



This is the way Old White Fairway 11 looked five months after treatment with Dasanit. Between October 1971 and October 1972, nematode count dropped from 5490 to zero. (See Table 1 below).

Nematodes

Could Your Turf Be Their Home?

I'M CONVINCED that nematodes are bad characters. If there are any around, they will get to you. So, if you have an unanswered problem with your turf, I'd check for nematodes quick," says W. D. Haven, golf and grounds superintendent for the Greenbrier, White Sulphur Springs, West Virginia.

Bill is speaking from first-hand experience. Various "culprits" such as fruit flies and *Fusarium* had been blamed for problem areas which developed in 1971. Several of the 54 fairways and greens on the 6500 acres comprising the famed luxury resort had been under attack.

"There are so many variables in maintaining a course — weather, weed, insect and disease control, drainage, fertilizing—that we can't always be sure that any one factor is responsible for a particular success or failure," Bill remarks. "But the rewards are proportional to the risks, and it's fascinating to see the turn-around when a problem is solved.

"Of course we tackle each problem as soon as it develops. We treated for fruit flies and *Fusarium*, but still had some yellow-white quarter-size spots that didn't resemble any of the diseases I know about. There is very little information available on nematodes in turf, but I read what I could find and wondered if, in fact, these small, wormlike in-

sects weren't gnawing away at the roots.

"So, in October, 1971 I sent soil samples from several fairways and greens to Virginia Polytechnic Institute (VPI) for a nematode assay.

"The high counts that were reported (see Table 1) were astounding. That started my search for a chemical to control nematodes. I wanted one that was easy to apply, with minimum hazard to the people working with it and the golfers using the course following application. I was also looking for a fast response, and long-lasting activity.

"I found the answer in Dasanit 15% granular," says the superintendent. "It fits in with our equip-

ment, goes right to work without burning, and one application lasts for the season." Haven reports that the product does give off an unpleasant odor, which lasts about 24 hours, but he did not have one complaint about this from any of our clientele, which is unusual.

"I first treated all tested fairways, as well as those which looked suspicious (it ended up to be all but a half-dozen) and then applied Dasanit on all the greens," he said. "We aerated each before treatment, then turned on the irrigation so that the granules would work right down to the root zone." The work started in mid-May, 1972 and wasn't finished until August. Even with 30

Table 1. Nematode Counts per 100 cc soil taken in October 1971 before treatment and in October 1972 following treatment.

Area	Ring (<i>Criconeimoides</i>)		Lance (<i>Hoplolaimus</i>)		Stunt (<i>Tylenchorhynchus</i>)		Spiral (<i>Helicotylenchus</i>)	
	Before	After	Before	After	Before	After	Before	After
Old White Fairway 1	710	....	70	....	1070	....	10	....
Old White Fairway 3	1080	4	....	4	600	....	....	....
Old White Fairway 4	490	4	....	4	430	....	....	4
Old White Fairway 9	390	....	20	4	530	4	....	....
Old White Fairway 11	3060	....	80	....	2800	....	....	....
Old White Fairway 13	340	20	20	24	660	....	10	4
Greenbrier Fairway 1	380	4	90	4	30	....	....	12
Greenbrier Green 7	....	....	300	16	190	....	....	....

men, it took considerable time to cover 600,000 square feet of greens and tees, as well as a goodly share of our 120 acres of fairway.

"Just to be sure we were on the right track, in June, 1972 I sent more samples from one of the same fairways plus other 'suspects' to another laboratory in Georgia for nematode analysis," Haven injects. While these early-season counts were much lower the laboratory felt they were high enough to constitute a problem, and also recommended treatment.

"And to be sure I was using the right product, I set up 5 x 10-foot test plots on one green comparing half- and full-rate treatments of Dasanit, Nematicur (an experimental compound) and several other products," he says. "Dasanit effectively controlled the nematodes. As for the Nematicur, it looked even more promising on these test plots."

The West Virginia golf superintendent notes fantastic improvement on several of the fairways and greens. He concludes that the nematode treatment was responsible for it. "I feel sure these pests have been causing problems for some time," he says. "We just didn't recognize them.

"For example, the 9th green on Old White has been a problem year after year. The back third continually got thin and sparse early in the season. We tried everything—aeration, micro-nutrient testing, regular fertilizing—to no avail. But the problem cleared up within 3 weeks



W. D. Haven says that typical symptoms of nematode damage are irregular bare patches. A nematode assay can quickly determine whether you have a problem.

after treating for nematodes in early June, and the green stayed in good condition through October.

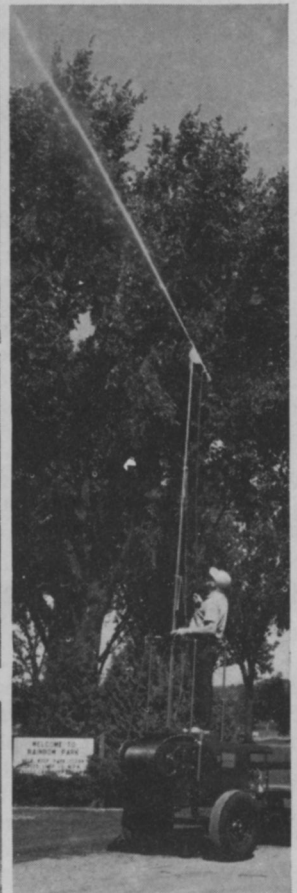
Currently only one treated fairway is not up to par. Haven's not sure but that weather, time of treatment or some other factor or combination of factors is responsible for that.

"I attribute a good part of our turfgrass success to our nematode control program," he says. "Dasanit has controlled one of the toughest problems we have in this business. There's no question that we have deeper, healthier roots than

ever before. Last fall we used less fertilizer than usual, but it was better utilized by more roots with the nematode menace gone."

Follow-up soil samples sent to 3 laboratories in October are now being correlated, but the results (see Table 1) support Haven's contention that nematodes can be drastically reduced with a single application of a nematicide.

"You've got to always be on your toes," Bill asserts. "You can't have a first-class golf club with second-class grass. You can be sure I'll be treating again next year."



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