

Benzimidazole-Resistant Dollar Spot Study

The benzimidazole-resistant dollar spot study was conducted on the MSU Soils Farm Research area on an intensively maintained bentgrass green infested with a benzimidazole-resistant strain of *Sclerotinia homeocarpa*.

The study was divided into two parts. Part one consisting of weekly fungicide applications and part two, consisting of bi-weekly fungicide applications. Both parts 1 and 2 were laid out in three repetitions of a randomized block design.

The entire study was applied on August 4, following extensive infestation by the dollar spot organism. Subsequent treatments were applied to part one on a weekly basis on August 10, 16, 24 and September 2. Subsequent treatments were applied to part two on a bi-weekly basis on August 16 and September 2. All treatments were applied foliarly with a CO₂ small-plot sprayer at a volume of 40 gallons/acre.

The readings in Tables 5 and 6 were taken on September 20.

TABLE 5. MSU Soils Farm Benzimidazole Resistant (BR) Dollar Spot
Treated Weekly - Number of Spots

Treatment	Rate/1000ft ²	I	II	III	AVE	(DMR)
Daconil 2787	6 oz	0	0	0	0	A
Daconil 2787 + Exhalt	3 oz + 1pt/100 gal	0	0	0	0	A
Daconil 2787 + Exhalt	3 oz + 1pt/100 gal	0	0	0	0	A
Acti-dione Thiram	1 oz	0	0	0	0	A
Acti-dione Thiram	2 oz	0	0	0	0	A
Acti-dione Thiram + Exhalt	2 oz + 1pt/100 gal	0	0	0	0	A
EL 222	2 oz	0	0	0	0	A
RP 26019	2 oz	0	0	0	0	A
Tersan 75 + Exhalt	6 oz + 1pt/100 gal	0	0	2	.7	A
Daconil 2787	3 oz	0	4	0	1.3	A
Acti-dione Thiram + Exhalt	1 oz + 1pt/100 gal	0	8	0	2.7	A
Tersan 75	6 oz	0	0	10	3.3	A
Tersan 75	3 oz	0	20	10	10	A
Tersan 75 + Exhalt	3 oz + 1pt/100 gal	0	6	25	10.3	A
Check	-	10	95	90	65	B

TABLE 6. MSU Soils Farm Benzimidazole (BR) Resistant Dollar Spot
Treated Bi-Weekly - Number of Spots

Treatment	Rate/1000ft ²	I	II	III	AVE	(DMR)
Daconil 2787 + Exhalt	3 oz + 1pt/100 gal	0	0	0	0	A
RP 26019	2 oz	0	0	0	0	A
Daconil 2787 + Exhalt	6 oz + 1pt/100 gal	0	10	0	3.3	A
Acti-dione Thiram + Exhalt	2 oz + 1pt/100 gal	0	10	0	3.3	A
EL 222	2 oz	5	15	0	6.7	A
Daconil 2787	6 oz	0	21	0	7	A
Daconil 2787	3 oz	1	0	20	7	A
Acti-dione Thiram	1 oz	35	8	13	18.7	A
Acti-dione Thiram	2 oz	2	11	50	21	A
Tersan 75	6 oz	75	3	0	26	A
Acti-dione Thiram + Exhalt	1 oz + 1pt/100 gal	20	80	7	35.7	A
Check		10	95	90	65.0	AB
Tersan 75 + Exhalt	6 oz + 1pt/100 gal	35	70	100	68.3	AB
Tersan 75 + Exhalt	3 oz + 1pt/100 gal	10	95	90	153.3	BC
Tersan 1991	1 oz	125	300	125	183.3	C

Results: Benzimidazole Resistant (BR) Dollar Spot
MSU Soils Farm

When the fungicides were applied on a weekly basis, all the fungicides gave significant control of the BR dollar spot when compared to the untreated control, (Table 5).

When the fungicides were applied on a bi-weekly basis, all of the treatments gave significant control compared to Tersan 75 at 3 oz with Exhalt at 1 pt/100 gal and Tersan 1991 at 1 oz. Many fungicides rank higher than the untreated check, although this control was not statistically significant. (Table 6.)

Conclusions:

Many fungicides can be used against the benzimidazole resistant (BR) strain of the dollar spot fungus. Fungicides that cannot be used against this strain are: Tersan 1991, Fungo 50, Cleary's 3336, Spot Kleen, Mertect 140 and Tobaz. (See 1974 and 1975 Michigan State Turfgrass Fungicide Report.)

Maple Lanes Nematicide Study

The nematicide studies were conducted on a heavily infested Toronto bentgrass practice green on the Maple Lanes Golf Course in Warren, Michigan.

The study was laid out in three repetitions of a randomized block design. Nematode counts were determined for each plot prior to the application of nematicides and subsequent nematode counts were made one month after application to determine the degree of control being obtained with each material. The two species of turf-pathogenic nematodes which were present in problematic numbers were the ring nematode (*Criconemoides* spp.) and the stunt nematode (*Tylenchorhynchus* spp.).

The plot area was sampled and treated on July 28, the granular nematicides being applied with a 3' Scotts drop-type spreader and the wettable powders and emulsifiable concentrates being applied with a 3' CO₂ small-plot sprayer. All treatments were irrigated into the root zone immediately after application. The plots were then sampled and nematode counts determined for the ring and stunt nematodes one month later, on August 26.

TABLE 7. Maple Lanes Nematode Study
% reduction - *Tylenchorhynchus* (Stunt) nematode

Treatment	Rate/1000ft ²	I	II	III	AVE	(DMR)
Nemacur	3 lb.	97.1	93.2	91.5	93.5	A
UC21865(wp)	5 lb ai/A	60.43	66.7	54.3	60.5	A
CGA12223(20G)	10 lb ai/A	84.2	74.1	0	52.7	A
Dasinat	3 lb.	21.2	49.5	44.5	38.4	A
UC21865(wp)	10 lb ai/A	88	5.3	20.2	37.8	A
CGA12223(20G)	15 lb ai/A	45.3	74.1	-16.4	34.3	A
CGA12223(4E)	15 lb ai/A	-116.4	78.3	- 1.2	-13.1	A
Check	-	-289.5	-251	14.8	-175.2	B