



Bio Boost

Superintendent implemented organic program to battle a fungal invasion at California course

Tom Huesgen has reduced chemical usage on the Links at Spanish Bay, thanks to his best practices program.

The Links at Spanish Bay, in Pebble Beach, Calif., provides some of the most beautiful golf holes in the world. Unfortunately, the course's location also leaves it vulnerable to diseases like fusarium, anthracnose, pythium and yellow patch.

Problem

The Links at Spanish Bay — a high-profile course in an environmentally sensitive area — needed to control fungal turfgrass diseases like fusarium nivale and anthracnose safely and effectively.

Solution

Use a biological fungicide and organic fertilizers as part of a "best practices" fertility program.

The problem

Climatic conditions, including moderately cool temperatures combined with coastal moisture and heavy fog in the summer, contribute to the high incidence of disease. The salt air coming off the Pacific Ocean also causes problems.

The maintenance staff at the high-profile course needed a way to control fungal turfgrass diseases safely and effectively because the course is in an environmentally sensitive area. California's strict environmental laws force the Links at Spanish Bay to adhere to mitigation plans established with government agencies. So to work within California statutes, the course needed to find a biological fungicide to complement its chemical applications.

The solution

As they prepared for the

1998 season (the club is open year round, but the course's heaviest use is between April and October), then-superintendent Forrest Arthur and assistant superintendent Tom Huesgen (who became superintendent in November 1998 when Arthur went to the Preserve GC) began searching for a biological fungicide to add to their disease-management strategy.

The two were using the following chemical fungicides on a rotational basis: Heritage, Banner Maxx, Rubigan, Daconil 2787, Bayleton 50, Subdue and Fore.

Arthur and Huesgen heard about a liquid biological fungicide called Companion from another area

superintendent. It contains *Bacillus subtilis* GB03 microbes, which attach to the turf's root hairs, multiply and crowd out disease-causing pathogens. The microbes also produce enzymes, plant growth regulators and antibiotics that weaken the cell walls of pathogens.

Companion, which was granted an experimental use permit by the EPA and is expected to have full registration in 2001, also contains a food source for the *Bacillus*. After researching the product and speaking with representatives from Growth Products (the company that produces Companion), Arthur and Huesgen tested the product on the course's greens.

The results

When Arthur and Huesgen applied Companion to the course, chemical fungicide applications dropped significantly within three months because the biological worked so well. There were also longer intervals between disease symptoms and breakouts, giving the superintendent more time to treat the disease before a full-scale invasion claimed the turf.

"At times, Companion alone checked *Fusarium nivale* (*Gerlachia nivalis*)," Arthur says. "We never sprayed chemical fungicides on a preventative basis because Companion worked so well. This eliminated excess fungicide use and allowed

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me to become a better integrated pest management program manager.”

In fact, the Links at Spanish Bay reduced its chemical fungicide use by more than 50 percent for the 1998 season. In 1999, chemical fungicide use on the course declined again by nearly 30 percent from May to October.

“I now use far fewer applications of my chemical fungicide rotation compared to the norm for the region,” Huesgen says. “We have received positive results, great disease suppression and extremely healthy turf.

“We also have root mass and a length of 2 to 3



The turf is healthy and disease suppression is excellent.

inches on our Poa annua greens,” he notes. “A good biological, in conjunction with a good fertility program, is an effective tool in

resistance management. This is a combination that allows for less frequent chemical fungicide usage and an increase in microbe

populations, so we are reducing the chance of disease resistance while still taking care of the environment.” ■

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