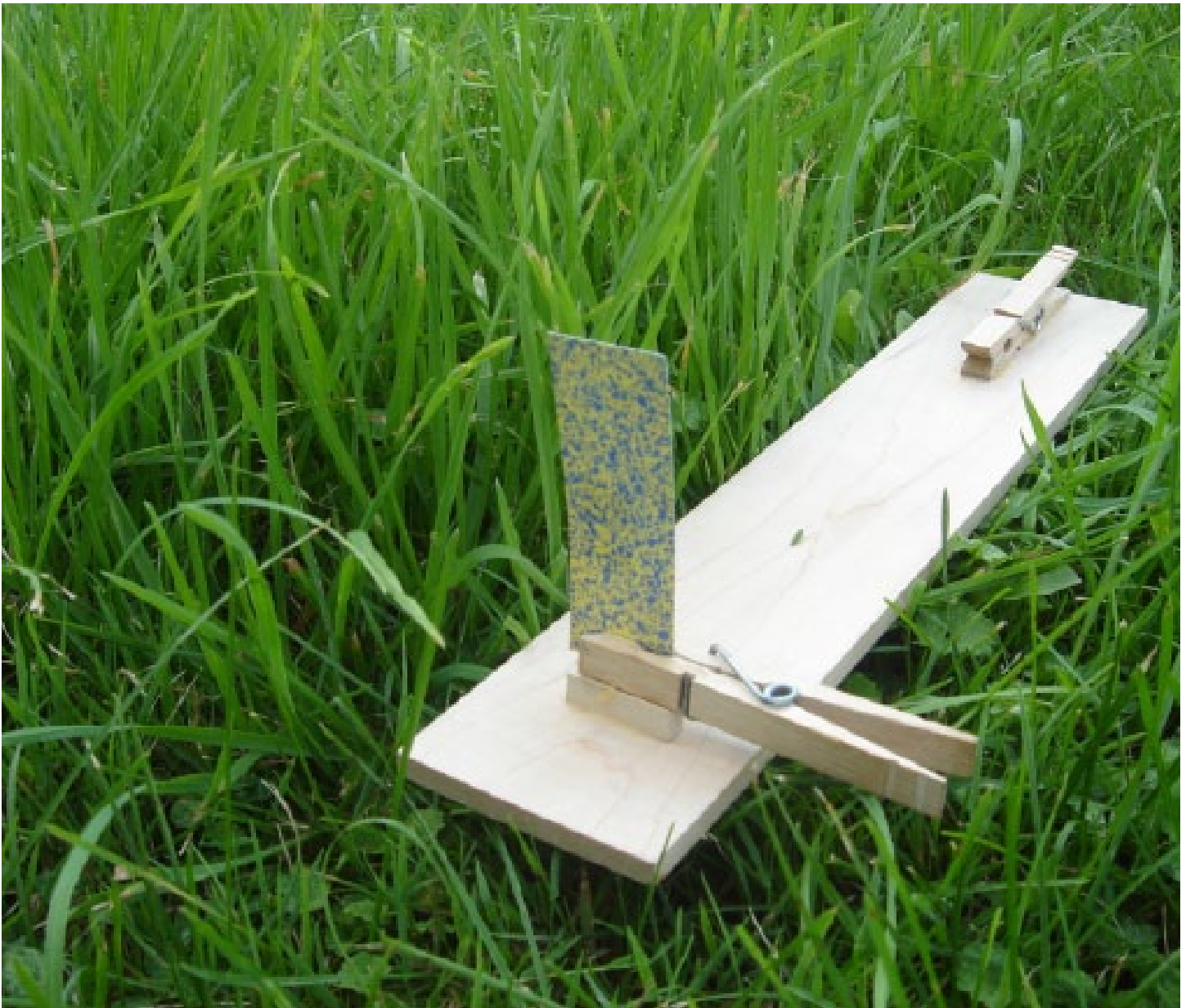
be learned from this exercise.

Checking for Drift – Everyone has neighbors and they are usually concerned about what you are spraying and if it could possibly be drifting onto their property. Besides neighbors, every spray application is completely surrounded with a no-spray zone. We need to be sure that the products we are spraying are only going on the intended spray area. We all should know this and don't need to be lectured again on all the reasons why. WSP is a great tool to test and verify that we are only applying on the intended spray area. Simply placing a WSP in a holder about 1 foot off the ground and every 10 feet along a border will indicate if any spray droplets have drifted off the intended spray area. If you are dealing with a concerned neighbor and you have controlled your drift, showing them the evidence on the WSP may put their mind at ease.

Checking for Coverage – When we talk about coverage we are referring to the ability to get as many droplets all over our intended target. The more droplets we get



on all sides of the target, the more effective the spray products are to do their work, specifically if they are contact type spray products. When we were checking for droplet size and volume, we placed the WSP flat on the ground, but in a three dimensional world, our spray targets are rarely flat on the ground. If we orient the WSP to mimic the structure of a turf grass blade, we can get a better picture of how well we are doing with our spray jobs and try different things to increase coverage. This thinking has led to multiple angled nozzles to spray forward and back as the spray boom moves over the target and it's easy



to demonstrate with WSP. Simply clip two WSP's taped back-to-back to a base and orient them vertically like a blade of grass. Align the WSP perpendicular to the direction of travel. Spray over them with a flat fan nozzle and compare the coverage on the front WSP to the back. Repeat the test using a twin-fan nozzle and you should note more coverage on the back WSP

side.

You may already feel that you have a good handle on your spray coverage and/or where your drift risks are. However if you want to gain a little more confidence and learn more about where your sprays are going, water sensitive paper is a good tool to use.

[Hypro WSP tech sheet](#)

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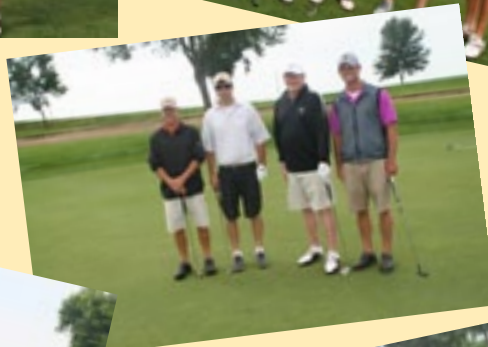
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Protecting Bees and Beneficial Insects in the MN Golf Industry

Vera Krischik, Department of Entomology, University of Minnesota
krisc001@umn.edu, 612.625.7044



Pollinators and Beneficial insects and the Golf Industry

In the February 2014 online article from the GCSAA (www.gcsaa.org/gcm-magazine/2014/february/gcm-february-2014-environmentally-friendly-golf) there is an online article on “Environmentally friendly golf: Reducing chemical use and adopting best management practices can make golf courses playable and environmentally friendly”. The article points out that managed honeybees and native pollinators can flourish on golf courses. Management of turf to remove weeds reduces the impact of systemic insecticides on any flowering weeds growing in turf. Management of pest insects on flower beds can use contact rather than systemic insecticides to protect beneficial insects and bees. Retrofitting the flower beds with plants that offer a season long display of flowers will conserve many beneficial insects that will help manage turf pests. The article goes on to discuss a research project funded by USGA on a golf course in Bethpage NY State Park that was a collaboration of Cornell University, the NY State IPM

program, and the golf course and has continued for 13 years. A manual describing these practices serves as the backbone for training personnel from 29 New York state park golf courses in a pilot implementation program. The manual has also been used by superintendents attending training sessions in New York State and at the GCSAA educational seminar on reduced chemical golf course management during the past two years. Please check out the article.

In this article, I wanted to provide some basic information on the neonicotinoid issue with bees and provide a reference for what insecticides are toxic to bees.

We Need Pollinators To Make Seed and Fruits

Honey bees and native bees, such as bumble bees, pollinate 30% of the plants that produce the vegetables, fruits, and nuts that we consume. More than 100 crops in North America require pollinators. Pollination by bees contributes over \$18 billion worth of additional crop yields. In addition, bees pollinate native plants that require seed to sustain future populations. Both native bees and managed honey bees are in decline due to habitat loss, loss of high quality pollen (protein), loss of nectar plants, pathogens, and pesticide use.

Honey bee colonies in Europe and North America have faced some difficult problems for a long time. Beekeepers have been battling the devastating effects of a parasite of bees called the Varroa mite, which was introduced into Europe in the 1970's and in the US in 1980's and is very difficult to control. Honey bees are also faced with a number of diseases and viruses that compromise their immune systems and health in general. Since WWII, with the increase in monocultures and herbicide use, there

has been a serious decrease in flowering plants that bees utilize.

Beginning in 2006 a yearly die-off of honey bee colonies occurred throughout the US. The cause of this mortality is still unknown but was coined, colony collapse disorder. Most researchers now agree that honey bee decline is due to multiple, interacting causes, including the effects of bee specific diseases and parasites, lack of floral resources that provide good bee nutrition, and lethal and sub-lethal effects of pesticides. It is known that insecticide use in general can take a toll on honey bees and native bees when the bees are exposed to high enough concentrations. However, it is unclear how much the neonicotinyl insecticides contribute to honey bee poor health or even mortality. Recent research indicates that bees exposed to relatively low doses of neonicotinyl insecticides (10 ppb) may have suppressed immune systems, which makes them more susceptible to some bee diseases. Research also shows that neonicotinoids can have multiple sublethal effects on bees, including disorientation, effects on learning and a reduction in pollen collection and storage. More research needs to be conducted to determine residue levels that bees are exposed to in agricultural and urban environments.

Neonicotinoid Insecticides May Harm Pollinators

- The class of neonicotinoids insecticides (imidacloprid, dinotefuran, clothianidin, and thiamethoxam) are highly toxic to honey bees and other pollinators. They are systemic, meaning that they are taken up by a plant's vascular system and expressed through pollen, nectar and guttation droplets on leaf tips from which bees forage and drink.
- Research has shown that sublethal exposure to neonicotinoid insecticides causes significant problems for bee health, including disruptions in

mobility, navigation, feeding, foraging, memory, learning, and overall hive activity.

- Pesticides are also suspected to affect honey bees' immune systems, making them more vulnerable to parasites and other pathogens.
- Seed treated crops usually demonstrate less than 7.6 ppb in pollen or nectar. However, field treated crops and landscape plants use higher amounts of neonicotinoid insecticides.
- In landscape and greenhouses higher rates of neonicotinoids are used compared to seed treatments. A canola and corn seed seed is coated with 0.11 mg and 0.625 mg of imidacloprid. A 3 gallon pot in the nursery can have 300 mg applied according to the label. Some landscape applications of neonicotinoids can be reapplied many times.

Recent Regulatory Issues

- For two years starting in January 2014, the Commissioner of the European Union restricted the use of 3 neonicotinoids (clothianidin, imidacloprid and thiametoxam) for seed treatment, soil application and foliar treatment on plants that are attractive to bees. Also, new practices must be developed to reduce clouds of neonicotinyl dusk at planting of seed- treated crops..
- EPA granted a conditional registration to the neonicotinoid clothianidin in 2003 without a required field study on pollinators on the basis that this study would soon be received. However, this requirement has not been met. EPA continues to allow the use of clothianidin nine years after acknowledging that it had insufficient basis for allowing its use.
- In March 2012, commercial beekeepers from Minnesota and other states and environmental organizations filed an emergency legal petition with EPA to suspend use of clothianidin, asserting that EPA failed to fol-

low its own regulations by allowing clothianidin to be used without the required adequate pollinator field study.

Bees and Beneficial Insects are Important in Integrated Pest Management (IPM)

Introduction to IPM

The conservation of beneficial insects, that includes bees, insect predators, parasitic wasps, and butterflies, is an essential part of Integrated Pest management (IPM) programs. IPM promotes multiple tactics to manage pests and to suppress the population size below levels that will damage the plant. IPM tactics include cultural control, sanitation, biological control, using insecticides friendly to beneficial insects, and finally the use of conventional insecticides. IPM recognizes that the few remaining pest insects will support beneficial predators and parasitic wasps. When scouting plants for pest insects, check for populations of both pest and beneficial insects, such as lady beetles and bees. If beneficial insects are present, wait to spray insecticides to see if the beneficial insects control the pest insects or use specific insecticides that only target the pest insects. Use spot treatments of contact insecticides, not systemic insecticides. Flowers that open after systemic insecticides are sprayed can contain the insecticide residue for months. Flowers that open after spraying with contact insecticides do not contain insecticide residue and leaves are toxic to pest insects for 1-3 weeks only. Use contact insecticides, such as bifenthrin, cyfluthrin, azadirachtin, and spinosad.

There are few systemic insecticides, while there are many systemic herbicides and fungicides. Systemic, neonicotinoid insecticides are the most

widely used insecticides in the world, due to their low mammalian toxicity and the ability of the insecticide to move systemically from soil into the entire plant, including pollen and nectar. Treatment methods include seed treatments, foliar sprays, soil (granular and liquid) applications, trunk drenches, and trunk-injections. Flowers that open after systemic insecticides are sprayed can contain the insecticide residue for many months in both the leaves and pollen and nectar.

There are six neonicotinoid active ingredients, imidacloprid, dinotefuran, thiamethoxam, and clothianidin, of which acetamiprid and thiacloprid are the least toxic to bees. There is another systemic insecticide, fipronil that is used around structures that is also toxic to bees. You will find these active ingredients listed on the insecticide label in small print.

Neonicotinoid systemic insecticides have been implicated in the decline of bees, butterflies, and other beneficial insects. The European Union banned the use of neonicotinoid insecticides from 2014-2016 on crops and plants that bee's visit. The concern was the residue in pollen and nectar and their negative effects on survival and foraging behavior of bees. The neonicotinyl class of insecticides is highly toxic to bees and kills bees at around 180 ppb in flower nectar or pollen. However, sublethal doses of neonicotinyl insecticide starting around 10 ppb, cause bees to lose navigation and foraging skills. The longevity and amount of the neonicotinoid in the pollen and nectar will depend on application method, concentration applied, and binding capacity of the soil.

The use of neonicotinyl insecticides as trunk injections and soil drenches for ash trees is important to slow the spread of the exotic, invasive Emerald Ash Borer and other invasive pests. As bees do not collect ash pollen in quantities, the risk to bee pollinators is low. In contrast, the use of neo-

nicotinyl insecticides on flowering garden plants, shrubs and trees, including linden and basswood trees can kill bees and beneficial insects that utilize the flowers for pollen and nectar. It is wise to avoid using systemic neonicotinyl insecticides on flowering plants that bees visit regularly. Instead use spot treatments of contact insecticides.

For managing Japanese beetles and other white grub species a new insecticide called chlorantraniliprole is available under different trade names; for consumers the product is called Grub-Ex and for professional applicators the product is called Acelepryn. It has very low toxicity to bees and is reported to work very well in soil for white grubs. On foliage, Japanese beetles adults can be killed with spot treatments of bifenthrin on the adult beetles when they aggregate on foliage in early morning and evening; other formulations may contain neonicotinoid insecticides (see the table below under imidacloprid). For instance, the professional formulation Triple Crown, Discus, and Allectus are combinations of a neonicotinoid and pyrethroid insecticide.

The new EPA bee icon and bee advisory box on insecticide labels:



EPA has added new language to neonicotinyl insecticide products (imidacloprid, dinotefuran, thiamethoxam, and clothianidin) to protect bees and other insect pollinators. The bee icon above signals that the pesticide has potential to harm bees. The language in the new bee advisory box explains application restrictions to protect bees:

PROTECTION OF POLLINATORS APPLICATION RESTRICTIONS EXIST FOR THIS PRODUCT BECAUSE OF RISK TO BEES AND OTHER INSECT POLLINATORS. FOLLOW APPLICATION RESTRICTIONS FOUND IN THE DIRECTIONS FOR USE

Bee and other insect pollinators can be exposed to the product from:

1. Direct contact during foliar application or contact with residues on plant surfaces after foliar application.
2. Ingestion of residues in nectar and pollen when the pesticide is applied as a seed treatment, soil, tree injection, as well as foliar application.

When using this product take steps to:

1. Minimize exposure when bees are foraging on pollinator attractive plants around the application site.
2. Minimize drift of this product onto beehives or to off-site pollinator attractive habitat. Drift of this product onto beehives can result in bee kills.

Install native and heirloom plants that bee's visit

Avoid treating flowering plants that bees utilize with systemic, neonicotinoids. Bees prefer to feed on native plants and heirloom "garden" varieties of plants. Some perennials very attractive to bees are: Potentilla, pussy willows, all flowering crabapple, apple, pear, hawthorn, and serviceberry, Delphinium, Campanula, Liatris blazing star, Echinacea cone flower, Se-

dum, Penstemon, Digitalis foxglove, honeysuckle, Salvia nemorsa May-night, Salvia verticillata Purple Rain, Nepeta catnip and catmint, Sedum, Angelica gigas Korean Angelica, Solidago goldenrod, New England aster, Verbascum, Scabious, Viburnum, and Rosa rugosa hybrids. Some annual bedding plants very attractive to bees are fennel, basal, dill, rosemary, thyme, lavender, heather, Salvia, Tithonia Mexican sunflower, Asclepias Mexican tropical, Buddleia, Gaillardia, Ganzania, Verbena, Portulaca, Lantana, Lobelia, Ageratum, Alyssum, Verbena bonariensis, Echinops globe thistle, and snapdragons.

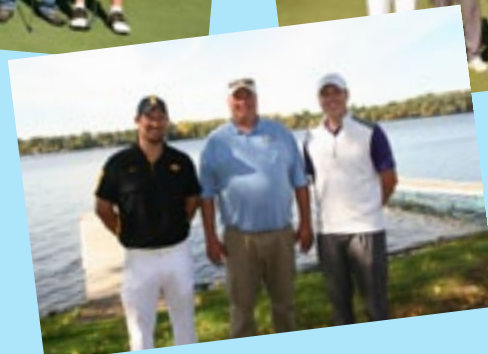
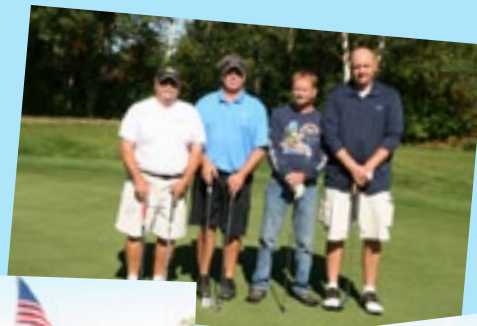
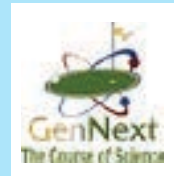
There are numerous lists identifying plants attractive to bees. Some lists only contain native plants, while other lists contain heirloom “garden” varieties of plants:

1. The University of MN bee lab bulletin, Plants for Minnesota bees
http://www.beelab.umn.edu/prod/groups/cfans/@pub/@cfans/@bees/documents/article/cfans_article_451478.pdf
2. Pollinator plants Midwest region
http://www.xerces.org/wp-content/uploads/2014/09/MidwestPlantList_web.pdf
3. CUES: Pollinator Conservation, plants for bees and other pollinators www.entomology.umn.edu/cues/pollinators/plants.html
4. CUES: Poster, Save the bees plant flowers and trees
<http://www.entomology.umn.edu/cues/pollinators/plantsposter.pdf>
5. CUES: Bulletin, Plants for butterfly gardening
www.extension.umn.edu/garden/yard-garden/landscaping/butterfly-gardening/
6. CUES: bulletin, Plants that provide pollen and nectar for beneficial insects www.entomology.umn.edu/cues/gervais/keytable.htm

Toxicity of turf, landscape, and nursery insecticides to bees						
Chemical class	Examples of common names	Examples of trade names	Toxicity			
			Non	Low	Mod	High
Carbamates	carbaryl, methomyl	Sevin, Lannate				x
Neonicotinoids	Imidacloprid (I) thiamethoxam (T) clothianidin (C) dinotefuran (D) imid+bifenthrin (I,B)	Nurrserly/landscape Merit, Marathon, Flagship, Meridian, Arena, Aloft, Safari, Allectus, Field crops Gaucho (I), Poncho (C), Cruiser(T) (seed treatments), Admire/Provado (I), Venom (C), Platinum (T)				x
	Acetamiprid (A), thiacloprid (T)	Tristar (A), Assail (A), Calypso (T)		x		
Organophosphates	acephate, chlorpyrifos, dimethoate, malathion, phosmet	Orthene, Dursban/Lorsban, Dimethoate, Malathion, Imidan				x
Pyrethroids	bifenthrin, cyfluthrin, fenpropathrin, lambda- cyhalothrin, permethrin	Attain/Talstar, Tempo, Decathalon, Tame, Scimitar, Astro				x
Botanical	pyrethrum/pyrethrins azadirachtin, neem oil	Pyganic, Azatin, Ornazin, Triact				x
Insect growth regulators	diflubenzuron tebufenozide	Adept, Dimilin, Confirm			x	
	azadirachtin buprofezin pyriproxyfen	Aza-Direct, Azatin, Ornazin, Talus Distance		x		
	novaluron	Pedestal				x
	cyromazine	Citation				x
Juvenile hormone	s-kinoprene	Enstar II		x		
Diamides	chlorantraniliprole	Acelypryn		x	x	
Macrocyclic lactones	abamectin/ivermectin, emamectin benzoate	Avid, Tree-Age				x
Miticides	acequinocyl, extoxazole, fenpyroximate, fenbutatin-oxide	Shuttle, TetraSan, Akari, Vendex	x			
	clofentezine, hexythiazox	Ovation, Hexagon		x	x	
	bifenazate	Floramite			x	
	pyridaben	Sanmite				x
Spinosyns	spinosad	Conserve/Entrust, less toxic dried		x		
Tetronic acids	spiromesifen	Judo, Kontos				
GABA-gated chloride channel	fipronil	Fipronil, Termidor,				x
Pyridine carboxamide	flonicamid	Aria, sucking mouthparts only	x			
Pyridine azomethines	pymetrozine	Endeavor, sucking mouthparts only	x			
Other insecticides	<i>Bacillus thuringiensis</i> ,	Bt/Dipel, Carpovirusine/Cyd-X	x			
	flonicamid, potassium salts of fatty acids	Aria, M-Pede		x		
	horticultural mineral oils	Monterey			x	

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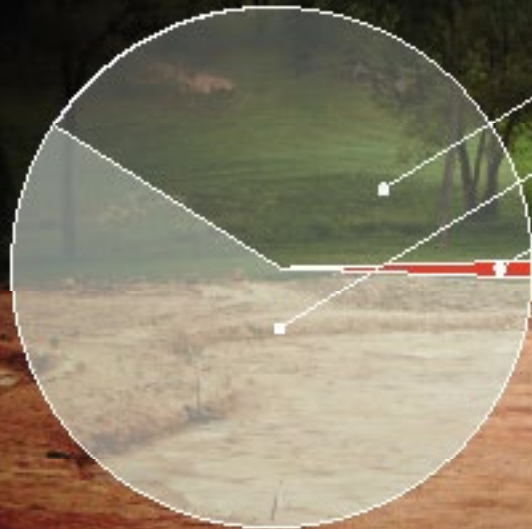
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Creative Solutions to Water U

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In the land of 10,000 lakes, water availability shouldn't be much of an issue. Unfortunately it is, as can be witnessed in depleting aquifers, shrinking lakes and sometimes dry rivers and streams. The biggest problem in Minnesota is that most water tends to run off our vast property; north to Hudson Bay, east to the Atlantic Ocean or south to the Gulf of Mexico. Fresh water resources are

being watched closer than ever and golf courses, considered recreational destinations rather than businesses, are easy targets for the newly water-conscious public.

In an effort to promote themselves as "Stewards of the Environment" and responsible water users, golf courses must begin telling their "good story" of economic stimulus, conservation

Undersupply

of each segment



programs and habitat enhancement. Golf courses also need to look beyond easy fresh water resources and pursue other irrigation opportunities. The following case studies are examples of such possibilities.

The Road to Success at Eagle Valley and Prestwick Golf Clubs

In the spring of 2011, Washington

County looked to HR Green to complete the final design on the reconstruction and expansion of a 1.73 mile long stretch of County State Aid Highway (CSAH) 19 (Woodbury Drive) in the City of Woodbury. The project called for roadway widening from a two-lane rural road to a four-lane street with curb & gutter.

In order to complete roadway construction, the County needed to obtain a stormwater permit from the South Washington Watershed District (SWWD). The SWWD permit application stated rate control, volume reduction, and water quality improvements were required to achieve the SWWD's goals. Rate control requirements included matching or decreasing existing 2-, 10-, and 100-year runoff rates. Washington County needed to infiltrate the first ½ inch of runoff over the entire site to complete the volume reduction requirements. Since approximately half of the roadway drains to Colby Lake, an impaired water downstream, water quality improvements included meeting a target standard maximum allowable unit load of 0.34 lbs. /ac/yr. of total phosphorous (TP).



Not only will roadway drainage supplement the irrigation water at Eagle Valley Golf Course, a babbling brook was also added to the tenth hole.

The County, City of Woodbury, SWWD, and HR Green met to discuss the stormwater management options for the project. Initial considerations included infiltration trenches and an iron-enhanced sand filter berm. However there were still some concerns about the performance and maintenance requirements of these best management practices. The SWWD's primary concern was Colby Lake's nutrient problem. Also in the back of the City's mind were concerns about the amount of water being pumped from their local aquifer. Other cities to the north were seeing significant decreases in lake water elevations

within the last few years, so the City of Woodbury wanted to be proactive in their water management strategies. Since the City owned Eagle Valley Golf Course, where David Erickson is Superintendent, adjacent to the roadway, the City suggested reusing stormwater for irrigation on the course. This provided a viable use for the project's stormwater and it reduced the 30 million gallons of aquifer pumping for the golf course. A similar system was considered at Prestwick, located just south of Eagle Valley. HR Green looked into the option to see if it was a possibility, examining drawdown volumes and pond recharge of the large

stormwater pond adjacent to Woodbury Drive. The calculations provided positive results and the reuse system was a go for the Colby Lake watershed.

Since the Eagle Valley Golf Course and Prestwick Golf Club already contained a large stormwater pond adjacent to the roadway, all road drainage was directed to these ponds for pretreatment. A pump station was installed on the eastern side of the pond, routing stormwater to the irrigation pond east of the driving range by an 8-inch transfer pipe. The existing irrigation system distributes water from the irrigation pond, normally filled by aquifer water, throughout the golf course. The golf course plans to use as much stormwater as possible without drawing down the stormwater pond so much it causes aesthetic ef-

fects. When the irrigation system is not in use, typically during the day, stormwater is routed to the north to a newly installed “babbling brook” surface water feature on the 10th hole. Since the small golf course ponds are already connected, stormwater will flow from the irrigation pond north to the brook, and then is redirected back to the large stormwater pond via gravity. This alternative routing system allows for additional infiltration water treatment. The Prestwick system is similar, only without the “babbling brook” transfer.

After all calculations and analyses are complete, the Eagle Valley Golf Course expects to utilize 22.5 million gallons (69 ac-ft.) of stormwater per year. These expected volumes will likely vary by year depending on precipitation amounts.



***Enhanced water features and Environmental Stewardship
reign at Eagle Valley Golf Club***

Assuming all irrigated stormwater is infiltrated, the Eagle Valley system is expected to achieve a TP unit loading of 0.12 lbs. /ac/yr., exceeding the goal for Colby Lake. One concern the golf courses have is the effect of road salt on the stormwater. Water with high salinity values are detrimental to golf course fairways. To avoid any negative effects on the landscape, the City will be monitoring the system for salinity and other pollutants. Sampling efforts are targeted to begin in the summer of 2014.

The total cost of this system was almost \$700,000, which was primarily paid for by a Legacy Grant funded by the Clean Water Fund. Overall, these

systems were a win-win-win for everyone involved. The golf courses obtained new pumping equipment, now able to reduce the amount of water they pump from the aquifer. The City will be able to extend the life of their aquifer, and the County will achieve their permit requirements. The SWWD will reduce the amount of untreated stormwater entering Colby Lake, provide infiltration to recharge groundwater, and exceed the required water quality treatment goals within the Colby Lake watersheds.

If you want to learn more about this project, please contact Bridget Osborn at 651.644.4389 or at bosborn@hrgreen.com.

Unique Golf Course/Home Owner



***Dave
Kazmierczak
CGCS,
Superintendent
at Prestwick Golf
Club, will utilize
stormwater run-
off as part of his
irrigation water
resource***

Association Relationship

Oakdale Golf Club, where Mike Knodel is owner and superintendent, began utilizing effluent as an irrigation source in the fall of 2001. The recycling of wastewater at Oakdale started as a collaborative effort between the residents around Lake Allie and Oakdale Golf Club. In 1997, the Lake Allie Environmental Subordinate Service District (ESSD) (a subsidiary of Renville County) was created to upgrade non-compliant wastewater systems around the lake. A centralized wastewater system servicing the homes and Oakdale within the ESSD was completed in 2001.

The engineering design focused on pretreating wastewater at a central site and recycling the water through spray irrigation onto the grounds of Oakdale Golf Club.

The Minnesota Pollution Control Agency (MPCA) permit required that the wastewater operator and Oakdale develop a plan for both wastewater facility operation and a turf management plan including the daily operations of the golf course.

The treatment process begins with a series of two septic tanks sized according to Minnesota Rules Chapter 7080. The flow from the septic tanks

Oakdale Golf Club draws down their effluent irrigation pond each fall to accommodate lake shore property owners.



enters a metering manhole and is then discharged into a filter tank and then sent through a vertical flow wetland that includes Forced Bed Aeration™ for enhanced treatment. Following treatment the water is disinfected by sodium hypochlorite to remove fecal coliform bacteria. After disinfection, the water gravity flows to the reclaimed irrigation pond for disposal.

During the irrigation season, the golf course consumes far more water on an average daily basis (53,000 GPD based on 183 day season) than the Lake Allie ESSD can generate at design flow (18,300 GPD). Water withdrawn from Lake Allie under Oakdale's water appropriation permit is mixed with the effluent in the reclaimed irrigation pond, maintaining a constant water level in the pond during the majority of the golf season and provides a "more desirable" irrigation source.

A new irrigation pump station was built at the head of the reclaimed irrigation pond that withdraws the water from the pond and pumps it through the existing golf course irrigation system. The interconnection between the old and the new pump station was designed so that either pump station

can be used for irrigation, depending on the needs of the golf course. Valves were also installed that isolate the reclaimed irrigation pond from irrigation water drawn from Lake Allie. If irrigation water is needed during the day, or at a time when it is not advisable to withdraw water from the reclaimed irrigation pond, the valves can be utilized in a manner that water can be drawn directly from Lake Allie.

During the last 60 days of the irrigation season, the reclaimed irrigation pond is drawn down. This allows treated effluent generated by the Lake Allie ESSD to be stored over the winter. The reclaimed irrigation pond will continue to fill during the winter months until the start of the irrigation, when it will be "topped off" or mixed with lake water and managed as previously described.

For more information about this project contact Mike Knodel, owner and superintendent at Oakdale Golf Course, mike@oakdalegolfclub.com

Oneka Ridge Cleans and Uses Agricultural and Urban Run-Off

The Rice Creek Watershed District worked closely with the City of Hugo

The irrigation pond at Oakdale Golf Club serves as a holding pond for treated effluent water as well as a lateral water hazard.



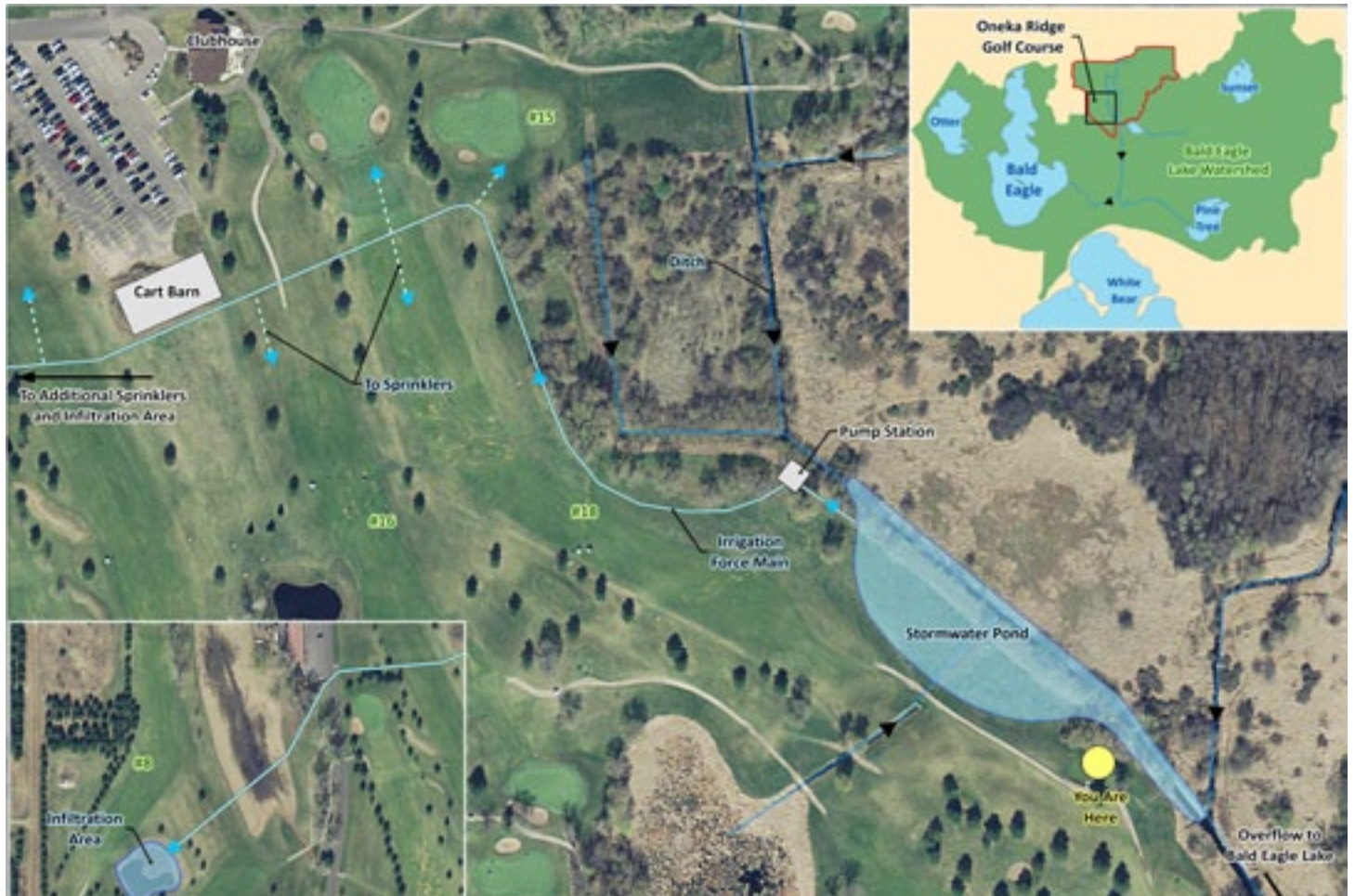
and the Oneka Ridge Golf Course, where Jamie Bezanson is superintendent, to finalize a large water re-use irrigation project.

The Oneka Ridge Golf Course project collects and stores stormwater runoff from nearly 1,000 acres of land upstream of Bald Eagle Lake and use it, instead of pumped groundwater, to irrigate 116 acres within the Oneka Ridge Golf Course. To accomplish this, a large pond was constructed along the 18th fairway to capture runoff from a nearby agricultural ditch. Excess water beyond that needed for irrigation is sent through perforated pipes to recharge the groundwater system.

The RCWD's initial estimates show

that 32.5 million gallons of stormwater runoff (or more) can be intercepted and treated through the re-use irrigation system and the underground infiltration system annually. By reusing and treating stormwater, excess nutrients such as phosphorous are being kept out of Bald Eagle Lake. Conservative estimates suggest that 75 pounds of phosphorous will be kept out of the lake each year, depending upon rainfall, as a result of this project. 75 pounds of phosphorus can grow between 12 and 18 tons of algae.

Bald Eagle Lake may not be the only local water resource benefiting from this project. According to a recent



The project at Oneka Ridge will reduce ground water pumping for irrigation from shallow aquifers as well as return water to shallow aquifers from seepage fields.

U.S. Geological Survey study, declining lake levels are the result of less than average rainfall combined with increased groundwater pumping for drinking water and irrigation. The Oneka Ridge project represents one significant step towards reducing water consumption and ultimately the pumping of groundwater while improving water quality and clarity. It is anticipated that Oneka Ridge Golf Course's dependence on groundwater for irrigation will be reduced by as much as 50% as a result

of this project.

This project was funded by a \$497,100 Clean Water Fund grant from the Clean Water, Land and Legacy Amendment. Matching funds and in-kind project support were supported by the RCWD and the City of Hugo. The Oneka Ridge Golf Course is also providing valuable in-kind support to the project. Construction began in November of 2013 and wrapped up in early 2014. For more information about this

project contact Kyle Axtell at the Rice Creek Watershed District, at kaxtell@ricecreek.org.

Making It Happen

As water becomes more and more scrutinized by the MPCA, DNR, MDH, MDA and public at large, it is in the Minnesota golf industries,, and individual courses, best interest to look at alternative sources to keep viable. All golf courses, and in particular surface water users, should begin reaching out to local businesses, communities and water districts to see if partnerships can be created to reuse industrial and municipal water as well as stormwater runoff.

The four example courses cited have reduced or eliminated their dependence upon freshwater resources as well as strengthened their position in the community as Stewards of the Environment. The advent of the Clean Water, Land and Legacy Amendment and Clean Water Grant funding, combined with these precedents, make the time perfect for courses to initiate water allocation and management changes.

Do you have a local source of reusable water for use on your course?



The newly created containment pond on Oneka Ridge Golf Course captures phosphorous laden water from urban and agricultural runoff.

Incident Response Plan or Release Response Plan

September 2014 (Bulletin 4 of 6)

What would you do if you have a release or incident on your course or at your facility? By pre-planning and practicing for a release or incident you will be better equipped to handle a spill or emergency.

What is an *incident*?

An incident is an event where a threat or actual agricultural chemical spill may adversely impact the environment or threaten public safety.



Leak from application equipment



Spill in shop/storage area



Fire



Flood

What to do if an incident or release occurs

- Immediately report the incident to the Minnesota Department of Agriculture (MDA) by phoning the Minnesota Duty Officer at (800) 422-0798.

Minnesota Duty Officer

<http://www.mda.state.mn.us/chemicals/spills/minn-duty-officer.aspx>

- Minimize risks and ensure safety while trying to abate the spill or leak
- Recover any agricultural chemicals involved in the incident and follow these clean up tips: <http://www.mda.state.mn.us/chemicals/spills/incidentresponse/guidelist/gd02.aspx>

What is an incident response plan

- A document you develop to prepare for dealing with pesticide and fertilizer incidents quickly and effectively.
- Describes fertilizer and pesticide storage, handling, disposal, and incident handling practices of your business.
- Must be current (reflects all changes since the last revision) and available for review.

Sample Plans

<http://www.mda.state.mn.us/~media/Files/chemicals/incidents/responseplan.ashx>

<http://www.mda.state.mn.us/news/publications/chemfert/responseplanlong.pdf>

Inspection questions and observations

Does firm have a release response plan?

Violation: No plan available

Order to comply: Within 10 business days that the Order is issued, the facility shall prepare a written release response (contingency) plan that describes its practices for agricultural chemical storage, handling, incident response and disposal.

Financial penalties

Lack of an incident response plan is a common violation seen at golf courses. This constitutes noncompliance and may result in enforcement action and financial penalties.

Statutory authority

Follow the link below to read Minnesota Statute 18B.37, Subd. 4. **Incident response plan.**

<https://www.revisor.mn.gov/statutes/?id=18B.37>

Corinne du Preez, Agricultural Advisor/ACI
[Minnesota Department of Agriculture](http://www.mda.state.mn.us)
Pesticide and Fertilizer Management Division
Office (507) 206-2883 -
corinne.dupreez@state.mn.us



Within the Leather

by David Kazmierczak, CGCS

Last Thursday I had the pleasure of making a road trip with a few fellow MGCSA associates to

Fargo, North Dakota for the 2014 NDGSA scholarship event. We left at sunrise, played and returned to the Twin Cities well after sunset making this a true road trip.

We caught a really great day too, as mid-September in North Dakota is no gimmie. The sunny, breezy day came and passed with marginal golf, good conversation and for me, a unique look at how another superintendent association functions and the dynamics within it. It was pretty strange walking around before and after the golf at what looked and felt like a MGCSA event, but all the faces were unfamiliar.

The scramble was held at Edgewood Golf Course, a municipal course located on the Red River. We teed off on the first hole, and right away my playing partner Steve Randall from the GCSAA, started to fill me in on some of the changes at the golf course as he had played it years ago growing up in the area. I had heard and read about

Edgewood, along with some other North Dakota and Minnesota courses located on the river concerning the flooding issues they have had to deal with over the years. By the time we got to the fourth hole, which ran right by the river, major changes, (new berms and dykes) became evident. New tees, acres and acres of seeding, and even a new 18th green, elevated to avoid flooding, showed themselves off as we finished the round. For all the destruction and construction that obviously had gone on in 2014 for the guys given the job of maintaining Edgewood, I thought the place looked great and more importantly, played great.

When we finished the round, we met Mark Lindberg, Superintendent at Edgewood. We exchanged greetings and talked a bit and then he related to us that this was it- this was his last year. He was retiring. He wasn't really retiring from work- he said he would probably continue to work within the parks department, but he was done being the head man at Edgewood. He had simply had enough of the rising waters of the Red River and the putting the pieces back together when they receded.

We all wished him luck, ate and sat through the awards presentation. At the end, a tall fellow seated to the right

of us asked if he could say a few things. Victor Heitkamp, superintendent of Osgood Golf Course, who was hired by the mechanic at Edgewood while Mark was away for a few days, was accosted by Mark when he returned to work and asked “who the hell are you?” Mark gave Heitkamp two weeks to prove himself, and the relationship is still going. You see, Mark was Heitkamp’s mentor, and his emotions concerning Lindbergs’s retirement were very evident and touching. It was clear what Lindberg meant to Heitkamp’s career and life.

I have heard the same speech before. Which is a wonderful thing. This profession allows for that. In a job that so much is learned on the greens, tees and fairways and not the classroom, having a good mentor can mean the difference between success and failure. Most successful superintendents can identify one, maybe two or three if they’re lucky, individuals that took them under their wing and helped propel them to new heights, sometimes higher than the mentors themselves. This is called Legacy.

The day after we got back, I started considering my Legacy. It was my 47th Birthday, and I began to think about my mentors, and anti-mentors, and the assistants that have worked for me. I thought about the high school and college kids that worked for me. Did I do enough to help them? Had I guided

them or extolled what knowledge and experience I possess so that they could succeed? Tough question to answer.

As I have aged, I have found that I have not been as communicative with my crew. I have tried to delegate more authority to people under me, which is good, but perhaps lost some communication in the process. I’ve even been told that information has to be “pried” out of me at times. That certainly is not good mentoring.

So I have something to work on the rest of the year, and in future years. I guess I knew this, but it’s funny how something like that trip to North Dakota opened my eyes to this subtle notion that there is an area I need to address. I’m sure there are other areas as well. Maybe the next MGCSA event will be another eye opener, who knows. But I do know that I want to be like Mark Lindberg when I retire. Not because of any personal satisfaction or accolades, but because it is so vitally important to be that guy (or gal). To be somebody that helps shape lives and careers. The position of Golf Course Superintendent lends itself to do that so easily and readily and it doesn’t take too much effort.

As long as you aren’t under water!