

Hole Notes

The Official Publication of the MGCSA

**2020 MGCSA Don White Match
Play Champions
Erik Pille and Zach Wignall**

Vol. 55, No. 11 October 2020



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On The Cover:

2020 Don White

Match Play Champions

Erik Pille, left, Equipment Manager at Minnesota Valley Country Club and Zach Wignall, Superintendent at Willingers Golf Club, won their final match against Dave Kazmierczak CGCS, Superintendent at Prestwick Golf Club and Tom Schmidt, Superintendent at Mendakota Country Club

MGCSA Member

Spotlight:

Brent Belanger

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Presidential Perspective

by Scott Thayer, Legends Club

What a beautiful end of September leading into October, very dry, but with all the fall colors coming early, it's a great time of year. Having multiple 80 degree days in October always seems to mean more golf and thus, more of us trying to accomplish end of the year tasks around lots of play. This year, I feel that is all our staff has been trying to do; get lots done on nice days around a full golf course. I am not complaining, well just a little, but having the course busy all year has been very tough managing projects or even just getting simple tasks accomplished.

This past week, a very good article was written in Turf Net Magazine. Will we be out of the Pandemic after 2020? Will there be a vaccine that fixes the bug? Can our course management withstand what has happened with golf? Will

our courses be able to withstand this dramatic uptick in play and survive the potentially tough winter ahead? The last and most important, if there is a vaccine, will golf stay as busy as it did or go back to the way it was? All really good questions, which I have been thinking about pretty much all year. Will this pandemic change golf forever... I certainly hope so, I desire that golf stays busy and that we reset participation in the game back to where it was in the late 90's and early 2000's. Of course it could shape or change our budgets and the way we do things forever, well that's what I am hoping anyway!

The month of October has also brought us all together for some golf, socializing, and just plain old fashion fun. The Wee One, held at Brackett's Crossing Country Club and hosted by Tom Proshek, was a great day. I am so glad we got the opportunity to play the new BCCC



this year. Brackett's went through a large renovation the past fall into this past spring; Sodding greens, sodding fairways and lots of tree clearing. Even though I work almost across the street, I never got to drive the course during the project with Tom, I guess I was just too busy!

What a fun day on the course it was: the course was in immaculate shape, weather was beautiful and even Matt Cavanaugh got to do a Maintenance Monday on the course. Tom and his staff should be proud of all that was done and how well everything came

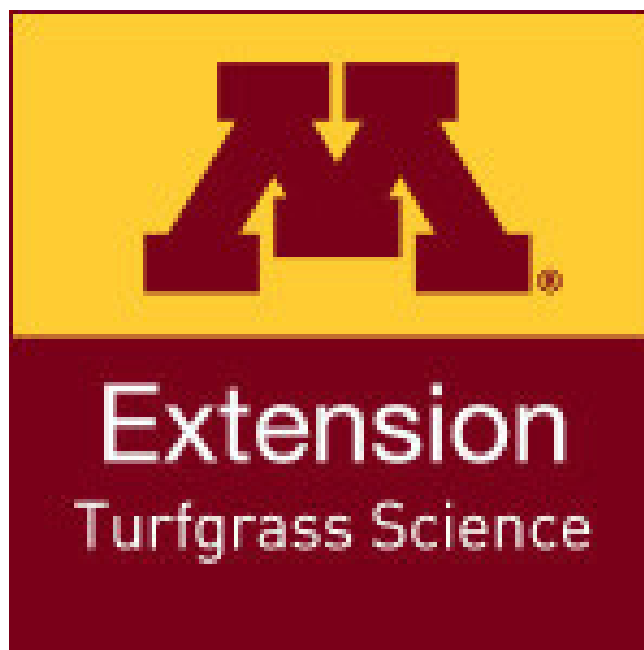
out with their construction project. I know I was amazed at how well it all turned out in such a short amount of time!

The next event, just a week later and almost literally across the street, was the Scramble held at my golf course, the Legends Club. Thank you to all who came out to support Scholarship and Research at the University of Minnesota. Without the support of the golfers and vendors, we could not have had such a successful event! I hope all who attended enjoyed the course and amenities offered here at Legends club.

What was up with that 11th hole? Everyone that got to play Legends tested our newest green we built just a year ago. The addition turned our 11th hole, a Z shaped par five, into a par four and a par three. Why did we do that?

Great question. The 2019 winter was a tough winter for some of you, but it was a really tough winter for the Legends Club. We lost at least 50 percent or 12 acres of fairways to winter kill. The poa didn't make it through the ice or the polar vortex, you pick which one killed it! So last summer my owner came up with the idea of making a 19th hole to give the course a little insurance policy. If we have a winter like that again we can reroute the course so we can work on it and have no play on that hole but still have 18 hole course...Brilliant! Well it was a fun project, to say the least, building a new green in the middle of the course! I hope all enjoyed the new green. Now you all know the story behind it.

Thank you to all players that came out to both events. Tom and I really enjoyed having everyone out to socialize with and play our courses for great causes. Can't wait till the next time we all can get together again, not sure when that will be, but hopefully sooner then later!





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Distinguished Service Award and MN Golf Hall of Fame

In an effort to make the Distinguished Service Award meaningful to the recipient and the Association, the 2018 Awards Committee created the following set of guidelines. Any member can be nominated, but greatest consideration will be given to those who have distinguished themselves supporting the Minnesota Golf Course Superintendents Association. Date for submission is **December 15th**.

The required point total necessary to be considered for the MGCSA Distinguished Service Award

can be a combination of any of the following. The minimum number of points necessary for the DSA Award is 25.

The Minnesota Golf Hall of Fame nominee must have previously attained the MGCSA DSA Award and fulfilled an additional 15 points beyond those previously acquired. DSA recipients prior to the establishment of the

new criteria will require 15 additional points in any category based on Committee suggestion.

The Board of Directors and Awards Committee will be responsible for final decisions.



- Terms on the MGCSA BOD = 2 points per term, including officer position, 4 maximum
- Officer Position = 1 point per office elected
- Audubon Certification and re-certification = 2 points, 4 maximum
- ESI Award = 2 points maximum
- Support of the University of MN research plots = 2 points, 4 maximum
- Support of the GCSAA committee members = 2 points, 4 maximum
- GCSAA, MTGF and Allied Association BOD or committee role = 1 point per year, 3 maximum
- MGCSA Membership = 1 point per decade
- Certification 2 points then = 1 per renewal, 5 maximum
- MGCSA event participation = 2 maximum
- Civic Community Service points = 1 point for each position 3 maximum
- Mentor potential = 1 point per professional through superintendent class, 3 maximum
- Any MGCSA, GCSAA or industry Presentations = 1 per presentation, 4 maximum
- Any MGCSA, GCSAA or industry articles written = 1 per article, 3 maximum
- Completion of any MGCSA Environmental Initiative Packet = 3 points per packet
- Contribution to golf that can't be anticipated = 5 points maximum
- *** The Committee can assign any number of points to those individuals who do not have access to this point system due to placement in our industry. For example, educators and affiliate members.

Please provide your nomination to the Awards Committee through jack@mgcsa.org. Include a list of nominee accomplishments and statement of recommendation. The award will be presented at the Annual Meeting during the Service Award presentation.

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Minnesota Department of Agriculture
- **Managing the most severe turfgrass insect pests in a challenging and ever-changing environment**
Dr. Ben McGraw – Penn State
- **Managing microdochium patch on annual bluegrass putting greens using traditional and non-traditional fungicides**
Dr. Clint Maddox
- **Weed control and herbicides**
Aaron Hathaway – Nufarm
- **CDC recommendations and effects on pesticide applicator safety protocol**
Jolene Hendrix – UMN Extension
- **Pesticides in the environment- considerations for minimizing offsite exposure**
Jolene Hendrix – UMN Extension

Registration and Payment

Course date: November 18, 2020

Registration deadline: Nov. 11, 2020, 5:00 p.m.

Time: 8:00 a.m.-3:45 p.m.

Registration Fee: \$145.00

Registration open now until November 11, 2020

- Check-in w/UMN, at roll call show your applicator card.
- No transfers in or out of this workshop.

How to Register

Register and pay online on the University of Minnesota
<https://z.umn.edu/GTRregister>

Payment

We accept credit card payment only at the time of registration, no exceptions.

Cancellation

Cancellations received by email by November 11, 2020 are refundable, minus a \$40 administrative fee. After that, refunds are not issued.

Personal Protective Equipment and Pesticide Use 2020

Working with pesticides is hazardous. Protect yourself and your employees by ensuring pesticide label required personal protective equipment (PPE) is worn during all pesticide applications.

Read the Pesticide Label Before You Apply

The pesticide label, and associated labeling, provides PPE safety information specific to each product.

Example: The pesticide label information for Trimec Classic Broadleaf Herbicide (EPA Reg. # 2217-543) states: Personal Protective Equipment (PPE)

“All mixers, loaders, applicators and other handlers must wear*:

- protective eyewear,
- long-sleeved shirt and long pants,
- shoes and socks,
- chemical-resistant gloves and
- chemical-resistant apron when mixing or loading, cleaning up spills or equipment, or otherwise exposed to the concentrate.



*Applicators may choose not to wear protective eyewear with dilution

rates greater (higher) than 5:1 or greater (higher) than 5 parts water to 1 part of product.”

Remember, it is a violation of both federal and state laws to use any pesticide product inconsistent with the label.

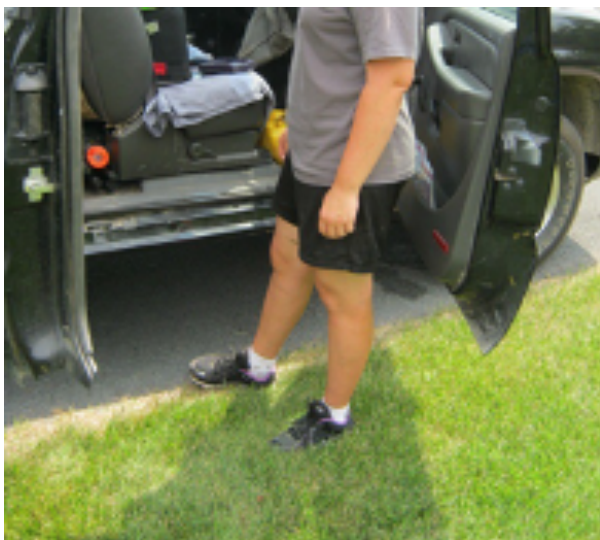
If you are applying more than one pesticide product, review each label’s PPE requirements. You are required to wear the most restrictive PPE listed on each label.

MDA Inspections

During an MDA Use Inspection, an MDA inspector will stop to observe your pesticide application. If you are not wearing the required PPE specified on the label(s) of the pesticide(s) you are applying, you will be issued an Order to Comply to stop the application until the proper PPE is obtained and worn. Examples of improper PPE are noted below.

PPE Violations and additional corresponding ORDER issued:

Order to Comply: A person applying pesticide must obtain and wear PPE required by the label prior to commencing a pesticide application.



Violations: Missing gloves, long pants and long sleeve shirt



Violations: Missing gloves and long sleeve shirt

Examples of Proper PPE being used:



Verified applicator meets all label PE requirements: pants, long sleeves, safety glasses and gloves



Safety glasses must include brow and temple protection

Additional Enforcement

Due to potential and actual safety hazards and health risks associated with the lack of proper PPE, documented noncompliance may result in additional enforcement, including financial penalties.

Statutory authority

Follow the link below to read:

[Minnesota Statute 18B.07, Subd. 2. \(a\) \(1\)](#)

Corinne du Preez, Agricultural Advisor/ACI, [MN Department of Agriculture](#)

The MGCSA is pleased to partner with the Minnesota Department of Agriculture to provide industry specific bulletins.

2020 MGCSA *The Scramble* Golf Tournament, for scholarship and research

Conditions were picture perfect at Legends Club for an exceptional afternoon of fund raising. Thanks to Superintendent host Scott Thayer, his staff and all the helpful folks at Legends for treating the MGCSA right and helping to generate over \$4,000 for research and scholarship.





Seasonal longevity of wetting agent functions

by Ryan Schwab, University of Minnesota, Dr. Brian Horgan, Michigan State University
and Sam Bauer, Bauer Turf, LLC

Our turfgrass research team began wetting agent research in 2014, which led to a 6-year run of multiple projects supported by the MGCSA. During this time, we evaluated many different surfactant products, spanning many chemistries, and tested their many functions and claims. I personally have been at the center of this research since 2016, which was finished in 2019 when I concluded my M.Sc. degree. There is still much to learn about them as soil moisture tools on golf courses outside of current published research.

Our research focused on seasonal longevity of wetting agents in creeping bentgrass USGA sand-based rootzones. We investigated the impact of soil temperature on wetting agent function over time. We also took a closer look at the spring benefits of late-fall wetting agent applications than previous research. One of the functions wetting agents provide in soil systems is a reduction of soil water repellency (hydrophobicity), a common cause of localized dry spots. Much of our research involves measuring this through water droplet penetration time (WDPT) tests, which involves recording the time it takes for a droplet of water to fully infiltrate a dried soil sample. Longer droplet times indicate that the soil water repellency is more persistent. We hypothesized that the environment (temperature) would impact the longevity of wetting agents by diminishing their functions, such as WDPT over time. Models for PGRs and some turfgrass diseases are great tools to help you determine when to reapply a product. Why not develop something similar for wetting agents? Although we didn't quite get to the point of developing such a model, significant progress was made.

Experiment 1: Seasonal water droplet penetration times and rootzone temperature

This experiment was done on a 'Penn A-4' creeping bentgrass research green on the University of Minnesota's Saint Paul campus in 2017. We sprayed 5 different wetting agents and one untreated control at label rates (**Table 1**) only once, either at the end of May or end of July (**Figure 1**). Following those one-time applications, we collected the following data: rootzone temperature at a 1-inch depth, water droplet penetration time (WDPT; measure of soil hydrophobic persistence), volumetric water content, turfgrass quality rating, chlorophyll index (average greenness of each plot), and visual wilt estimation. We then compared each product, looked into rootzone temperature influences on WDPT, and compared WDPTs of May-applied and July-applied treatments to determine if July applications had similar results as May applications for the remainder of the growing season. Dry spots on the research green were encouraged by irrigating at 80% ET replacement up to twice weekly, only when cumulative ET was greater than total rainfall throughout the duration of the experiment.

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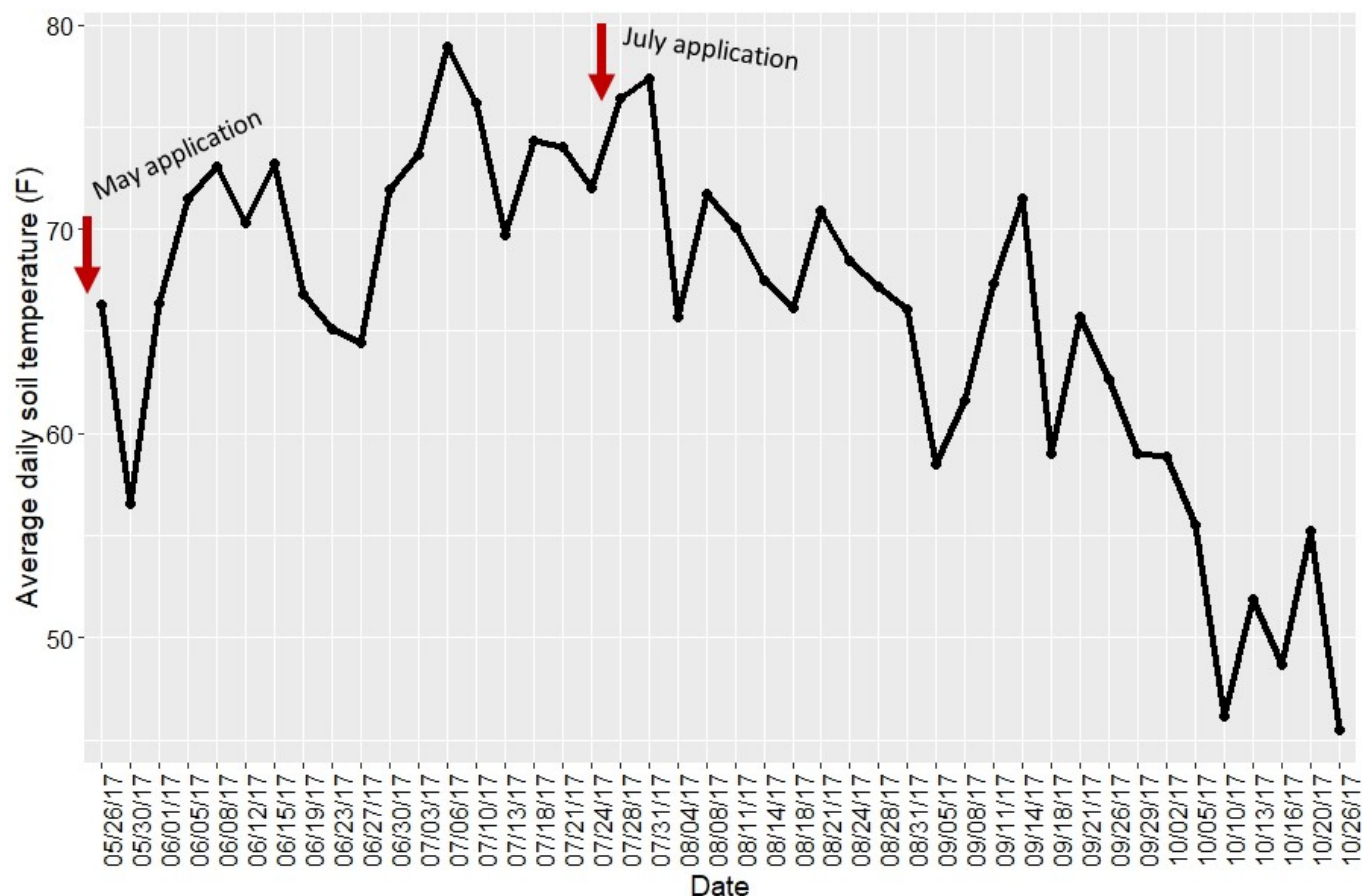
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Revolution	6	Aquatrols
PBS150	5	Aqua-Aid Solutions
Cascade Plus	8	Precision Laboratories, LLC
Duplex	0.46	Precision Laboratories, LLC

Table 1. Treatment list for Experiment 1 and Experiment 3.

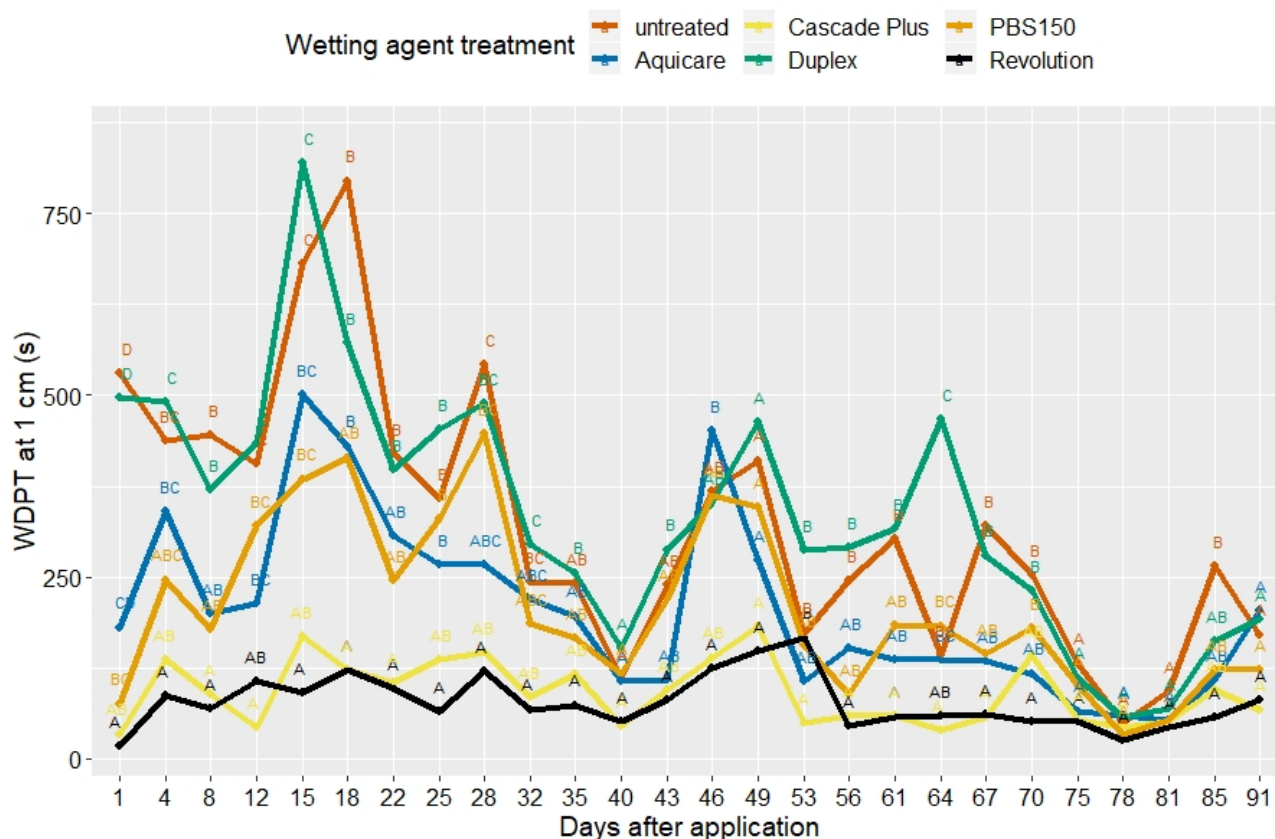
Figure 1. Average daily soil temperature at a 1 inch depth in the research green, and application dates.



Our results revealed that the wetting agent applications influenced soil water repellency. WDPTs fluctuated throughout the growing season, and in general rose until early August and decreased into fall. The WDPTs of the wetting agents applied in May maintained the same rankings from late May to mid-October, whereas those applied in July varied by date (**Figure 2**). The plots treated with Cascade Plus or Revolution had quicker WDPTs (less water repellent) than the untreated control plots more often than the other wetting agent

treatments. Revolution treated plots had quicker WDPTs than the untreated control plots up to 85 days after the one-time application, which is 55 days longer than the label-recommended reapplication interval. The application frequency of this product and others in this experiment could likely be extended if used as a soil water repellency preventative.

Figure 2. Water droplet penetration time (WDPT) at a 1 cm depth of each wetting agent treatment applied in July for the remainder of the growing season. Points that do not share the same letter within the same day are significantly different.



When comparing the WDPTs of the May treated plots to the July treated plots from July-October, we concluded that they performed similarly for all products. In other words, during the final half of the growing season, it didn't matter if the plots were treated in May or July, they had similar soil water repellency levels. Although we could not see the additive effect of applying a wetting agent more than once in one plot (since each plot was only treated once), this conclusion may aid decisions in tight budget situations when only one wetting agent application is doable.

We also observed a significant, but weak relationship between WDPT and soil temperature for all wetting agent products (**Figure 3**). Soil temperature influencing WDPTs had the strongest relationship in untreated control and Duplex treated plots. Additionally, as soil temperature increase, the variability in soil water repellency increased.

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Figure 3. Water droplet penetration times (WDPT) at 1 cm depth of each wetting agent treatment as influenced by average daily soil temperature



Within the plots treated in July, localized dry spots and wilting symptoms began to appear in September. Based on an estimation of wilt in each plot, we concluded that the wetting agents influenced these symptoms (**Figure 4**) which has commonly been observed on golf courses and by other researchers. Cascade Plus treated plots tended to have the least wilt compared to the other treatments. Duplex, Aquicare, and PBS150 treated plots had statistically similar wilt symptoms as the untreated control for each date. Once the dry spots appeared, the decreased growth of the research green during fall likely kept plots from recovering to acceptable levels. Even though we did not collect data the following year, we did observe a noticeable difference in dry spot symptoms between a Revolution treated plot and an untreated control (**Figure 5**) one year after the application!

Figure 4. Estimated visual wilt of each wetting agent treatment applied in July for the remainder of the growing season. Points that do not share the same letter within the same day are significantly different.

Figure 4. Estimated visual wilt of each wetting agent treatment applied in July for the remainder of the growing season. Points that do not share the same letter within the same day are significantly different.

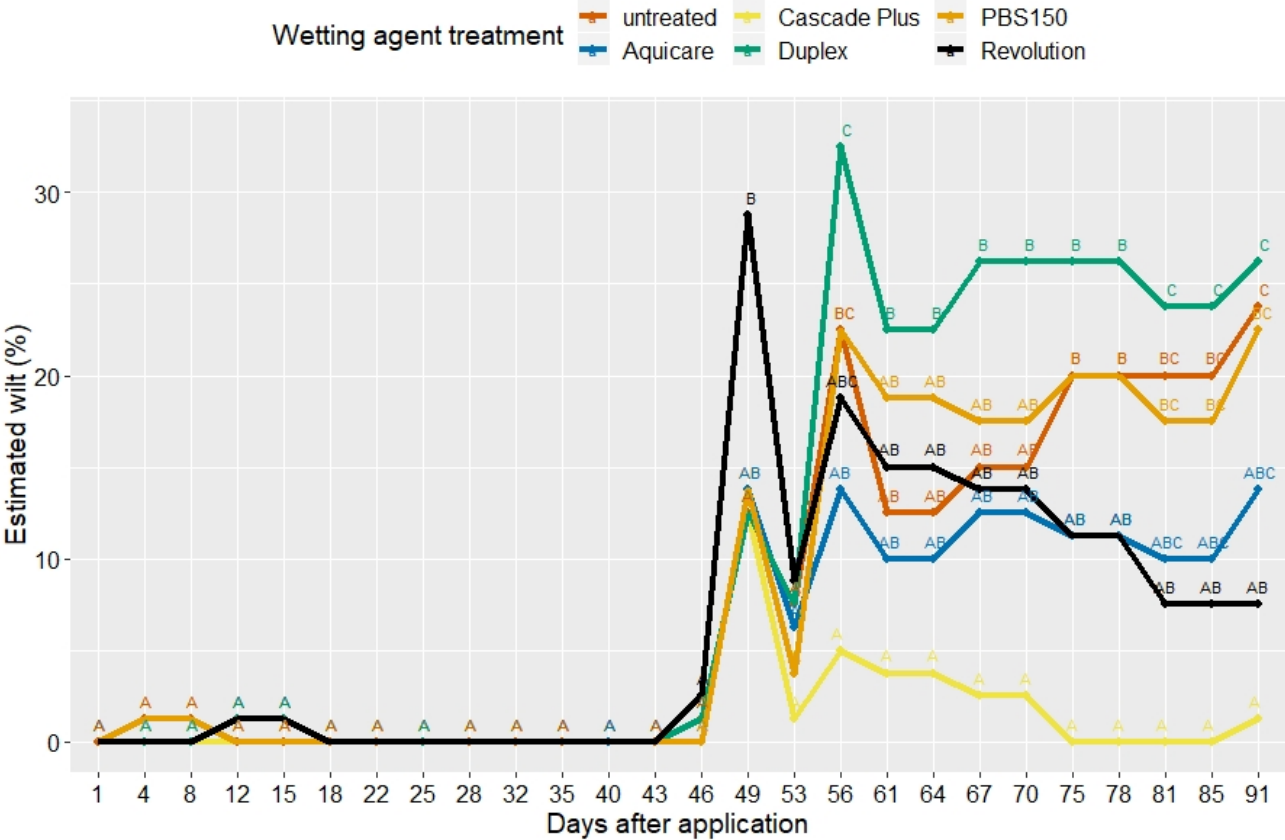
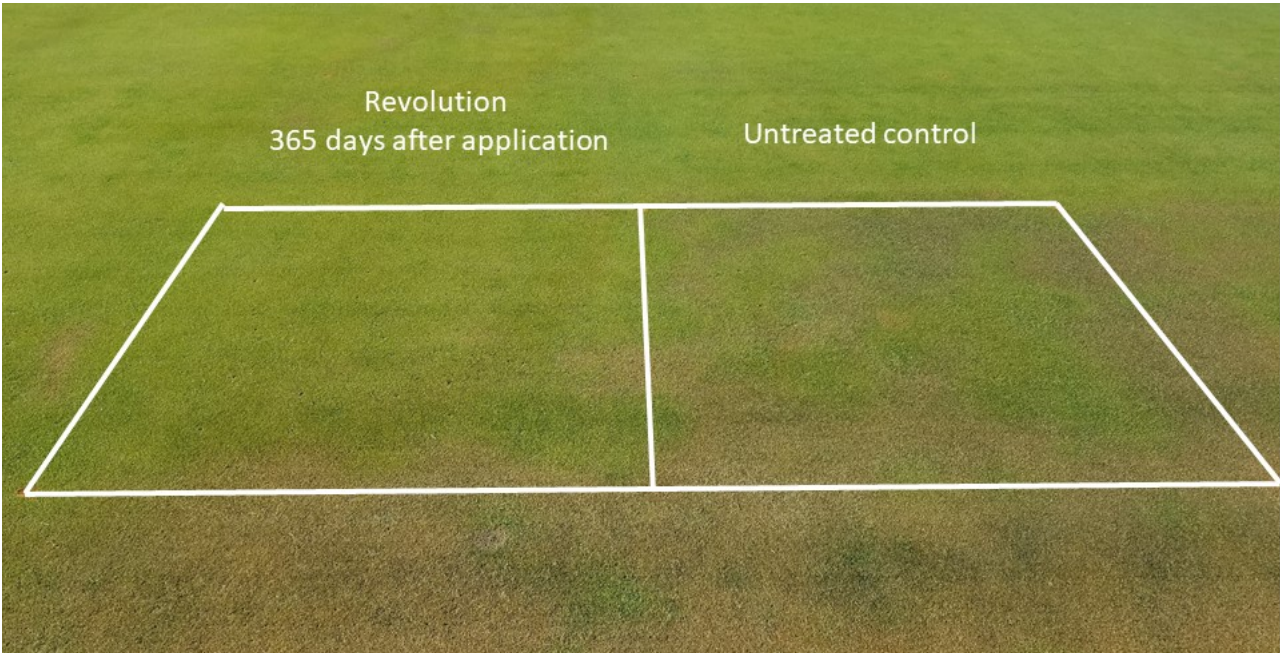


Figure 5. Revolution treated plot preventing localized dry spots one year after application.



We concluded that WDPTs vary wildly throughout the growing season, likely due to soil temperature fluctuations. Wetting agents differ in their ability to reduce soil water repellency

and dry spot symptoms, and some may impact soil-water properties longer than label-recommended reapplication intervals.

Experiment 2: Rootzone temperature and water volume influences

In experiment two, we decided to take a closer look at soil temperature impacts on a wetting agent over time in an indoor, controlled environment setting. ‘L-93’ creeping bentgrass plugs were placed into one of three rootzone temperature environments (71, 82, 94 °F; **Figure 6**). Half of the plugs were treated with Cascade Plus at a label rate. Each rootzone temperature treatment was watered based on the weights of the plugs. In this way, the hotter treatments were supplied with more water than cooler treatments, much like our expectations of a green requiring more water during the heat of the summer than the cooler fall months. At 10, 20 and 30 days after the one time Cascade Plus application, we harvested the plugs and recorded their weights (as a measure of water retention) and WDPTs. Next, we water-saturated the rootzone sand of each plug and conducted WDPT tests as the sand dried (**Figure 7**). This allowed us to estimate the critical soil moisture content, which is the soil moisture level at which the soil become water repellent. We wanted to see if a wetting agent changed the critical soil moisture content, and if that changed after being subjected to varying periods of heat and water.

Figure 6. Rootzone heating system that allowed creeping bentgrass plugs to be maintained at three different rootzone temperature treatments.

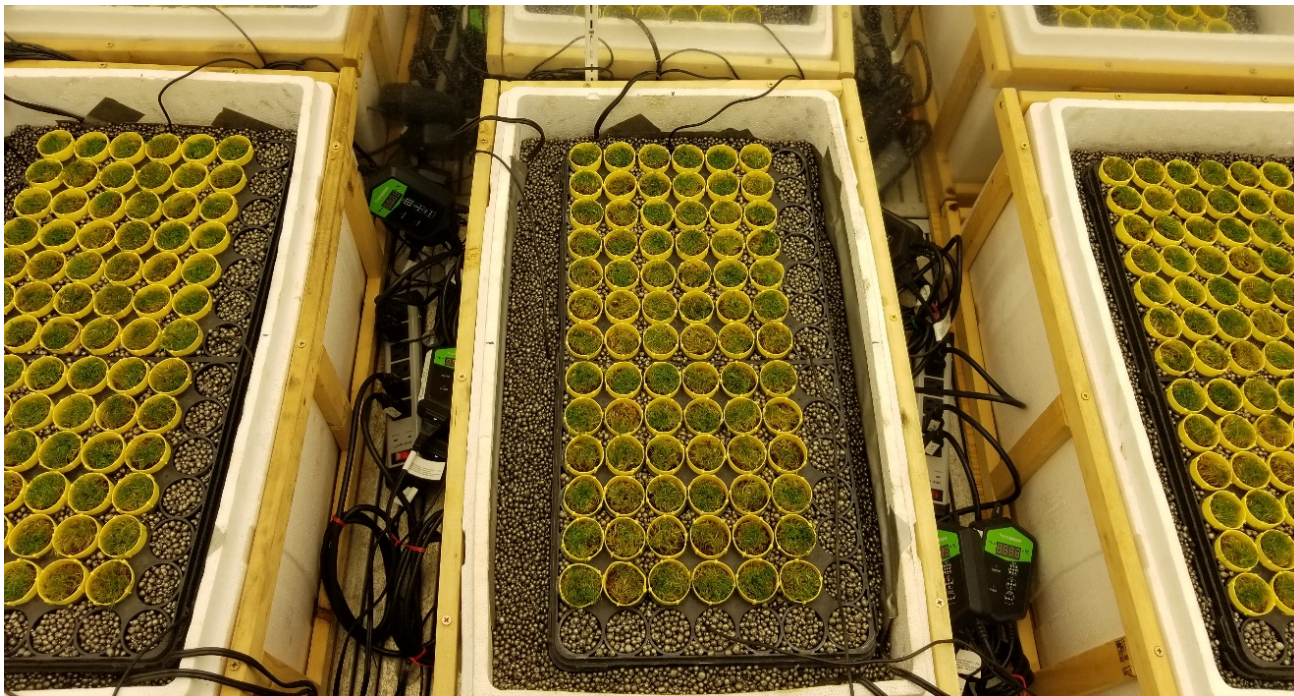
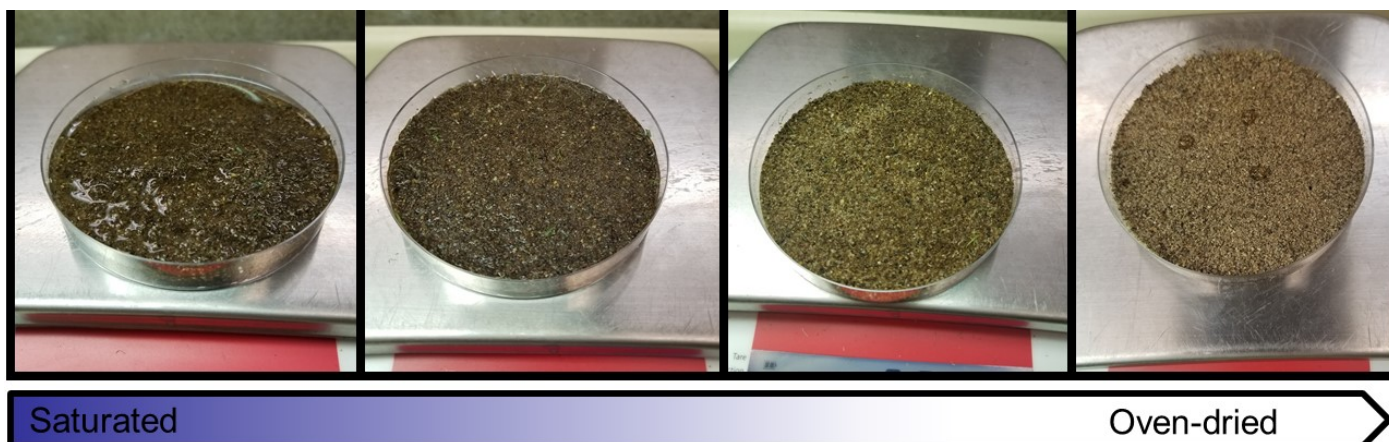


Figure 7. WDPT tests were conducted with the saturated rootzone of each creeping bentgrass plug as they air- and oven-dried to estimate the critical soil moisture content.



Cascade Plus treated rootzone maintained quicker WDPTs than the untreated control for the duration of the experiment (30 days), regardless of temperature treatment (**Figure 8**). When the one-inch bentgrass plugs treated with Cascade Plus were subjected to our hottest rootzone temperature treatment (94 °F) for 30 days and supplied 3-4 inches of water, WDPTs were highest (12 seconds), which was expected; however, this was still over 6 times quicker than the untreated at the same level of heat and water exposure. A similar trend was found in the critical soil moisture content estimations. As the Cascade Plus treated plugs were exposed to heat longer and supplied more water, their ability to keep critical soil moisture content low began to faintly diminish, but remained much lower than the untreated plugs (**Table 2**). In general as the water-saturated sand from the rootzones dried, its water repellency increased, but to a lesser degree in Cascade Plus treated sand.



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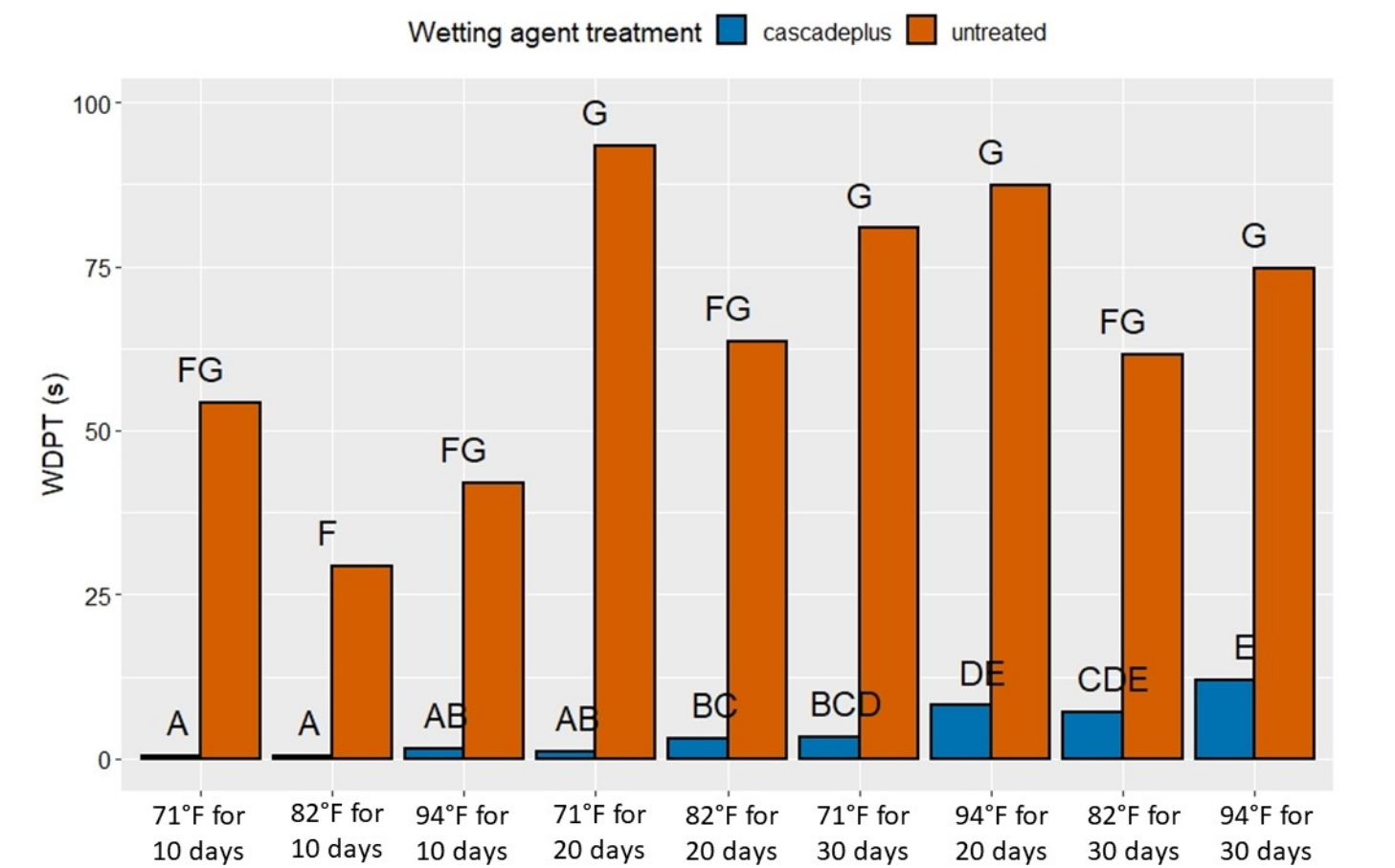
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Figure 8. Water droplet penetration time (WDPT) of Cascade Plus and untreated creeping bentgrass rootzones at different rootzone temperature exposure levels. Bars that do not share the same letter are significantly different.



Wetting agent	Rootzone temperature (°F)	Critical soil moisture content		
		10 Days	20 Days	30 Days
	°F	-----VWC (%)-----		
Cascade Plus	71	-	-	-
	82	-	2.24	8.24
	94	0.16	6.25	9.13
Untreated	71	27.06	30.60	30.98
	82	29.92	27.16	29.92
	94	21.60	24.31	24.55

Table 2. Estimated critical soil moisture content (soil moisture level at which the soil becomes water repellent) of Cascade Plus and untreated creeping bentgrass rootzones subjected to different rootzone temperature exposure levels. Areas marked with a dash indicate the soil remained wettable as it dried.

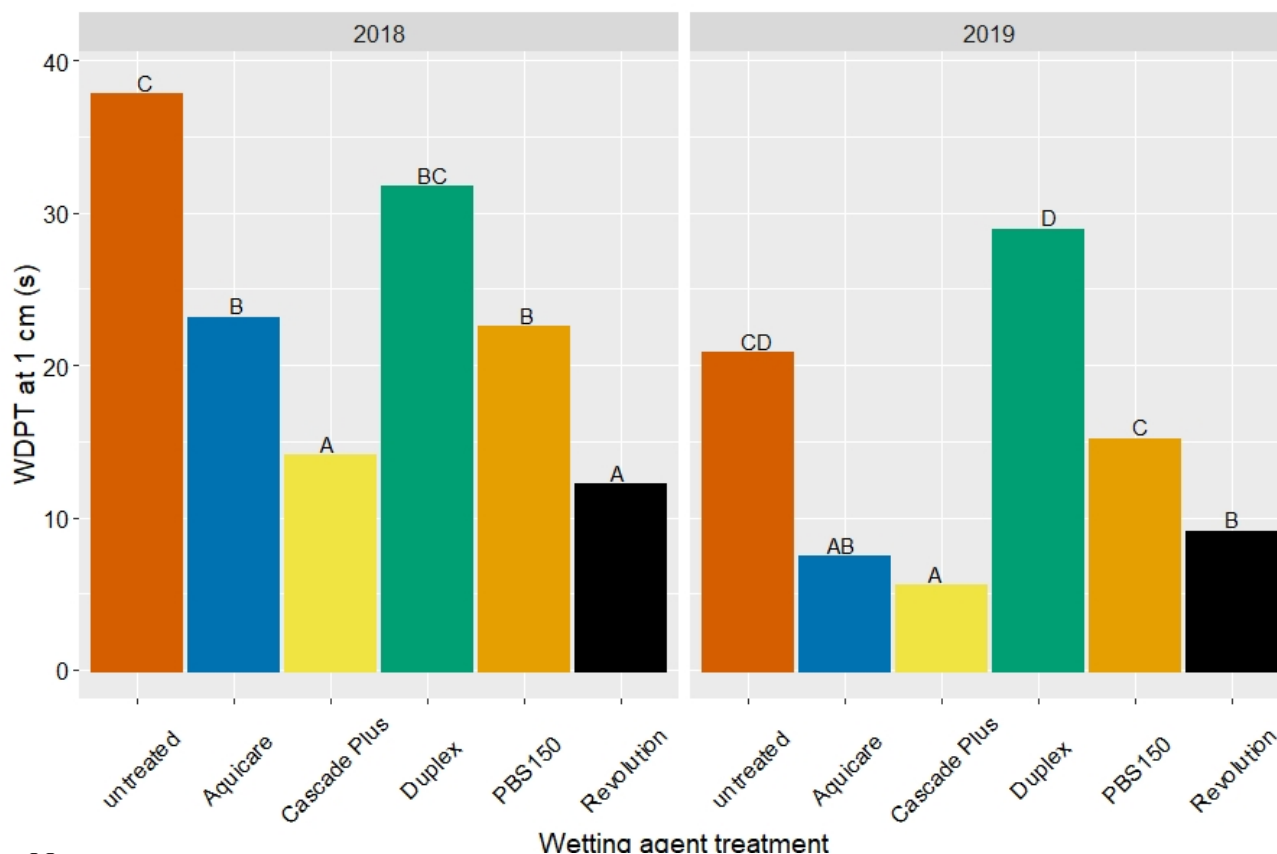
It can be concluded that the efficacy of Cascade Plus may last longer than our 30 day experiments. Rootzone temperature exposure, the amount of irrigation, or both caused slight reductions in the product’s ability to maintain a wettable rootzone. It remains unclear if soil temperature influences the longevity of wetting agent compounds in the soil.

Experiment 3: Spring benefit assessment of late fall wetting agent applications

This experiment was done on the same ‘Penn A-4’ creeping bentgrass research green and same wetting agents as Experiment 1 described above during 2017-18 and 2018-19. Each wetting agent was sprayed at their label rate the day prior to irrigation blowout each year late in the fall (November 11th, 2017 and October 21st, 2018). The spring benefits of this practice was evaluated the following spring, at which we collected the following data during the 1st, 3rd, and 5th weeks the soil had thawed: WDPT, volumetric water content, unsaturated infiltration rate, turfgrass quality ratings, and chlorophyll index.

Most of the wetting agent treatments influenced WDPT in the spring indicating product residual following winter and snowmelt. All products, except Duplex, had quicker WDPTs than the untreated each spring (**Figure 9**). These results fall in line with MGCSA member-driven research published by Bauer et al. (2017) regarding spring residual of wetting agents as a result of a late fall application. This practice puts the soil in a good position by reducing the potential for localized dry spots in the spring.

Figure 9. Water droplet penetration times (WDPT) at a 1 cm depth of each late fall wetting agent treatment and spring. Letters represent mean groupings within year, and bars that do not share the same letter are significantly different.



Of the data collected, the wetting agents responded well to WDPT tests, but not the other parameters (turfgrass quality, soil moisture, etc.). Winter and the transition into spring can drastically differ from year to year in Minnesota. In this experiment, each week of thawed soil differed by many factors such as reoccurring snow events, large temperature swings, and recovery progress from the past year's disease or moisture stress damage. Being able to observe the benefits of lower soil water repellency from a late fall wetting agent application likely depends heavily on the creeping bentgrass health going into winter and the spring weather conditions.

Summary

Wetting agents in these experiments generated lower soil water repellency characteristics, and this response was product dependent. This seems to be a common spring benefit of late fall applications; however, this affect may fluctuate throughout the growing season as a response to the environment. It remains unclear which environmental conditions influence wetting agent loss in golf greens, but soil temperature and irrigation/precipitation amount are probable candidates. Our results suggest that soil temperature influences WDPTs, but we are not sure about the effect on wetting agent longevity. Based on our research, reapplication intervals as directed by labels are likely shorter than needed, unless future models suggest otherwise.

Feel free to reach out to me via email (schw1396@umn.edu) for any questions related to this research. More detail and experiments can be found in my M.Sc. thesis, which is publically available in the University of Minnesota's Digital Conservancy (<https://conservancy.umn.edu/handle/11299/215027>).

Thank you

I would like to thank the MGCSA for their funding of this research over the years. I am forever indebted to your commitment and partnership with our lab at the University of Minnesota. I have enjoyed learning from many of you, and will always hold a great respect for the work you do every day in the name of sustainable and creative golf management.

Special thanks to Dr. Brian Horgan and Sam Bauer for laying the foundation and guidance in this research.

I'd also like to thank and recognize the following organizations for their support and donations during my run as a graduate student: USGA, Plaisted Companies, Aquatrols, Winfield United, Precision Laboratories, Aqua-Aid Solutions, Rush Creek Golf Club, and Spectrum Technologies.

Sources

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Ryan Schwab

schw1396@umn.edu

[Applied Plant Sciences](#)

Education

B.S. University of Minnesota, Plant Science 2016

Website

[Turfgrass Research](#)

The members of the Minnesota Golf Course Superintendent Association wish to thank Ryan for his dedication to this member driven project. Your support of the golf course turf industry is greatly appreciated.

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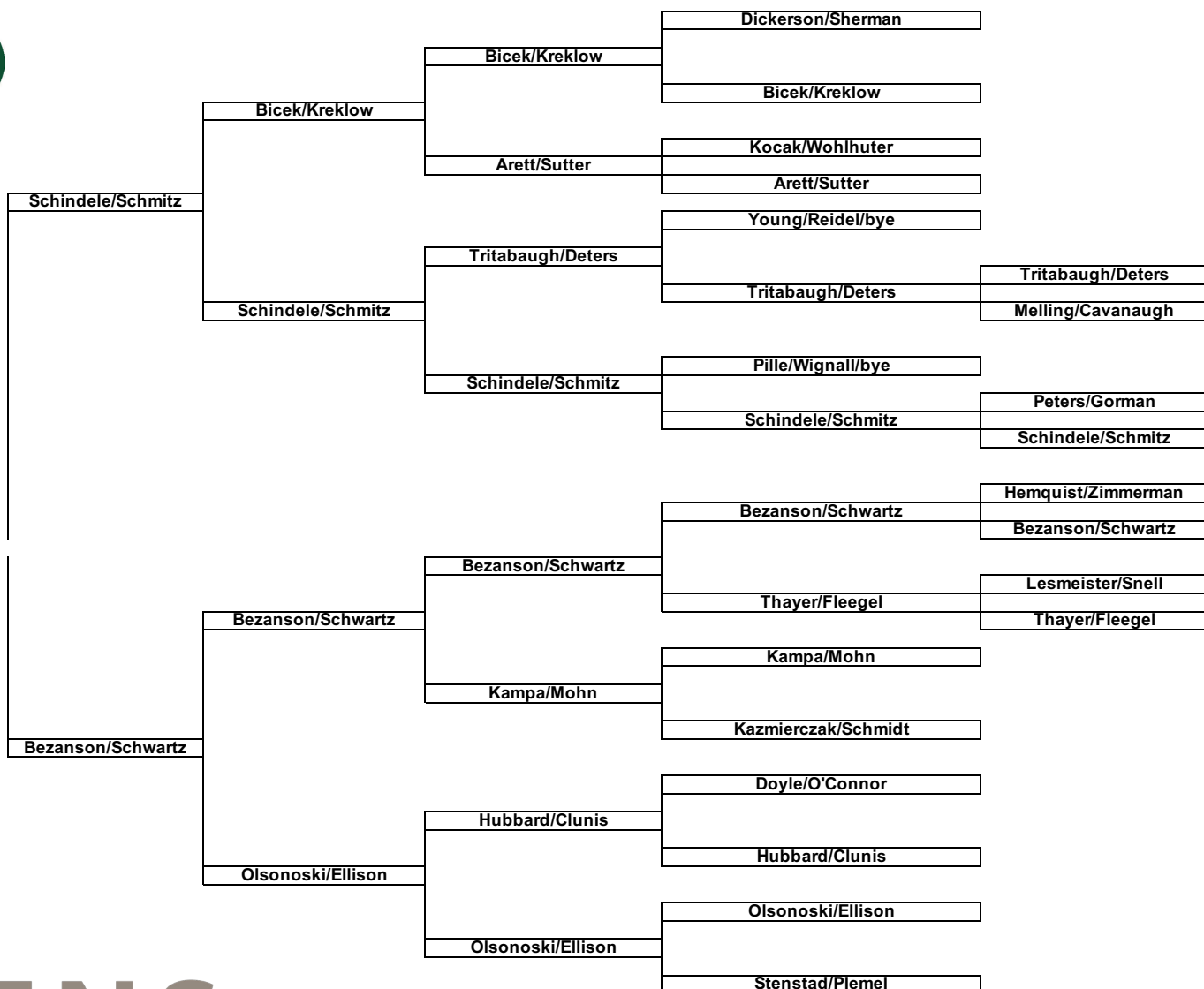
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Round Three
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Orion

The golf course superintendent's constellation

By David Ward, Coyote Run Golf Course

Throughout history humans have felt moved to mark the passing of time and seasons. The observation of nature, the length of days, the position of the sun and the stars in the night sky were all used to determine when to plant or to celebrate important cultural and religious festivals. Egyptians built temples so that sunlight entered a room at only one precise time of the year. Most experts believe Stonehenge was constructed by the Druids to mark both the summer and winter solstices. Mayans used watchtower-style structures to observe the equinoxes and solstices. Once modern-day calendars were invented, people didn't need to know anything about nature, the sun, or the stars to know when to start planting or celebrate Christmas, (a celebration roughly coinciding with the winter solstice).

Golf course superintendents are a little more attuned to nature than the general population. Most of us take cues from nature and keep track of dates that affect our professional lives. The average temperature starts dropping on July 19th and starts going up on January 29th. Many superintendents keep track of sunrise and sunset times. Days get shorter and the sun angles lower starting the first day of summer, usually June 21st, and the opposite occurs the first day of winter, usually December 21st. Early bloomers like marsh marigold and vernal witch hazel mark the start of the growing season. Autumn is about to begin when the Ohio buckeye's leaves start to show fall color in late August. The first yellow blooms of forsythia are a good indicator that it is time to apply growth regulators for Poa seed-head control.

Most superintendents in the Midwest feel relief on August 15th. If our courses are still in good condition on that date, they

Orion facts:

Orion is one of the 88 constellations within the celestial sphere.

Orion is one of the 17 constellations that represents a mythical character.

Symbolism: Orion is 'The Hunter'

Orion has been known by many different cultures and represent many different things for these cultures throughout history.

In Greek mythology, Orion represents a hunter who was the son of Poseidon, the god of the sea.

Orion is recognizable for its distinct shape of a hunter holding a weapon

Orion has ten stars with planets

Orion is home of Red Supergiant Betelgeuse

are unlikely to “go south” for the rest of the golf season

A seasonal indicator that is often overlooked by superintendents are the stars in the night sky, (maybe because most of us are in bed early), especially the constellation, Orion. It is one of the most prominent and recognizable constellations in the winter sky - the three-star belt flanked by Rigel and Betelgeuse, the two bright stars on either side. Because it is located on the celestial equator, it can be seen around the world.

Much like the fall color of sugar maple leaves, Orion is an indicator that autumn is around the corner when in mid-August it can be seen just before dawn on the eastern horizon. In late November and December, it can be seen in the eastern sky at about 9:00pm. It moves progressively westward in January and February, as winter moves towards spring. Like the blooming of the vernal witch hazel, at the end of March, Orion is barely visible in the western sky shortly after dusk, heralding the beginning of the growing season. It is not visible in the summer because it is in our sky during the daylight hours.

In Greek mythology, Orion was the great hunter famed for his good

looks and many love affairs. Its brightest star, Rigel, is a blue supergiant and the sixth brightest star in the night sky. It serves as the hunter's left foot. Orion's shoulder, the second brightest star in the constellation and the eight brightest star in the night sky is the red supergiant, Betelgeuse. It will someday explode as a supernova, as soon as this moment or any time in the next million years, (a blink of the eye in geologic time). When it does, it will be easy to find in the sky, not just at night, but also in broad daylight. The supernova would shine brighter than the moon and be the brightest supernova in history – another compelling reason to keep an eye on the Orion constellation.

Whenever you happen to be out after dark over the winter months, (after 9pm), take a second, look up and see if you can find Orion. You might get lucky and have the once in 100 million years' experience of watching Betelgeuse explode into a supernova. And pay attention to Orion's position in the night sky - he'll be marching toward spring before you know it."



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Minnesota Chapter

GCSAA

Golf Course Superintendents Association of America

Conference Comes to You replaces 2020 MGCSA MEGA Seminar

This fall, Minnesota GCSA is proud to partner with the Carolinas GCSA in an online conference to satisfy members' ongoing education needs during the coronavirus pandemic. Known as Conference Comes to You, the program will deliver 30 distinct seminars scheduled - one a day - over 30 weekdays, starting November 2. There will be a one-week break over Thanksgiving.

Using a tailored Zoom platform, the two-hour seminars will be presented live each day at 1 pm EST by some of the leading researchers, scientists and experts in their field. All seminars will carry GCSAA education points and, where applicable in participating states, many will carry pesticide credits.

As official partners with the Carolinas GCSA in this effort, Minnesota GCSA members will receive designated member pricing for every seminar, discounted from \$70 to \$40.

In addition to first-class education, our members will also be eligible to share in \$30,000 worth of cash giveaways. A total of 82 prizes – ranging from \$100 to \$2,500 - will be drawn, live on the Carolinas GCSA Facebook page at 1 pm EST on December 21. Each seminar you take qualifies you

for one entry. The more seminars you take, the more chances you have to win. To validate your entry, you must watch a series of brief messages from our Industry Partners.

Our chapter benefits from your participation. A portion of each registration fee paid for by Minnesota GCSA member, will come back to the chapter. So, the more seminars you take, the more our chapter “wins.” Registration and complete conference information is available beginning at 10 am EST Friday, September 25 through a purpose-built website –

Thanks to golf industry suppliers rallying in support, Conference Comes to You – the MGCSA’s online MEGA education conference – will now give away an additional \$10,000 in cash to early registrants. A total of 40 prizes, ranging from \$100 to \$1,000 will be given away over two drawings, on October 16 and October 30. This is in addition to \$30,000 in cash prizes to be drawn on December 21 after the conference ends.



Attendees will earn one entry in the Early Bird registration giveaway for every seminar they take. For example, someone who registers for three classes before October 16 will have three entries in that drawing and three in the October 30 drawing. They will also be eligible for three entries in the end-of-show drawing.

“Obviously, this is a great incentive for golf course superintendents and other industry members to sign up immediately,” Carolinas GCSA executive director Tim Kreger says. “They already have access to first-class education at a fair price, but if they register now, they can also get three bites at a cherry that has grown to \$40,000.”

Even so, Kreger says the most significant element of it all is in the sheer volume of support from industry partners and sponsors. To date, nearly three dozen companies have pledged financial backing for Conference



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Comes to You, which offers 30 distinct seminars over 30 days starting November 2. The online conference takes the place of the traditional MGCSA MEGA Seminar, cancelled this year because of the coronavirus pandemic.

“We were incredibly grateful to those companies willing to help us get such a new venture off the ground so quickly,” Kreger says. “But honestly, the fact that so many companies keep coming forward offering to help, has been overwhelming. It speaks to why this industry is so resilient.”

Growing corporate support is mirrored by growing support from superintendent chapters across the U.S. and overseas. Now 40 individual chapters have signed on as official partners of Conference Comes to You, earning their members discounted registration fees. For their participation, those chapters will receive a portion of every seminar fee paid for by one of their members. Recently Canada joined

the international contingent when the Ontario Golf Superintendent's Association signed on.

For full details on the Early Bird registration giveaway and to register for seminars, visit www.conferencecomestoyou.org. Early Bird registration sponsors include Ewing/Rain Bird, FMC, Frost, Inc., Radius Sports Group and STEC.

For more information, call Carolinas GCSA executive director, Tim Kreger, at (800) 476-4272.

The MGCSA membership thanks Carolinas GCSA Executive Director Tim Kreger for his hard work on this project and for including our chapter in the program.



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DNR is Working with Golf Courses to Track Water Use Efficiency

By Carmelita Nelson, Water Conservation Specialist, Minnesota DNR

Irrigation scheduling... Soil moisture testing... Irrigation sprinkler head maintenance... Stormwater reuse... These are some of the ways golf courses are improving the efficiency of their irrigation systems.

Beginning in October 2020, golf course irrigators will start reporting the water efficiency measures they are implementing along with the annual amount of water they have used. This web-based “Water Conservation Reporting System” will complement the water use reporting system currently in place.

Minnesota is the first state in the nation to measure water conservation on a statewide basis. For the past three years, the Minnesota Department of Natural Resources (DNR) has been working with cities, commercial, industrial and institutional water users to create a web-based system that allows them to report their water conservation and efficiency measures. We now want to partner with golf courses, nurseries and agricultural irrigators in this effort to do the same for them.

Initially, the DNR created a list of irrigation conservation measures



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from best practices recommended by the Minnesota Golf Course Superintendents Association, the University of Minnesota, and other irrigation guidelines. Irrigation experts and partners then reviewed and refined the questions. The DNR will use the refined list to create a web-based reporting system. A training video will be available to explain how to complete the new Water Conservation Reporting system.

The goal in gathering this data is to measure water conservation actions, track success and encourage efficiency. Ensuring sustainable use of waters, reducing losses and waste of water is everybody's responsibility. The data will be aggregated, summarized and used in various legislative reports, conference presentations and other outreach with partners.

Golf courses will continue to report their monthly water use totals to the DNR through the existing Minnesota Permitting and Reporting System (MPARS) and pay the annual water use fee. Once this is completed, there will be a link taking water users to the Water Conservation Reporting system.

For additional information please see the [DNR water conservation reporting system webpage](#) or contact Carmelita Nelson, DNR water conservation specialist, at 651-259-5034 or carmelita.nelson@state.mn.us.





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Meet the MGCSA

Brent Belanger

Les Bolstad, University of Minnesota Golf Course

Interview by Joe Berggren

FACILITY INFORMATION:

Public or Private: **Public**

Number of Holes: **18**

Fulltime employees: **3**

Seasonal employees (not including full time): **12**

Number of employees of entire facility at peak season: **42**

Types of grass: **Poa Annua and Bentgrass**

Total course acreage: **132**

Greens acreage: **3.5**

Tee acreage: **2**

Fairway acreage: **27**

Rough acreage: **82**

Driving range acreage: **10 acres**

Range tee acreage: **3 acres**



PERSONAL FACTS:

How many years have you been in your current position? **11**

How many years have you been in the turf industry? **34**

Where else have you worked?
**International Falls Country Club
and Majestic Oaks**

Turf School Attended?
**Anoka-Hennepin Technical
College**



Brent, right, and key staff member Chris Carpenter heading out onto the course.

Industry Thoughts:

What is one “master plan” thing you would like to change at your golf course?

New irrigation system (the old system is 50 years old and for sure outlived expectations).

What concerns do you have the turf business and the future of golf?
I fear that the younger population won’t take the time to play a full round of golf. They don’t seem to have the time. On the brighter side of things, I’m excited to see how technology will change the turf industry.

What piece of equipment do you want? Not a need, a want. I’ve always wanted a hovering golf cart.

In terms of industry costs (equipment, pesticides, labor, etc.) are they too low, too high or just right?

I believe that costs are getting into the too high range. It's pretty tough for Superintendent's with a lower budget to afford updated equipment, enough staff for a pay scale that other businesses are paying and chemicals to protect the facility.

FUN FACTS

Have you ever met a celebrity? Who? **Yes, I met Bronko Nagurski. He is from my home town.**

What is your favorite vacation spot? **International Falls/Rainy Lake**



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What is your favorite memory of starting your turf career? **My first boss sent me down to the edge of the cart path on #9 to dig a hole. It was about 4 feet deep in wet clay. When I was done he told me to fill it back in. I asked another employee the next day about the hole and he said it was my tryout to see if I would come back the next day. 33 years later, I keep coming back.**

What is your favorite job on the golf course? **I love mowing fairways.**

What is your least favorite job on the golf course? **Irrigation repairs**

Have you played any famous golf courses? Which ones? **I played Kapalua Plantation Course when we visited Maui.**

Who is your dream foursome? **Charles Barkley, Larry The Cable Guy and Bill Murray. I laugh at my game. May as well laugh as I'm playing!!**



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Educational Opportunity: 2021 Great Lakes School of Turfgrass Science: Cool-Season Golf Edition set for January 11 – April 2, 2021.

Any investment in quality continuing education opportunities benefits employees and employers alike. The 2021 Great Lakes School of Turfgrass Science: Cool-Season Golf Edition is designed to help meet the continuing education needs of any individual or organization. This 12-week program aims to provide participants with thorough and practical continuing education in turfgrass management. The course is directed by 12 turfgrass scientists and educators from 5 Land-Grant Universities and other organizations. We are very pleased to be offering this on the Greenkeeper University platform this year.

Turfgrasses are a resource in our urban community environments and best management practices are aligned with environmental, economic & societal priorities. The Great Lakes School of Turfgrass Science provides participants with the science-based principles needed to effectively manage turf for recreation, sport, aesthetics and environmental protection. The Great Lakes School of Turfgrass Science is a quality training opportunity for:

- Practitioners that establish and maintain turfgrass for golf courses
- Technical representatives from industry (suppliers of equipment, plant protectants, fertilizer, etc.)
- Those new to the industry - wanting to get trained and off to a great start
- Those with experience in the industry - to review/update their knowledge and practices

Students will have access to the course and materials at their convenience during the 12-week period via moodle class management system. The fee for the course is \$550, which includes supplemental materials and a certificate after successful completion of the program. Visit this link to register: greenkeeperapp.com

Early registration is encouraged and pre-registration is required. For Further Information: Contact Sam Bauer. Email: sam@bauerturf.com Phone: 904-271-0250.

Register at: greenkeeperapp.com



2021 Great Lakes School of Turfgrass Science: Cool-Season Golf Edition



Online Program (Jan. 11th – April 2nd, 2021)

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Questions about the school?

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This year offered at Greenkeeper University

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2021 Great Lakes School of Turfgrass Science Instructors

Without question, the strength of this new online school lies within the depth and experience of the turfgrass faculty. This program allows for extensive interaction with researchers and educators having national and international recognition.



Sam Bauer, M.Sc.
Owner/Agronomist
BauerTurf, LLC
Wayzata, Minnesota



Paul Koch, Ph.D.
Assistant Professor
Department of Plant Pathology
University of Wisconsin-Madison



Bill Kreuser, Ph.D.
Assistant Professor
Department of Agronomy and
Horticulture
University of Nebraska-Lincoln



Aaron Patton, Ph.D.
*Associate Professor and Extension
Turfgrass Specialist*
Department of Agronomy
Purdue University



Kevin Frank, Ph.D.
*Associate Professor and Extension
Turfgrass Specialist*
Department of Crop and Soil
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Michigan State University



Frank Rossi, Ph.D.
*Associate Professor and Extension
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David Gardner, Ph.D.
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The Ohio State University



Doug Soldat, Ph.D.
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Specialist*
Department of Soil Science
University of Wisconsin-Madison



Brian Horgan, Ph.D.
*Professor and Extension Turfgrass
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Chris Williamson, Ph.D.
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Ed Nangle, Ph.D.
Assistant Professor
Horticulture Technologies
The Ohio State University



Eric Watkins, Ph.D.
Professor
Department of Horticultural Science
University of Minnesota-Twin Cities



2021 Great Lakes School of Turfgrass Science

School format:

Participants will work through a total of 12 sessions during the 12-week program. Each session will include readings, a 2-hour recorded lecture, a live 1 hour discussion with 3-4 instructors, quizzes, and a final test. Participants completing all sessions will receive a certificate of completion for the 2021 school. The required work can be completed beyond the 12-week school period.

Sessions include:

- **Turfgrass identification, physiology and growth**
- **Soil science and management**
- **Selection and establishment**
- **Nutrition and fertility programming**
- **Mowing and additional cultural practices**
- **Abiotic stresses**
- **Irrigation**
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General

In order to enhance the educational opportunities of our existing membership/staff and promote the Golf Course Management Industry, the MGCSA is offering a new Reimbursement Program for the Great Lakes School of Turfgrass Science Online. (4) Reimburse coupons will be offered annually to approved applicants who complete the Online program and submit their Certificate of Completion. Applications will be reviewed by the Scholarship Committee. All decisions of the committee will be final. Applicants will be notified by December 15th prior to the School's Registration deadline. Applicants will still need to register/pay for the Online School as if they were attending on their own. The Reimbursement check of \$495 will be issued to the individual or company paying the initial Class Fee following the completion of the course.

Eligibility

1. Applicants must either be a MGCSA member or sponsored by a MGCSA member to apply.
2. Completion of the program and providing Certificate of Completion is necessary for reimbursement.

Criteria for Selection

1. (4) Applicants shall be selected based on employment history, recommendations and personal statement essay.
2. Financial need is not a factor in the selection
3. Any Scholarship Committee member with a conflict of interest must remove him/herself from the process. (family member or current employee applying)

How To Apply

Applicants must complete the attached application form and supply the following under one cover:

1. Personal Statement Essay
2. All applications must be post marked by Dec. 15th of the year submitted.
3. Send applications or email to:

MGCSA
10050 204th Street North
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jack@mgcsa.org

Application Form

Name _____ Date _____

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Or

MGCSA Member Sponsor/Employer Signature _____

Phone _____ Email _____

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Current Employer/Position _____

Past Employment History _____

Personal Statement

Attach a one page statement that tells who you are, explains when and how you became involved in Golf Course Management and why you are interested in the Great Lakes School of Turfgrass Science.

**RETURN THE COMPLETED APPLICATION AND PERSONAL STATEMENT NO LATER THAN
DECEMBER 15th TO:**

**MGCSA
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In Bounds

by Jack MacKenzie, CGCS

While not huge fans of network television, my wife and I have dabbled in cable programming for entertainment when we are not playing cribbage or reading together. Our viewing preferences vary dramatically. While racking up elliptical miles, I might watch *The Boys*, *The Punisher* or the *Westworld* series. When I am away on a solo camping adventure, my wife pursues powder puff programs like *Grace and Frankie*. We both enjoyed *The Marvelous Mrs. Mazel*, unfortunately, the latest season has yet to air.

I am very curious how the artificial intelligence of Netflix or Prime can select programming “specially selected” for my family’s viewing tastes. There really aren’t any warm and fuzzy, shoot ‘em up, blood and gore, lovey-dove with a twist of humor, programs on the platforms delivered to our boob-

tube.

And thus, in this pandemic driven “new world”, we have begun to watch documentaries. Left, right, centrist, apolitical, natural, scientific, preposterous, conspiratorial, investigative, instructional and sometimes super boring and or stupid. The latter of which we shut off and go play another game of cards.

A few programs my wife and I have watched together recently may be of interest to you as well:

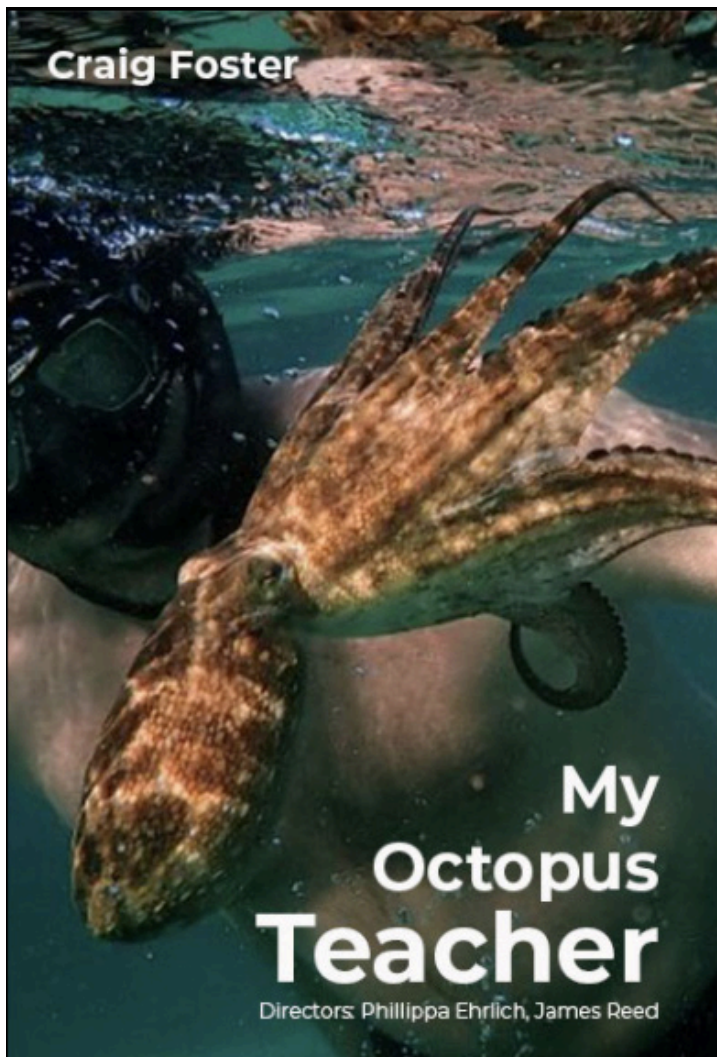
My Octopus Teacher. Breath taking underwater cinematography combined with a short-lived relationship between an introspective middle-aged guy and an octopus off the coast of South Africa. A wide variety of messages



are offered to the viewer, but as an experienced diver, I really just enjoyed the photography and unfolding mysteries of a creature I knew very little about and my wife was amazed by the interactions between species.

Plandemic II. Okay, okay, this may

be a tiny conspiratorial in nature.... But what if there is some truth in the presentation... even just a little bit, and I suspect there is. I personally enjoy a splash of left or right slanted, and/or alternative programming to keep my mind alive with different perspectives.



Gordon Ramsay's Ultimate Cookery Course. None of the ridiculous hash of verbal abuse dished up in Hell's Kitchen, just a few great recipe ideas and techniques to keep our amateur chef skills at their peak. From basics to unusual, Ramsay offers pleasant "G"-rated instruction on creating great chow.

Kiss the Ground. Scientific and thought-provoking information focused on the soil and our survival. The term desertification (look it up) and its negative impacts is focused upon and a methodology of conquering and turning back global warming. Fewer concerns with burning fossil fuels (that horse is out of the barn) and much, much

more emphasis on sequestering carbon through alternative farming methods. According to this documentary, humanity could conquer the threats of rising temperatures and desertification with minimal impact upon our society, just a strong push to get off of subsidized agricultural practices. My wife and I found the material eye-opening and worth pursuing.

Social Dilemma. There were so many eyebrow raising, brain stimulating and potentially physically impacting ideas put forth by the amazingly-smart people who created our current social platforms and now seriously question their final product, it took three nights to watch and digest. We literally stopped the program to talk about the ideas presented. SCARY stuff and very worthwhile.

Sea Change. An intriguing self-filmed story about the trials and tribulations of a husband and wife who row 7,000 miles across the

Atlantic Ocean in a very small boat. Crazy on many different levels.

As you can tell, our interests vary considerably. However, with a bit of searching we can settle upon stimulating entertainment to while the evening hours away. Of course, we enjoy our books and pegging out, but sometimes it is fun to curl up on the couch in front of the tele for a bit of mindless, vicarious distraction.

