

INTRODUCING **DISPLACE™**

12% Calcium with a soil wetting agent

Displace is a unique combination of readily available calcium and soil surfactant formulated to rapidly displace sodium from the soil and add calcium for improved soil structure and water infiltration. The calcium in Displace will remain in solution and react directly with the soil to displace sodium ions. The specially designed soil surfactant component enhances product infiltration and facilitates uniform placement of the product throughout the soil profile for optimal efficacy when dealing with sodic issues. Displace is intended to rapidly exchange sodium with calcium in critical areas of golf and sports turf.

- Displace is a convenient and easy to use formulation through the combination of a highly effective form of calcium and a proven wetting agent.
- Proprietary soil surfactant chemistry will improve product placement in difficult soil conditions.
- Displace will increase water infiltration and provide a more uniform wetting front in the soil profile, improving the efficacy of leaching.
- An excellent tool to address hydrophobic soil conditions (localized dry spots).
- Improves soil structure for better root growth, nutrient uptake, water infiltration, soil oxygenation and overall turf vigor.
- An excellent tool for managing bicarbonate accumulation from irrigation water.
- Displace is two products in one that saves time and additional mixing.



Toll Free (888) 246-8873 • Fax (208) 673-6342
P.O. Box 128 • Albion, ID 83311
[facebook.com/griggbros](https://www.facebook.com/griggbros) • www.griggbros.com

newer putting greens less than 10 years old,” says Kern. “I think the reason we haven’t seen either increases or decreases in the disease is because we haven’t had a lot of new construction or renovations.”

As far as why new greens would be more susceptible to PRD than older greens, the experts simply don’t know. A valid hypothesis, Kerns believes, is that maybe the roots on new greens aren’t as developed. Or, as greens age and develop more organic material, perhaps the microbial environment is less conducive to the pythium species’ survival.

PRD has been spotted throughout the U.S., but, according to Kerns, it seems to be predominant in the Mid-Atlantic and Southeast states where there are prolonged periods of stress during the summer. Recommendations for those areas include two applications one month apart of Insignia, Segway or Signature tank mix when soil temperatures are around 55 to 60 degrees at a two-inch depth.

“This method has stood up outside of the Southeast, but it has not been documented with research,” Kerns says. “But in my experience, PRD hasn’t been a major disease outside of the Southeast and has been fairly limited in other areas around the country.”

But he admits that the weather patterns of the last few years give other regions reason to be concerned.

“Over the last couple summers, that stress has moved into other areas, for example Ohio, Wisconsin and maybe the Northeast, so I advise superintendents to be on the lookout for PRD but also to not be scared of it. It used to be a hot button issue when it was a new disease and was a one-hit wonder for a long time, but I think things are starting to calm down a little now.”

Kerns recommends that superintendents send in samples of their turf to be diagnosed for PRD if they’re not seeing results from their traditional fungicide programs.

“For example, in Ohio, a lot of superintendents are probably treating for take-all patch, and then they’ll see symptoms in the summer and wonder why their application didn’t work,” he says. “If that’s the case, send samples to a diagnostic lab or local extension to figure out if the problem is caused by take-all or PRD.”

Kern offers another observation: “We have only ever seen it on creeping bentgrass. Some people have claimed they’ve seen it on annual bluegrass, but I personally have never diagnosed it on that.” **GCI**



The PRD pathogen infects during spring and fall when the soil temperature is between 55 and 75 degrees Fahrenheit. The symptoms, though, don't emerge until the turf enters a stressful period.

GO GREEN.

[...on your tee boxes]

[...on your greens]

[...on your high traffic areas]

[...on your fairways]



INTRODUCING THE TURFCO® TRIWAVE™ 40

Damaged turf on your #7 tee? Weak areas on your #2 and #12 greens? Want to improve the overall stand of grass on your high traffic areas on #6 and #10? Greening up your course has never been easier or quicker with the TriWave 40. Just hook up to your turf vehicle and **seed them all in one trip.**

- Quickly adjust seed rates and depths to match conditions—no tools required
- Patented floating heads and seed delivery system maximize germination rates
- Patented WaveBlade™ technology optimizes seed-to-soil contact with minimal turf disruption
- Seed while you turn so you can follow greens, collars and contours

It's your grass on the line. Save it with the TriWave 40.

CALL 1-800-679-8201

for a FREE on-site demonstration, or
VISIT WWW.TURFCO.COM
to see the TriWave 40 in action.



THE LEADER. SINCE 1961.



Monroe Miller retired after 36 years as superintendent at Blackhawk CC in Madison, Wis. He is a recipient of the 2004 USGA Green Section Award, the 2009 GCSAA Col. John Morley DSA Award, and is the only superintendent in the Wisconsin Golf Hall of Fame. Reach him at groots@charter.net.

DOES BRAND LOYALTY EXIST ANYMORE?

When I was growing up in Wisconsin, “brands” identified you and your neighbors. The Bohls were a John Deere farm, the Baumgartners had Case, and we were Ford and Oliver. Dairy cattle breeds were sort of a brand. You had Holstein farms, Guernsey or Jersey farms and even a few Brown Swiss herds could be found. There was fierce loyalty to the breed of cattle your dad liked.

And so it went with cars and trucks and even seed corn varieties. That brand loyalty that was so evident and important in my youth is with me yet today, and dictates many personal choices. It is still important to me. I like Case pocketknives, Red Wing boots, Carhart jeans, Pendleton shirts and Stormy Kromer winter hats. I drive only Ford and I’m partial to Snap-On hand tools. I even have a preference for the wooden pencils I write with – Ticonderoga No. 2s.

A 2010 survey stated for two thirds of Midwest farmers, brand loyalty influences their decisions on equipment purchases. I was surprised, expecting brand loyalty would have gone by the wayside in the sweeping changes in agriculture in the past 50 years.

Not so. The same survey reported that less than 20 percent responded that they were less loyal to equipment brands than five years previous, while more than 25 percent had become more equipment brand loyal.

This got me to thinking about superintendents and the shops I have visited in the last 40 to 50 years. There are shops that heavily favored one brand of turf machinery over others. It wasn’t hard to tell – either they were orange or red. Jacobsen and Toro dominated the golf machinery market until the past couple of decades, when John Deere entered the turf care market. Some shops are now green.

How much influence can brand loyalty have for most superintendents? It is one thing when a farmer who owns his own business can use his own money to buy whatever brand he wants. It is another thing entirely when you are spending someone else’s money, whether it is an owner, a municipality or a private club.



A lot of what appears to be brand loyalty to a color or logo is really **salesman loyalty**. We count on them for so much – information, demonstrations, communications – that there is a natural tendency to want to deal with one who is dutiful, reliable and honest.

Blind loyalty is a rare commodity among the ranks of superintendents. The fact is for almost all of us the choices we make in selecting equipment is based more on things like distributor reputation, the salesmen involved, and the fit of a particular machine to our turf and individual course features. Price is also obviously a very important consideration.

The distributor’s role in service is critical and almost every superinten-

dent I know puts high value on parts availability and delivery. Anymore, with the high cost of turf equipment, no one wants it sitting in a corner of the shop for a week, waiting for a part.

A lot of what appears to be brand loyalty to a color or logo is really salesman loyalty. We count on them for so much – information, demonstrations, communications – that there is a natural tendency to want to deal with one who is dutiful, reliable and honest. I will never forget the salesman who left a family reunion to chase down to the distributor shop on a Sunday afternoon to get a part for us so we could keep a Greensaire operating. And as generous as that action was, I love the story of a sales person snagging a needed part from the assembly line for a desperate superintendent. Boy, do heroic efforts like these ever build brand loyalty.

Location of a distributor plays into loyalty, too. If a distributor is relatively close by, then that proximity can influence what appears to be brand loyalty in a big way.

What it comes down to is less brand loyalty and more the distributor/superintendent relationship. Obviously, there has to be satisfaction with the product he sells, but it may be less of a machinery loyalty factor than the comfort and the trust offered and nurtured by the seller. When brand loyalty exists, it is almost always because it’s good business. Honestly, orange and red and green all do a great job and help courses all over the world prepare for major tournaments as well as daily play.

I was thinking back to last spring when I was mowing fairways while wearing my Jacobsen hat, a Deere sweatshirt and operating a Toro fairway mower. Apparently I spread my brand loyalty around. That is, except when it comes to Ford trucks. **GCI**



Intelligent Irrigation

What is your root zone telling you?



The LCD screen displays:

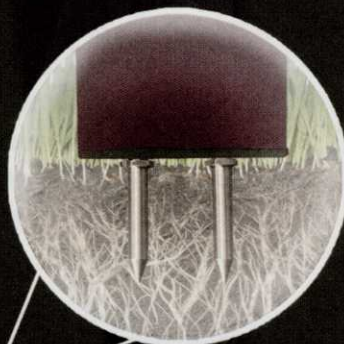
- Current Measurement
- Rod Length
- Number of Readings
- Running Average



FIELDSCOUT®

TDR 300 Soil Moisture Meter

- Hand Water Objectively
- Monitor Irrigation Uniformity
- Schedule Irrigation Effectively
- Reduce Water Usage



Rods available in lengths of 1.5", 3", 4.8", and 8"



Order online at www.specmeters.com



Scan the code with your smart phone for more information about the FieldScout TDR 300!

Spectrum®
Technologies, Inc.
"To Measure Is To Know"

12360 S. Industrial Dr. East
Plainfield, Illinois 60585
Toll Free: (800) 248-8873
Email: info@specmeters.com

BY RENÉE RIOUX AND JIM KERNS



Rioux



Kerns

Water volume doesn't matter...or does it?

Research examines the effect of different water carrier volumes on fungicide efficacy for dollar spot control.

As a turfgrass pathology PhD student under Dr. Jim Kerns, I study virtually all aspects of dollar spot, from where the pathogen is coming from to how it infects its hosts, and even the molecular mechanisms governing host resistance. This summer, we added another project to my research: evaluating the effect of different water carrier volumes on fungicide efficacy for dollar spot control. This has become an increasingly popular subject in recent years because many view carrier volume as a variable that can be manipulated to optimize disease control. With the many issues complicating dollar spot management, getting the most out of available fungicides is no trivial matter.

Editor's Note

This article first appeared in the November/December issue of *The Grass Roots*, the official publication of the Wisconsin Golf Course Superintendents Association. It is reprinted with permission.

Our goal with this study is to determine if altering carrier volume enhances the efficacy or expands the duration of dollar spot suppression provided by Chipco26GT and two relative newcomers to the market, Secure and Daconil Action.

THE STUDY. This study commenced this past summer and was performed on a creeping bentgrass (cultivar 'Alpha') fairway maintained at a height of 0.5 inches at the O.J. Noer Turfgrass Research Center. All possible combinations of four water carrier volumes and six fungicide regimes were utilized as treatments and were replicated four times in a randomized complete block design (Table 1). An initial spray was put out on June 14, 2012, at which time no active dollar spot infection centers were present. Dollar spot severity ratings were made weekly by counting the number of active infection centers present in each plot.

Fungicide reapplications were made based on a 1% spray threshold; thus, when infection

centers covered greater than 1% of the area in a single plot, the treatment in that plot was reapplied to all four replicate plots for the treatment. This allowed us to determine not just fungicide efficacy, but also differences in duration of

control for our different treatment regimes. Based on our 1% threshold, two reapplications were made for treatments 5 and 20, but only one reapplication was needed for all other treatments (Table 1). At the end of the trial, severity data was con-

Table 1. Treatments for trial on the effects of carrier volume for dollar spot control

Treatment	Fungicide(s)	Carrier Volume (gal/1000ft ²)	Rate
1	Nontreated control	0.5	
2	Nontreated control	1.0	
3	Nontreated control	1.5	
4	Nontreated control	2.0	
5	Daconil Action	0.5	2 FL OZ/1000FT ²
6	Daconil Action	1.0	2 FL OZ/1000FT ²
7	Daconil Action	1.5	2 FL OZ/1000FT ²
8	Daconil Action	2.0	2 FL OZ/1000FT ²
9	Chipco26GT	0.5	4 FL OZ/1000FT ²
10	Chipco26GT	1.0	4 FL OZ/1000FT ²
11	Chipco26GT	1.5	4 FL OZ/1000FT ²
12	Chipco26GT	2.0	4 FL OZ/1000FT ²
13	Secure	0.5	0.96 FL OZ/1000FT ²
14	Secure	1.0	0.96 FL OZ/1000FT ²
15	Secure	1.5	0.96 FL OZ/1000FT ²
16	Secure	2.0	0.96 FL OZ/1000FT ²
17	Daconil Action Chipco26GT	0.5	2 FL OZ/1000FT ² 4 FL OZ/1000FT ²
18	Daconil Action Chipco26GT	1.0	2 FL OZ/1000FT ² 4 FL OZ/1000FT ²
19	Daconil Action Chipco26GT	1.5	2 FL OZ/1000FT ² 4 FL OZ/1000FT ²
20	Daconil Action Chipco26GT	2.0	2 FL OZ/1000FT ² 4 FL OZ/1000FT ²
21	Daconil Action Secure	0.5	2 FL OZ/1000FT ² 0.96 FL OZ/1000FT ²
22	Daconil Action Secure	1.0	2 FL OZ/1000FT ² 0.96 FL OZ/1000FT ²
23	Daconil Action Secure	1.5	2 FL OZ/1000FT ² 0.96 FL OZ/1000FT ²
24	Daconil Action Secure	2.0	2 FL OZ/1000FT ² 0.96 FL OZ/1000FT ²

Green is more than just a color

With a 100-year tradition of sustainability leadership, Milliken not only delivers the colorants, turf paints and spray pattern indicators with the performance you've come to expect, our innovative products can help you have less impact on the environment and more impact on the beauty of your facility.



Milliken®
Blazon®
Spray Pattern Indicator

Milliken®
Evergreen Jade™
Turf Color Enhancer

Milliken®
Evergreen Viva™
Green Turf Paint

Milliken®
Aquarius®
Soil Wetting Agents

Milliken®
Mirage®
Lake and Pond Colorants

Milliken™

millikenturf.com

© Copyright 2012 Milliken & Company. All rights reserved.

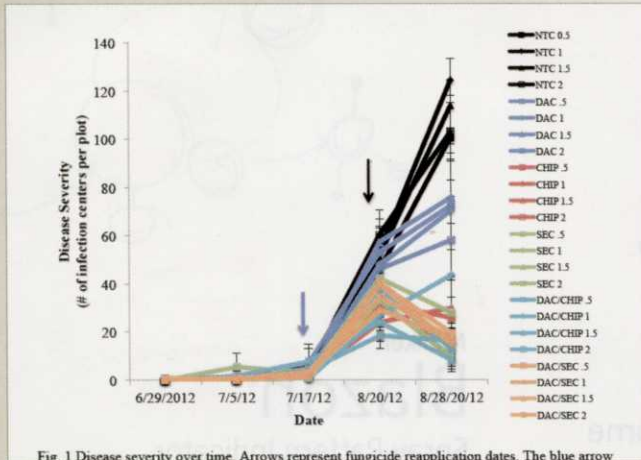


Fig. 1 Disease severity over time. Arrows represent fungicide reapplication dates. The blue arrow

Fig. 1. Disease severity over time. Arrows represent fungicide reapplication dates. The blue arrow represents reapplication of treatments 5 and 20 only. The black arrow represents reapplication of all fungicide treatments.

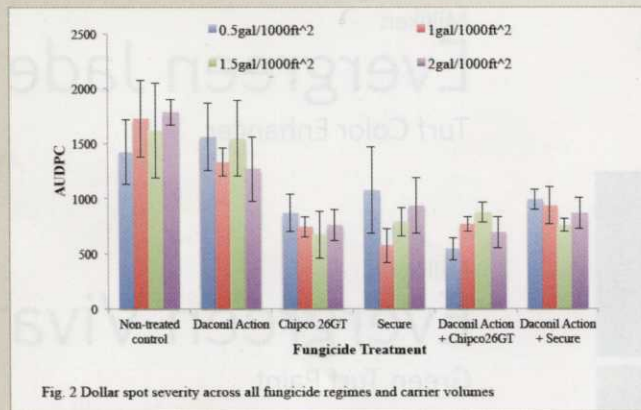


Fig. 2 Dollar spot severity across all fungicide regimes and carrier volumes

Fig. 2. Dollar spot severity across all fungicide regimes and carrier volumes

verted to area under the disease progress curve (AUDPC), which gives a single value for disease progress over time, and means were separated using the Waller Duncan test. We looked for effects of fungicide treatment, carrier volume and interaction between fungicide treatment and carrier volume.

THE RESULTS. Unfortunately the hot dry conditions we experienced this summer were not particularly conducive for dollar spot and much of this trial went without significant symptom development (Fig. 1). Around mid-July, we experienced moderate disease pressure and this resulted in the extra reapplica-

tion mentioned before for treatments 5 and 20. Following this outbreak, another hot stretch limited disease development until mid-August. Conditions around this time were highly conducive for dollar spot and all the plots got hammered, resulting in reapplication of all treatments (Fig. 1).

Based on our disease severity over time, the combination of Daconil Action and Chipco26GT or Secure provided the best suppression of dollar spot (Table 2). All other treatments, with the exception of Daconil Action alone, provided disease suppression similar to that of the Daconil Action/Chipco26GT mix. Daconil Action by

itself provided poor dollar spot control across all water volumes and its performance was not statistically different from that of the non-treated controls. This was not a surprise, as the hot, dry conditions in Madison this summer prevented application of the fungicide until it was likely too late to truly prevent dollar spot development. It does, however, reaffirm the need to mix different active ingredients when dollar spot development is extreme. This was evident from both Chipco26GT/Daconil Action and Secure/Daconil Action performing well in our trial. When applied alone, the newest fungicide in our treatment list, Secure, also performed reasonably well when compared to the non-treated control, though not as well as when applied in combination with Daconil Action.

In this year of the study, water carrier volume had very little effect across all of our fungicide treatments (Table 3). Consequently, no difference was detected for carrier volume or the interaction between fungicide regime and carrier volume. These results are reinforced by a comparison across all treat-

ments and carrier volumes (Fig. 2). In general, those fungicide regimes that performed well did so across all carrier volumes and those fungicide regimes that did not perform so well also did so regardless of carrier volume.

SUMMARY. With a single year of data and less than ideal conditions for both dollar spot development and fungicide application, we are unable to make any conclusions about the influence of carrier volume on fungicide efficacy for dollar spot suppression. Though results from this year indicate a minimal influence of carrier volume, we may see a different trend next summer. Another year of data will improve our understanding of the role of carrier volume on dollar spot suppression. This will allow for the selection of carrier volumes that optimize the efficacy and longevity of fungicide applications for dollar spot management. **GCI**

Jim Kerns is an assistant professor, plant pathology, and Renee A. Rioux is a graduate research assistant, plant pathology, at the University of Wisconsin-Madison.

Table 2. Dollar spot severity over time as affected by fungicide

Treatment	AUDPC ¹
Nontreated Control	1638.4 a
Daconil Action	1427.1 a
Chipco26GT	884.4 b
Secure	859.0 b
Daconil Action Chipco26GT	758.4 b
Daconil Action Secure	715.5 b

¹AUDPC values followed by the same letter do not differ significantly (Waller Duncan test, p=0.05)

Table 3. Dollar spot severity over time as affected by carrier volume

Carrier Volume	AUDPC ¹
0.5gal/100ft ²	1075.2 a
1.0gal/100ft ²	1048.3 a
1.5gal/100ft ²	1042.4 a
2.0gal/100ft ²	1029.8 a

¹AUDPC values followed by the same letter do not differ significantly (Waller Duncan test, p=0.05)



MUSKETEER™

Turf Growth Regulator

Musketeer is the first turf plant growth regulator (PGR) to incorporate three PGR technologies to uniquely and effectively suppress Gibberellic Acid synthesis, leading to superior growth regulation of targeted turfgrasses. Musketeer is the result of SePRO research and based upon the same patented turf PGR synergy technology as SePRO's Legacy* Turf Growth Regulator. Musketeer is specifically formulated to aggressively target growth suppression of *Poa annua* in cool-season turfgrass species, such as creeping bentgrass, while providing excellent turfgrass enhancement. The result—more bentgrass and less *Poa annua*.



SePRO Corporation Carmel, IN 46032



*Trademarks of SePRO Corporation. The synergy derived from the combination of Type IIA and Type IIB PGRs is covered under U.S. Patent No. 7,135,435. Always read and follow label directions. ©Copyright 2012 SePRO Corporation.

435/ 797-6650

Research Interest: Water conservation, Ornamental Horticulture and Extension. Work focuses on turf grass water use efficiency, water-wise landscaping principles, water and nutrient management in turf grass. Working closely with Utah state agencies for best water management practices.

Comment: No matter where we live and work, we need to develop best-management practices for water use as well as pesticide and nutrient run-off and management. Water is a valuable resource everywhere.

Dr. Scott McElroy – Auburn University, College of Agriculture, Agronomy and Soils

Jsm0010@auburn.edu
334/ 844-3992

Research Interest: Evaluation of herbicides for use in turf grass management and development of new sustainable organic and non-synthetic pesticide weed management practice for use in turf management.

Comment: Reduced pesticide use, alternative practices, and pesticide development will lead to cleaner, safer and weed-free golf courses.

Dr. Brian Horgan – University of Minnesota, Department of Horticulture Science

bphorgan@umn.edu
612/ 624-0782

Research Interest: Work revolves around nutrient fate and general turf grass management. In addition, research focuses on salt tolerance in cool season grass, water use and distribution practices.

Comment: You would think the “Land of Ten Thousand Lakes” wouldn’t have water concerns. But it does and water is very valuable to Minnesota’s economic development.

Dr. Alec Kowalewski – Oregon

State University, Department of Turf Grass Science

Email not available
541/ 737-3695

Research Interest: On getting settled at Oregon State, his research will focus on maintaining quality turf grass conditions within operating budget restrictions, reducing the impact to the environment through proper turf grass practices, researching various turf grass varieties for those species which use less fertility and water.

Comment: Effective management of turf grass resources is essential if we are going to continue to produce quality playing conditions.

Dr. Doug Karcher – University of Arkansas, Department of Horticulture

karcher@uark.edu
479/ 575-5723

Research Interest: Research program to improve the functional and aesthetic quality of turf grass through the refinement of cultural practices, especially those pertaining to soil management. Developed digital image analysis techniques to quantify turf grass cover and turf grass color.

Comment: If we can improve what turf looks like, the consumer will be more open to the various practices we employ.

As this “Not So Dirty Dozen” proves, there is no shortage of important agronomic ideas to study in this industry. But their success relies on our support. We can’t let funding be allocated to the same participants year after year after year. Be a voice for progress and get involved with local, regional and national groups encouraging research that will help make our lives better and safer.

Be on the lookout for new and better ideas and when you see them, let everyone else know. **GCI**



Training should be conducted by management and not fellow workers with longevity.

At the point of orientation, I suggest explaining some of the following items:

- What is a golf course?
- What are our objectives?
- What are the standard work rules including items like tardiness, absenteeism and anything else that would be included in an employee manual?
 - Pesticides, their storage and usage, location of MSDS sheets
 - Hazards in the workplace
 - Emergency evacuation information including fire exits and also location of extinguishers, etc.
 - Disaster Plan if applicable that might be for tornados, hurricanes, earthquakes, tsunamis, etc.

It could easily take a few days to cover these items for new hires. For those superintendents that choose to delay this, you are really putting yourself and your club at great risk. If something happens to an employee in those first days of employment without this type of training, then the facility will likely be liable.

In recent years, it is fairly standard to receive either a training video or an operator manual for most of the equipment used on a golf course. Each employee must read or view these training and safety manuals so that they understand how the equipment works and how to use it in a safe manner. Should an accident ever occur this will be one of the first things an investigator or the injured parties will look into. “Was the employee properly trained?” If not, it is hard to defend safe usage of any piece of equipment. Be sure that employees view or read this material and then sign off on their understanding of the information and keep that on file.

OUTCOMES. Imagine a well-trained team of employees that operates in a precision manner to accomplish the goals and objectives of your facility. Imagine a team that understands what spells success for the golf course facility. Imagine a team that all knows how to execute daily the plan that you have for them. If this sounds like a fantasy it may be because you have never worked in an operation that holds training as one of the fundamentals for success. I suggest you visit a facility that utilizes formal training and see what their efficiencies are and their ease of management.

Cross training of employees will lead to several things. Not only are people checked off to do a variety of tasks, but they also are inspired to take on more training that could lead to more responsibility and potential pay increases. The more an employee knows and can do for the facility then the more value he has to the employer. Employees that are learning and growing are happy employees and this will lead to longer tenure with up to date skills. **GCI**