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Tee To Green

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It's All About Meetings

**METGCSA
MEETING
ROOM**

WELCOME



I have to admit I was a little concerned when I took over as president of the Met—particularly with the trend of declining attendance at meetings and events over the past few years. Not knowing what long-term effects September 11 might have on area clubs and businesses didn't help my confidence either. Would the downturn in the business environment require belt tightening and reduce revenue available for the MetGCSA's treasury?

Many of you took me aside or called on the phone to offer your advice and words of wisdom—about the Met's attendance problem and other issues concerning the health and welfare of our association.

Little did I know just how united we were in our interest for the association's well-being.

I was also reassured by the nice start we had to our golf and tournament season. So far, we've had four very successful monthly meetings.

We kicked off the season with our March Business Meeting at Lake Isle Country Club with Kevin Quist as our host. Right behind that was our first golf meeting of the year, the Two-Ball Qualifier, hosted by David Mahoney at Siwanoy Country Club. Then we were off to Tony Grasso's, Metropolis Country Club, for the Superintendent/Manager meeting. And June 3, we had a very successful Invitational Tournament hosted by none other than The Legend himself, Bob Alonzi, and the rest of the Fenway family (see page 12).

What a lineup of impressive sites. Not only were the golf courses in terrific condition, but the hospitality from all the clubs was also superb. For those who have opened their courses to a Met meeting this year or sometime in the past, I thank you on behalf of all our members. Without your commitment and generosity, we would not be the association we are today. The best part is that there's much more to come for the balance of the year.



Tim Moore
MetGCSA President

What's in Store

For one, our Education Committee has added an interesting twist to our July meeting. The thought is to provide a longer, more targeted educational program than we've been able to offer at our standard monthly meetings but then follow it up with a fun event. (See page 13 for the low-down on the lineup of speakers and events.) It will start late afternoon, so those who can't get away for an entire day can still attend and get the full benefit of an educational program and time to network and relax with peers.

We're hoping this will encourage better participation not only from the superintendents, but also the assistants and affiliate members. So please be sure to attend and encourage others to do so as well, and then let us know what you think of this new format. Watch the mail for details.

Another event with details to follow is our Summer Social, which the Social Committee has been in the throes of planning for later this summer. Keep your eyes peeled for info on what promises to be a fun-filled event.

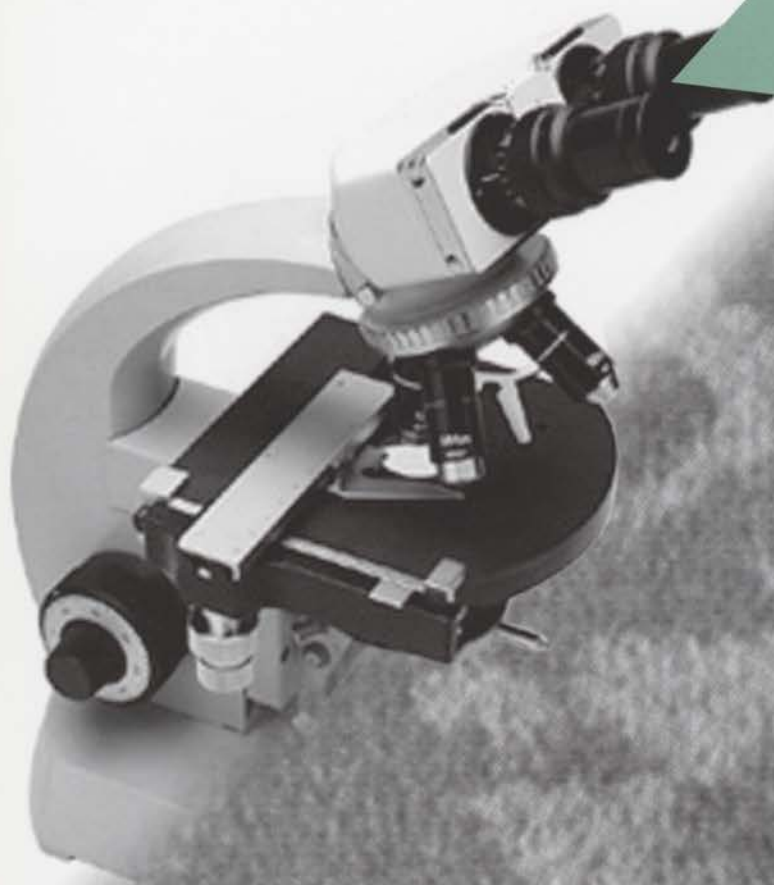
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Feature

Resisting Fungicide Resistance

by Scott Niven, CGCS

*Pathologists Present
Opposing Views on
Fungicide Resistance
Management*





It's tough to be a maverick . . . unless you're Michigan State University plant pathology professor Dr. Joe Vargas. Though he's raised more than a few eyebrows for his contrary views on fungicide resistance, he takes solace in the fact that greats like Charles Darwin and Louis Pasteur, were once ostracized for their groundbreaking theories on evolution and pasteurization.

Dr. Vargas insists that there's no need to rotate fungicides for effective resistance management. He first touted this theory in his 1981 book, *Management of Turfgrass Diseases*, and has more recently traveled the country spreading the good word.

But most plant pathologists, who have long held that we should rotate or alternate fungicides for effective resistance management, feel Dr. Vargas's theory is risky at best. And they're concerned that superintendents may be persuaded to follow his course of resistance management with ill effects.

"A good number of superintendents know better than to prescribe to Vargas's theory, but some don't," says Houston Couch, a professor of plant pathology at Virginia Polytechnic Institute and State University. "Rotation is an essential part of resistance management. To tell people not to rotate is really the ultimate in irresponsibility."

Coveted Beliefs

Proponents of the longstanding rotation/alternation method of fungicide use firmly believe that the way to delay or avoid fungicide resistance is to either tank mix two or more fungicides with different modes of action (i.e., mix a contact with a systemic) or alternate fungicides by varying chemical families and modes of action every other spray.

As Dr. Bruce Clarke, Rutgers Cooperative Extension specialist in turfgrass pathology, explains, "A fungicide's mode of action dictates if and when it can develop fungal tolerance." For example, fungicides with broad modes of action, such as chlorothalonil, mancozeb, and PCNB (pentachloronitrobenzene), have low potential for developing fungal tolerance. But fungi-

cides with more specific modes of action, such as the benzimidazoles and strobilurins, have moderate to high potential for developing fungal tolerance when used repeatedly. (See Tables 1 and 2 on the following pages for fungicide resistance potential and modes of action.)

That's why it's essential, pathologists agree, that the more site-specific group of fungicides be alternated or tank mixed with those that have a broad mode of action. "By mixing various combinations of fungicides from two chemical families at reduced rates," explains Dr. Couch, "you can create a synergistic effect and provide enhanced disease control while reducing the risk of resistance."

The theory behind this is that different families of chemicals, when mixed, would control each others' developing resistant strains and thereby delay—even avoid—the tolerance selection process.

A Growing Problem

Interestingly, despite the fact that various types of fungicides have been used on turf since the Bordeaux mixture was introduced in the early 1900s, fungicide resistance did not become a valid concern until the 1970s when systemically translocated products like Tersan 1991 and Cleary's 3336 came on the scene.

These fungicides, and others in their chemical family, are at high risk for resistance problems because they are persistent in the environment and their mode of action is very site-specific in disrupting the physiology of a fungus.

The majority of resistance cases have been associated with dollar spot, but pythium cases are running a close second. And there have also been documented cases of resistance with anthracnose, gray leaf spot, powdery mildew, rust, and snow mold.

An informal poll of 18 Met area superintendents revealed that half had either experienced a case of dollar spot resistance at their golf course or knew someone who had a problem. All were subscribing to the traditional form of resistance management. Three of the 18, however, are planning to switch to Dr. Vargas's strategy.

Dr. Vargas's Theory

Dr. Vargas says he resurrected his research because he kept getting phone calls from superintendents who said the fungicides they were using in rotation weren't working anymore. In response, he studied resistant strains of dollar spot found on bentgrass/*Poa annua* fairways in Michigan, Ohio, and Pennsylvania. He collected four different strains from courses in each of the three states.

The outcome: Two strains showed resistance to two classes of fungicides—demethylation inhibitors (DMIs) and Benzimidazoles—while the other two showed resistance to three classes—DMIs, dicarboximides, and benzimidazoles.

Dr. Vargas maintains that the traditional theory of mixing or rotating different chemistries will not, as commonly believed, cancel out each others resistant strains, but rather select for strains of fungus that have *multi-resistance*.

"Multi-resistant strains present a real problem," says Dr. Vargas, "because you're seriously limiting the number of fungicide classes you can go to for effective control."

To avoid developing multi-resistant strains, Dr. Vargas advocates using only one site-specific, high-risk fungicide at a time until resistance occurs. "Then and only then," he says, "should you change to a different chemical class."

To delay resistance for as long as possible with each particular fungicide, Dr. Vargas further recommends alternating a high-risk fungicide with a contact, such as chlorothalonil, in order to keep the number of annual applications of the site-specific fungicide to a minimum.

That means if you're using a DMI product and you're planning to spray six times during the year for dollar spot, you should make half your applications with chlorothalonil and half with the DMI.

If you figure, as Dr. Vargas estimates, that you have at least 20 to 30 applications of DMIs before they lose their effectiveness, then you'd have roughly 7 to 10 years before developing resistance, at which point, you'd simply switch to a different chemical class and start all over again.

“Decades of research have shown that rotating works and that it will slow the resistance process. Even though Dr. Vargas has put together a compelling story backed by sound research, it is still based on a few isolated cases in the wide world of turfgrass pathology. Until there is more data to back up the new findings, it may be a little early to abandon the time-tested strategy of fungicide rotation.”

— Dr. Nathaniel Mithowski
University of Rhode Island

“I USED TO BE SENSITIVE....”

“STOP BEING SO RESISTANT!”

Table 1: Potential for Development of Resistance to Certain Turfgrass Fungicides

Fungicide	Genetic Factor	Site of Action	Resistance Risk Level
Benzimidazoles	Monogenic	Single	Very High
Phenylamides	Monogenic	Single	High
Strobilurins	Mono and Poly	Single	High
Propamocarb	Polygenic	Single	High
Fosetyl AI	Polygenic	Single	High
DMI	Polygenic	Single	High
Dicarboximides	Monogenic	Multiple	Moderate
Aromatic Hydrocarbons	Polygenic	Multiple	Moderate
Dithiocarbamates	Polygenic	Multiple	Low
Nitriles	Polygenic	Multiple	Low

Telltale Signs of Resistance

Dr. Vargas and the other pathologists do see eye-to-eye on one point: that all high-risk, site-specific fungicides have a finite number of sprays before a fungus becomes resistant. Though it's clear that the number of sprays can vary depending on the location and environment of the golf course, Dr. Vargas estimates that dicarboximide fungicides can endure 30 to 50 sprays before losing their effectiveness, compared to 20 to 30 applications for the DMIs.

It's important to note that when a pathogen develops resistance to a fungicide, it will be resistant to all fungicides with the same mode of action in its chemical family. For instance, if you have resistance to Banner, a fungicide in the DMI family, then you'll also find Sentinel, Rubigan, Eagle, and Bayleton ineffective as well.

What are the warning signs of resistance? “You will gradually notice that the length of fungicide control becomes shorter and shorter,” says Dr. Clarke. “For example, a product that originally gave 28 days' control, will only work for 7 days or less as the resistant strain becomes more dominant.”

After a period of time, it is possible that less fit resistant strains will lose their dominance in the fungal population allowing you to revisit previously ineffective fungicides. This time frame will vary depending on the mode of action of the fungicide and the nature of the resistant strain. It could be a very long time as is the case with Tersan 1991 and Cleary's 3336, which still have resistance problems 30 years later, or as little as 2 to 4 years with the dicarboximides.

Old Habits Die Hard

As controversial as Dr. Vargas's theory on resistance management still is, he's convinced that he's gaining converts among his peers. “I'd say 50 percent of pathologists in the green industry have converted to my way of thinking,” says Dr. Vargas.

Though his claim may well be true, the Eastern U.S. pathologists we spoke to were not among Dr. Vargas's list of converts.

Dr. Peter Dernoden of the University of Maryland, who works in the Mid-Atlantic region, concurs with some parts of Dr. Vargas's theory but doesn't feel it's a realistic approach for the Mid-Atlantic.

“We're forced to rotate many different fungicides to control the many active diseases in the transition zone,” says Dr. Dernoden, who also notes that their resistance problems are far more prevalent with pythium blight than with dollar spot.

Dr. Lee Burpee of the University of Georgia is another proponent of rotation as the best way to delay resistance—as is Dr. Paul Vincelli of the University of Kentucky, though he's not convinced anyone has discovered the ultimate strategy for avoiding fungicide resistance. “I believe that we'll reach multi-fungicide resistance in the same length of time whether we continue rotations or use Dr. Vargas's method,” he says.

Dr. Bruce Clarke is another diehard proponent of tank mixing and rotation to help keep resistant strains in check. “I feel the proposed new strategy is risky,” he says. “Eventually, we may not have any effective fungicides left. If we continue to rotate and delay resistance, we buy ourselves more time until more effective fungicide chemistries are discovered. The only problem is many of the new products in the approval pipeline are copycats of the few existing chemical classes we have left available to us today.”

Dr. Nathaniel Mithowski of the University of Rhode Island sees no harm in rotating. He explains, “Decades of research have shown that rotating works and that it will slow the resistance process. Even though Dr. Vargas has put together a compelling story backed by sound research, it is still based on a few isolated cases in the world of turfgrass pathology. Until there is more data to back up his findings, it may be premature to abandon the time-tested strategy of fungicide rotation.”

Table 2: Fungicides for Turfgrass

Chemical Family	Common Names	Trade Names	Comments
Aromatic Hydrocarbons	Chloroneb Ethazole Quintozene	Teremec SP Koban, Terrazole PCNB, Turfcide 400	Protectant fungicide. Mode of Action: Interferes with mitosis.
Benzimidazole	Benomyl Thiophanate-methyl	Lebanon Fungicide Type B Fungo 50 Cleary's 3336	Acropetal penetrant. Mode of Action: Fungicide bind tubulin subunits that result in mitotic arrest.
Carboximides	Flutolanil Oxycarboxin	Prostar Arrest systemic fungicide	Acropetal penetrant. Basidiomycetes control. Mode of Action: Blocks activity of certain respiratory enzymes.
Demethylation Inhibitors (DMI)	Cyproconazole Fenarimol Myclobutanil Propiconazole Triadimefon	Seninel Rubigan Eagle Banner Bayleton	Broad-spectrum, acropetal penetrant. Mode of Action: Inhibits sterol (ergosterol) synthesis in fungal cell membrane.
Dicarboximides	Iprodione Vinclozolin	Chipco 26019 Vorlan, Touché, Curalan	Localized penetrant. Mode of Action: Affect DNA synthesis and lipid metabolism.
Dithiocarbamates and Carbamates	Captan Mancozeb (a) Propamocarb (b) Thiram (c)	Captan Fore, Formec, Dithane Banol Spotrete	Protectant fungicide. Mode of Action: (a) Enzyme inactivation. (b) Alters cell membrane function. (c) Chelates metal ions thus allowing passage through cells.
Nitriles	Chlorothalonil	Daconil 2787 Thalonil	Protectant fungicide. Mode of Action: Cell membrane toxicity.
Phenylamides	Metalaxyl	Subdue	Acropetal penetrant. Mode of Action: Inhibits RNA synthesis.
Phenylpyrrole	Fludioxonil	Medallion	Protectant fungicide.
Phosphonates	Fosetyl AI	Aliette	Systematic fungicide. Mode of Action: Direct fungitoxic effect.
Strobilurins	Azoxystrobin Trifloxystrobin Pyraclostrobin Experimental	Heritage Compass BAS 500 BAS 505	Broad-spectrum, acropetal penetrant. Localized penetrant. Acropetal penetrant. Mode of Action: Blocks fungi from generating ATP.
Triazines	Anilazine	Dyrene	Protectant fungicide. Mode of Action: Cell membrane toxicity.

The Debate Continues

After all is said and done, we have to agree with the pathologists who feel there are a lot of unknowns in predicting how and when a resistance case will occur. The highly interactive biological world of soil micro-organisms and fungi is complicated, at best, which of course makes it exceedingly difficult to track and measure the individual impact of a fungicide product on any given fungal population.

Your best defense against fungicide resistance is to grow healthy turf that requires few chemical applications. Beyond that, it's up to you to seek out the resistance management program that you feel is most reliable. Should you mix and rotate fungicides or manage resistance one chemical at a time? Let your turf be your guide.

Scott Niven, a member of the Tee to Green Editorial Committee, is superintendent at The Stanwich Club in Greenwich, CT.

Technically Speaking ... A Quick Take on Fungicide Resistance

Fungicide Resistance Defined

Fungicide resistance occurs when a fungus, through a genetic mutation, becomes immune to a fungicide that was previously effective in its control. In short, resistance is the ability of a fungus to remain unaffected by a fungicide.

High-Risk vs. Low-Risk Fungicides

Also known as site-specific fungicides, high-risk fungicides are persistent in the environment and, as the term suggests, have a high risk for resistance. They control sensitive diseases by disrupting only one physiological process within the fungus, which is controlled by only one gene (monogenic).

Low-risk fungicides, by contrast, are *not* persistent in the environment and, therefore, have a low risk for resistance. They inhibit multiple vital physiological functions in the fungus that are controlled by more than one gene (polygenic).

Fungicide Resistance at Work

A pathogen becomes resistant to a high-risk fungicide when a genetic mutation produces a new strain of the fungus that is not sensitive to the fungicide. It is also probable that in many cases resistant strains of pathogens are already present at very low levels in nature. If a resistant strain has a high level of fitness and becomes dominant in the pathogenic population, the fungicide in use will become ineffective.

Persistent, site-specific fungicides encourage this transformation by actually eliminating sensitive strains from the population, which helps pave the way for resistant strains to become dominant. Many of our newer fungicides fall into this category. In a way, they are victims of their own success, for it is their superior ability to eliminate fungal strains that allows the resistant strains to take over. Contact fungicides have remained resistance-free because they *suppress*, rather than *eliminate* pathogenic populations.

Upcoming Events

Conferences and Educational Events

President's Message continued from page 1

Scheduling Conflicts

While I'm on the subject of meetings, I just want to talk about an issue that's raised a few concerns: the scheduling conflicts we've run in to when planning a few of our meetings. I'm talking about those meetings like the Invitational and Superintendent/Manager, where the people we would invite to attend with us have their own association or industry commitments scheduled for the very same day.

On the day of our Super/Manager meeting, for instance, the club managers association had a meeting as well. When the Invitational was scheduled, many golf pros were committed to playing in the Caddie Scholarship Tournament. Unfortunately, given the limited number of dates and clubs available for meetings, these kinds of conflicts are bound to occur.

To those who were affected, I apologize. But you can use these kinds of situations to your advantage: In my case, because I was forced to make a substitution, I was able to meet and play with another person I normally wouldn't have.

Nonetheless, the board will continue to make every effort to avoid these conflicts in the future.

In Closing...

I want to thank all those who support our association by participating and attending our events, and I want to encourage all those who have not made it to our meetings to do so in the future.

As you can see, we have a lot to offer, but the best part is the people you meet and the contacts and friends you make for life. I hope everyone has a successful June and July.

Tim Moore
MetGCSA President

The Rutgers Golf and Fine Turf Research Field Day

Thursday, August 1

Turf Research Farm, Ryders Lane, North Brunswick, NJ

Registration is at 9 a.m.; field tours will run from 10 a.m. to 3 p.m.—rain or shine. The cost: \$30, which includes a sandwich lunch stop on the tour.

For further information and directions, call Marlene at 732-932-9400, ext. 339.

University of Rhode Turfgrass Field Day

Wednesday, August 21

University of Rhode Island, Kingston, RI

Join fellow professionals at the 71st Annual URI Turfgrass Field Day, featuring vendor exhibits, demonstrations, workshops, and research tours.

For further information, call 401-874-4540 or email your questions to senmike@uri.edu.

NYSTA Turf and Grounds Exposition

Tuesday – Thursday, November 12 – 14

Convention Center at Oncenter, Syracuse, NY

Cosponsored by Cornell University, the expo is in its 27th year, featuring more than 60 business and technical sessions and an expansive trade show with 350 exhibitor booths.

Call 800-873-8873 or 518-783-1229 for more information.

New Jersey Turfgrass Expo 2002

Tuesday – Thursday, December 10 – 12

Trump Taj Mahal Resort and Casino, Atlantic City, NJ

Plan now for this three-day conference featuring more than 40 educational presentations and one of the top trade shows in the country.

Watch for further information as the event approaches.

2002/2003 Rutgers Professional Golf Turf Management School

Fall Session: October 7 – December 13, 2002

Winter Session: January 6 – March 14, 2003

Applications for either 10-week session are due August 1, 2002.

Cook Campus of Rutgers University

Rutgers-The State University of New Jersey, together with the Cook College Office of Continuing Professional Education and The Center for Turfgrass Science, offer two 10-week sessions over a two-year period.

One of the nation's leading professional education programs in golf turf management, this program offers students the technical skills required of all superintendents, such as turfgrass establishment, maintenance of greens and tees, botany and physiology of turfgrass and ornamentals, and weed identification, as well as the management, computer, and communications skills all managers should master.

Classes are held Monday through Friday, 9 a.m. to 3 p.m.

To receive a catalog, including application form and scholarship information, contact Continuing Professional Education, Cook College, Rutgers, The State University of New Jersey in New Brunswick, NJ, by phone at 732-932-9271 or by email at ocpe@aesop.rutgers.edu.

2002 MetGCSA Calendar Update

Education Dinner

Thursday, July 18
Pelham Country Club
Pelham Manor, NY
Host: Jeff Wentworth

MetGCSA Family Picnic

Date & Site TBA

MetGCSA Summer Social

Date & Site TBA

Poa Annual Tournament

Monday, August 19
Sands Point Golf Club
Sands Point, NY
Host: Rich Raymond

Superintendent/Green Chairman Tournament

Tuesday, September 17
Bedford Golf & Tennis Club
Bedford, NY
Host: Bob Nielsen

Golf Meeting

Tuesday, October 29
Westchester Country Club/South Course
Host: Joe Alonzi, CGCS

Annual Assistants Championship

Thursday, October 3
Greenwich Country Club
Greenwich, CT
Assistant Hosts: Paul Boyd and Josh Satin

Met Area Team Championship

Monday, October 7
Montammy Golf Club
Alpine, NJ
Host: Mike Miner, CGCS

Annual Meeting

November
Date & Site TBA

MetGCSA Christmas Party

Date & Site TBA

Volunteers Needed for Championship Prep and Maintenance

Sleepy Hollow Super Tom Leahy is looking for some able-bodied volunteers to assist in tournament prep and maintenance for the 2002 U.S. Women's Amateur Championship being held August 12 through August 18.

Volunteers would be needed from the evening of August 11 through the morning of August 18. Anyone interested in this valuable experience should contact Tom at 914-941-8281.

Visit our website—MetGCSA.org—for additional information on upcoming events.

Book Review

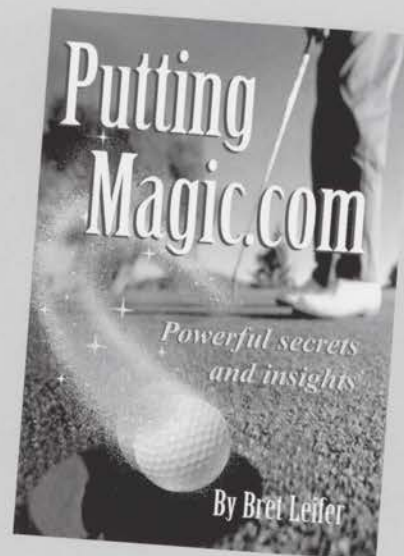
PuttingMagic.com

by Bret Leifer

The key to taking one to four strokes off your game immediately—and forever—is to understand the mental process of putting or the “power of positive putting”—and the ball will go in! In *PuttingMagic.com*, you will discover the fastest route to better golfing—through the power of your mind and your putter!

This “magical” and entertaining book contains a multitude of putting tips and proven expert instruction that can quickly improve the putting prowess of everyone—from the beginner to the experienced golfer.

After learning only one or two putting techniques from this book, your game will improve from two to six strokes. The essence of this “inner work” will change your game forever.



Also included are the results of Bret Leifer's original putting research, “The effect of selected types of motivation on golf putting.” According to Leifer, you will be able to use these results to your benefit every round you play.

Also beneficial are the yoga exercises for golfers Leifer's thoughtfully included by internationally known Yoga Master Kali Ray.

For additional information and to order, visit www.puttingmagic.com.

The Drought: A Blessing in Disguise?



by James H. Baird, Ph.D.,
USGA Green Section

Often times, good things come out of bad. Take the drought. Though the mandated water-use restrictions have had every superintendent shakin' in their golf shoes, there's been a bright side.

Surprised? Well, think about it. Restrictions force savings on irrigation water and the electricity to pump it, and they spare your irrigation system some wear and tear.

Drier conditions also result in fewer earthworm castings and reduce the need to mow and to spray for pests (with the possible exception of grubs, chinch bugs, and fairy ring).

Beyond that, and more importantly, tough times can serve as the springboard for improvement—in our operations and management practices.

Here are a few ways you might turn this—and the inevitable future droughts—to your advantage.

Irrigation System Reconsidered

When pushed to the limit in your watering practices, it's a great time to seriously consider upgrading your existing irrigation system or installing a new one that is capable of applying water more efficiently and in a site-specific manner. For the uninitiated, here's "the stuff" an efficient irrigation system is made of:

- **Sound hydraulic design:** Be sure your system has the correct pipe and pump sizes, operating pressures, and flow rates. This usually translates into less than seven hours to complete an automatic cycle at peak water demand. Lower output means you need a longer window of time to irrigate. This benefits neither the plant, in terms of extended leaf wetness and disease susceptibility, nor the golfer, in terms of soft, wet conditions for play.
- **Properly installed, reliable hardware components:** Be diligent in your inspection of controllers, fittings, thrust blocks, pipe pressure rating, etc.
- **Computerized central controls:** They, of course, should include flow-managing software, solid-state satellites, on-site weather station(s), and handheld radio controls.

- **Individual sprinkler control:** No surprise here. They should exist throughout greens, tees, fairways, and roughs, with dual heads at green perimeters and mist heads around bunkers.

- **Sprinkler station distribution:** Ideally, no more than two to three sprinklers should be assigned to a control station.

- **Sprinkler head spacing and operation:** The heads should be properly spaced, level with the turf surface, turn properly, free of leaks, and contain proper nozzles.

Keep in mind: Whether or not your golf course has state-of-the-art irrigation technology, handwatering remains an essential part of irrigation, particularly in managing site-specific water requirements on the golf course that even the best irrigation technology cannot account for. Golfers should be aware that handwatering is labor-intensive and must be done during the heat of the day when turf is stressed and play is heavy.

Sound Water Management

Drought and water-use restrictions actually encourage more efficient—even appropriate—use of irrigation on golf courses. Under normal circumstances, many people err on the side of overwatering, which has numerous ill effects: You have to battle puddling and an increase in spike marks and deeply pitted ball marks on greens, approaches, and fairways. There's a greater incidence of disease, not the least of which are brown patch and Pythium, and you provide an environment for increased populations of annual bluegrass, as well as mower wear around greens, tees, and fairways.

The other sizable negative of overwatering is that it encourages shallow root growth and, ultimately, less hardy turf.

Research has demonstrated that irrigation applied deeply and infrequently results in overall less water use and more stress-tolerant turf with deeper roots and more root hairs compared to turf that is irrigated daily or on short intervals.

Furthermore, a study showed that creeping bentgrass used 10 to 30 percent less water when irrigated in response to wilt compared to irrigation on three- to seven-day cycles.

Obviously, deeper and less frequent irrigation practices are dependent on the depth of the root system, which can be very shallow during the summer, so it's important to regularly monitor rooting and soil moisture using a soil probe.

Another important water conservation method that should be a part of your irrigation scheduling program is the use of evapotranspiration data from weather stations located on- or off-site.

Irrigation should be applied when wind is low and temperatures are relatively low, usually at night, and at rates that do not exceed the infiltration rate of soil to avoid water loss from runoff or evaporation. If necessary, use repeat irrigation cycles to avoid puddles of irrigation water.

Tree Removal Justified

Here's another valid reason you can offer tree-hugging members for removing unwanted trees. In addition to adversely affecting playability, ruining some of the greatest designs in golf course architecture, and robbing turf of available sunlight, nutrients, and air movement, trees most certainly will out-compete turf for available water during a drought.

Keep 'Em on the Cart Paths—or on Foot

A dream come true. You have good reason to restrict carts to the cart paths—and to urge your club to allow walkers. Wear and compaction from cart traffic cause a series of turf challenges under normal and wet conditions, but carts can do as much, if not more, harm to turf stressed by drought.

As rainfall ceases and turf cannot be supplemented with irrigation water, it's best to restrict cart traffic to cart paths in order to guard against accelerated turf injury or loss.

Another option would be to sacrifice a pathway in the rough for cart traffic to shorten the walking distance from the cart to the fairway. Hopefully, golf courses that require golf cart use will see the light and, under these circumstances, allow golfers to walk instead of ride.

Cutting Yourself—and Your Turf—a Break

During water restrictions and drought, you have the perfect alibi for raising your height of cut on your greens, tees, and fairways. Ask doubting Thomases if they've ever seen the effects of an unirrigated home lawn cut short in the heat of summer. I cut mine at the highest setting on my mower. It manages to stay green for a longer period of time, while everyone else's lawn around me quickly turns brown.

Although it could be said that taller cut turf has greater leaf area for water loss, raising the height of cut throughout the golf course will help to increase rooting and overall stress tolerance.

In addition to raising the height of cut, it's a good idea to reduce the frequency of mowing, mow in the early morning or late evening when temperatures are lower, use smaller, lightweight mowing equipment with sharp blades and solid front rollers on reel mowers to reduce turf wear.

It's Not Easy Being Green

Given a drought and water restrictions, you can excuse yourself for having a course that's a little off-color. Even under ideal conditions, USGA agronomists have pointed out that "green is not great" and "you don't putt [play] on the color."

Although my favorite color happens to be green, members should be made aware that lush green turf is not necessarily healthy turf, nor does it equate to firm and fast conditions that are desired for the game of golf.

That's not to say that it's a bad thing if your golf course is green. In fact, judicious and timely use of fertilizer can maintain a balance of good color, healthy turf, and firm playing conditions.

Keep in mind, however, that under severe conditions, some turf loss may occur. Prepare your membership for the worst, pointing to areas most likely to suffer the most significant turf loss. Your most vulnerable areas would be those containing excessive thatch, underlying rock, or that receive a lot of foot or cart traffic or southern exposure.

A Healthy Turf Is a Drought-Resistant Turf

The following are drought-busting cultural practices that will help you keep your turf alive—and relatively well—in the face of drought and water restrictions.

Cultivate. Cultivate

Cultivation practices, such as aeration, verticutting, and topdressing help to reduce thatch, relieve compaction, improve water infiltration and root growth, and, ultimately, enable turf to better withstand drought conditions. In preparation for drought, all areas of the golf course would benefit from aeration, including the rough. It would be wise, however, to avoid cultivation during excessively warm and dry periods to guard against increased water loss and stress on the plant.

Regulating Turf Growth

Turf growth regulators have a lot of pluses: They reduce mowing and clipping yields, increase ball roll, provide more consistent ball roll throughout the day, improve shoot density, enhance rooting, provide color enhancement, and increase stress tolerance to shade and temperature extremes. And they're also useful in helping to reduce turfgrass's need for water. If you're not already using turf growth regulators, you might consider putting them to use for water conservation.

As long as temperature and soil moisture permit active shoot growth, there's no problem in season-long use of a product like Primo (trinexapac-ethyl), which is recommended for greens, tees, fairways, and rough.

**"HONEY, TRY TO STAY
ON THE PATH THIS
TIME!"**



The Merits of Wetting Agents

Wetting agents help to reduce the surface tension of water and allow it to infiltrate and wet hydrophobic soils. Several products are available to provide either preventive or curative control of dry spots. Although wetting agents should be a part of most everyone's drought management program, take note that regular use of these products may result in wetter and softer conditions if abundant rainfall occurs or excessive irrigation is applied.

Fertilize Judiciously

Nitrogen should be applied sparingly during the spring and summer to avoid excessive flushes of growth and greater susceptibility to environmental stress and pests. Fall is the preferred time for application of the majority of nitrogen and other nutrients that are needed by the plant to aid in the production of carbohydrates necessary for root growth.

Introduce a More Drought-Tolerant Grass Species

Whether you're seeding to establish turf lost due to drought or overseeding/interseeding to establish a more desirable turf, take into account the relative drought tolerance of the turfgrass species/cultivar during the selection process. Contact your USGA agronomist or State Extension Specialist for assistance in making the best choices for your golf course.

In the End

Rain or shine, there's no better time than the present to reevaluate the water management and cultural practices on your golf course with the goal being to use less water and provide improved playing conditions.

As golfers and golf course managers, we owe it to the game to be good stewards of the environment and to educate those outside the industry about the importance and benefits of golf and golf turf.

Then, the public and policymakers may place our industry a little higher on the ladder of importance—particularly when making those tough decisions on water—or pesticide—use.

Dr. Jim Baird is an agronomist in the Northeast Region of the USGA Green Section.

Siwanoy Two-Ball Qualifier Weathers the Rain

It may have rained April 22, but the Siwanoy meeting was far from a washout. More like a walk in the park, in fact—with an emphasis on WALK. With the inclement weather, Met members played golf the way it was meant to be: on foot. Dave had the course in superb condition—and was, understandably, happy to keep it that way.

The post-golf meeting featured the Met's premier Round Table Discussion on superintendent relationships with club management and officials. On the panel were Pelham's Jeff Wentworth, Westchester's Joe Alonzi, and Lake Isle's Kevin Quist. With Dave Mahoney as facilitator, there was a lively give-and-take with the audience.

Congratulations to the following Two-Ball Qualifiers—and Two-Man Best Ball contestants.

Class A/B Two-Ball Pairings and First-Round Matches

1) Bob Alonzi/Joe Alonzi <i>vs.</i>	Fenway GC/Westchester CC
16) Blake Halderman/Glen Dube	Trump National GC/Oak Hills Park GC
3) Matt Lapinski/Steve Rabideau <i>vs.</i>	Winding Hills GC/Hamlet Golf & CC
14) Ken Benoit/Jeff Wentworth	Glen Arbor GC/Pelham CC
5) Mike Miner/Jim Swiatlowski <i>vs.</i>	Montammy GC
12) Matt Severino/Bob Zaletsky	Scarsdale GC/New York CC
7) Earl Millett/John O'Keefe <i>vs.</i>	Ridgeway CC/Preakness Hills CC
13) Dave Mahoney/Steve Renzetti	Siwanoy CC/Quaker Ridge GC
8) Bob Nielsen/Bill Perlee <i>vs.</i>	Bedford Golf & Tennis Club/The Apawamis Club
9) Matt Ceplo/Scott Niven	Rockland CC/The Stanwich Club
6) Bert Dickinson /Chip Lafferty <i>vs.</i>	Willow Ridge CC/Wykagyl CC
11) Jim Calladio/Tony Girardi	Milbrook Club/Rockrimmon CC
4) John Carlone/Les Kennedy <i>vs.</i>	The Meadow Brook Club/Blind Brook Club
13) Jim Fulwider/Jim Fulwider Sr.	Century CC/Class AL
2) Tim Garceau/Rich Browne <i>vs.</i>	The Tuxedo Club/Garrison GC
15) Bob DeMarco/Gary Arlio	Powelton Club/North Jersey CC

Class A/B matches should be completed by the following dates:

Round 1 - June 14

Round 2 - August 2

Round 3 - September 27

Final - October 25

Please be sure to report your match results to Tournament Co-Chair Tom Leahy at 914-941-8281.

Two-Man Best Ball Results

Class A/B

Low Gross Winner

73 John Carlone/Les Kennedy
The Meadow Brook Club/Blind Brook Club

Low Net Winners

64 Tim Garceau/Rich Browne
The Tuxedo Club CC/Garrison GC

64 Bob Alonzi/Joe Alonzi
Fenway GC/Westchester CC

65 Matt Lapinski/Steve Rabideau
Winding Hills GC/Hamlet Golf & CC

67 Mike Miner/Jim Swiatlowski
Montammy GC

Closest to the Pin

Jim Swiatlowski
Montammy GC 6'11"

Longest Drive

Matt Lapinski
Winding Hills GC

Class AF

Low Gross Winners

80 Dick Neufeld
E/T Equipment Company

87 Greg Moran
Lesco, Inc.

Low Net Winners

72 Dave Pijnenburg
Greenacres Company

74 John Currie
Currie Landscaping

Metropolis Superintendent/Manager Tourney's Winning Results

This year's annual Superintendent/Manager Tourney was held at the Metropolis Country Club in White Plains, NY, on May 20. Once again, Tony Grasso and his staff had the golf course in fantastic shape for our meeting.

Clearly, home court advantage goes a long way in golf: The team of Grasso and Martocci won the gross prize with a 77 score.

Here's a look at the other top plays:

Superintendent/Manager Tournament

First Low Gross	77 Tony Grasso/Jeff Martocci, <i>Metropolis Country Club</i>
First Low Net	61 Dave Mahoney/Rob Kassara, <i>Siwanoy Country Club</i>
Second Low Net	64 Matt Lapinski/Marc Devitt, <i>Winding Hills Golf Club</i>
Closest to the Pin	Rick Schock Jr., <i>Wee Burn Country Club</i> 2'5"
Longest Drive	Member: Rob Goring, <i>Golf Club of Purchase</i> Manager: Marc Devitt, <i>Winding Hills Golf Club</i>

Two-Ball Event

Superintendents unable to attend with their manager were teamed with other solo members or guests to compete in a Two-Ball Tourney.

Congratulations to **Tony Girardi** of Rockrimmon Country Club and **John Apple** of Westchester Tractor, Inc., for their winning low net score of 65. They won in a match of cards to Garrison Golf Club's **Rich Browne** and partner **Pat Calhrew**.

Wee Burn Takes Invitational Trophy With a 59

Bob Alonzi and the entire staff at Fenway rolled out the red carpet June 3 for our association's annual Invitational Tournament. The golf course was in superb shape, and the food was out of this world.

Special thanks to Ray Beaudry and Byron Johnson for all their help with the tournament.

Low Net Champ Wee Burn had to match cards this year to take first place. So let's hear it for Wee Burn Country Club.

Here are the other notable results:

Low Gross Winners	
68 Metropolis Country Club (won in a match of cards)	<i>Tony Grasso, Cheryl Anderson, Dr. James Reiffel, George Fox</i>
68 Rolling Hills Country Club	<i>Glenn Perry, Joe Bostic, Jeff Jones, George Hoenig</i>
69 Ridgeway Country Club	<i>Earl Millett, Pete Donnelly, Peter Arrest, Dr. Michael Shonging</i>
Low Net Winners	
59 Wee Burn Country Club (won in a match of cards)	<i>Rick Schock, John Karcher, Richard Colligan, Joe Roxe</i>
59 Oak Lane Country Club	<i>Larry Dodge, Mike Martin, Jim Vberti, Ozzie Levene</i>
60 Pelham Country Club	<i>Jeff Wentworth, Greg Pace, Joe Solininia, Greg Griffin</i>
Closest to the Pin	
Golf Professional: David Friel, <i>Foster Country Club</i> Superintendent: Bert Dickinson, <i>Willow Ridge Country Club</i> Green Chairman: Steve Frankel, <i>Fenway Golf Club</i> Club Official: Greg Griffin, <i>Pelham Country Club</i>	
Longest Drive	
Golf Professional: Dean Johnson, <i>Fenway Golf Club</i> Amateur: Earl Millett, <i>Ridgeway Country Club</i>	

Member News

New Members

Please join us in welcoming the following new members:

- **Michael Brunelle**, Class C, Quaker Ridge Golf Club, Scarsdale, NY
- **Andrew Clark**, Class C, The Meadow Brook Club, Jericho, NY
- **Michael Ferraro**, Class C, Quaker Ridge Golf Club, Scarsdale, NY
- **Michael Guinan**, Class C, Blind Brook Club, Purchase, NY
- **Patrick Knelly**, Class C, Silver Spring Country Club, Ridgefield, CT
- **Peter McFarland**, Class AS, Alpine, the Care of Trees, Elmsford, NY
- **Patrick Quinlan**, Class C, Willow Ridge Country Club, Harrison, NY
- **Joseph Sustack**, Class C, Willow Ridge Country Club, Harrison, NY
- **Todd Treault**, Class C, Wykagyl Country Club, New Rochelle, NY

Newly Informed

Please join us in welcoming our new Informed member, **Dr. Jim Murphy** of Rutgers University.

Births

Congratulations to:

- Burning Tree Superintendent **Gary Glazier** and his wife, Tracey, on the birth of their daughter, McKayla Amber, on April 14.
- Minisceongo Golf Club Assistant Superintendent **Jason Ziesmer** and his wife, Katherine, on the birth of their daughter, Caitlin Grace, on March 28.

Well Wishes

Continued well wishes to MetGCSA friend **Gerald Mahoney**, MGA Director of Golf Programs.

In Sympathy

Our deepest sympathy to two MetGCSA members who recently lost their fathers. Our thoughts are with you. . . .

- **Richard Feducia**, superintendent at Dellwood Country Club in New City, NY
- **Peter McCormick** of TurfNet in Skillman, NY



What Is the Legend Behind 'The Legend'?

An Inside Look at Invitational Host Bob Alonzi and His Operation

by Glenn Perry, CGCS

On June 3, MetGCSA members were treated to a fine day of golf at the Invitational Tournament at Fenway Country Club in Scarsdale, NY. Hosting the event was Bob Alonzi, the man affectionately dubbed "The Legend" by close friends and colleagues. A legend in his own mind? Hardly.

Bob, a past MetGCSA president and winner of the association's prestigious Sherwood A. Moore Award, has been a superintendent in the Met area for nearly 38 years. He started his climb to legend status working weekends for the late Ted Jozwich at Tamarack in Greenwich, CT.

From that point forward, Bob spent two years in the army, two years at Rutgers University, three years as superintendent at Rye Golf Club, five years as superintendent and general manager at Burning Tree Country Club, and six years at Fairview Country Club before joining Winged Foot as cosuperintendent with Sherwood A. Moore for the 1984 U.S. Open Championship. Fifteen years and two major tournaments later, Bob decided to take a break from the championship course arena. He arrived at Fenway in the fall of '99 after a brief return trip to Fairview.

Semi-Retired... Ha!

Opened in 1924, Fenway is known as one of architect A.W. Tillinghast's finest efforts. Not a particularly long course, it provides all that you can handle with deep bunkers that protect the severely undulated greens. Bob likens the greens at Fenway to those at another Tillinghast classic that he's also familiar with: Winged Foot East.

"When I left Winged Foot," says Bob, "people joked that I was slipping into semi-retirement." But in Bob's book, nothing could be farther from the truth.

When he came to Fenway, he hit the ground running. "I was handed the task of completing a bunker restoration program," says Bob, who worked with architect Gil Hanse through the final stages of the proj-

ect. "At the same time," adds Bob, "we recaptured areas of the putting surfaces that had been lost to triplex mowers over the years."

After the bunker project, Bob quickly shifted his attention to designing a new maintenance facility. "The building will centralize the golf course's maintenance operation by allowing us to put all the equipment under one roof," explains Bob.

The grand plans include 18,000 square feet of all the latest and greatest in golf course maintenance systems and technology. "We've devoted 4,500 square feet to golf cart storage," says Bob, "and another 2,500 square feet to an office/support staff area, where employees can gather for meetings and a break from the action."

Though still in the midst of this project, Bob is already looking to the next challenge. "Fenway is in the early stages of developing an irrigation reservoir system," explains Bob, "complete with wells to recharge the holding ponds." Another major component of the project is an all-new irrigation system.

Semi-retired... ha! I knew that story wasn't true, even before Bob uttered a word. When I walked in to his office, what do you think The Legend was doing? He was fixing a string trimmer, hands coated with grease, so a crew member could finish his work for the weekend. After well over a quarter of a century as a top-ranked superintendent, Bob's still not beyond getting his hands dirty. Anything to get the job done.

You Gotta Love It

Since his start in the business, Bob has seen more changes in the industry than most of us. Some good. Some not so great.

"What began as an occupation for guys like me who love being outside," says Bob, "has turned into a very competitive field. Today's standards have forced superintendents to spend most of their time preventing disasters while constantly pushing the turf to the limit. We water sparingly and fertilize less trying to create fast green speeds to keep our members happy."

Despite these new job realities, Bob

admits he still enjoys the field: "Our work is not redundant. The weather is unpredictable, with late March and April snows, sudden and damaging windstorms, droughts, rainy periods. These all command daily evaluation and readjustment of our routine maintenance schedules. I thrive on the challenges nature creates—and that sense of accomplishment when I've successfully met those challenges."

When asked about making the transition from a 36-hole to an 18-hole course, he says, "The biggest difference is in the support staff. At Winged Foot, we had a larger crew, which, believe it or not, was easier to manage than a smaller one. With a larger staff, you have the luxury of throwing everyone at one golf course to get it prepared for a tournament if needed. With a small staff, planning and preparation are very important to insure that the golf course peaks at the right time."

As for working at Fenway... "It's a great place to finish my career," says Bob, who explains how impressed he was with how harmoniously everyone at the club works together.

Perhaps, the key to Fenway's success is what Club President Jeffrey Citron described at the Invitational as the "Fenway Family" philosophy, which fosters a strong bond between the professional staff and the board.

Mr. Citron went on to praise the "out-standing job" Bob is doing, pointing to the progress that has been made since Bob accepted the golf course superintendent's position.

Also speaking before our group after the tournament that night, Bob showed the ultimate respect for his peers when he announced that he placed more importance on hosting this event than any other in his career. Considering Bob's hosted a U.S. Open and a PGA Championship, this was quite a high compliment to our association members and the club presidents, green chairmen, and golf professionals who accompanied them.

The Family Man

Born in Italy, Bob moved to the U.S. with his family when he was 12, living in Port Chester and then Greenwich. He and his wife, Kim, of 35 years have raised four children: Jennifer, Rob, Dana, and Cassie, and have lived in Greenwich for the past 27 years.

This past March, his son Rob, superintendent at St. Andrews Golf Club, and daughter-in-law, Ann Marie, presented Bob and Kim with their first grandchild: Nicholas Robert. In September, Bob and Kim will have yet another cause to celebrate: The marriage of their youngest daughter, Cassie.

Glenn Perry, co-editor of the Tee to Green, is superintendent at Rolling Hills Country Club in Wilton, CT.



And Now for Something Completely Different

Jeff Wentworth Hosts Met's First No-Golf Meeting

by Bill Perlee

What?

No Golf?!

Yup. It's true. Avid golfer and—by all accounts—serious turf head Jeff Wentworth will be hosting the Met's first-ever no-golf meeting at the Pelham Country Club in Pelham, NY.

The date: July 18. The format: an education dinner with an impressive roster of speakers (see below) followed by a learn-all-you-can-about-wines, wine-tasting event.

Because the meeting is scheduled to begin in late afternoon, Jeff and the other board members are hoping that superintendents will invite assistants and support staff to join them at this historic site.

Changes for the Better

Currently in his eighth season at Pelham, Jeff has raised the bar each year. At the helm since 1994, Jeff began his era by killing off the existing rough and overseeding to a uniform and consistent stand.

Recent participants in a local qualifying round for the U.S. Open got a taste of Jeff's handiwork, not the least of which was new rough mowed at a hefty 3.5 inches. The narrow and tightly cropped fairways brought Jeff's menacing creation even more into play. When questioned about the grooming-inspired challenges he placed before the players, Jeff explained, "Most of these guys are pros; these conditions will identify the best players in the field and allow them to get to the next round."

Other improvements to the golf course in the Wentworth era include a fairway top-dressing program now in its fourth season. "With this, we've seen an improvement in surface drainage as well as in the ability to get a firmer and denser fairway surface at a lower height of cut," says Jeff. "We use about 75 tons of sand per acre each season."

Among Jeff's proudest accomplishments is his new, state-of-the-art maintenance facility. Completed in 2000, the facility features ample room for shop activities, as well as plenty of crew and office space. But it's the living quarters, which include a kitchen

and several bedrooms, that set this maintenance facility apart from most.

"This new facility has had a much greater impact on our operation than I ever imagined," says Jeff. "From an organizational and productivity standpoint to crew morale, we've noticed a big change for the better."

Keeping Burnout at Bay

Jeff manages to keep his perspective through the season by allowing himself time away from the course. Though you won't find him on a secluded retreat, he does enjoy visiting U.S. Open tournaments—wherever they may be—with longtime cohort, Mill River Super Steve Sweet.

"We've seen Pinehurst and Congressional and hope to see many more before our careers are over," says Jeff. "We threw Augusta National in last spring for a little variety."

The highlight of Jeff's busman's holidays was this past fall's trip to the British Isles, which would need an entire article to properly chronicle.

On the Road to Success

Jeff's path to Pelham began in 1988 at the Myopia Hunt Club, where he worked as a placement student. From there, Jeff moved to Ridgewood in New Jersey, took a southerly diversion through Maryland to the

Columbia Country Club and, in 1991, began a four-year term at Westchester Country Club.

In the midst of his many career moves, Jeff completed the two-year turf program at Stockbridge in 1989 and a B.S. in Urban Forestry from UMass in 1991.

Jeff is active in the MetGCSA, serving on the board of directors since November 1999. Right now, Jeff's heading up three of our association's committees: Education and Special Events, which he's co-chairing with Jeff Weld, and Social & Welfare.

When asked what he likes about this crazy business, he points to the rewards of being able to display your talents in a visible and tangible way each day. Jeff also gives high marks to the unique camaraderie among superintendents: "This is the only business I know where competitors—young and old—actually help each other, sharing equipment, giving advice."

Beyond the Golf Course

Jeff and his wife of five years, Mimi, share a house that overlooks the third green and is within view of the maintenance facility. It's no surprise, then, that they enjoy getting away in the off-season. This year, they are looking forward to a European adventure: a trip to England and Germany.

Bill Perlee, a member of the Tee to Green Editorial Committee, is superintendent at The Apawamis Club in Rye, NY.

July Meeting Schedule of Events

- 4:30 Arrival
- 5:00 Renovation Using Basimid as a Soil Fumigant
Speaker: Mr. Brad Park of Penn State University
- 5:35 Effective Management of Earthworm Castings
Speaker: Dr. R. Chris Williamson of the University of Wisconsin
- 6:10 Anthracnose: Cultural Practices and Ball Roll
Speaker: Dr. James Murphy of Rutgers University
- 6:45 Cocktails (members must sign chits)
- 7:30 Dinner and Wine Tasting
- 9:30 Adjourn

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Patrons listed on this page are supporting our association. You are encouraged to support them.

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EMAIL jeff.weld.b@bayer.com

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✱ **TurfNet**
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Skillman, NJ 08558
800-314-7929

✱ **Turf Products Corp./TORO**
Paul Mazzola, Irrigation
Al Tretera, Equipment
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✱ **Turf Products Corporation**
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✱ **Valley View Wholesale Greenhouses**
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