

At Hermitage Country Club in Manakin Sabot, Va., superintendent Keith Fellenstein occasionally uses DMI fungicides to combat fairy ring. He cautions others to be careful about using DMIs in the heat and to conduct tests before making DMI applications in the summer.

BEWARE OF SUMMER DMI USE

Avert disaster by avoiding DMI fungicide use
in the heat of summer.

By John Walsh

Like a beware-of-the-dog sign alerting a mailman or unknowing visitors, superintendents have that same caution from researchers and peers when it comes to using DMI fungicides on bentgrass during the heat of summer when turf is stressed. Turf damage is what they're trying to prevent.

All DMI (demethylation inhibitor) fungicides have growth-regulating properties, says Lane Tredway, associate professor and extension specialist in the turfgrass pathology department at N.C. State University.

DMIs include Banner Maxx, Bayleton, Eagle, Rubigan, Tourney, Trinity and Triton. The later three are supposed to have less growth-regulating effects than the older products; nonetheless, they still have growth-regulating effects. DMI fungicides' main disease targets are dollar spot, brown patch and anthracnose.

The growth-regulating effects are minimal when the turf is healthy and actively growing, but significant thinning of the canopy can occur during hot weather, even on otherwise healthy turf.

"Combine a DMI application, hot weather and severely stressed turf and the consequences can be disastrous," Tredway says.

Because DMIs have growth-regulating effects, turf can end up off color and off texture, says Megan Kennelly, assistant professor, extension and research, horticultural crops in the department of plant pathology at Kansas State University. DMIs can make turf lush and green, but they also can make some turf blueish in color. And they can cause the texture of a leaf blade to get thicker.

"The more common problem is undesirable color," Kennelly says. "It's a strange, blue color. You see it in putting greens."

The higher the rate, the more likely the growth-regulating effect will occur. Turf managers can lower the risk by using a low rate of DMI mixed with other fungicides. High-stress conditions play into the regulator effect, too.

"I don't recommend using DMIs in the heat of the summer," Kennelly says.

Contact fungicides such as chlorothalonil, boscalid, thiophanate and iprodione are suggested alternatives to DMI use.

"It's important to use a variety of modes of action," Kennelly says. "I'd like to see two or three different classes of fungicides in a rotation. You don't need six, but you also don't want to rely on one or two over and over again. It all depends on the disease pressure and what was used before."

SELECTIVE AND TIMELY USE

Jim Husting, CGCS, at Woodbridge (Calif.) Golf & Country Club, is in the know about avoiding DMI use when temperatures are high.

"I've never run into trouble with DMIs because I attend GCSAA seminars and have subscribed to PACE for years," he says, referring to the turf management information service. "I value what they have to say. When Larry (Stowell) says don't use DMIs in the heat of the summer, I don't. And if you use PGRs, that's a double whammy. I keep my nose to the books and absorb as much as possible. I knock off the DMIs before June and don't go back to them until after Labor Day."

Husting, who has been at Woodbridge for 24 summers, manages old push-up *Poa annua*

greens, *Poa/rye/bermuda* fairways and rye tees with a \$1.23-million budget, \$82,000 of which is spent on fungicides.

"I've gotten burned one too many times trying to skip a fungicide application," he says. "This is a private club, so the margin of error is minimal."

Husting's big three diseases are summer patch, anthracnose and Southern blight. He sprays preventively and curatively, but strategically, meaning he sprays selected cool-season fairways regularly but not the predominately bermudagrass fairways, on which he applies only PGRs.

Husting's greens are on a strict preventive program – he sprays once a week, alternating systemic and contact fungicides from April through October. Tees are sprayed strategically in June, July and August. From mid-October to mid-April, he treats for snow mold preventively; from mid-February to mid-April, he treats for yellow patch.

Husting uses DMIs, mostly Banner Maxx, in the spring, fall and winter for suppressing anthracnose and summer patch.

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"DMIs are a nice, broad systemic fungicide you can use in nonstressful times," he says. "But most people are cautionary. It's going to be 103 and 105 degrees this week, and I don't know anybody using DMIs right now."

LEARN FROM EXPERIENCE AND OTHERS

Like Husting, Andy Fries has been burned

before – to the point where he lost a job.

"I had used DMIs with no regard as far as unwanted growth regulation, says Fries, CGCS, at Brownson Country Club in Huntington, Conn. "Years ago, I got into trouble on a golf course and was let go. Banner Maxx at a high rate was my style, but that was four years ago. A sales guy and message boards have helped, so I've tried

to avoid DMIs. I don't have a check plot. I'm just going off others' experiences."

Fries, in his second season at Brownson (last year he was an assistant) manages bent/*Poa* greens, rye/bent/*Poa* tees and fairways and rye/blue/fescue rough with a maintenance budget of \$570,000 and a chemical budget of \$82,000. The top two diseases Fries battles are anthra-

DMI fungicide use on creeping bentgrass during heat stress

By Lane Tredway

Superintendents must use extreme caution when applying DMI fungicides (Banner, Bayleton, Eagle, Rubigan, Tourney, Trinity and Triton) to creeping bentgrass putting greens. These products can cause severe phytotoxicity, thinning and even death of creeping bentgrass if the turf is severely stressed from heat, drought or other factors. The potential for injury is much greater when high label rates are used and when high temperatures are consistently above 90 F.

There are differences among the DMIs in their potential to cause injury – some are safer than others – but none of the currently available DMIs can be classified as safe on bentgrass during 90-plus degree weather.

Additionally, there are few situations in which DMI applications are necessary or beneficial during the summer because safer chemistries are

available for control of most summer diseases. The DMIs are most useful during the fall and spring to prevent diseases such as dollar spot, summer patch, take-all patch, fairy ring, snow mold, yellow patch, etc.

Anthracnose is the only disease that warrants DMI applications during the summer, but this is only a concern for superintendents managing older bentgrass varieties such as Penncross, Pennlinks, Dominant, Dominant Plus, L-93 and Crenshaw.

If a DMI application is necessary to control anthracnose during the summer, use low label rates and tank-mix with chlorothalonil to prevent algae infestations. The Penn A and G series bentgrasses are essentially immune to anthracnose in North Carolina, so this disease is not a concern for superintendents managing these grasses.

Tredway is an associate professor and extension specialist in the turfgrass pathology department at N.C. State University. He contributes to a blog about turf diseases at turf-diseases.blogspot.com.

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cnose and summer patch. His spray program for greens is every 10 to 14 days with Banner, Daconil and Medallion; in fairways he sprays Curalan, Daconil and Banner every 14 days.

In July, Fries uses Headway on greens, tees and fairways, and is trying to get away from DMIs or go with lower rates or combo products.

"This year, I'm trying to avoid DMIs," he says. "The weather will dictate whether I will use DMIs or not. If it's in the mid to low 70s, I might sneak in a high rate of a DMI. I won't abandon DMIs altogether this year because I'm using the products we have in stock. Next year, I might get rid of the DMIs altogether. I'll make the purchasing decisions for next year, and Triton, Tourney and Trinity are some DMIs I'll look at."

OTHER CHOICES

Keith Fellenstein, superintendent of the Sabot Course at 36-hole Hermitage Country Club in Manakin Sabot, Va., manages L-93 bentgrass greens and Valmont bermudagrass rough, tees and fairways. Pythium root dysfunction,

fairy ring and take-all patch are his top three diseases. On a preventive fungicide program, Fellenstein rotates Signature and Banol, getting as much as 28 days of control based on the weather. He also uses chlorothalonil, iprodione and thiophanate-methyl.

Fellenstein doesn't have much dollar spot and brown patch, hence, not as strong of a need to use DMIs.

"I'm not sure if it's because L-93 is more resistant to those diseases or it's my fertility program," he says. "I'm not sure why."

However, because fairy ring is Fellenstein's No. 2 disease, he uses Bayleton as a preventive application in the spring and ProStar as a curative one.

In the past, he has used Banner preventively for dollar spot control, but didn't apply it this summer.

"There are so many other options for what I'm targeting, with the exception of fairy ring," he says. "I'd rather go with a less risky fungicide. If I'm going after dollar spot and brown patch, I'll use chlorothalonil, fipronil and thiophanate-methyl most times. I get at

least seven days of coverage and as many as 21 days."

Overall, Fellenstein recommends superintendents be careful about how much fungicide they apply and when. Fellenstein keeps a good rotation and periodically introduces a new product.

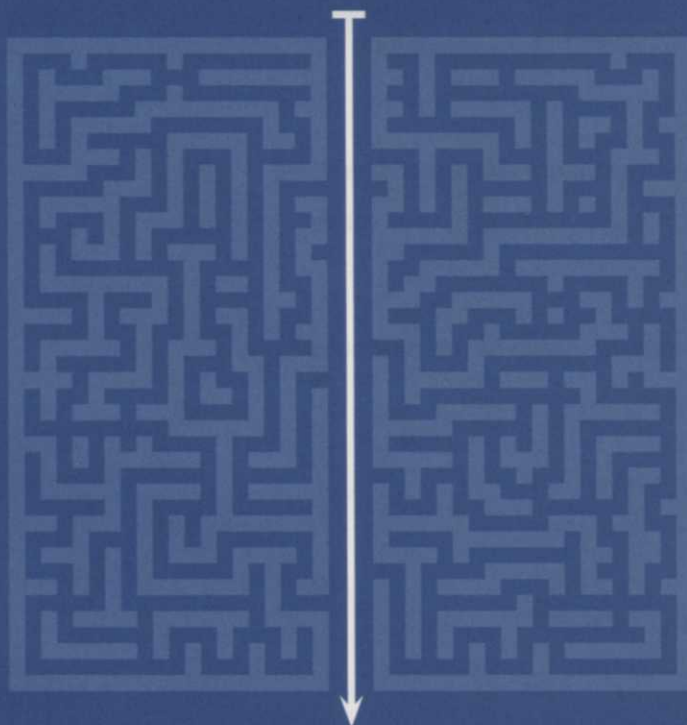
"The key is during high-stress periods that can set the bentgrass back," he says.

Academics and superintendents are the reasons Fellenstein knows about the growth-regulator effect of DMIs with PGR use.

"People growing *Poa*/bentgrass turf said DMIs were very harsh on the *Poa* – that's where most of the cautionary tales came from," he says. "We work so hard to make it though the summer, we don't like to take chances. There are so many options/alternatives for treatments. I don't have a problem with DMIs, but I'd caution anyone using DMIs in the summer. Test before going out with any application." GCI

John Walsh is a freelance writer based in Cleveland.

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