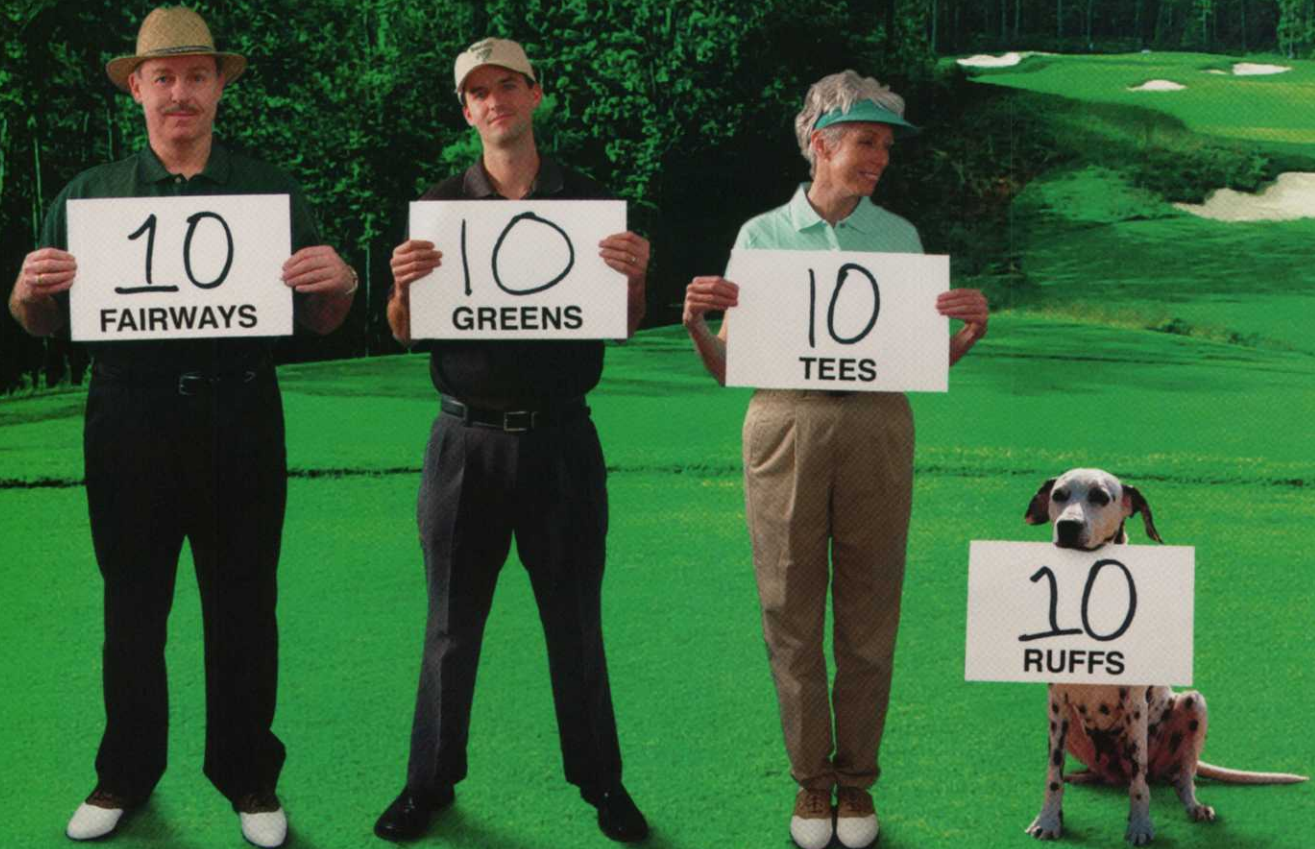


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### About the Cover

Superintendent Gary Klingelhoets, Baker National Golf Course, brought his portable sawmill to Somerset Country Club. "He does a great job with the mill," said James Bade and added "it is quite an interesting process. We are stocking up some lumber for a future project some day."

## Upcoming MGCSA Schedule

**Tuesday, August 28**

**MGCSA Championship**

Hillcrest Golf Club of St. Paul

Host Superintendent: Thomas Schmidt

**Thursday, September 13**

**University of Minnesota Field Day**

University of Minnesota St. Paul Campus

Hosts: Dr. Brian Horgan and Larry Vetter

**Monday, September 17**

**Harold Stodola Research Scramble**

The Jewel Golf Club, Lake City

Host Superintendent: Doug Mahal, CGCS

**Monday, October 8**

**MGCSA Fall Mixer**

Le Sueur Country Club, Le Sueur

Host Superintendent: Thomas Meier

**Tuesday, December 4**

**MGCSA Awards & Recognition Banquet**

Prestwick Golf Club, Woodbury

Host Superintendent: Dave Kazmierczak

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## PRESIDENT'S MESSAGE

### *While Greenkeepers Think of Grass Quality; Others Have Emotional Attachments to Trees*

By James Bade

'Tis the season for Green Committee meetings, aerification, spraying dandelions and for some filling pools. So for those of you who were able to make it to the Spring Mixer at Deer Run, thank you very much. I had a conflict with aerification, but I heard from quite a few people that the golf course was in great shape and that guest speaker Gail Franc was very good. Thank you Barry Provo and staff for hosting the event. And I would like to thank Tom Proshok for filling in for me. The turn-out was great and that is what we always hope for as a board of

directors.

The generation before me had to memorize a poem at school that went like this:

*I think that I shall never see a poem as lovely as a tree. A tree whose hungry mouth is prest, against the earth's sweet flowing breast; a tree that looks at God all day, and lifts her leafy arm to pray; a tree that may in summer wear, a nest of robins in her hair; upon whose bosom snow has lain; who intimately lives with rain. Poems are made by fools like me but only God can make a tree.* By Joyce Kilmer

"I think that I shall never see a poem as lovely as a tree," unless it is a silver maple shading your green and sucking up the water and nutrients. Did you know that a silver maple can transpire 58 gallons of water per hour on a hot summer



Gary Klingelhoets with his portable sawmill.

day! In other words, a tree can be a weed, a plant out of place, particularly on a golf course. The MGA Turfgrass Forum held at Midland Hills this spring dealt with the issue of trees and turfgrass quality. The Forum is a great opportunity to educate those you work with and for, like green committee members and general managers. Dr. Horgan and Bob Vavrek usually co-host this event on very pertinent topics of the day.

(Continued on Page 5)

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# HOLE NOTES

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## President's Message—

(Continued from Page 4)

I have been very fortunate at Somerset Country Club, where the members have been very understanding when a tree gives us agronomic problems. We had the most beautiful Linden tree 20 feet away from the east side of the 16th green so there was morning shade until 11:00 a.m. Plus, the tree helped create a lot of localized dry spot. Since the tree has come down, the green's health has improved considerably and we have given the edge back to the bentgrass over the annual bluegrass.

**However, one has to be careful.** When I took my wife, Stephanie, out to Hole 16 one day a tear came to her eye. The tree I had proposed to marry her under was gone! So there can be a strong emotional attachment to trees on a golf course. For the greenkeeper we have grass quality on our minds, where others may be thinking of certain people or events when it comes to a tree.

Now Somerset is in the process of removing overcrowded, unhealthy green ash trees in preparation for the Emerald Ash Borer. Many of the trees have nice trunks so we have been logging them out and making lumber. Fellow greenkeeper Gary Klingelhoets, pictured on Page 4, has a portable sawmill and has done some of the work for us. He does a great job with the mill; it is quite an interesting process. So we are stocking up some lumber for a future project some day.

**Another opportunity?** The City of Mendota Heights kept its Par 30 from becoming a housing development by purchasing the land. This may be another opportunity for our association to lend some expertise in managing a golf course in exchange for a place to do research. It is an opportunity that we will explore if it is in



*Somerset Country Club's finished product.*

the best interest of the MGCSA and all the parties involved. As a Board we are always looking for your input, so if you ever have any ideas or thoughts about a Research Center Golf Course please let us know.

The weather has been a roller coaster ride so far so hang onto your hats. I wish you the best of summers.

Cheers. - James Bade



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# Maximize Fungicide Effectiveness with Proper Application to Strengthen Turfgrass Health

By DAVID OBERLE  
BASF

For golf course superintendents, the battle against fungal diseases that attack and destroy turfgrass is never-ending. While today's science has produced many fungicides designed to prevent and cure outbreaks of the most damaging turf diseases,



David Oberle

superintendents need to both properly choose the correct fungicide for a particular pathogen and then properly apply that fungicide.

Superintendents with the healthiest, disease-free turfgrass are those who have developed a comprehensive strategy to protect their turf including cultural controls, proper fertility and a fungicide application and rotation program to prevent disease resistance. Such a strategy increases the chances for successfully keeping deadly disease outbreaks at bay and decreases the likeli-

hood of future flare ups.

More than 20 known fungal diseases attack turf, degrading its density, color and overall health. Some of the most common - and toughest to control - turfgrass diseases in Minnesota include:

- ~ Dollar spot (*Sclerotinia homoeocarpa*),
- ~ Brown patch (*Rhizoctonia solani*),
- ~ Pythium blight (*Pythium aphanidermatum*),
- ~ Anthracnose (*Colletotrichum graminicola*),
- ~ Take-all patch (*Gaeumannomyces graminis*),
- ~ Snow mold (*Microdochium nivale*) and (*Typhula incarnata*)
- ~ Summer patch (*Magnaporthe poae*).

A combination of cultural controls and proper fungicide use are vital for helping maintain turf health and reducing plant stress. This well-rounded approach is critical for managing golf course turf - especially on greens. Greens are the areas most closely scrutinized and most susceptible to damage, primarily due to the disease-causing challenges placed upon the turf by regular, short mowing heights (1/8-inch or less), heavy traffic and the low disease resistance of grass species adapted to the environment. Given these disease-favoring conditions, golf course superintendents who take the time to understand the conditions that lead to turf ailments and disease mode of action will have a greater chance at successfully preventing disease. With knowledge in hand, superintendents can be better prepared to make superior choices when it comes to managing cultural con-

trols, determining fungicide selection and calculating proper application timing and techniques.

## Create a Turf Management Plan

Any good turf management plan for combating fungal diseases should include strategies that mix both chemical and cultural controls to help balance the effect on people, the environment and the turf. When developing a program, superintendents should consider their plan as a "work in progress," using several different, varying methods to promote long-term health. Key strategies to consider include:

**Develop a base of knowledge.** Through building reference resources, superintendents will have a better understanding of

(Continued on Page 7)

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- Utilizes three nitrogen sources providing staggered, more consistent N response
- Controlled release coated potassium reduces potential for leaching
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- The micronutrient delivery system provides immediate and longer term availability resulting in improved plant utilization versus traditional source of micronutrients.

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Rates:	4.55 (Low) 6.82 (Medium) 9.10 (High)
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## Fungicide Effectiveness—

(Continued from Page 6)

key grasses, the pests that attack them and conditions that favor disease development. Common sources of knowledge might include fellow superintendents, university extension experts, researchers, product distributors and manufacturers - all of whom can provide a wealth of knowledge and background to help develop a successful strategy. Additionally, many university extension offices, distributors and manufacturers have developed web sites that house their many published research reports, informational articles, application guides and product labels.

**Develop a plan.** Create a written plan outlining key tasks, overall plan purpose and the seasonal timing for each objective, with both chemical and cultural controls. Having a written plan can help superintendents and staff to identify priorities and concerns at distinct times, helping keep management efforts on track.

**Rely on cultural practices.** With rising disease resistance, ecological concerns and the need to manage time and money more effectively, the benefits from cultural practices to develop healthy turf should always be considered as a key part of an overall disease program. While cultural practices are not a quick fix, the long-term benefits of proper cultural turf care can help keep devastating outbreaks at bay.

**Scouting.** During daily course drives, pay particular attention to trouble areas and monitor the environmental conditions that can lead to disease so that disease onset can be predicted and managed before reaching an epidemic stage. Maintaining a

course map or diagram annotated with problem-prone areas can help provide a visual reminder of symptoms and areas to monitor.

**Maintain a log.** Keeping a record of turf conditions, weather, course activity, disease occurrence, the actions taken and the results of those actions can assist in building a plan and furthering success in disease prevention.

**Do your own research.** Select locations on the golf course where you can make product comparisons and create your own test plots. Evaluate cultural practices such as removing dew before spraying versus not removing dew. Test other factors that may impact product performance.

### Choosing the Correct Products - Preventing Resistance

Choosing a fungicide that is effective against the fungus that is causing the disease in your turf is a critical first step as products are not equally effective against all fungi. Knowing the benefits and effects of a diverse range of fungicide products is important, because relying on a single product or type of fungicide can spur the development of areas that resist fungicides - an increasingly common trait amongst fungal diseases. To maintain effectiveness, consider rotating fungicide products as part of an overall disease-control program. Additionally, it is very important to maintain a log of the effectiveness of fungicides for your particular turf against prevalent turf diseases in your region.

Fungicides are characterized as contacts, local penetrants or systemics in the way they move about in the turfgrass. In order to protect turf, contact fungicides must cover the plant surfaces before fungi attack. If the target fungi attack the leaves, it is easy to apply a contact fungicide to the leaves; but as the leaves grow, new leaf tissue is exposed and unprotected. In order to maintain protection, frequent application is necessary. In the spring, this could be as often as every week. If the fungi attack the crown, rhizomes, stolons or roots, similar challenges are encountered due to tissue, but further complicated by the fact that soil and organic matter that surround the plant will filter and bind many chemicals to their surfaces.

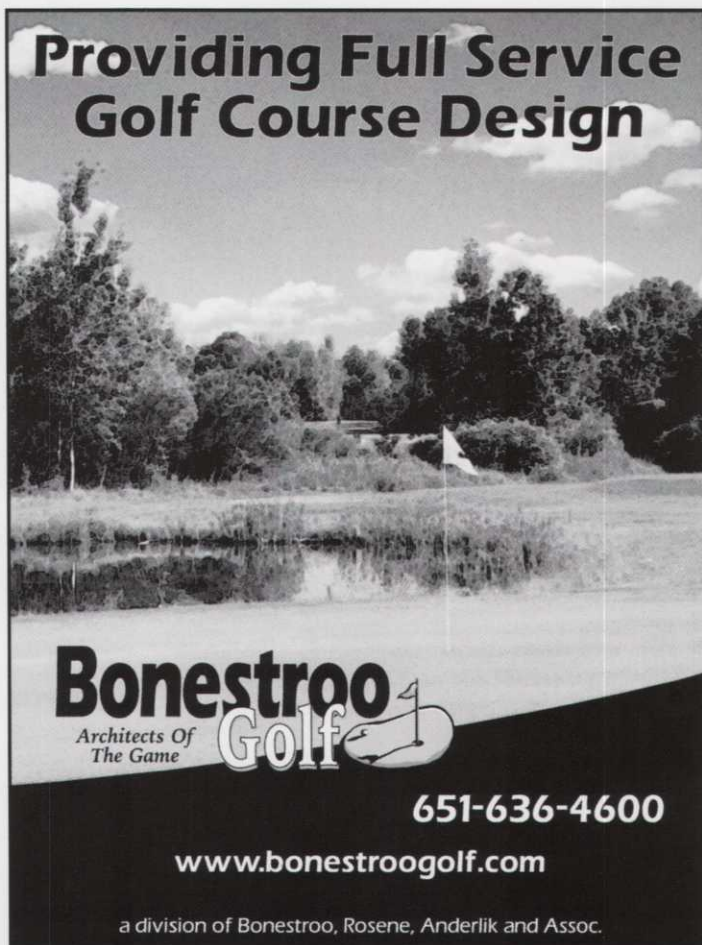
Local penetrants move into the plant but have limited movement once inside the plant. However, they are effective at providing protection to areas of the turf that are not sprayed. Systemic fungicides are able to "move" within the plant once applied to the turf - allowing the active ingredient to work within and throughout the plant. Since the application, delivery and incorporation of fungicides play a major part in ensuring proper coverage and protection, systemic fungicides have the added advantage of making themselves present throughout the plant. All three types have their advantages and disadvantages and a balance of all three is needed for a comprehensive disease control program.

### Proper Application is Key

Many times, the efficacy of a fungicide has more to do with the timing of its application than any other factor. As a general rule, preventive applications of fungicides generally have the greatest success against turf loss. This rule is especially true for root and crown diseases such as brown patch and pythium - cases in which disease is not easily seen until foliage is affected by damage caused at the plant's lower extremities.

Preventive fungicide applications in the spring and fall can help reduce the amount of pathogens before the arrival of conditions favorable to the onset of such maladies. At the same time, seasonal applications of fungicide can help give the turf time to

(Continued on Page 10)



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# Why Remove Buckthorn?

By CINDY SCHWEI

**E**xotic species of plants, like buckthorn, are taking over the bluff and crowding out native species. This lack of plant diversity is hurting the wildlife habitat on the bluff and the river valley ecosystem as a whole.

Recently, I was asked what monocultures (single plant species) were and why would I want to encourage residents to remove a plant that grows well, furnishes birds with food, and provides privacy. It took only a moment for me to ask this person to imagine going to their favorite restaurant and opening the menu, only to find one item listed. They said, "That would be ridiculous! A menu with no choices!" I said, "The same is true for nature." Buckthorn is rapidly eliminating choices. Diversity is the key to ecological health and sustainability.

Unfortunately, diversity is diminishing along the Mississippi River. Even the casual observer will note that a monoculture is emerging and Buckthorn is one of the culprits. It is crowding out native plants and in the process, we are losing wildflowers, trees, and shrubs because the native species cannot compete with an aggressive exotic shrub such as buckthorn. In some areas, an unnatural impenetrable wall of vegetation hides the river.

The goal of the project is to restore the river bluff to its natural pattern of vegetation by removing exotic species. This will help create better habitat for wildlife, better views of the beautiful Mississippi River and a stronger, more vital river bluff ecosystem.

Common buckthorn, glossy (columnar), and fernleaf buckthorn are now on the noxious weed list in Minnesota. What this means is that they will no longer be sold and cannot be transported in Minnesota.

## KNOW YOUR BUCKTHORN!

Review the picture on the first page and if you still are not sure, cut a small branch that has leaves (and berries if present) and bring it to a professional nursery for identification.



## REMOVING SEEDLINGS AND SMALLER SHRUBS

Small seedlings can be removed by hand or by using a hoe. For larger shrubs up to 2.5" in diameter, a Weed Wrench is available from Ace Rental at 1668 1/2 Grand Ave. (651-690-3510). It's free to use and no chemical treatment is necessary!

## CUT LARGE SHRUBS AND TREAT THE STUMP

For buckthorn shrubs greater than two and one half inches, use a hand saw and cut as close to the ground as possible. Follow either option 1 or option 2 for the remaining stump:

1) Environmentally safe method: dig the stump out (no chemicals are needed).

2) Herbicide (8% Triclopyr, such as Brush-B-Gon) Method: For safety, it is extremely important to read and carefully follow the label directions. The herbicide stump treatment is most successful when used from July through October. *Please Note:* Do not cut the shrub if rain is predicted within four hours.

Purchase a hand spray bottle and use it exclusively for this herbicide. Wear disposable gloves and protective eyewear.

Properly mark the spray bottle before pouring in the herbicide. *Do not dilute!*

Immediately after cutting the shrub, spray only the remaining stump and

exposed bark.

After using the herbicide, pour it back in the original container for safe storage. Keep out of the reach of children.

## DISPOSAL OF BRANCHES

For most homeowners there are two options for brush disposal: drop off, or pick-up. NRG Processing Solutions at 915 N. Albert St. is open from April-November and will dispose of the brush for a minimal fee when you drop it off. For hours of operation, call 952-946-6999. Contact your garbage hauler about brush pick-up at your home. While burning is the best way of destroying seeds, it is not allowed in St. Paul. If you don't live in St. Paul, call the city in which you live to inquire about burning permits.

## EDUCATION

Spread the message about buckthorn! Buckthorn is easily controlled in mowed areas, but in natural areas it is devastating. Often, people may not know that buckthorn is a problem. Education is the first step in understanding the destructive nature of this exotic shrub.

## WILL BUCKTHORN COME BACK?

If you carefully follow the steps listed under number three; your success rate will be reasonably high. Buckthorn only resprouts from the stump, not the roots. However, because each berry contains three or four seeds, seedlings may appear. Be diligent about pulling them!

## REPLANTING

About two weeks after chemically treating the buckthorn stump, you can replant a native shrub in the area. There are several shrub selections suitable for many planting conditions. With careful selection, you will have a wonderful non-invasive shrub, which will provide a wonderful habitat and possibly a food source for our feathered friends!

*(Editor's Note: The photo above is courtesy of courtesy of Kathy Bolin, MnDot.)*

## *REPLACE BUCKTHORN with NATIVE SHRUBS*

(Please note: Suggestions are for Minnesota. If you live elsewhere,  
check with a local nursery for native shrub suggestions)

VARIETY	HEIGHT	SPREAD	LOCATION	SHAPE	FOLIAGE	FALL FOLIAGE	FLOWERS	BERRIES	ATTRACT
Alfredo Compact American Cranberrybush	5'-6'	5'-6'	Full sun to full shade	Compact rounded	Green	Red		Scarlet	Birds
American Hazelnut	6'-8'	6'-8'	Full sun to part shade	Rounded	Dark green	Yellow green		Edible nuts	Birds
Arrowwood Viburnum	10'-12'	10'-12'	Full sun to part shade	Upright, rounded, dense	Dark green, lustrous	Reddish- purple	White	Edible, blue- black	Birds
Cardinal Red Osier Dogwood	8'-10'	10'	Full sun to part shade	Rounded	Dark green	Reddish- purple twigs	White	White	Birds
Clove Currant	6'-8'	6'-8'	Full sun	Irregular, loose and open	Bluish green	Yellow	Yellow, spicy scented	Black	Birds
Dwarf Ninebark	4'-6'	4'-6'	Does well in shaded areas	Dwarf, dense, bushy	Small green		White	Red seed pods	
Eastern Wahoo	10'-12'	8'-10'	Full to part sun	Upright, irregular	Green	Striking red fall color		Pink fruit	Birds
Glossy Black Chokeberry	4'-6'	4'-6'	Full to part sun	Compact, rounded	Glossy green	Brilliant red	White	Black	Birds
Gro-Low Fragrant Sumac	2 1/2'	6'-8'	Full sun	Wide spreading, low	Medium green	Scarlet to orange	Yellow	Red hairy fruit	Birds Butterflies
Isanti Dogwood	5'-6'	8'-10'	Full to part sun	Mounded, dense, slow growing	Dark green, red bark	Reddish- purple	White	White	Birds
Nannyberry	20'	6'-10'	Full sun to full shade	Upright, vase shape, very hardy	Shiny green	Purplish-red	White	Blue- black	Birds
Regent Serviceberry	4'-6'	4'-8'	Full sun to full shade	Mounded	Gray- green	Yellow to red	White	Black- purple	Birds
Summersweet (Clethra)	3'-8'	4'-6'	Tolerates heavy shade	Oval	Deep green	Pale yellow to golden brown	Fragrant white		Butterflies
Techny Arborvitae	10'-12'		Full sun to part shade	Upright, fast growing, winter hardy	Dark green				
White Snowberry	5'-6'	3'-6'	Full sun to full shade	Broad, rounded, good for steep banks	Bluish- green		Pink	White	
Witch Hazel	15'	12'-15'	Part to full shade	Rounded, vase shape, does well in poor soil	Green	Golden Yellow	Yellow		
Yellow Twig Dogwood	6'-8'	8'-10'	Full sun to full shade	Broad, rounded	Glossy green	Reddish- purple	White	White	Birds



## Fungicide Effectiveness—

(Continued from Page 7)

grow and become stronger. Applying fungicide before infection occurs is key, because once a turf area is infected, it becomes stressed, meaning that some degree of loss is almost certainly going to occur, regardless of how quickly superintendents react to the outbreak. In addition to treating turf at the appropriate times, applying fungicide in correct quantities at the appropriate target location is also critical to success. Flat fan nozzles spaced on 20-inch centers and placement of spray booms at 16 inches above ground height have been shown to help provide excellent coverage and overlap. The most common problem related to poor application is caused by improper spray nozzle selection.

Selecting the proper nozzle type - which serves to control spray droplet size - is an important management decision, because the size of a spray droplet can have a direct influence on the efficacy of chemicals applied. As an example, if the average diameter of a droplet is reduced to half its original size, eight times as many droplets can be produced from the

same flow, so a nozzle that produces small droplets can theoretically cover a greater area with a given flow.

It is important to note, however, that extremely small droplets may not be able to deliver fungicides on target, because factors such as relative humidity and wind speed can affect the application accuracy of small droplets.

As a general rule, flat-fan nozzles are the preferred nozzles for use when treating for foliar diseases such as dollar spot where the active ingredient should be concentrated at the turf canopy. When treating for diseases that attack the crowns and roots (such as summer patch, anthracnose and pythium), fungicide needs to be delivered below the turf's foliage.

While leaf wetness is less of a problem with systemic fungicides, efficacy is only possible with contact fungicides when the active ingredient comes in contact with the affected area. To help keep fungicides on target (especially contacts), applications should be made when the turf is dry, not dew-covered, and sprayer water volumes should be appropriate for the chemistry being applied.

In areas where there is poor irrigation water quality, the use of buffering agents may be necessary to correct extreme pH

levels or water hardness to ensure that they do not hinder the active ingredient's effectiveness. Before considering the addition of buffering agents, read the label and consult with your local manufacturer or dealer sales representative to understand how the current water quality and how changing that water quality will affect the product that you are applying.

### Know Your Turf - and Its Enemies

There is no "universal program" available when it comes to preventing turf diseases and maximizing the effectiveness of fungicides. Therefore, superintendents need to consider many factors, including turfgrass species, disease type and persistence, cultural controls, fungicide spectrum of control, efficacy and length of control and environmental concerns. By understanding the challenges associated with turf diseases and how today's modern chemistry helps support cultural control measures, superintendents will be able to best develop their individual, supporting fungicide program that considers the best products to use and the appropriate timing and application practices to ensure the greatest success in protecting turfgrass against fungal diseases.

(Editor's Note: MGCSA member David



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