

Fusarium Blight Control

Practical Ideas for Bluegrass Health

PRACTICAL APPROACHES and experience in the control of Fusarium blight disease are being reported in the Northeast in an area where this disease has become a major problem, especially on blue grasses such as Merion. The experience includes several years of trials on Pennsylvania golf courses that have been hit hard by a disease which thrives in summer when temperatures are constantly above 70 degrees.

Golf course superintendents have faced difficult disease problems with Merion, despite the fact that it generally holds up better than bent grass and does not need as much water or fertilizer. Also Merion can be cut at 1" — not ½" as on bent grass. But in spite of these maintenance advantages and the enthusiasm of golfers for Merion, the appearance of Fusarium blight several years ago threatened a number of well-known courses where Merion Blue was the dominant grass. The disease has customarily appeared about half a dozen years after the turf was well established, and control seemed to be elusive.

Now, it's clear the disease can be stopped. Several superintendents of leading golf courses in southeastern Pennsylvania have achieved practical control in '73 and '74. They expect to continue their control programs for the coming season, as well. The programs are based on timely applications of fungicide. Following are the experiences of three.

Moselem Springs Success

Bare spots from mid-June on was the Fusarium blight challenge faced several years ago by superin-

tendent Byron Knoll at Moselem Springs Golf Club at Fleetwood, Pa. Wilting grass turned brown on all of the fairways and small one-foot spots quickly coalesced into patches measuring six to eight feet in diameter. The disease first appeared on the course in 1970 and was rampant two years later. In June, 1973, Dr. Herbert Cole and his staff from Penn State and Knoll established a key series of 30 trials on a fairway close to the clubhouse. Their aim was to measure the control potential of alternate materials and to demonstrate what could be done to keep a fairway in good condition with disease-control compounds that would involve added maintenance cost — yet insure better turf.

"We used a show-and-tell technique to demonstrate how a fungicide can control disease," says Knoll. "It was easy for our membership to see how Fusarium blight was stopped. The disease marched right up to the edge of the plots. We certainly developed a lot of interest in the control program."

Moselem Springs had been developed with a 70 to 90 percent stand of Merion and with increasingly heavy disease pressure it provided almost a classic example in disease control. Cole's trials included application of nine materials in mid-June, 1973, with a second application being made in early July. The rate used was 8 ounces per 1000 square feet, each time. The principal conclusion in these trials was that a heavy infection of Fusarium blight could indeed be controlled by a high rate of "Ter-san" 1991. This fungicide proved the most effective treatment in the plots that were laid out across the fairway.

"The eight-ounce rate seemed like a 'massive dose' of material," says Knoll. "But it did not kill the grass, and it did control Fusarium. And that's why we expanded our control efforts in 1974. We also found we were getting control of other diseases."

Last year Knoll used a boom sprayer to cover about 25 acres of turf on Moselem Springs fairways. The first application was made June 20, when the weather was cool and dry. Weather continued cool, and rain was seasonal — 2" fell in a span of several days. In mid-July small areas of Fusarium developed, apparently where the boom treatment had missed. These were spot treated — and results were immediate. A second general application on the fairways was made July 24 at the eight-ounce rate during a period of high humidity and high temperatures. Rains and irrigation of the course moved the material down into the critical root zone. About three weeks later, when disease spots turned up on some fairways, the turf was spiked and four ounces of the fungicide and five ounces of wetting agent were sprayed.

Superintendent Knoll sums up his disease control program at Moselem Springs: "A late season evaluation showed we were getting good control, except for minor Roseum breakthroughs and for boom misses in our 1974 treatments. We're planning a repeat program for 1975. We have learned a lot about how to control Fusarium — and we certainly had better fairways to go into winter in 1974 than we have known for the last ten years. Our preventive disease control program represented only about

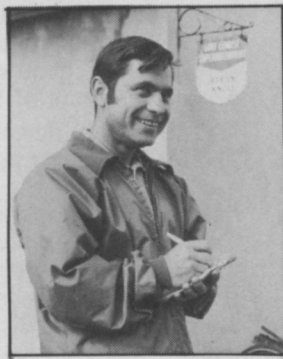


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1. Disease conference brings together Byron Knoll of Moselem Springs Golf Club and Neil Wenning (right), technical representative for a major chemical firm, as they check for Fusarium blight on treated area. 2. Continuing checks are vital in disease prevention programs. Knoll is on his course every day looking for subtle changes in health of grass. 3. Careful tests and accurate record keeping are essential in developing a successful disease control program says Knoll. 4. Disease problem on Waynesborough fairway shows how Fusarium blight looks at initial stages. Small patches spread rapidly when disease pressure is heavy. 5. Fungicide boom application at Moselem Springs shows how material is evenly applied for maximum disease control.



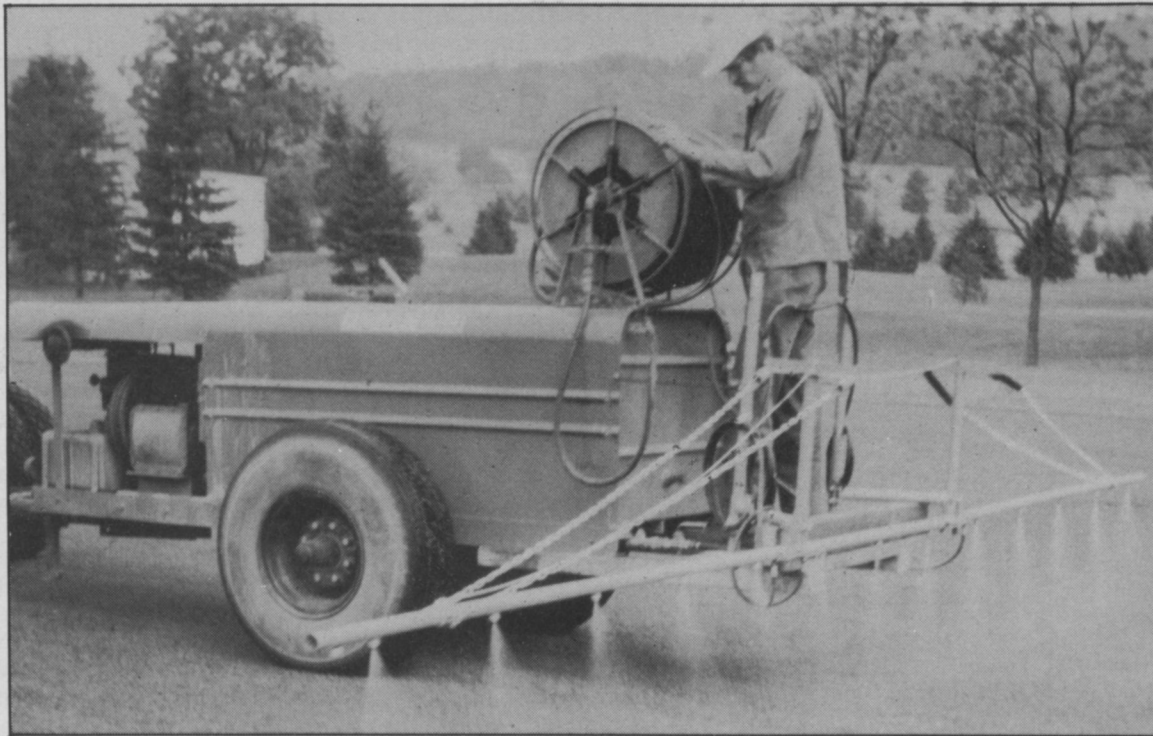
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five percent of our maintenance budget. It was a sound investment for this particular growing season."

Spot Treatments at Heidelberg

At the Heidelberg Country Club, Superintendent Harry Carlson has built his preventive program for Fusarium blight control around spot treatments. The Heidelberg Club in Bernville, Pa., has been developed with Merion blue grass on the fairways and Penn Cross bent grass on tees and greens. Carlson has been familiar with Merion for many years. His maintenance program features an annual renovation period beginning after Labor Day, with each nine holes of the Heidelberg course being closed in turn for five days for thatch removal, fertilizing, top dressing and other work.

"We get heavy play in October and November," notes Carlson. "We have a sizeable membership, plus various outings — and the course is open seven days a week. We have found that the annual renovation period is vital to keeping the turf in top shape."

Fusarium blight has turned up as a relatively new problem, according to Carlson, who recalls its initial appearance in the late 1960's. He has not been shooting for complete control. At Heidelberg he has been following a program of spot treat-

ments with "Tersan" 1991 that follow several applications of "Tersan" LSR in the spring and are combined with heavy watering. This minimizes disease appearance and pressure. Carlson applies an inch of water every week — which, of course, is supplemented by rain.

"We spot treat areas with the fungicide where we have disease," says Carlson. "And we have been able to keep Fusarium pretty much under control, so golfers can almost always play summer rules. We recognize that as our course gets older (it was built in 1967) we may have to step up our disease control program."

New ideas in disease control are not likely to be overlooked at Heidelberg, even including rearranging the order or sequence of mowing of holes on the course to help minimize disease infection. In 1974, Carlson applied the fungicide in mid-June and again in early July. In 1975, he anticipates a third application to be scheduled in late July to avoid breakouts of the disease.

"We apply our chemicals with a 21-foot boom sprayer, and we do all our spraying in the morning when the dew is on the grass," says Carlson. "Our applicator is a farmer who does some crop spraying, too. Know-how is very important if you are going to keep disease under control."

Every year is somewhat different in Carlson's experience. The confidence he has gained in timing of disease control sprays will be useful in dealing with weather variations in his area in the future.

Three Years at Waynesborough

Work with Fusarium blight control started at the Waynesborough Country Club in Paoli, Pa., in 1971, when superintendent John Segui tested the fungicide at 2½ ounces per 1000 square feet. The rate was too low. The following year he boosted his rate to 6 ounces and gained limited control with applications being made in early July and in mid-August. Then in 1973, he added a third treatment in one area and observed good control of the disease in treated areas.

"We got our best control with three treatments last season," says Segui "in areas where we had treated in 1973 as well. Two years of successive treatments obviously produce better results. It was quite

striking on a fairway that had a 20-foot untreated strip with disease carrying over from 1973."

The turf disease first appeared at the Waynesborough Club in 1970. Segui, whose experience dated from 1959 at other clubs, knew he had a problem — and in 1972 he set up a criss-cross block pattern for his fairway trials, so he could observe results at varying rates of application. The tests showed that "Tersan" 1991 provided the longest control.

"The initial treatment in 1973 stopped the disease cold," recalls Segui. "You could see the edge of our treatment clearly outlined. That's what helped convince our Greens Committee to move ahead with a larger program."

The 1974 program was featured by boom applications early and late in July and again in August, with spray patterns being criss-crossed on alternate applications to insure maximum control. Fusarium blight was checked everywhere, except on the two fairways with the heaviest disease infestation; here there were some signs of disease in early September. Progress of the program has been followed closely not only by superintendent Segui but also by all seven members of the Greens Committee, who began to ask that the fairways be widened when they realized that summer rules would be practical through the season. When the fairways were widened by close trimming of the grass, Segui noticed that Fusarium blight was in the rough, so he initiated the practice of hanging half of the boom in the rough during spray treatments. The disease had never been spotted when the grass had been taller.

"We'll be continuing our control efforts this coming season. I'm looking for improved results as we become more effective with our timing of applications."

Practical experience added to the recognized disease control potential of the fungicide will go a long way toward keeping Fusarium blight under control. That's the lesson at Moselem Springs, at Heidelberg, and at Waynesborough Country Clubs. Input from Dr. Herb Cole, Jr., plant pathologist at Penn State has been essential in all cases — the course experience of knowledgeable superintendents has been equally important in obtaining good control of a tough disease.



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