

IRRIGATION AND FERTILITY EFFECTS ON HELMINTHOSPORIUM
MELTING-OUT AND DOLLARSPOT

M.E. Otto, J.M. Vargas Jr., and R. Detweiler
Department of Botany and Plant Pathology, M.S.U.

HELMINTHOSPORIUM MELTING-OUT FERTILITY TIMING STUDY

Fertility application timing studies were conducted at the Hancock Turfgrass Research Center in 1983 and 1984 on Kenblue Kentucky Bluegrass maintained at 1 1/2" height cut. Urea treatments were applied foliarly with a CO₂ small plot sprayer.

The first study was begun Fall of 1982 with rates and dates as listed in Table 1. Disease ratings were taken June 14, 1983 with results as listed in Table 1.

The study was repeated in 1984 to further test the hypothesis that application of fertilizer dormant and in the spring will significantly reduce the severity of Helminthosporium melting-out. Treatments were applied as described above and dates and rates are outlined in Tables 2 and 3.

Discussion

These two studies show significantly lower Helminthosporium melting-out development at moderate levels of dormant and spring fertility. Based on these findings a dormant application followed by 2 spring applications of 3/4 lb to 1 lb N should provide best preventive management of Helminthosporium melting-out.

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Two studies were conducted at the Hancock Turf Research Center to test the effects of different irrigation practices on disease development. One study was established on Adelphi Kentucky Bluegrass (Poa protensis) primarily to test for differences in Helminthosporium Melting-out (Drechslera poae) development between daily irrigated and less frequently irrigated areas.

The second study was established on an annual bluegrass (Poa annua) simulated fairway area, to test for differential dollarspot development (Lanzia and Moellerodiscus spp.) under three different irrigation regimes.

Ten chemical treatments, including five rates of Aqua-Gro-wetting agent, Green Magic fertilizer, Lawn Restore and Lawnkeeper fertilizers and a check were included as subplots within each irrigation block in both studies.

irrigation at wilt. Irrigation was begun 6/1/84 and terminated 9/30/84.

Dollar Spot Count

All plots were rated 8/6/84 for amount of dollarspot damage. In each plot the number of diseased spots were counted and a factorial analysis was performed on the data.

Discussion

Analysis of variance of the data show no significant differences between chemical treatments at the 5% level. The irrigation treatment differences proved highly significant however. Interestingly, the daily irrigated areas displayed the highest amount of disease followed by 110% pan, and finally non-irrigated. The fact that this data differs from what is in the literature for this disease (greatest disease in driest areas) is further evidence for the possible existence of more than one strain of the pathogen.

Table 1. Helminthosporium melting-out Fertility Timing Study-1983. Hancock Turfgrass Research Center, MSU. Rating Scale - 1 (no disease) - 9 (90% infection or greater). Rating date - 6/14/83.

Treatment	Rate*/1000 ft ²	I	II	III	Ave	DMR**
Urea (Fall & Spring)	2.3 lb N	1	1	2	1.3	A
Urea (Spring only)	1.3 lb N	1	2	4	2.3	A
Urea (Fall only)	1 lb	7	5	4	5.3	B
Check	--	8	8	8	8	C

*Urea rates represent total pounds actual nitrogen per 1000 sq. ft. over duration of study.

**Treatments followed by the same letter are not significantly different from each other at the 5% level.

Table 2. Fertility Application Timing - Melting Out Disease Study - 1984.
 Hancock Turfgrass Research Center, MSU. Melting-out disease rating
 scale: 1 (no disease) - 9 (90% infection or greater). Rating date:
 6/1/84

Treatment Date	lbs N 1000 ft ² (urea)	Rep I	Rep II	Rep III	Ave	DMR
2/24, 4/19, 5/16	1, 3/4, 3/4	4	4	4	4	A
4/19, 5/16	3/4, 3/4	7	7	4	6	AB
4/19	3/4	8	5	8	7	B
2/24	1	7	7	8	7.3	B
2/24, 4/19	1, 3/4	8	7	7	7.7	B
No fertilizer	---	7	8	8	7.7	B

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

Table 3. Turf Quality Rating Scale: 9 (Best) - 1 (Worst).

Treatment Date	lbs N/1000 ft ² (urea)	Rep I	Rep II	Rep III	Ave	DMR
2/24, 4/19, 5/16	1, 3/4 3/4	9	8	8	8.3	A
4/19, 5/16	3/4, 3/4	6	6	8	6.7	A
4/19	3/4	5	5	4	4.7	B
2/24, 4/19	1, 3/4	4	5	4	4.3	B
2/24	1	4	3	2	3	BC
No fertilizer	---	4	1	1	2	C

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