

Wisconsin Turf Disease Research in 1984

By Dr. Gayle Worf

Turf interests in Wisconsin are rather diversified, and the problems of golf course superintendents, sod producers, lawn care and landscape personnel are not always the same. When we design our research efforts, we try to keep the major concerns in mind, and to the extent that it is possible to do so, try to emphasize work that will have an interest for the majority of turf groups. Some projects are undertaken to provide information that can be used right away, eg., evaluation of fungicides for their effects on various diseases such as dollar spot, necrotic ring spot and snow mold. Others take a longer period of time, such as assessment of varieties to diseases and problems. Still others seem to take a much longer period of time, such as determining the cause(s) of certain disorders such as Poa decline and necrotic ring spot. With those problems, both field, laboratory and greenhouse work is required.

Before we discuss specific projects, I'd like to mention the **location** of some of our major plots in 1984. Our success in developing useful information depends so much upon having opportunity to work on turf sites that are typical of the situations we are trying to research. Varietal reactions may differ in organic soils, or in large plantings vs. smaller plots, so we expect the rather large bluegrass variety trials and Huggett and Kempley sod farms to be useful. We recently completed snow mold trials at the Wausau and Westmoor Country Clubs, which offered information both on the influence of treatment dates, as well as efficacy of several newer candidate fungicides and combinations. Necrotic ring spot field trials are planned in a large area in cooperation with the Waukesha County Parks System. We will continue our study of the influence of soil type, as well as various physical treatments such as de-thatching and aerifying upon NRS at the Rieder Experimental Farms (barring its sale for developmental purposes, which is contemplated

for the near future). If possible, we wish to examine the effects of continued application of dollar spot applications on the same site to determine whether the residual effectiveness of certain fungicides does in fact diminish over time, not from the development of fungal resistance, but possible from "accelerated fungicide decomposition." This will occur in cooperation with the Nakoma Golf Course. We need to learn more about Pythium control, and hope to accomplish some of that at the North Shore Golf Club. We will continue with general observation plots in cooperation with several cooperators around the state.

But the largest concentration of plots is planned in cooperation with the Oconomowoc Country Club and the Wisconsin Turfgrass Association, where the summer field day is planned. The club, and Superintendent Harvey Miller, has designated substantial areas where we can look at some specific questions during the coming summer. We expect to continue with dollar spot fungicide evaluations and demonstration controls. A number of new candidate compounds and combinations continue to appear. In addition, we want to know whether fertilizer rates and types might influence fungicide effectiveness differentially. (We all know that nitrogen levels influence susceptibility, but will fungicide comparisons differ under different fertility regimes?) The same question prevails concerning anthracnose/Poa decline control. There is considerable interest in knowing whether growth regulators such as Embark can have beneficial influence on Poa health and resistance to summer decline. We want to examine that question, particularly as it may also be influenced by summer fungicide programs. And the interest is very great concerning the combined influence of fenarimol (Rubigan) as a dollar spot control fungicide and a suppressant of Poa in mixed Poa-bentgrass sites. Trials will be in place for a second year, and should be ready for assessment by season's end. Some additional trials are contemplated there.

Our laboratory and greenhouse work continues with efforts to determine the role that several fungi we have isolated in recent

years have upon turf health. We are closer to knowing the relationship of the "NRS fungus" now—and it appears that it may be identical to, or closely related to, very similar fungi being reported out of New York and Washington. Its possible role in some of the "yellow patch" situations will be investigated as a part of our effort to gain a better understanding of the impact and prevalence of that particular disease. And the Take-all patch disease has received considerable publicity of late. We've isolated that fungus only occasionally to date, but we must wonder about its possible association to, or similarity to, the NRS fungus. What about the possibility of certain organisms being useful as "thatch control" or "biological control" units? Those questions are a bit more basic, but they're worth keeping in mind as disease situations are examined and analyzed in greenhouse and laboratory situations.

We are fortunate in having an excellent staff of personnel who will be responsible for much of the work. Jana Stewart continues as our primary laboratory and greenhouse technician. Charles Leafblad is a student who will be replacing Glenn Dahl and, in fact, has already started to work with us. Glenn, by the way, has volunteered to continue with some local projects when he joins the North Shore staff this spring. And we will also have the part-time assistance of Mr. Peter Sanderson, a recent graduate, to help with a number of the projects. Their services are made available primarily through the grant of the Wisconsin Turfgrass Association, together with a College Hatch research project.

We described our general objectives two years ago as wanting to: (1) determine the diseases and casual organisms affecting Wisconsin turf; (2) develop suitable field and laboratory diagnostic techniques so that proper selection and application of treatments can be made; (3) develop control measures that meet the needs of Wisconsin turf sites; and (4) learn more about how environmental and cultural factors influence disease, so that long range improvements in turf quality may be possible. Those objectives remain—we hope we're making progress towards them!