

EXPENSIVE PROBLEMS

NO TURF DISEASE RECEIVES MORE ATTENTION THAN DOLLAR SPOT.

HERE'S THE LATEST IN WHAT YOU NEED TO KNOW!

As dollar spot outbreaks seem to be increasing in severity and duration, controlling this common disease becomes more challenging.

“Outside of the fungicide resistance issues,” says Dr. Richard Latin, the longtime professor of plant pathology at Purdue University. “I think the increase in dollar spot severity may be more of a reflection of changes in turf management than the evolution of a more aggressive pathogen. We have these current demands for increased greens speeds and tighter fairways, and in order to achieve those, we’ve reduced the height of cut and the amount of applied nitrogen over the past 20 years. The mechanical and nutritional stress makes turf a little bit more prone to infection. And, when infection does occur, the

plants are going to be slow to outgrow the damage.”

Perhaps no turf disease is discussed more frequently and with more frustration and disdain than dollar spot. Latin is an expert on dollar spot — as much as anybody can be an expert on an ever-evolving disease — with recent research projects focused on factors that affect fungicide performance, fungicide-resistant pathogen strains, the epidemiology of dollar spot on creeping bentgrass, and weather-based systems for scheduling fungicide applications.

We know the basics, of course, like the fact that dollar spot “mostly affects stems and leaves,” Latin says. “It generally does not kill the plants, although it can cause some very awful damage, turf tends to recover at the end of the year. Also, the pathogen can be active during the entire growing season. As long as favorable temperature and moisture conditions persist, the pathogen will grow and disease will occur.”

“All disease issues are population

issues. Disease becomes a problem when populations increase rapidly,” Latin adds. “I like to think about the pathogen population as an iceberg and only the tip is visible. Those are the symptoms you see on the turf. But, like an iceberg, there’s this greater mass down below, this population that has built up beneath turf surfaces, in the thatch and soil. We need to manage populations hidden in the turf profile, before disease symptoms become evident on the surface. That’s the basis for a preventative approach to disease management.”

On the large majority of golf courses in the northeast quadrant of the United States, fungicides offer the most reliable solution to tackle the infectious problem. “I think that on most bentgrass or *Poa* courses, whether it be greens or fairways or tee boxes, fungicides are essential,” Latin says. “Dollar spot is a season-long threat. The pathogen is always present in the turf profile, and will cause cosmetic and structural damage under favorable

▲ Dollar spot remains one of the most researched diseases in turf management.



environmental conditions. It needs the attention of fungicides in order to avoid outbreaks or mitigate turf damage.”

Latin uses Xzemplar® and Maxtima® fungicides, both from BASF, in a variety of research projects and describes them as being “at the top of their respective classes.” Maxtima® fungicide, a DMI, “has an added benefit in that it has a safety factor,” Latin says. “It doesn’t have a PGR effect or any phytotoxicity issues even when it’s applied during the heat of the summer, so you achieve good disease control without negative effects on turf quality.”

Cultural practices can contribute to dollar spot control as well, among them providing turf with adequate nutrition and shortening the length of the wet period by dragging fairways and mowing greens in the morning. “These practices can truncate the period for a successful infection and help reduce disease pressure,” Latin says. “Lightweight rolling also has been shown to reduce the severity of dollar spot outbreaks. These are some things we can do to reduce disease pressure and keep populations low from a non-chemical standpoint.”

Avoiding a damage-based approach, where treatment is delayed until symptoms are expressed on the

surface, is also key. “I think that’s very risky,” Latin says, “allowing the pathogen population to build up to the point of a visible outbreak will increase disease pressure and reduce the overall effectiveness of a fungicide treatment.” Superintendents that have experienced that scenario usually had difficulty fighting the disease all season long. Latin suggests “a well-developed, calendar-based fungicide program where superintendents consider all diseases that threaten the course and when their pathogens become active, and then schedule fungicide applications very strategically into the program so they can keep populations low, maintain good disease control, and reduce the likelihood of resistance issues.”

Research relevant to dollar spot control pops up in the published literature almost every month. Much of the current research in plant pathology is focused on fungicide resistance. “The same fungicides we use on turf often are used against crop pathogens, and we are learning a lot about managing disease where resistance occurs within and across fungicide classes. This is an area where new information is being generated all the time, and I suspect that we’ll have so much more insight next season.”

Latin’s research has always focused on fungicides and factors that affect

their performance. He and his team of graduate students showed evidence that Maxtima fungicide was more effective than older generation DMI fungicides against dollar spot strains that were trending towards insensitivity to the DMI class. “This opens the door to reintroducing a DMI fungicide into rotations for dollar spot control, especially on fairways.”

Another project focused on the influence of water pH on the efficacy of fungicides. He wanted to know if water quality, especially in terms of pH, was affecting how well the fungicides were able to perform to control disease. And what did he find after four runs of field tests and multiple laboratory tests? “With modern fungicides, we really don’t have to worry about the effects of alkaline hydrolysis in the spray tank,” he says. “Mostly, it has to do with the amounts of fungicide we’re using in the tank, the fact that there are so many buffering and stabilizer agents inside fungicide formulations, and the fact that fungicides are not very soluble and just don’t break down that quickly.” In short, spray water pH is not going to affect the efficacy of any particular modern fungicide.

The dollar spot fungus is a simple pathogen—and yet controlling the disease continues to be a complicated challenge. Fortunately, its simplicity lends itself to a variety of experimental approaches to manage the disease and reduce the incidence and severity of dollar spot outbreaks.

An effective ▶ fungicide rotation is a proven way to control dollar spot on playing surfaces.



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