#### Intermountain Golf Course Superintendents Association

**Summer 2017** 

Logan Golf & Country Club

GOLF COURSE SUPERINTENDENTS ASSOCIATION OF AMERICA

# Chin up: The Crew Morale Series **Delegation** 3rd installment By: Alan Davis, Superintendent—Willow Creek Country Club

It was an evening in September 2008 and a friend of mine had joined me for my nightly dog walk. On the walk we were discussing a variety of topics, one of which was work. One comment I made as I was feeling a bit overwhelmed at the time, was that I thought I was going to "work myself into an early grave." Basically I felt like I was fighting a losing battle trying to manage the entire crew, keep up with a healthy fert/pesticide program, keep up with daily/ weekly tasks, etc. I then asked one of the most fruitful questions I've ever asked. "You manage 1,200 individuals every day, why am I having trouble with 26?" What he told me changed my (work) life forever.

First step is to assess your in-house talent. Odds are you have an individual that is on your crew right now that is an untapped resource. The best way to spot who will rise and who will fall is to take people out of their comfort zone. I always subscribed to having everyone know how to operate every piece of equipment. Reading that last sentence might have thrown you a bit, but yes that is what I meant, everyone on every piece of equipment. While there are rare cases where individuals are hired to fill specific roles, generally speaking this holds true. How else could we measure work potential? I use the first 60 days to assess aptitude. How fast to people move along and gain proficiency with equipment? How well do they follow protocol?

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# **President's Message**

#### **Spark Wheel**



It is July and it is hot in the greater Wasatch. This time of year can be overwhelmingly busy for the golf course superintendent. Packed golf courses, cruel heat, unrelenting cart traffic, dry winds, temperamental irrigation pumps and ill-tempered employees nag at a superintendent's mind. A cup of coffee – perhaps a full pot – perhaps even a bright orange can of blueberry and Kumquat flavored energy drink becomes a powerful friend for the weary turfgrass worker. Sleep is often an unsettled and unfulfilled debate. Recreation can become as inconsistent as homesteads in the deep places of the West Desert. But, along with the tough days of effort around the Solstice's comes

some of the greatest events of the year. Events worth celebrating like the 4th of July, Pioneer Day, Oakley Rodeo, Ogden farmers markets, Kamas demolition derby, Salt Lake Bees baseball, and live music pretty much anytime and everywhere. The great thing about many of these events specifically in Utah is they are all required by law to have a massive fireworks display before anyone can leave or neighbors can sleep. Good old fashion American pyrotechnics – red, orange, blue explosions of patriotism. Rockwellian emotion oxidized by saltpeter and lit with the quick thumbed back snap of a spark wheel on a Bic lighter.

Fireworks - at least the good and dangerous type – don't come cheap and don't come from Utah. And when you need pyrotechnics there is only one reasonable place to go – Evanston, Wyoming. Actually, for the good folks of Utah - Evanston is the go to place for Powerball, high-point beer, unfiltered cigarettes, horse racing or a steak and French onion soup dinner at Bon Rico's Restaurant. Evanston tends to be exceptionally cold and inevitably windy, but the view of the North Slope of the High Uinta Wilderness guarding Kings Peak and beyond is well worth the trip. And Purple Sage Golf Course overseen by legendarily kind Jeff Murdock is a great track – certainly worthy of playing after picking up 412.00 dollars in bottle rockets, aerial mortars, M-80's, and those silly sparkler tanks that never work.

The golf industry is a peculiar little industry full of monotone demands especially during the heat of July. But, take some time despite the summer rush to enjoy a few events. Celebrate government of the people - by the people and for people, celebrate the Exodus of Utah's founders from persecution into the Land of Deseret, celebrate live music and dance, celebrate sustainable community agriculture, celebrate barrel racers, bull riders and race car drivers, and celebrate family. And make sure you end your celebration with a big, loud, sulfur covered fireworks display with rockets purchased from Evanston, Wyoming.

Patrick M. Christoffer – 435-657-4061 – <u>pat.christoffer@redledges.com</u> Red Ledges Golf Club IGCSA President and Fireworks Expert

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### **ICEMAN**

Written by: Alan Davis, Superintendent-Willow Creek Country Club

On top of maintaining one of the finest golf clubs in the state, Glenwild, Mike Valiant has a myriad of activities outside of work. I've seen first-hand that his day doesn't even close to stop when he leaves work. He regularly leads a variety of Boy Scout excursions, bikes (both mountain and road), skis, and the focus of this spotlight, chases the puck. Hockey has been a passion of Mike's for over 17 years. What started out as a very informal small group of superintendents wanting to mess around on a frozen pond, grew over the years. They were adding new people every year, trading their jeans for breezers (hockey shorts) and pads. Eventually the group grew to a size where they had enough people



to have a proper hockey team. They rented ice at a local arena, and found themselves competing in league play. Though Mike relocated to Utah he has been involved in organized hockey ever since. Typically he plays once to twice a week with the Park City Puckers. When not in the penalty box, he's seen knocking people off the puck in the defensive zone. Though he has yet to lose a tooth he has once cracked a rib, which is not a pleasant experience. Mike was adamant about having a "pass first" mentality to be successful in hockey, though he has scored his fair share of goals. When faced with the question "what was your greatest goal?" Mike replied, "any goal is my greatest goal." A refreshing outlook on personal achievement, or maybe he has just scored so many it's too hard to recall.

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#### Continued from cover—Chin Up: Delegation

Do they seem to maintain a level of care or do they get over-confident too quickly and get sloppy? Possibly most important, how do they interact with their trainer and peers? Are they attentive, asking questions, and genuinely putting forth the effort to do their best? Believe me, you can spot your leaders. While there is a place for the employee that just wants to mow a few greens and rake a few bunkers for a summer, by cross training on tasks you will find out if there are a few who might want more.

Now that we've spotted our leaders, what do we do with them? My buddy, whom I referenced earlier, asked me about my crew at the time. Did I have some solid individuals or was it just a big bunch of misfits? I launched into a 5 minute monologue about how great I thought the crew was and all of the potential therein. Unutilized potential at the time. He explained that the only way he could successfully manage 1,200 is with good people underneath at all times. He only had 3 direct reports whom he was dealing with on a regular basis. They also each had a person under them who was a direct report. Sharing the burden was key. Additionally the employees (general crew) must feel they have only one main point of contact on a daily basis. It is frustrating for employees when there are too many managers providing conflicting instruction. When your crew leaders train, they must have confidence because they themselves were trained well. When they instruct, they know they are doing right because you took the time to give them full understanding of the task. You must place your entire faith in the extremely well trained managers, or the whole thing will come crumbling down.

Sections, sections, sections. There is no day with enough hours in it to see every inch of an 18 hole, or even 9 hole, course every day. Wet spot, dry spot, improper tee placement, low plug, high plug, something will get missed. I've tried a variety of different section makeups before I landed on the one I currently employ. Here are a few of the different configurations that I've tried:

- **19 sections.** 18 holes and the practice area. I've always been a huge fan of the thought of this. However, rarely have I run into courses with the resources to pull this off. Superintendents that use this say it is incredibly successful and efficient.
- 6 3 hole sections. Depending on the layout of your course, this can be a great option.
- **3 6 hole sections**. This is the one, through trial and error, I have landed on. This seems to be a great fit for our labor, equipment, and size of area.
- **2 9 hole sections**. Though the area to cover is larger, it can still be effective and manageable.

Get creative by switching the sections monthly, implementing section competitions, and moving crew leaders around. Whatever works. If you have a crew of two, take nine a piece. If you have a crew of 36 try and break it down even smaller. Take what can be the large and daunting task of trying to see every-thing, every day, and delegate the load. The employees will appreciate the opportunity, and the faith you placed in them.

I hope so far this crew moral series has provided some food for thought. Anyone hungry?

# Understanding The Different Wetting Agent Chemistries

A surfactant is a wetting agent but a wetting agent may not be a surfactant. surprised? BY STANLEY J. ZONTEK AND DR. STANLEY J. KOSTKA

that causes a liquid to spread more easily across or penetrate into the surface of a solid by reducing the surface tension of the liquid."

Today's golf course superintendent has a dizzying array of wetting agent products available to purchase. As a general class of turf care products, wetting agents are one of the more frequently used on golf courses. Common sense would suggest that not every surfactant or wetting agent is the same. Ironically, all of our turf care fungicides, herbicides, and insecticides are organized into their own classifications, i.e., the DMI fungicides, the strobilurins, the phosphites, etc. Wouldn't it be nice if we could also group wetting agents and surfactants into the appropriate category of the different chemistries from which they are derived? That is the purpose of this article.

Over the years, there has been a gradual change in the type of soils used for golf course construction and maintenance. We have evolved from using the old, blended topsoils of years ago (typical manufactured topsoils were 1-1-1 by volume mixes of sand, soil, and peat) to near straight sand soils used today. Sandier soils are used for the construction of greens and tees and even sand capping of fairways. The same sandier soils are used for topdressing of these areas as well. Sands have replaced soils. That's the bottom line. Sandy soils tend to naturally be, or become, hydrophobic (water repelling) in contrast to topsoils, which are less so inclined.

One of the most frequently asked questions of USGA Green Section agronomists is, "Which is the best wetting agent product to use?" In a



Diagnosing localized dry spot and hydrophobic dry patch in the field can be relatively straightforward, especially when noting dew patterns on the grass. Where dew exists, there is good soil moisture. By contrast, only a few inches away, there is no dew on the turf. It is time to test the areas using a soil probe. See next image. The grass is "talking to you."



Areas without dew are powder dry (on left) whereas samples taken in the adjacent area with dew shows good soil moisture. The powdery dry soil is hydrophobic, or water repelling. No amount of water will rewet the dry area. A wetting agent is needed, preferably in combination with some form of surface aeration, to rewet the soil, control turf wilt (and decline), to save labor in hand watering, and to improve turf appearance and playability.

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Hi Everyone! Happy SUMMER!! I know you are all out there on the course for long hours in the heat. Just a little reminder to drink PLENTY of water (at least half your body weight in oz) and apply that sunscreen (maybe even a few times a day)! Heat stroke and skin cancer are a serious thing and I want you all to be healthy!

- Reminder that memberships expired on March 31st. There are still quite a few members that haven't renewed yet. You can get the form on the IGCSA website or call the office and we can take care of it over the phone.
- I would love to be more active on social media (Facebook & Twitter) with things YOU are doing, photos of your course, crew, etc. We have many followers and I love when YOU are represented for all your hard work! Send me pictures and a brief description of the photo either by email (intermountaingcsa@gmail.com) or text it to (801) 554-9218. I would like to aim to post a few times a week so keep them coming!!!
- The next event is the Chapter Championship on July 20th at Logan Golf and Country Club. Even though this is the championship, everyone is welcome to come and play—the more the merrier! However, the overall champion must be a current member or vendor. There are also a couple hotels close by if anyone is interested in staying in Logan for the night.
- Save the date for our Annual Education Conference and Trade Show on October 4-5 in Wendover. We've had record attendance for the last few years and it's been such a great meeting—let's keep it going! YOUR participation and engagement with the chapter and what makes it so successful!



(Left) Note the dew pattern on this wetting agent and soil surfactant test area. While a wetting agent is a surfactant, it only wets. A surfactant can do more than just rewet the soil. (Right) Dry spots and uneven wetting can be a problem on any area of the golf course, including greens, tees, roughs, and, in this case, a fairway. While all soil types can become hydrophobic, sandier soils (which inherently hold less water anyway) seem to have the most severe problems. While there is a trend towards "firm, dry, and fast," there are situations where turf suffers permanent wilt. Turf loss is the result, especially when golf carts drive through witting grass. Wetting agents and soil surfactants can be used to rewet the area, allow for more even soil wetting over time, and keep the problem from reoccurring in the future.

word, it "depends." Specifically, it depends upon what you want that product to accomplish. Is it to rewet a dry, water-repelling soil as the result of isolated dry spot development? Is it to prevent isolated dry spots from developing in the first place? Is it to make, "water wetter" as an injectable material into your golf course's irrigation system to try to move water through the soil? Is it to improve irrigation efficiency and turf performance using less water? Is it to use wetting agents (rightly or wrongly) as a spray adjuvant when applying herbicides, insecticides, growth regulators, or fungicides? Is it to improve rootzone placement of soil-directed pesticides and fertilizers or to reduce their leaching? These are not easy questions to answer because, again, there are so many different wetting agent/soil surfactant chemistries available to our industry. Note: While a wetting agent is a surfactant, it only wets. A surfactant can do more than just wet a dry soil.

#### SOIL SURFACTANTS - 101

Soil surfactant products are made with several different classes of surfactant chemistries. These classes of chemistry have molecules with different structures and therefore they have different modes of action in how they interact with water and soil. This article will discuss the different classes of surfactant chemistries and their varying molecular structures. By defining the capability of each class of surfactant chemistry and defining which class or classes of surfactant chemistry each particular soil surfactant product contains, golf course superintendents will better understand the best product to use to address their particular management problem.

Note: This article is not intended to recommend one product over another. All wetting agents/surfactants have specific uses. The goal is to provide information to better understand these products, which allows the end users, golf course superintendents, to decide which product best fits their needs.

#### SURFACTANT CHEMISTRIES In no special order of priority.

#### 1. Anionic and Blends with

Anionics. Anionic wetting agents are negatively charged surfactants. They can offer fast wetting but, depending upon application rate, can be phytotoxic to turf. Because of their negative ionic charge, anionics can cause dispersion of clay particles, which can negatively impact soil structure in fine-textured native soils. In the agricultural chemical industry, these compounds are often used to aid in the dispersion of clays in flowable or suspension concentrate formulations. Sometimes referred to as "old chemistries," anionic wetting agents were introduced into the turf care market in the 1950s.

Commercially available anionic blends include: AquaAid, Naiad, Penterra, and Prevade.

#### 2. Nonionic Surfactants.

2-1. Polyoxyethylene (POE) Surfactants. A POE (also referred to as alkylphenol ethoxylate, or APE) are also "old chemistry" wetting agents. The original AquaGro contained a POE. Like the anionic group of surfactants, POEs also can be phytotoxic to fine turf when used in some situations. POEs were originally developed to correct localized dry areas, so they do help treat water repellency, but not nearly as well as newer chemistry wetting agents that were developed and introduced in the 1990s. This class of chemistry can enhance water movement into the soil. The original products in this category were introduced as turf management tools in 1954.



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2-2. Block Co-Polymer Surfactants. This class of wetting agent chemistry is the most commonly used in the turf care market today. These compounds are significantly safer to fine turf than POEs and are very effective in reducing soil water repellency and improving soil water content and plant-available water. Two basic chemical structures are used:

Straight Block Co-Polymers. Field observations show enhanced water movement in the soil and can be helpful in leaching programs.

Commercially available straight block co-polymers include: Brilliance, Capacity, Cascade Plus, Conduit 90, Hydro-Wet, LescoFlo Ultra, Remain, and Sixteen90. Injectable formulations of Straight Block Co-Polymer wetting agents include: Drench, Duplex, Fairway ISP, InfiITRx, IrriCure, Syringe, UniWet, and UniWet 25.

Reverse Block Co-Polymers. Field observations show enhanced moisture retention in the rootzone, which can be particularly helpful in soils that do not hold much water. Some companies have referred to the compounds as "retention-type surfactants." These materials were introduced into our industry in 1995.

Commercially available reverse block co-polymers include: Primer Select, Magnus, ReLoad, Rely II, Respond 3, Retain, TriCure AD, and TriCure Micro.

Blends of Straight and Reverse Block Co-Polymers. Industry scientists have attempted to find ways to exploit the characteristics of the respective surfactant chemistries. Research conducted by Aquatrols on the blended block co-polymer product Aqueduct showed that the blend was more effective in correcting localized dry spots and improving turf quality than either the straight or reverse block copolymer used alone. To date, this blend remains the standard by which all experimental formulations are compared in Aquatrols internal research.

Commercially available products based on blends of these two block co-polymer categories include: Aqueduct, Resurge, and ReWet.

Note: "Field blends" of different wetting agent chemistries are becoming more commonly used. That is, two or more wetting agents/soil surfactants are tankmixed to try to achieve rewetting, retention, and moving excess



A wilt and dew pattern on a sand-based tee. With sandier soils, water management always is a challenge, especially during hot and dry weather.



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"Firm, dry, and fast" conditions are good for golf, but it is a challenge for the golf course superintendent to find ways to use water as efficiently and effectively as possible while avoiding excessive dryness, which can damage the turf, especially under cart traffic, as this image clearly shows. Wetting agents and soil surfactants can be important management tools to achieve this goal, whether they are sprayed onto the turf or injected into irrigation systems.

water through the soil profile. Such blends are typically recommended by company technical advisors.

#### 2-3. Alkyl Polyglucoside Surfactants

are made from a sugar molecule reacted with a fatty acid and are considered naturally derived surfactants (but not to be confused with organic). Like many surfactants, alkyl polyglucosides can reduce soil water repellency. However, when blended with a block co-polymer surfactant, these formulations have been shown to increase infiltration more than either wetting agent component alone. This phenomenon of synergistic surfactant wetting activity, the first such activity reported for soil wetting agents, has resulted in patents being granted on this technology in the U.S. and globally. This

blend of wetting agent chemistries improves water penetration rates through the soil compared to straight block co-polymer products. These materials seem to improve water availability in the rootzone for better growing conditions and enhanced irrigation efficiency. Independent university research has demonstrated that treatment resulted in improved plant-available water and turf quality even when irrigation inputs were reduced to less than 50% evapotranspiration (ET) replacement. This chemistry was introduced in 2000.

Commercially available alkyl polyglucoside and straight block co-polymers include: Dispatch Injectable, Dispatch Sprayable, and Tournament-Ready. Note: Tournament-Ready contains a blend of alkyl polyglucoside,



standard and reverse block co-polymer. Tournament-Ready imparts multiple modes of action by making use of three different types of surfactants.

2-4. Modified Methyl Capped Block Co-Polymer. This class of wetting agent is a patented variation of the block co-polymer class. The structure of the molecule was modified by replacing -OH terminal groups with -CH<sub>a</sub> (methyl) caps. This small change in molecule structure modified the hydophilicity of the terminal groups. The -OH groups are hydrophilic, or water loving, while the CH<sub>3</sub> (methyl groups) are hydrophobic, or water repelling. As a result, the methyl groups impart a small hydrophobic characteristic to the terminal groups. This modification changes how the

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#### May 4, 2017—Spring Network & Education Event

Another great event is in the books! On Thursday, May 4th, attendees from all over the state (including our Moab guys!) met up at The Barn Golf Club for our yearly spring event. Despite the cold, snowy weather the week before it ended up being a sunny, blue-sky day. Host Superintendent and Board Member, Justin Woodland had the course in beautiful shape and the hospitality was amazing! The day started out with attendees playing a four man tee ball scrambled followed by lunch made by Woodland family friend, Scot Liskey, who made teriyaki BBQ beef sandwiches. Next, Justin Woodland talked to the group about life on the course and the family dynamic, going outside of the box and his famous compost pile. Finally, Dan Nelson, Ph.D., of Soil Test Labs discussed soils, soil reports and the benefits of using compost on the course. HUGE thanks to RMT Equipment for sponsoring the event and Steve Regan and Sprinkler Supply Co. for hole sponsoring.













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The sole commercially available modified methyl capped block copolymer wetting agent is sold under the brand name Revolution.

2-5. Humic Substance Redistribution Molecules. This class of wetting aids was patented by Milliken & Co. and introduced to the turf industry by Aqua-Aid in 2003. These molecules allow water penetration through the soil profile by disrupting the hydrophobic supramolecular humic associations, most prevalent in the top one to two centimeters (0.40 to 0.80 of an inch) of the soil, which led to localized dry spots. Reduction in size of the large hydrophobic associations into smaller, more soluble conformations results in increased water penetration and allows for redistribution of these "smaller compounds" from the surface, where they cause water management

issues, through the soil profile, where they may be beneficial to moisture control.

Examples of these compounds are found in the OARS<sup>®</sup> product line.

2-6. Multibranched Regenerating Wetting Agents. These molecules differ from the traditional linear copolymer molecules in that they are much higher in molecular weight and have multiple interactive sites, such that each branch is essentially a wetting agent in itself. Branching, coupled with higher molecule weight, not only increases the interaction between the wetting agent and the soil, but also affects the biodegradation profile. As one branch is removed via biodegradation, a new lower molecular weight surface active species is regenerated to continue to manage the water in the soil profile. The use of these molecules on turfgrass was patented in 2005 by Milliken & Co. Examples of these compounds are found in PBS-150® and the OARS® product line.

**3. Cationic Surfactants.** This group of surfactants is not commonly used as soil wetting agents due to their strong biocidal activity. Many of these compounds are effective disinfectants and may be particularly aggressive to plant tissues, resulting in severe plant damage when applied at rates effective for water repellency mitigation. As a positively charged molecule, they tightly bind to soil particles and have been reported to cause treated soils to become more water repellent when used repeatedly. To the best of our knowledge, no cationic surfactants are sold as soil wetting agents in our industry.

4. New Chemistries. There will no doubt be new wetting agents/surfactants and blends available to our industry in the future. The ability to modify and manage water more efficiently and more effectively continues to be a long-term goal. Equally, new products will no doubt be developed that will allow for more even wetting of the soil and more efficient use of water in that soil, while better managing ongoing problems with fairy rings, isolated dry spots, and poor soils. Stay current.

#### MANAGEMENT

One major management topic not discussed in this article has been how wetting agents and soil surfactants are managed and used. Oftentimes, these products are added as spray adjuvants, "just because." This creates a whole new set of interactions that are difficult to measure. For instance, does a little extra wetting agent in the tank aid in fungicide placement or compromise fungicide effectiveness? These are all good topics to discuss with your com-



(Left) Turf loss due to localized dry spots, or LDS. The solution is a wetting agent or soil surfactant program that allows the grass to recover and to keep the problem from reoccurring in the future. See next image. (Right) Complete recovery. LDS has not reoccurred due to adjustments in the way the turf is managed using wetting agents and soil surfactants.



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Pressure reducing or sustaining valves are essential for your system to function correctly – we can service virtually any PRV, flow meter or master valve in your system!!

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# 2018 Dog Days of Golf Calendar

Submissions for the 2018 Dog Days of Golf Calendar will be accepted through

**Aug. 1, 2017.** From the submissions, 14 dogs will be selected. Owners of the selected dogs will be notified in September, and the calendar will be distributed with the November issue of *GCM* magazine.

Plan now to stop by the LebanonTurf booth at the Golf Industry Show in February to place your vote for the 2018 Dog of the Year. The winner's owner will receive a \$500 prize and \$3,000 for his or her GCSAA-affiliated chapter. A \$2,000 charitable donation will also be made by GCSAA and LebanonTurf in honor of the winner.

LebanonTurf has been supporting golf course superintendents and their chapters through the Dog Days of Golf Calendar for more than a decade.





#### **Time On The Hill**

Written by: T.A. Barker, CGCS—Fore Lakes Golf Course

On April 26, 2017, 100 golf course superintendents along with 100 more members of the golfing community embarked on Capitol Hill to advocate for the golf industry. Two of those superintendents were two of our own – IGCSA board member, Dave Carruth (Murray Parkway) and IGCSA Past President T.A. Barker, CGCS (Fore Lakes). The pair had a very busy few days scheduled leading up to and during National Golf Day 2017 (NGD17). This is the second year that the two joined the Golf Course Superintendents Association of America (GCSAA) Government Affairs collation in Washington, DC. GCSAA is the most active organization in government affairs out of all the major golf organizations, which is why over half of the participants at NGD17 are golf course superintendents.

NGD17 was a bit different this year, since it was the ten year anniversary of the initial National Golf Day. GCSAA decided to change it up and do a large service project. However, this was not your typical service project. This was going to be conducted on the National Mall. You know, the Nation's front yard where all those people come and stand and walk to see the presidential inauguration? Yeah, I know what you're thinking, AWE-



SOME! The project included aerating, seeding and mowing grass panels, cleaning up walkways, washing benches, and adjusting sprinkler heads, just to name a few. The day started when we got on the bus at 7 am and took us past the Pentagon, Lincoln Memorial, and Washington Memorial. We arrived at the National Mall around 8 am, where we were greeted by Mike Stachowicz, former Golf Course Superintendent and now Turf Specialist for the National Park Service and head turf specialist over the National Mall. Mike talked with us about how the work that we were going to perform would save the National Park Service two to three weeks of his budget and that he could get to some of the projects on his list that had been neglected. The best part about my day was driving a John Deere tractor while seeding the lawn.

Continued on page 29



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pany technical representative, supplier, and USGA agronomists.

How best to manage irrigation is another important management topic. Specifically, if your goal is to rewet a dry, hydrophobic soil, it is best to prepare the area with some form of surface aeration, pre-wet the area, apply the wetting agent or soil surfactant, and water it into the soil profile. For maximum efficiency and effectiveness in this case, it is best not to let the wetting agent dry. Rather, water it in rapidly and liberally. The addition of other products could therefore compromise the action of those materials either by too much water or compromise the wetting agent/surfactant product by not using enough water. Again, when in doubt, ask for advice.

In preparing this article, almost every contributor made the following point: With the wetting agent options we have today, you either treat the water or treat the soil. There are different wetting agent chemistries to solve whatever problem you may have. Also, the wetting agents and soil surfactants available today are much more sophisticated than the products used years ago. In the "good old days" of turfgrass management, we used to add a quart of wetting agents to every spray tank. We have come a long way since then.

Wetting agent and soil surfactant products are used in many ways and for many different reasons on golf courses today. It is important to think about what you are trying to accomplish when applying any turf care products, including wetting agents and soil surfactants. **READ THE LABEL**. If your questions are not answered, contact the company. It is a call or email worth making to ensure the product you are using is being properly applied.

#### **FINAL THOUGHTS**

Still awake? As you can see, this article is technical in nature. Most of us are not chemists. We rely on research results from our state universities along with field trials of side-by-side product comparisons, testimonials from fellow golf course superintendents who have used these products, and product



A stylized view of what a branched wetting agent molecule looks like. Surprised? There is a whole lot more to selecting a wetting agent or surfactant than the average person might know. It is a complicated science. (Image courtesy of Milliken & Co.)

information from technical representatives of the companies who formulate, develop, produce, and sell wetting agents and soil surfactants. This information (hopefully) allows all of us to make informed decisions on which wetting agent chemistry helps solve the problems you have, as it pertains to soil water repellency, enhanced soil moisture retention (or not), the prevention of isolated dry spots, or the treatment of dry patch and fairy ring once they develop. One key thing to remember is to ask your sales representative for research reports on field evaluations of the product. That third-party confirmatory testing is the only way to ensure you can count on a product to do what is claimed.

In summary, there are many different wetting agent and surfactant compounds and chemistries available. Hopefully, by knowing some of the strengths and weaknesses of the various commercially available products, the right choice can be made by you, the consumer, on which product to purchase and use.

#### DISCLAIMER

All the information contained in this article comes from the best possible knowledge available at the time of writing. We apologize if a product was not mentioned, if a product is miscategorized, or if a product is no longer available. At least the superintendent will know which question to ask the next time a representative tries to sell a wetting agent or surfactant. You can ask, "Is it a straight or reverse block co-polymer? A modified methyl capped co-polymer? An APE or a POE? By the way, are your wetting agents anionic or cationic?"

STANLEY J. KOSTKA is Director of Technology and Business Development for Aquatrols Corporation of America. He has spent nearly 20 years working in the area of understanding how surfactants can be used to manage soil water repellency and improve water use and productivity in turfgrass, ornamentals, and agricultural crops. He holds 13 patents relating to novel surfactant technologies and agrichemical formulations. Stan received his Ph.D. in plant pathology from the University of Massachusetts, an M.S. in plant science from the University of Connecticut, and a B.A. in biology from the College of the Holy Cross (Mass.).

RANDY D. PETREA, reviewing author, is a senior chemist at Milliken Chemical with over 23 years of experience in surfactant design, synthesis, and formulation of new products for various industry segments. He holds 10 patents, six of which relate to the use of novel soil surfactants for moisture management. He received an M.S. in analytical chemistry from the University of Tennessee - Knoxville and a B.S. in chemistry from Pfeiffer College (N.C.). We thank Randy for his input.

STANLEY J. ZONTEK is the director of the USGA's Mid-Atlantic Region. He formerly served as director of the North-Central and Northeastern Regions during his tenure with the USGA Green Section. Stanley joined the Green Section in February 1971 and is a graduate of Penn State University. He is the USGA's longest tenured employee. He is old enough to remember the earliest wetting agent chemistries, which are no longer available!



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# 2017 IGCSA Educational Scholarship Award Recipients



## Chad Severtson Superintendent, Red Ledges

I would like to thank the IGCSA for awarding me the 2017 educational scholarship. I am very grateful for the help and support I have received from the organization. Over the past year since winning this scholarship in 2016, I have continued on my

path to complete my second bachelors degree taking classes through Utah State University in the Plant Science department.

I am very excited to graduate in December 2017 and I am looking forward to having more free time to play golf and ski. I hope the IGCSA will continue to be very supportive of continuing education by its members and their families.

### Alec Weinert

I am originally from Southeastern, Pennsylvania where I spent my first season working on a golf course at French Creek Golf Club in Elverson, PA. I came to USU in 2012 and began working at the Logan Country Club in 2014 for Paul Stokes. This is my fourth season at the country club and I have loved every minute of it. I credit Paul for helping me realize that I have a passion for turf and that I want to be a golf course superintendent. I graduated from USU this spring with a BS in Human-Environment Geography and will be attending the two-year Rutgers Professional Golf Turf Management School beginning in October.





## Thad Murdock

Since graduating from Evanston High School in early June, Thad has been working at the Purple Sage Golf Course in Evanston, Wyoming. He will begin attending BYU-Idaho in September where he plans to study technical theater with an emphasis in lighting and sound. Thad was very active in student council serving as student body Vice President his senior year in High School. His favorite extracurricular activity was Speech & Debate and he also enjoyed playing percussion in the marching band.











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EETHOLDS EXCRIMITOR REPORTION & UTILITIES





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It was nice to see some suits getting dirty and doing manual labor, including Mr. Rhett Evans, CEO of GCSAA. Rhett worked a Ryan sod cutter around an entire panel of the mall – roughly a one mile radius. I think he might still be shaking! It was a great day for the golf industry and the entire superintendent profession. Day two was National Golf Day and the tenth anniversary. This was also the main purpose for Dave and I attending. We first posed for some pictures in front of the capital and then embarked on a full day of congressional meetings. The first meeting was with Senator Orin Hatch and then on to

Representative Jason Chaffetz's office. Next we visited Senator Mike Lee's office and finally had time to get a bite to eat before making the journey to Representative Mia Love's office. During the meetings, Dave and I spoke with staffers about the importance of golf, both economically and environmentally, and how when new laws are proposed they may have a negative impact on one of the biggest industries in the country. We also talked about golf in the State of Utah and how the industry employs around 10,000







people and has a total economic impact of 800 million dollars in our state alone. These numbers are huge for us and our leaders recognize that.

National golf day 2017 was a day that Dave and I will not soon forget. Our presence on Capitol Hill is what will fuel our industry into the future and will hopefully keep our communities coming back for more.

