

Crop and Soils Field Laboratory Growth Regulator Study - 1981

Establishment

The Elanco growth regulator-disease control interaction studies were conducted on a high maintenance Toronto creeping bentgrass putting green at the Crop and Soils Research Laboratory on the MSU campus in E. Lansing, MI. The area had suffered severe dollarspot (Sclerotinia homeocarpa) pressure in the past. The treatments were applied on April 18, prior to any significant spring green-up and well before the first mowing of the season (Table 9). Applications were made with a CO₂ small-plot sprayer at a volume of 40 gal/acre. The plots were 6' x 6' in size.

Results

Immediately following the early spring treatments, no significant differences in spring green-up were noticed. Within a few weeks of application, however, marked differences began to develop in turf color, density and vigor. The plot area had suffered significant dollarspot (Sclerotinia homeocarpa) and snow mold (Typhula sp., Fusarium nivale) damage during the prior season. Because of the suppressed growth effect of primarily the 2 lb. ai./acre rate of EL 500, all three replications of this treatment showed evidence of previous season snow mold and dollarspot damage well into June. On June 19, differences were noted comparing the appearance of the treated plots to the untreated controls. The following chart summarizes these observations.

As the summer progressed, the growth inhibition effects in the previously mentioned plots subsided, such that by July 21, no noticeable differences in appearance or growth rates were obvious between the treated and the untreated plots. At this point, all plots began to respond predictably to the fertilizer treatments (1 3/4 lb. total nitrogen) and to the irrigation.

By the beginning of August, dollarspot pressure was increasing rapidly over the entire plot area. By August 12, the entire plot area was diseased, making the first disease rating possible (Table 9). As the data shows, differences in disease level from plot to plot were apparent, but the ratings are somewhat erratic. By August 26, disease pressure had increased further and a second dollarspot rating was taken (Table 10). There were no significant differences between treatments. EL 500 may have shown fungicidal properties had the dollarspot appeared in early June, as it normally does, when the growth retardant effects of the EL 500 were still evident. Additional studies should be conducted in this vein.

Table 9. Elanco Growth Regulator - Dollarspot Creeping Bentgrass Study - 1981. Summation of early season plot observations. Rating 1 (no disease) - 9 (90% infection or greater). Rated 8/12/81.

Treatment	Rate/Acre	Replication			AVE	DMR
		I	II	III		
Daconil 2787 WP	8 lbs. ai.	2	2	4	2.7	A
E.L. 500 + Daconil 2787 WP	1 lb. ai. + 4 lb. ai.	3*	3	2	2.7	A
Check	---	2	2	4	2.7	A
E.L. 500	2 lbs. ai.	3*	2*	5*	3.3	A
E.L. 500 + Daconil 2787 WP	1 lb. ai. + 8 lb. ai.	3	3	4	3.3	A
E.L. 500	1 lb. ai.	3	4	4	3.7	A
E.L. 500	.5 lb. ai.	5	2	5	4	A
E.L. 500	1.5 lb. ai.	3	2	7*	4	A

Treatments followed by the same letter are not significantly different at the 5% level.

No phytotoxicity has been observed up to this point.

*On 6/19/81, these plots showed marked growth inhibition compared to other treated and untreated plots. They were much darker green in color, sunken in appearance in relation to surrounding plots and still very "pock-marked" from the previous seasons dollarspot and snow mold damage. Turf in these plots was less dense, and leaves were wider and more coarse than turf in surrounding plots and controls.

Table 10. Elanco Growth Regulator - Dollarspot Creeping Bentgrass Study - 1981. Rating 1 (no disease) - 9 (90 % infection or greater). Rated 8/26/81.

Treatment	Rate/Acre	Replication			AVE	DMR
		I	II	III		
Daconil 2787 WP	8 lbs. ai.	2	2	5	3	A
E.L. 500 + Daconil 2787 WP	1 lb. ai. + 4 lb. ai.	3	4	3	3.3	A
Check	---	2	3	5	3.3	A
E.L. 500	1 lb. ai.	4	4	4	4	A
E.L. 500 + Daconil 2787 WP	1 lb. ai. + 8 lb. ai.	3	4	5	4	A
E.L. 500	1 lb. ai.	3	3	7	4.3	A
E.L. 500	1.5 lb. ai.	3	3	7	4.3	A
E.L. 500	.5 lb. ai.	6	2	7	5	A

Treatments followed by the same letter are not significantly different at the 5% level.