

University of GA Coop Ext Service

Effect of Soil Moisture on Annual Bluegrass Control with MON 44951	
Trial ID: Turf5-03	Study Dir.: Bill Nutt
Location: Griffin	Investigator: Tim R Murphy

GENERAL TRIAL INFORMATION	
Study Director: Bill Nutt	Title: ARC I
Affiliation: UGA-CAES	
Investigator: Tim R Murphy	Title: Weed Scientist
Affiliation: UGA-CAES	
TRIAL LOCATION	
City: Griffin	Trial Status: ARCHIEVED
State/Prov.: GA	
COOPERATOR/LANDOWNER	
Cooperator: Dennis Williamson	
Org: Monsanto	
City: Mt. Pleasant	State/Prov: SC
Postal Code: 29466	
Conducted Under GLP (Y/N): N	Conducted Under GEP (Y/N): N

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	POANN	Annual bluegrass	<i>Poa annua</i>

Planting Date: 10-8-2002	Rate: 2 lb/1000 sq ft
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Crop 1: CYNDA Bermudagrass/*Cynodon dactylon* **Variety:** Tifway **Perennial Age:** 10 yr

Crop 2: LOLPE Perennial ryegrass/*Lolium perenne* **Variety:** Sunrise Primo Blend

PURE SEED	VARIETY	KIND	GERMINATION	TOTAL	ORIGIN
39.27%	Jet	Perennial Ryegrass	85%	85%	OR
39.07%	Sonata	Perennial Ryegrass	85%	85%	OR
19.08%	Wind Star	Perennial Ryegrass	85%	85%	OR

Planting Date: 10-8-2002	Planting Method: Broadcast	Rate: 10 lb/1000 sq ft
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SITE AND DESIGN

Plot Width, Unit: 1.7 FT **Plot Length, Unit:** 4 FT **Reps:** 3
Site Type: simulated fairway **Study Design:** RANDOMIZED COMPLETE BLOCK

Trial Initiation Comments: Trial is located on rain-out shelter site. This shelter automatically closes when rain occurs. High soil moisture treatments are watered daily. Water withheld for dry soil moisture treatments. Site mowed at 0.625 inch.

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APPLICATION DESCRIPTION

	A	B
Application Date:	3-21-2003	4-15-2003
Time of Day:	1:30 pm	10:00 am
Application Method:	Broadcast	Broadcast
Application Timing:	Post	Post
Applic. Placement:	Foliar	Foliar
Air Temp., Unit:	69 F	72 F
% Relative Humidity:	50	70
Wind Velocity, Unit:	4.5 mph	3 mph
Dew Presence (Y/N):	N	N
Soil Temp., Unit:	73 F	65 F
Soil Moisture:	High/Dry	Good
% Cloud Cover:	0	0

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	CYNDA Green	CYNDA Green
Stage Scale:	20%	30%
Height, Unit:	.625 inch	
Crop 2 Code, Stage:	LOLPE Active Growth	LOLPE Active Growth
Height, Unit:	.625 inch	1.0 inch

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	POANN Active Growth	POANN Active Growth
Stage Scale:	Seed Head, 625" Hght	Seed Head, 1" Hght
Density, Unit:	5 %	5 %

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	Backpack*	Backpack
Operating Pressure:	19.5 psi, CO2 regulator	19.5 psi
	19.5 psi, Down pipe, plot centered on white dot.	
Nozzle Type:	Flat fan	Flat fan
Nozzle Size:	8004 E tip	8004 E
Nozzle Spacing, Unit:	20 inch	20 inch
	Single Nozzle Boom	
Boom Length, Unit:	20 inch	20 inch
Boom Height, Unit:	12 inch	12 inch
Ground Speed, Unit:	3 mph	3 mph
Carrier:	Water	Water
Spray Volume, Unit:	25 gpa	25 gpa
Propellant:	CO2	CO2

Tank Mix (Y/N):	N	N
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Trial Comments

10-31-02

Applied 1 lb N/1000 sq.ft. as 34-0-0 fertilizer.

Applied 1 lb N/1000 sq.ft. as 0-0-50 fertilizer.

Dry side shows wilting, drought stress.

Collected moisture samples 1 hour before spraying on treatments.

Depth of sample was 4 inches. 3 samples taken from wet side. 3 samples taken from dry side.

RESULTS OF SOIL MOISTURE SAMPLES: (3 sample average)

Wet side: = 4.39%

Dry side: = 0.95%

4-1-03

Broadcast 10 lb N/1000 sq.ft. of 10-10-10 fertilizer and watered in.

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Trial ID: Turf5-03				Study Dir.: Bill Nutt								
Location: Griffin				Investigator: Tim R Murphy								
Weed Code								LOLPE	LOLPE	LOLPE	LOLPE	LOLPE
Crop Code								Injury	Injury	Injury	Injury	Injury
Rating Data Type								0-100	0-100	0-100	0-100	0-100
Rating Unit								3-31-2003	4-8-2003	4-15-2003	4-21-2003	5-12-2003
Rating Date								10 DA-A	18 DA-A	25 DA-A	31 DA-A	52 DA-A
Trt-Eval Interval												
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code					
1	MON 44951 + Chem-Nut 80/20 NIS High soil moisture	75	WG	0.01 0.25	lb ai/a % v/v	mid-Mar mid-Mar	A A	10 a	20 bc	7 ab	0 b	0 a
2	MON 44951 + Chem-Nut 80/20 NIS High soil moisture	75	WG	0.02 0.25	lb ai/a % v/v	mid-Mar mid-Mar	A A	10 a	30 ab	15 a	2 b	2 a
3	MON 44951 + Chem-Nut 80/20 NIS fb MON 44951 + Chem-Nut 80/20 NIS High soil moisture	75	WG	0.01 0.25 0.01 0.25	lb ai/a % v/v lb ai/a % v/v	mid-Mar mid-Mar + 21 day + 21 day	A A B B	10 a	17 c	3 b	12 a	0 a
4	MON 44951 + Chem-Nut 80/20 NIS fb MON 44951 + Chem-Nut 80/20 NIS High soil moisture	75	WG	0.02 0.25 0.02 0.25	lb ai/a % v/v lb ai/a % v/v	mid-Mar mid-Mar + 21 day + 21 day	A A B B	10 a	30 ab	15 a	13 a	0 a
5	MON 44951 + Chem-Nut 80/20 NIS Low soil moisture	75	WG	0.01 0.25	lb ai/a % v/v	mid-Mar mid-Mar	A A	10 a	18 bc	7 ab	2 b	2 a
6	MON 44951 + Chem-Nut 80/20 NIS Low soil moisture	75	WG	0.02 0.25	lb ai/a % v/v	mid-Mar mid-Mar	A A	10 a	38 a	8 ab	0 b	0 a
7	MON 44951 + Chem-Nut 80/20 NIS fb MON 44951 + Chem-Nut 80/20 NIS Low soil moisture	75	WG	0.01 0.25 0.01 0.25	lb ai/a % v/v lb ai/a % v/v	mid-Mar mid-Mar + 21 day + 21 day	A A B B	10 a	22 bc	5 b	15 a	0 a
8	MON 44951 + Chem-Nut 80/20 NIS fb MON 44951 + Chem-Nut 80/20 NIS Low soil moisture	75	WG	0.02 0.25 0.02 0.25	lb ai/a % v/v lb ai/a % v/v	mid-Mar mid-Mar + 21 day + 21 day	A A B B	10 a	38 a	10 ab	15 a	2 a
LSD (P=.05)								0.0	10.7	8.2	3.8	3.1
Standard Deviation								0.0	6.1	4.7	2.1	1.8
CV								0.0	22.83	53.81	29.46	282.84

Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT)

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Weed Code							LOLPE	POAAN	POAAN	POAAN	POAAN
Crop Code							Injury	Control	Control	Control	Control
Rating Data Type							0-100	0-100	0-100	0-100	0-100
Rating Unit							5-20-2003	3-31-2003	4-8-2003	4-15-2003	4-21-2003
Rating Date							60 DA-A	10 DA-A	18 DA-A	25 DA-A	31 DA-A
Trt-Eval Interval											
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Stg	Appl Code					
1	MON 44951 + Chem-Nut 80/20 NIS High soil moisture	75	WG	0.01 lb ai/a 0.25 % v/v	mid-Mar mid-Mar	A A	0 a	47 ab	37 a	48 c	53 ab
2	MON 44951 + Chem-Nut 80/20 NIS High soil moisture	75	WG	0.02 lb ai/a 0.25 % v/v	mid-Mar mid-Mar	A A	0 a	53 a	57 a	60 abc	50 ab
3	MON 44951 + Chem-Nut 80/20 NIS fb MON 44951 + Chem-Nut 80/20 NIS High soil moisture	75	WG	0.01 lb ai/a 0.25 % v/v	mid-Mar mid-Mar	A A	0 a	50 a	40 a	53 bc	57 ab
4	MON 44951 + Chem-Nut 80/20 NIS fb MON 44951 + Chem-Nut 80/20 NIS High soil moisture	75	WG	0.02 lb ai/a 0.25 % v/v	mid-Mar mid-Mar	A A	0 a	50 a	50 a	65 ab	52 ab
5	MON 44951 + Chem-Nut 80/20 NIS Low soil moisture	75	WG	0.01 lb ai/a 0.25 % v/v	mid-Mar mid-Mar	A A	0 a	37 c	43 a	68 a	63 a
6	MON 44951 + Chem-Nut 80/20 NIS Low soil moisture	75	WG	0.02 lb ai/a 0.25 % v/v	mid-Mar mid-Mar	A A	0 a	40 bc	43 a	67 ab	55 ab
7	MON 44951 + Chem-Nut 80/20 NIS fb MON 44951 + Chem-Nut 80/20 NIS Low soil moisture	75	WG	0.01 lb ai/a 0.25 % v/v	mid-Mar mid-Mar	A A	0 a	40 bc	43 a	63 ab	60 ab
8	MON 44951 + Chem-Nut 80/20 NIS fb MON 44951 + Chem-Nut 80/20 NIS Low soil moisture	75	WG	0.02 lb ai/a 0.25 % v/v	mid-Mar mid-Mar	A A	0 a	40 bc	60 a	72 a	47 b
LSD (P=.05)							0.0	6.5	24.3	12.5	14.4
Standard Deviation							0.0	3.7	13.9	7.1	8.2
CV							0.0	8.3	29.76	11.47	15.04

Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT)

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Weed Code							POAAN	POAAN
Crop Code							Control	Control
Rating Data Type							0-100	0-100
Rating Unit							5-12-2003	5-20-2003
Rating Date							52 DA-A	60 DA-A
Trt-Eval Interval								
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Appl Stg	Code	
1	MON 44951 + Chem-Nut 80/20 NIS High soil moisture	75	WG	0.01 lb ai/a 0.25 % v/v	mid-Mar mid-Mar	A A		22 a 13 a
2	MON 44951 + Chem-Nut 80/20 NIS High soil moisture	75	WG	0.02 lb ai/a 0.25 % v/v	mid-Mar mid-Mar	A A		33 a 30 a
3	MON 44951 + Chem-Nut 80/20 NIS fb MON 44951 + Chem-Nut 80/20 NIS High soil moisture	75	WG	0.01 lb ai/a 0.25 % v/v 0.01 lb ai/a 0.25 % v/v	mid-Mar mid-Mar + 21 day + 21 day	A A B B		27 a 23 a
4	MON 44951 + Chem-Nut 80/20 NIS fb MON 44951 + Chem-Nut 80/20 NIS High soil moisture	75	WG	0.02 lb ai/a 0.25 % v/v 0.02 lb ai/a 0.25 % v/v	mid-Mar mid-Mar + 21 day + 21 day	A A B B		10 a 7 a
5	MON 44951 + Chem-Nut 80/20 NIS Low soil moisture	75	WG	0.01 lb ai/a 0.25 % v/v	mid-Mar mid-Mar	A A		22 a 23 a
6	MON 44951 + Chem-Nut 80/20 NIS Low soil moisture	75	WG	0.02 lb ai/a 0.25 % v/v	mid-Mar mid-Mar	A A		25 a 27 a
7	MON 44951 + Chem-Nut 80/20 NIS fb MON 44951 + Chem-Nut 80/20 NIS Low soil moisture	75	WG	0.01 lb ai/a 0.25 % v/v 0.01 lb ai/a 0.25 % v/v	mid-Mar mid-Mar + 21 day + 21 day	A A B B		23 a 23 a
8	MON 44951 + Chem-Nut 80/20 NIS fb MON 44951 + Chem-Nut 80/20 NIS Low soil moisture	75	WG	0.02 lb ai/a 0.25 % v/v 0.02 lb ai/a 0.25 % v/v	mid-Mar mid-Mar + 21 day + 21 day	A A B B		10 a 7 a
LSD (P=.05)							34.9	37.7
Standard Deviation							20.0	21.5
CV							93.0	112.22

Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT)