

independent of treatment. Although, based on the data in Table 12, some of the treatments provided significant moss reduction compared to the control, none of the treatments totally eradicated the moss. In addition, some phytotoxicity was observed over the course of the study. Spotrete exhibited mild phytotoxicity as a slight darkening of the turf. The high rate of Junction showed no damage early in the trial, but by the end of July, some slight browning was visible. In early September, moderate phytotoxicity was observed in the plots treated with the high rate of Junction only.

Table 12. Moss 2001.

Hancock Turfgrass Research Center, East Lansing, MI							
Rating Scale: Percent plot area with moss.							
Treatment Rate/1000 ft²	Interval (Days)	Mean^a 6/14	Mean 7/9	Mean 7/17	Mean 8/17	Mean 8/29	Mean 9/5
Spotrete 7.5 fl oz	7	0.8 a	0.4 b	0.4 b	0.5 b	0.2 b	0.2 b
Junction 2 oz	14	1.4 a	1.4 ab	0.6 b	1.3 ab	0.8 ab	0.7 b
Junction 4 oz	14	1.0 a	1.3 ab	0.9 ab	1.1 b	0.9 ab	0.9 b
Junction 6 oz	14	1.6 a	2.1 a	1.9 ab	1.5 ab	1.3 ab	1.1 ab
Control (Fertilized)	--	1.9 a	2.4 a	2.3 a	2.5 a	2.2 a	2.1 a

^aTreatment means followed by the same letter within the same rating date are not significantly different (LSD, p = 0.05).

TAKE ALL PATCH (*GAEUMANNOMYCES GRAMINIS*)

Because disease activity occurred in the spring this year, Take All Patch (*Gaeumannomyces graminis*) studies were conducted curatively on a diseased creeping bentgrass fairway at the Golf Club of Michigan, Brighton, MI. The study was set out in four replications of a randomized complete block design utilizing 6' x 9' plots, each of which displayed one or more active take-all patches. Applications were made with a small plot, CO₂ sprayer with two flat fan nozzles at 35 PSI and 96 GPA. Treatments were not watered in. Fertilizer treatments, except urea, were pre-weighed and hand-applied. A pre-treatment disease rating was taken on 5/17, prior to the initial application on 5/17. Treatments were re-applied at the interval cited in the data table (Table 13). The ratings (percent recovery) were taken on 7/11/01 as disease pressure peaked in the study area. Because the study area was lean at the time of treatment initiation, supplemental fertility was applied to all non-fertilizer treatments as follows: ¼ # N (18-3-18) on 5/17, 1/8 # N (urea) on 5/22, ¼ # N (18-3-18) on 6/14, and ¼ # N (18-3-18) on 6/19. Additionally, Daconil Ultrex (3 oz/1000 sq ft) and Subdue Maxx (1 oz/1000 sq ft) were applied to the entire study on 6/28 for dollar spot and Pythium blight control.

Disease pressure in this study peaked in early July and gradually decreased throughout August. No fall disease activity was observed.

As the data in Table 13 indicates, the fungicides Honor, Systec 1998, and Heritage provided significantly better disease recovery than was observed in the control treatment. Also included in this elite group was the urea fertilizer treatment at ½ lb nitrogen/1000 ft² per 14 days. No phytotoxicity was observed in this study this year.

Table 13. Take All Patch Golf Club of Michigan, Brighton, MI.

Rating Date: 7/11/01							
Rating Scale: Mean percent recovery from pre-treatment disease levels on 5/17/01.							
Treatment Rate/1000 sq ft	Application Interval	I	II	III	IV	Mean^a	LSD
Heritage 0.4 oz	May, June (2 apps) ^b	75	80	100	100	88.75	A
SysTec	14 days ^c	100	70	100	75	86.25	A
Urea 1 lb N / month (1/2 lb N / 14 days)	May, June, July, Aug ^d	100	67	80	86	83.25	AB
Honor 0.2 oz	2 fall '01, 2 spring '02 ^e	70	90	100	67	81.75	A-C
SysStar WDG 3.0 oz	14 days ^c	100	80	100	40	80	A-D
Eagle 0.6 oz	14 days ^c	60	90	85	80	78.75	A-D
Insignia 0.9 oz	2 fall '01, 2 spring '02 ^e	100	67	83	50	75	A-D
Eagle 1.2 oz	28 days ^f	50	60	100	72	70.5	A-D
Nitroform 2 lb. N.	May only ^g	-25	43	0	60	19.5	A-E
Urea 1/2 lb. N.	May, June, July, Aug ^d	50	29	43	-50	18	A-E
Nutralene 2 lb. N.	May only ^g	-67	57	0	57	11.75	B-E
Lebanon 18-3-18 1/2 lb. N.	May, June, July, Aug ^d	20	-75	60	33	9.5	C-E
Control	--	20	60	0	-50	7.5	DE
Nitroform 1 lb. N.	May, July ^h	0	-75	20	0	-13.75	EF
Nutralene 1 lb. N.	May, July ^h	-50	0	-40	0	-22.5	EF
Nitroform (38%) 1/2 lb. N.	May, June, July, Aug ^d	0	-60	25	-60	-23.75	EF
Nutralene (40%) 1/2 lb. N.	May, June, July, Aug ^d	-133	-50	20	60	-25.75	EF
Lebanon 18-3-18 1 lb. N.	May, June, July, Aug ^d	-250	43	-133	43	-74.25	F
Heritage 0.2 oz + Banner Maxx 2 fl oz	21 days ⁱ					NA	
Heritage 0.2 oz	21 days ⁱ					NA	

^aMeans followed by the same letter do not significantly differ (LSD, p = 0.05).

^bTreatments applied on 5/17 and 6/14.

^cTreatments applied on 5/31, 6/14, 6/27, 7/11, 7/27, 8/8, and 8/21.

^dTreatments applied on 5/17, 5/31, 6/14, 6/27, 7/11, 7/27, 8/8, and 8/21.

^eTreatments applied on 5/17, 6/14, 7/11, and 8/21.

^fTreatments applied on 5/17, 6/14, 7/11, and 8/8.

^gTreatments applied on 5/17.

^hTreatments applied on 5/17 and 7/11.

ⁱProduct/protocols arrived too late to be applied with rest of treatments. Treatments were applied, but not early enough to have time for recovery before the rating date.

Table 14. Take All Patch Golf Club of Michigan, Brighton, MI.

Rating Rate: 7/21/01							
Quality Rating Scale: 10 (best), 0 (worst), 7 (acceptable).							
Treatment	Rate/1000ft ²	Intervals	I	II	III	IV	Mean
Urea	1/2 lb N/14 days	May, June, July, Aug ^a	7	8	8	8	7.8
Nutralene	1 lb. N	May, July ^b	8	6	8	8	7.5
Heritage	0.4 oz	May, June (2 applications) ^c	8	7	7	7	7.3
Insignia	0.9oz	May, June, July, Aug ^d	7	7	7	7	7.0
Urea	1/2 lb.N	May, June, July, Aug ^d	7	7	7	7	7.0
Eagle	1.2 oz	28 days ^d	7	8	6	7	7.0
SyseTec	5.0 oz	14 days ^a	6	8	7	7	7.0
Honor	0.2oz	May, June, July, Aug ^c	6	7	7	7	6.8
Eagle	0.6oz	14 days ^a	6	7	7	7	6.8
Nitroform	2 lb. N	May only ^f	6	7	6	7	6.5
Lebanon 18-3-18	2 lb. N	May, June, July, Aug ^d	8	6	6	6	6.5
Sys Star WDG	3.0 oz	14 days ^a	7	6	6	7	6.5
Nutralene	2 lb. N	May only ^f	6	6	6	7	6.3
Nutralene (40%)	1/2 lb.N	May, June, July, Aug ^d	7	5	5	7	6.0
Lebanon 18-3-18	1/2 lb. N	May, June, July, Aug ^d	6	6	5	7	6.0
Control	-	-	5	7	6	5	5.8
Nitroform	1 lb. N	May, July ^b	7	5	5	5	5.5
Nitroform (38%)	1/2 lb. N	May, June, July, Aug ^d	5	5	5	6	5.3

^aTreatments applied on 5/17, 5/31, 6/14, 6/27, 7/11, 7/27, 8/8, and 8/21.

^bTreatments applied on 5/17 and 7/11.

^cTreatments applied on 5/17 and 6/14.

^dTreatments applied on 5/17, 6/14, 7/11, and 8/8.

^eTreatments applied on 5/17, 6/14, 7/11, and 8/21.

^fTreatments applied on 5/17 only.

DOLLAR SPOT (*RUTSTROEMIA FLOCCOSUM*)

Study A

Study A was set up in four replicates of a random block design with 2' x 4.5' plots. We applied the liquid treatments with a CO₂ backpack sprayer with a single nozzle (flat fan 8002E TeeJet) boom at 34 psi and 48 GPA. Granular treatments were pre-weighed and hand applied. The host was Emerald creeping bentgrass mowed at 3/16". Fertility was maintained at 3/8 # N/month/1000 ft². Treatments were applied on intervals as listed in Table 15. Treatments on a 3 day interval were applied on: 8/3, 8/6, 8/10, 8/14, 8/18, 8/24, 9/1, 9/7, 9/11, 9/14, and 9/17. The 7 day treatments were applied on 8/3, 8/10, 8/18, 8/24, 9/1, 9/7, and 9/14. The 14 day treatments were applied on 8/3, 8/18, 9/1, and 9/14. The 21 day treatments were applied on 8/3, 8/24, and 9/14. The 28 day treatments were applied on 8/3 and 9/1. Data represent mean percent plot area infected (Table 15).