

effective. It should be noted that the dollar spot strain in this plot area is resistant to the benzimidazole fungicides, such as Fungo.

No phytotoxicity was noted in this study, although a "greening effect" was observed in some treatment plots, as noted on data Table 8.

NECROTIC RING SPOT FUNGICIDE STUDIES - 1991

Two necrotic ring spot (*Leptosphaeria korrae*) studies were conducted this year, one on the Hancock Turf Research Center on the MSU campus, and another on the Yankee Springs Golf Course in western Michigan. Both studies were located in previously diseased Kentucky bluegrass turfs which were irrigated, fertilized at 1 lb N/mo (except fertilizer treatments and unfertilized control) and mowed at 1" (Yankee Springs) and 1½" (Hancock Center) height of cut. Both areas were treated for weeds, etc., as necessary, but no general maintenance fungicides were used during the season.

Applications were made as foliar sprays initially on August 1 (Hancock Center) and August 5 (Yankee Springs Golf Course). Second and third applications were made thirty and sixty days later. The goal of these early August applications was to control the new disease outbreaks frequently observed in the September-November period.

Because symptoms of previous disease activity (patches) were present throughout the Hancock plot area, pre-treatment ratings (% plot area infected) were taken with subsequent efficacy ratings being reported as percent disease increase/decrease compared to initial disease levels (Table 9).

No disease activity was apparent on the Yankee Springs plot area at the time of initial treatment, although the area was moderately diseased in previous seasons.

Necrotic Ring Spot Study #1 - Hancock Turfgrass Research Center, MSU, East Lansing, MI

This study was initiated on August 1, 1991 with subsequent applications being made on August 29 and October 3, 1990. At the time of the initial applications, numerous, newly-formed patches were present in the plot area as a result of summer heat and drought stress. The turf that was killed had probably been infected by the necrotic ring spot fungus during the previous fall and spring when the soil temperatures were lower. As Table 9 indicates, most of the fungicide treatments promoted recovery from previous disease incidence by allowing old patches to fill in to various degrees. Because this recovery was not uniform across all treatment replicate plots, however, the treatments were not significantly different from each other. There was also no evidence of a renewed disease outbreak in the fall since the control (unfertilized) plot failed to develop increased disease pressure, and actually improved somewhat during the study duration, and no phytotoxicity was observed during the study duration.

Necrotic Ring Spot Study #2 - Yankee Springs Golf Course

This study was initiated on August 5, 1991 with second and third applications being made on September 3, 1991 and October 9, 1991. Unfortunately, the frequently observed late-season disease outbreak did not occur this year and no data was available from this trial.

No phytotoxicity was observed in the plot area, with the exception of mild phytotoxicity in the EXP 10064 B (3 fl oz) treatment, which persisted through early November.

Table 9. Necrotic Ring Spot Fungicide Study - 1991

Hancock Turfgrass Research Center, MSU, East Lansing, MI
 Percent recovery from pre-treatment disease level/plot
 (negative numbers indicate disease increases)
 Rated 10/17/91

Treatment ^c	Rate/1000 ft ^{2b}	Applic. Dates	I	II	III	AVE	DMR ^a
Rubigan	8 fl oz (one appl. only)	8/1	70	88	80	79.3	A
Panasea Plus + Rubigan	4 fl oz + 1 fl oz	8/1, 8/29, 10/3	75	86	68	76.3	A
EXP 10221 + Ch. 26019 (WDG)	2 fl oz + 2 oz	"	80	88	70	79.3	A
EXP 10221 + Ch. 26019 (WDG)	1.5 fl oz + 1.5 fl oz	"	64	71	80	71.7	A
EXP 10064 B	1.5 fl oz	"	60	85	60	68.3	A
ASC 66925	2.5 oz	"	65	100	40	68.3	A
A 499 10 (10-2-5)	1 lb N	"	75	33	80	62.7	A
Banner	4 fl oz	"	61	50	75	62	A
EXP 10064 B + Ch. 26019 (WDG)	1.5 fl oz + 2 oz	"	67	40	75	60.7	A
Panasea Plus	4 fl oz	"	57	53	65	58.3	A
Lustre Lawn (21-0-10)	1 lb N	"	58	50	60	56	A
Ch. 26019 (WDG)	4 oz	"	22	72	72	55.3	A
Rubigan	2 fl oz	"	100	0	57	52.3	A
ASC 66825	1.5 oz	"	75	14	63	50.7	A
Ch. 26019	8 fl oz	"	25	50	75	50	A
EXP 10064 B	3 fl oz	"	43	50	50	49	A
Regenerate/Rejuvenate	1 lb N	"	44	40	44	42.7	A
Rubigan	1 fl oz	8/1, 8/29, 10/3	58	0	50	36	A
Rubigan	4 fl oz	"	60	0	44	34.7	A
ASC 66825	4 oz	"	75	71	-43	34.3	A
EM-3	4 fl oz	"	0	0	70	23.3	A
Urea (46-0-0)	1 lb N	"	33	-67	86	17.3	A
Control (unfertilized)	---	"	20	-50	71	13.7	A

^aTreatments followed by same letter are not significantly different at 5% level.

^bRates listed are formulation unless listed as "ai" (active ingredient).