



We're Learning More About Take-All Patch

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Take-All Disease in 1990. Several courses in Wisconsin experienced bentgrass patch disease — or take-all patch — this past growing season. Formerly known as Ophiobolus patch, and sometimes called Gaeumannomyces patch after the causal fungus (*G. graminis* var. *avenae*), it occurs primarily during cool wet seasons. So it's no surprise that we encountered some of it this year after a lapse of several warm years. It also was reported to be very prevalent in the greater Chicago area.

What's new, at least for us, is the fact that it was found on several older sites, on courses that were established many years ago. Our experience until now has been primarily with new courses, where the turf is maybe three to six years old.

The major damage that we saw still was associated with new turf. Some observers associate greatest vulnerability with new courses that have been carved out of woodlands or forests. It also seems to be associated with newly-established sand-based greens. The possible explanation for this, assuming these observations to be correct, is that these sites are new to turfgrass production. There has not been ample opportunity, under these conditions, for competitive and beneficial microorganisms to evolve, and so the take-all fungus can grow and attack the turf without natural competitive restraint.

But what about the older courses? Why did they show disease this year? The literature suggests that take-all patch will be more severe in poorly drained areas, and where the pH is high. My best guess is that when we encountered these conditions on fair-

ways this past cool, wet spring, the fungus simply outdistanced the competitive organisms.

What is interesting to me is the kind of symptoms that were produced. Affected areas were not small, as is often encountered on new greens. Some were several feet in diameter, suggesting the fungus had been around for awhile. In other words, it was not recently introduced. Nor was the turf killed on any of the older infected turfs that I saw. Damage in individual spots on the old courses was usually not nearly as severe as on new courses. To my eyes they gave an appearance very similar to localized dry spots! Except, of course, the soil was moist, and usually there was no evidence of a thatch layer, either. The fungus was not into the crown tissues. If it had been, the plants would probably have died. But the roots were diminished, giving the same effects as a droughty condition. To me, it suggests we should check strange patches and "dry spots" in the future for this fungus, which was readily isolated from the roots.

What can we do about take-all? On fairways, the options are limited. Improving surface and subsurface drainage may be possible in some instances, and it would certainly make sense to avoid overliming. Try to keep the pH below 6.5. Maryland suggestions call for use of ammonium chloride fertilizer, at a total of 3 to 4 lb N and K/1000 square feet for at least two years. Sulfur treatments have helped sometimes, but not usually. On greens you can use PMA in October and November for snow mold control, which also reportedly helps to control take-all.

We tried several sterol inhibitor fun-

gicides in a replicated trial at the Black River Falls golf course this spring, where the disease was appearing for the second year on new greens not yet open to the public. Results were not encouraging, except for one experimental compound. Rubigan, which is labeled for the disease, and Banner, not registered for take-all, were no better than the checks after three treatments. The chemicals were irrigated in thoroughly after two of the treatments. What was most encouraging was the eventual disappearance of symptoms, chemically treated or not, after mid-summer. The superintendent provided excellent irrigation, aeration, fertilizing practices.

I can't encourage wholesale fungicide treatment of this disease with these kind of results. Maybe fall applications would have been more useful. We still need development of a dependable treatment that we can apply at first symptoms. Maybe one or more of the new compounds, combined with wetting agents and the right cultural treatments, can be found to do the job.

Editor's Note:

Worf assumes another job

Many of you will recall Donald Peterson, Associate Dean of the College of Agricultural and Life Sciences, in charge of CALS extension programs. Don has retired, and Professor Worf is serving as Acting Associate Dean through June, 1991. Worf still retains a 25 percent appointment in the Department of Plant Pathology, and plans to appear on the winter turf programs. However, his other plant pathology duties will be restricted.

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THE OLYMPIA in OCONOMOWOC — JANUARY 8&9, 1991**