

Fungicide rotation is key to anthracnose control

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difficult to control because of increasingly stressful cultural practices.

"Turf management has changed," she said. "The key things are lower mowing heights and more compaction from increased play and the sand topdressing that gets brushed in. I think it is a signal from the turf that they [courses] are going too far. You can throw every kind of chemical in the world at it, but if you don't modify those cultural practices you are going to still be dealing with it."

According to Rutgers University's Dr. Bruce Clarke, maintaining proper levels of fertilization, raising the height of cut and maintaining consistency are the keys to managing anthracnose culturally.

"Superintendents need to get off the mowing roller coaster," he said. "Going back and forth and raising it and lowering it again and again in the heat of the summer is difficult on turf. Greens can still be fast and have less disease but it is a compromise that needs to be made because you can't keep lowering the height of cut forever."

Weather, however, has also played a part in the severity of the disease pressure. Warmer winters in 2000 and 2001 allowed the pathogen to survive and hit earlier than before. Hot, drought-plagued summers served to worsen conditions.

ROTATION IS KEY TO CONTROL

While anthracnose wreaked havoc on courses last year, it yielded valuable information to those studying the disease that will be helpful in future outbreaks.

"Last year was the best fungicide study I have had in the last 20 years because it was very easy to evaluate. We got a natural infection," said Clarke.

Clarke's research took place at three different sites and confirmed the importance of rotating fungicides to control the disease and reduce the chances of resistance.

"In the study, we had tolerance from strobilurins and benzimidazoles but at other courses they worked just fine," said Clark. "So you can't say they don't control anthracnose, that is not the point. Many courses have had success with those two chemistries. This is why we need to tank

mix and rotate. Where strobilurins and benzimidazoles are affected they should be alternated with other products."

Superintendents have taken the rotation suggestion seriously, and many have reported success.

Bob Mogel, superintendent at Galen Hall Country Club in Wernersville, Pa., got hit hard in 2001 and was ready for anthracnose in 2002. His arsenal included Signature, Zerotol, Daconil, Compass and Banner MAXX and he managed to make it through 2002 unscathed.

"It hit in the end of March a couple of years ago, so I started off early last year. I am about to put out Zerotol pretty soon here. It smokes the spores with hydrogen dioxide. Last year I sprayed every Friday throughout the summer. I used a lot of Signature and Daconil and threw in some triple 20 fertilizer to keep the fertility up," he said.

Mogel also tried not to stress out the turf. He started the season at 1/10 inch and eventually went up to 1/8 inch. He also used solid rollers and stayed away from aerifying or verticutting after the beginning of May.

At Doylestown Country Club in

Warrington, Pa., superintendent Paul Bevan has managed to stay anthracnose-free as well while also keeping the greens lean and mean.

"When I came here we had six greens that were riddled with it," said Bevan. "Right now we don't have any."

Bevan has reduced fungicide applications to twice a month by rotating applications between Zerotol every other week and a mixture of fungicides every other week. Last year he used Daconil, 3336, Compass, Alliette, Heritage, Banner MAXX, Bayleton and Endorse.

"I mow greens at 1/10 of an inch and I roll three times a week," said Bevan. "I push them and I have not had any problems with it. When I have had little bouts of it, five or six spots on each green, I hit it with Zerotol for three straight days and then come back with Endorse or Daconil and I seem to get some recovery out of it."

While superintendents continue to press the envelope, more research is planned. Clarke will focus future research on the impact of fertility, mowing practices, plant growth regulators, herbicides and improved fungicide application strategies on the development of anthracnose. ■

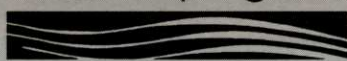
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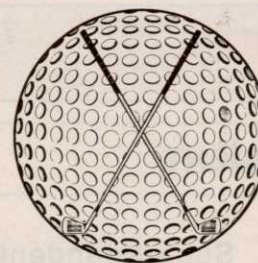


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Cook disputes activist's pesticide science

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State University to put golf course pesticide use in the proper perspective.

It is difficult to respond to this kind of sweeping condemnation of golf course pesticide use. By combining a hodgepodge of miscellaneous claims with no apparent context, the author has created a scary image of impending doom. All I can do is ask some questions.

1. How can anyone fairly evaluate the relative intensity of pesticide use without factual information?

The amount of pesticide applied per treated acre is an argument that has been used for many years. This argument exaggerates and skews the actual use of pesticides in my opinion. For example, if a 150-acre planting of corn received a pre plant herbicide application at one pound of active ingredient (ai) per acre followed by two later applications of insecticide for corn earworm each at one pound of ai per acre, what would the statistics show? They would show a total of three pounds of ai per treated acre. They would also show a total of 450 pounds of ai applied to the corn crop.

If you had a 150-acre golf course with two acres of putting greens and those greens received six fungicide treatments at one pound of ai per acre plus two insecticide applications

'I feel it is a giant leap to equate superintendent health issues with pesticide use'

— Dr. Tom Cook

at one pound of ai per acre, what would the statistics show? Total pesticide ai per treated acre would be eight pounds. Total pesticides applied per 150-acre golf course would be 16 pounds of ai. Which site used the most pesticide? Per treated acre, the golf course did. Per site, the farm used 450 pounds vs. 16 pounds for the golf course. If I want to defend golf courses, I talk about total pesticide use for the entire area. If I want to disparage golf courses I talk about pesticide use per treated acre.

In reality, pesticide use varies dramatically from one golf course to another. Unless New York has official mandated reporting guide-

lines, there is no way the attorney general could accurately calculate the actual pesticide use on Long Island golf courses. He would have to invent his numbers by making numerous assumptions that may or may not be correct.

2. What conclusions can you draw from the GCSAA survey regarding health of golf course superintendents?

Are we to assume that the apparent increase in cancer is due to exposure to pesticides? Perhaps it is the natural consequence of people working in high-stress jobs who have poor general health habits including poor diet, smoking, alcohol consumption, sleep deprivation, etc. Add to that the emotional strain of trying to produce perfect playing conditions under all manner of weather-related stresses and it is probably surprising that superintendents don't have even more health problems. At many if not most golf courses, the superintendent isn't even directly involved in pesticide application and has probably no more exposure to pesticides than the general golfing public. I feel it is a giant leap to equate superintendent health issues with pesticide use. ■

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Forecaddies keep the pace at Bear's Best

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WHAT'S OLD IS NEW AGAIN

According to Adam Owen, general manager at Bear's Best Las Vegas, the forecaddie program was initiated as a means of providing better service to the course's customers by helping to familiarize them with an unfamiliar layout.

"It's always difficult when you go to a brand-new golf course that you've never played before, and you have forced carries where you don't know how far you have to carry it or greens where you can't really see the green, just the flagstick," Owen said. "We're able to help them out with yardage and with navigating around the course."

The reduction in average round

times was a pleasant side effect of the program, Owen said.

"For the last 14 or 15 months of our operation, we've been able

"On some of our spring days, we have 180 or 190 players, so pace of play is critical. That's what we always try to stress is that we're not only guaranteeing happiness with pace of play for the group on the tee, but also for the group 30 groups behind them."

— Adam Owen

to keep our average pace of play to four hours and 20 minutes, which for a resort round of golf is very quick," he said. "Most average rounds in Las Vegas are around five hours."

Owen said the caddies at his club attack pace of play before a round even begins by making sure

groups arrive at the first tee five minutes prior to their tee time.

"The program ensures proper starting times, so they're acting as not only starters but course marshals," he said.

Owen said the club stresses the importance of maintaining a consistent pace of play to ensure that everyone can play the course in a timely fashion.

"On some of our spring days, we have 180 or 190 players, so pace of play is critical. That's what

we always try to stress is that we're not only guaranteeing happiness with pace of play for the group on the tee, but also for the group 30 groups behind them," he said.

Despite the high costs associated with the program, Owen said the benefits of offering the ser-

vice far outweigh those costs.

"We are taking a severe hit on our cash flow as a result of offering this service because every one of our caddies is an employee of Bear's Best. It is financially daunting for us to keep this program in place," he said. "But we think it is a nice enough service that adds such an experience and adds a value to our green fee that it would be difficult to do without."

The cost for forecaddies is built into green fees, Owen said, so paying for the service is as easy as possible for customers. The only charge that isn't included in the service is the caddie gratuity.

Owen also said the program pays off for Bear's Best, since the club has a built-in representative who spends four hours with a group and can answer questions about things like the availability of home sites and other amenities at the club. ■

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