

1979 Summer Turf Research Report

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The golf turf research program during the summer of 1979 had its ups and downs. It started without technical help and the first attempt to apply fungicides resulted in discovery of a lost sprayer. The second attempt was rained out. Since then, materials have been applied and data was recorded. It was a good year for plot work. Pythium Blight - yes Pythium Blight as well as Dollar Spot fungi performed very well. Fertilizer-disease interaction studies were continued from 1978 and similar results were obtained. Fall applied fertilizer relative to snow mold development is being repeated at one location this year.

Pythium Blight, this study really had its start in 1978 with unexplained losses of turf. At that time Pythium was implicated but not isolated. Symptom development was rapid but not completely typical of Pythium Blight. Earlier the presence of this turf problem may have been compounded with or confused by Anthracnose. At Interlachen, test plots on fairway #14 were established. The first attempt to treat was interrupted by the lack of a sprayer which did later materialize. The second attempt found us on the fairway ready to treat with different equipment and a rain storm prevented application. Pythium Blight did get started on the test area before the chemicals were applied. Excellent results were achieved with two experimental products - CIBA GEIGY 48988 and a Nor-Am chemical material as a liquid and a granular formulation.

The check area was not much worse than the area treated with 4 oz of Chloroneb, in other words in this test Chloroneb provided little disease control and required re-application 5 days later. CIBA GEIGY 48988 at 5 oz performed well but did have a little more disease than the 10 oz rate which controlled Pythium Blight 100%. The Nor-Am liquid formulation performed slightly better than the granular formulation, which also appeared to be somewhat less active. These two materials may be available in 1980 under an experimental use permit or full label. I hope to test these excellent materials again in 1980.

Dollar Spot, the Dollar Spot fungicide test was at the University of Minnesota where 12 treatments were applied starting on August 8. Dollar Spot developed earlier at the campus turf research area but several weeks were required before the disease was established on the test plot area. Thus when spraying began the disease was well established on the entire area and on the test plots. The check area, unsprayed, the week after spraying began, had an average of 61 spots per 44 square feet. The disease pressure was high (abundant inoculant in the plot area) and the disease was present in all plots at a level greater than what most superintendents would permit. This was a curative-catchup test and that may explain why several products performed poorly during the early weeks of the test. The results therefore may not reflect what would be expected under golf course management programs or your results should be better. This was a severe test of the products ability to stop the disease and to prevent re-entry. The data are present in table form.

The value of systemics, like benomyl is clearly evident; long term control. This test also suggests as did last year's results that 1 oz of RP26019 is marginal when applied every two weeks, even the 2 oz rate started to fail at the end of two weeks. Daconil 4F at 3 fl oz and 6 fl oz provided inadequate control for several weeks of the test, while the 11 fl oz rate checked the disease after the second application. The experimental products performed well and CIBA GEIGY 64251 also produced a darker green color. The rates of CIBA GEIGY 64251 are very low, less than half the active ingredient equivalent of benomyl.

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Disease fertilizer interaction studies at Duluth, Rochester, Campus and Oak Ridge produced little data different from last year's results. The Duluth and Oak Ridge plots had no disease development, while Dollar Spot at Rochester damaged the test area. No relationship to fertilizer was recorded and Kurt Erdmann did apply a fungicide to stop this disease. At Duluth, in high peat soils some clear differences were noted. The performance of all materials at all locations was judged adequately relative to color and vigor of the grass. Products applied to test greens include: Scotts 22:0:16, Howes Turf Special 20:5:10, Par Ex 31:0:0, Par Ex 20:0:16, Ammonium nitrate 34:0:0, Ammonium sulfate 21:0:0, Milogranite 6:2:0 at 1 lb actual nitrogen per 1000 sq ft in the week of June 4, July 9, August 6 and September 7. A final application will be made when the fungicides are applied in October or November. Fertilizer at Oak Ridge was applied twice and a third application is planned before snow mold fungicides are applied this fall. Even under low nitrogen, no summer disease developed at Oak Ridge. The effect of fall applied fertilizer at Forest Lake is being repeated and other than a color and growth response at this time, no data is available. Next spring the plots at Oak Ridge and Forest Lake should be of real interest.

1979 DOLLAR SPOT TEST PLOT RESULTS ON PAGE 4

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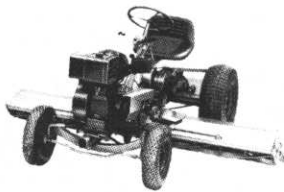
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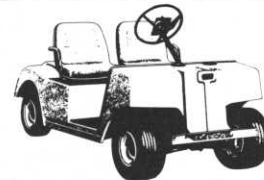
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1979 Dollar Spot Test Plot Results

| Product | Rate / 1000 sq ft | Treatment applied | | | | | and Average Number of Infection Sites Per Plot | | | | | |
|-------------------------|----------------------|-------------------|------|------|------|------|--|-----|------|------|------|------|
| | | 8/8 | 8/15 | 8/24 | 8/24 | 8/30 | 9/6 | 9/6 | 9/13 | 9/19 | 9/26 | 10/3 |
| Tersan 1991 | 1 oz product | T | 7 | 1 | | 0 | 2 | T | 1 | 0 | 0 | 0 |
| RP26019 | 1 oz product | T | 15 | 100 | T | 26 | 100 | T | 1 | 3 | 0 | 0 |
| RP26019 | 2 oz product | T | 13 | 27 | T | 1 | 2 | T | 1 | 4 | 1 | 0 |
| Daconil 2787 4F | 3 fl oz " | T | 19 | 100 | T | 33 | 100 | T | 10 | 20 | 3 | 0 |
| " | 6 fl oz " | T | 18 | 87 | T | 8 | 17 | T | 2 | 4 | 0 | 0 |
| " | 11 fl oz " | T | 8 | 24 | T | 1 | 1 | T | 0 | 0 | 0 | 0 |
| Ciba Geigy 64251 | 2 gms ai | T | 15 | 29 | T | 4 | 23 | | 46 | 50 | 30 | 5 |
| " | 4 gms ai | T | 9 | 10 | T | 1 | 2 | | 8 | 21 | 5 | 0 |
| " | 8 gms ai | T | 19 | 3 | T | 1 | 0 | | 0 | 1 | 1 | 0 |
| BFN8090 (Boots Chem) | 0.5 oz ai | T | 83 | 75 | T | 15 | 90 | T | 10 | 17 | 0 | 0 |
| " | 1.5 oz ai | T | 33 | 75 | T | 3 | 34 | T | 1 | 1 | 0 | 0 |
| " | 3.0 oz ai | T | 12 | 27 | T | 2 | 21 | T | 0 | 0 | 0 | 0 |

PLOT SIZE 44 square feet