

### University of GA Coop Ext Service

#### Efficacy of Mesotrione and Prodiamine for Weed Control in Common Bermudagrass.

Trial ID: Turf27-03

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: ONE-YEAR/FINAL

State/Prov.: GA

Initiation Date: 4-15-2003

#### COOPERATOR/LANDOWNER

Cooperator: Doug Houseworth

Country: USA

Org: Syngenta

#### CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	DIGIS	Crabgrass, smooth	<i>Digitaria ischaemum</i>
2.	COPDI	Swinecress	<i>Coronopus didymus</i>

**Crop 1:** CYNDA Bermudagrass/*Cynodon dactylon* **Variety:** common **Perennial Age:** 20 yrs

#### SITE AND DESIGN

Plot Width, Unit: 6 FT Plot Length, Unit: 15 FT Reps: 3

Site Type: simulated golf course fairway Study Design: RANDOMIZED COMPLETE BLOCK

#### MAINTENANCE

Field Prep./Maintenance: Irrigated site. Mowed at 5/8 inch height of cut.

#### APPLICATION DESCRIPTION

	A	B	C
Application Date:	4-15-2003	4-15-2003	5-16-2003
Time of Day:	1:45 pm	1:45 pm	4:15 pm
Application Method:	Broadcast	Broadcast	Broadcast
Application Timing:	Pre/Post	Pre/Post	Post
Applic. Placement:	Folr/Soil	Folr/Soil	Foliar
Air Temp., Unit:	82 F	82 F	84.5 F
% Relative Humidity:	35	35	70
Wind Velocity, Unit:	1.5 mph	1.5 mph	3.2 mph
Dew Presence (Y/N):	N	N	N
Soil Temp., Unit:	70 F	70 F	81 F
Soil Moisture:	Fair	Fair	Good
% Cloud Cover:	10	10	35

### University of GA Coop Ext Service

#### CROP STAGE AT EACH APPLICATION

	A	B	C
<b>Crop 1 Code, Stage:</b>	CYNDA Green	CYNDA Green	CYNDA green
<b>Stage Scale:</b>	40%	40%	80%
<b>Height, Unit:</b>	0.75 inch	0.75 inch	0.75 inch

#### WEED STAGE AT EACH APPLICATION

	A	B	C
<b>Weed 1 Code, Stage:</b>	DIGIS 1 leaf-1 tiller	DIGIS 1 leaf-1 tiller	DIGIS 3-4Tiller
<b>Density, Unit:</b>	25 %	25 %	40 %
<b>Weed 2 Code, Stage:</b>			COPDI Bloom
<b>Stage Scale:</b>			6" Dia

#### APPLICATION EQUIPMENT

	A	B	C
<b>Appl. Equipment:</b>	Backpack	Backpack	Backpack
<b>Operating Pressure:</b>	26 psi	26 psi	26 psi
<b>Nozzle Type:</b>	Flat fan	Flat fan	Flat fan
<b>Nozzle Size:</b>	8004	8004	8004
<b>Nozzle Spacing, Unit:</b>	20 inch	20 inch	20 inch
<b>Boom Length, Unit:</b>	5 feet	5 feet	5 feet
<b>Boom Height, Unit:</b>	18 inch	18 inch	18 inch
<b>Ground Speed, Unit:</b>	3 mph	3 mph	3 mph
<b>Carrier:</b>	Water	Water	Water
<b>Spray Volume, Unit:</b>	25 gpa	25 gpa	25 gpa
<b>Propellant:</b>	CO2	CO2	CO2
<b>Tank Mix (Y/N):</b>	Y	Y	Y

Application	Treatment Application Comment
A and B	4-15-03; Applied Appl. A and B due to late shipment of mesotrione. : Treatments 1 and 2 were scheduled to be applied in March preemergence to crabgrass emergence. However, the shipment of mesotrione did not arrive until April 10, 2003. At this time crabgrass had emerged, and treatments 1 and 2 were applied to 1 leaf to 1 tiller crabgrass.

#### Trial Comments

5-7-03 and 5-12-03: No common bermudagrass, CYNDA, injury observed.

5-27-03

Common bermudagrass was injured 25 to 32% by Mesotrione + Barricade treatments applied on 5-16-03.

6-26-03

No common bermudagrass, CYNDA, injury observed .

8-19-03

No common bermudagrass, CYNDA, injury observed.

7-29-03

Broadcast 1 lb N/1000 ft. sq. as 34-0-0 fertilizer over entire test area.

## University of GA Coop Ext Service

Weed Code								CYND A	CYND A	DIGIS	DIGIS
Crop Code								Foliag	Foliag	Plant	Plant
Part Rated								injury	injury	Density	Density
Rating Data Type								0-100	0-100	0-100	0-100
Rating Unit								5-7-2003	5-27-2003	4-15-2003	5-7-2003
Rating Date								22 DA-A	42 DA-A	0 DA-A	22 DA-A
Trt-Eval Interval											
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
1	Barricade 4L + Nonionic surfactant	480	SC	730	g ai/ha 0.25 % v/v	1-3 lf 1-3 lf	A A	0 a	0 b	22 a	32 ab
2	Mesotrione + Barricade 4L + Nonionic surfactant	480 480	SC SC	210 730	g ai/ha g ai/ha 0.25 % v/v	1-3 lf 1-3 lf 1-3 lf	A A A	0 a	0 b	32 a	10 d
3	Barricade 4L + Nonionic surfactant	480	SC	730	g ai/ha 0.25 % v/v	1-3 lf 1-3 lf	B B	0 a	0 b	18 a	28 abc
4	Mesotrione + Barricade 4L + Nonionic surfactant	480 480	SC SC	70 730	g ai/ha g ai/ha 0.25 % v/v	1-3 lf 1-3 lf 1-3 lf	B B B	0 a	0 b	22 a	18 bcd
5	Mesotrione + Barricade 4L + Nonionic surfactant	480 480	SC SC	140 730	g ai/ha g ai/ha 0.25 % v/v	1-3 lf 1-3 lf 1-3 lf	B B B	0 a	0 b	25 a	15 cd
6	Mesotrione + Barricade 4L + Nonionic surfactant	480 480	SC SC	210 730	g ai/ha g ai/ha 0.25 % v/v	1-3 lf 1-3 lf 1-3 lf	B B B	0 a	0 b	32 a	15 cd
7	Mesotrione + Barricade 4L + Nonionic surfactant FB Mesotrione + Barricade 4L + Nonionic surfactant	480 480	SC SC	140 730	g ai/ha g ai/ha 0.25 % v/v	1-3 lf 1-3 lf 1-3 lf	B B B C C C	0 a	25 a	22 a	13 cd
8	Mesotrione + Barricade 4L + Nonionic surfactant FB Mesotrione + Barricade 4L + Nonionic surfactant	480 480	SC SC	210 730	g ai/ha g ai/ha 0.25 % v/v	1-3 lf 1-3 lf 1-3 lf	B B B C C C	0 a	32 a	30 a	10 d
9	Barricade 4L + Nonionic surfactant FB Mesotrione + Barricade 4L + Nonionic surfactant	480 480	SC SC	730 280 730	g ai/ha g ai/ha g ai/ha 0.25 % v/v	1-3 lf 1-3 lf 4-6 lf 4-6 lf	B B C C C	0 a	32 a	27 a	37 a
10	Untreated Check							0 a	0 b	23 a	42 a
LSD (P=.05)								0.0	8.7	14.9	13.7
Standard Deviation								0.0	5.1	8.7	8.0
CV								0.0	57.33	34.43	36.41

## University of GA Coop Ext Service

							DIGIS	DIGIS	DIGIS	DIGIS	
							Plant	Plant	Plant	Plant	
							Density	Density	Density	Control	
							0-100	0-100	0-100	0-100	
							5-12-2003	6-26-2003	8-19-2003	5-7-2003	
							27 DA-A	72 DA-A	126 DA-A	22 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code				
1	Barricade 4L + Nonionic surfactant	480	SC	730	g ai/ha 0.25 % v/v	1-3 lf 1-3 lf	A A	0 c	48 b	57 ab	0 c
2	Mesotrione + Barricade 4L + Nonionic surfactant	480	SC	210	g ai/ha	1-3 lf	A	73 a	18 def	38 bcd	77 a
3	Barricade 4L + Nonionic surfactant	480	SC	730	g ai/ha 0.25 % v/v	1-3 lf 1-3 lf	B B	0 c	42 bc	60 ab	0 c
4	Mesotrione + Barricade 4L + Nonionic surfactant	480	SC	70	g ai/ha	1-3 lf	B	43 b	27 cde	42 bcd	30 b
5	Mesotrione + Barricade 4L + Nonionic surfactant	480	SC	140	g ai/ha	1-3 lf	B	62 ab	28 cd	47 bc	55 a
6	Mesotrione + Barricade 4L + Nonionic surfactant	480	SC	210	g ai/ha	1-3 lf	B	63 ab	30 bcd	47 bc	72 a
7	Mesotrione + Barricade 4L + Nonionic surfactant FB Mesotrione + Barricade 4L + Nonionic surfactant	480	SC	140	g ai/ha	1-3 lf	B	57 ab	8 ef	17 cd	53 ab
8	Mesotrione + Barricade 4L + Nonionic surfactant FB Mesotrione + Barricade 4L + Nonionic surfactant	480	SC	210	g ai/ha	1-3 lf	B	78 a	4 f	10 d	78 a
9	Barricade 4L + Nonionic surfactant FB Mesotrione + Barricade 4L + Nonionic surfactant	480	SC	730	g ai/ha	1-3 lf	B	0 c	25 cde	38 bcd	0 c
10	Untreated Check							0 c	77 a	85 a	0 c
LSD (P=.05)							24.3	18.0	31.0	23.5	
Standard Deviation							14.1	10.5	18.1	13.7	
CV							37.54	34.12	41.07	37.52	

# University of GA Coop Ext Service

Weed Code							DIGIS	DIGIS	DIGIS	COPDI	
Crop Code							Plant	Plant	Plant	Plant	
Part Rated							Control	Control	Control	Control	
Rating Data Type							0-100	0-100	0-100	0-100	
Rating Unit							5-27-2003	6-26-2003	8-19-2003	5-12-2003	
Rating Date							42 DA-A	72 DA-A	126 DA-A	27 DA-A	
Trt-Eval Interval											
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code				
1	Barricade 4L + Nonionic surfactant	480	SC	730	g ai/ha 0.25 % v/v	1-3 lf 1-3 lf	A A	30 bcd	38 b	33 bcd	0 b
2	Mesotrione + Barricade 4L + Nonionic surfactant	480	SC	210	g ai/ha 730 g ai/ha 0.25 % v/v	1-3 lf 1-3 lf 1-3 lf	A A A	53 abc	77 a	48 abc	100 a
3	Barricade 4L + Nonionic surfactant	480	SC	730	g ai/ha 0.25 % v/v	1-3 lf 1-3 lf	B B	22 cd	42 b	27 cd	0 b
4	Mesotrione + Barricade 4L + Nonionic surfactant	480	SC	70	g ai/ha 730 g ai/ha 0.25 % v/v	1-3 lf 1-3 lf 1-3 lf	B B B	55 abc	68 ab	50 abc	100 a
5	Mesotrione + Barricade 4L + Nonionic surfactant	480	SC	140	g ai/ha 730 g ai/ha 0.25 % v/v	1-3 lf 1-3 lf 1-3 lf	B B B	43 a-d	67 ab	43 abc	100 a
6	Mesotrione + Barricade 4L + Nonionic surfactant	480	SC	210	g ai/ha 730 g ai/ha 0.25 % v/v	1-3 lf 1-3 lf 1-3 lf	B B B	68 ab	65 ab	43 abc	100 a
7	Mesotrione + Barricade 4L + Nonionic surfactant FB Mesotrione + Barricade 4L + Nonionic surfactant	480	SC	140	g ai/ha 730 g ai/ha 0.25 % v/v 140 g ai/ha 730 g ai/ha 0.25 % v/v	1-3 lf 1-3 lf 1-3 lf 4-6 lf 4-6 lf 4-6 lf	B B B C C C	82 a	88 a	73 ab	100 a
8	Mesotrione + Barricade 4L + Nonionic surfactant FB Mesotrione + Barricade 4L + Nonionic surfactant	480	SC	210	g ai/ha 730 g ai/ha 0.25 % v/v 210 g ai/ha 730 g ai/ha 0.25 % v/v	1-3 lf 1-3 lf 1-3 lf 4-6 lf 4-6 lf 4-6 lf	B B B C C C	78 a	93 a	83 a	100 a
9	Barricade 4L + Nonionic surfactant FB Mesotrione + Barricade 4L + Nonionic surfactant	480	SC	730	g ai/ha 0.25 % v/v 280 g ai/ha 730 g ai/ha 0.25 % v/v	1-3 lf 1-3 lf 4-6 lf 4-6 lf 4-6 lf	B B C C C	72 ab	70 ab	50 abc	0 b
10	Untreated Check							0 d	0 c	0 d	0 b
LSD (P=.05)							41.0	29.8	35.7	0.0	
Standard Deviation							23.9	17.4	20.8	0.0	
CV							47.54	28.59	46.03	0.0	

## University of GA Coop Ext Service

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	
	Weed Code							COPDI
	Crop Code							Plant
	Part Rated							Control
	Rating Data Type							0-100
	Rating Unit							5-27-2003
	Rating Date							42 DA-A
	Trt-Eval Interval							
1	Barricade 4L + Nonionic surfactant	480	SC	730	g ai/ha 0.25 % v/v	1-3 lf 1-3 lf	A A	0 b
2	Mesotrione + Barricade 4L + Nonionic surfactant	480	SC	210	g ai/ha 730 g ai/ha 0.25 % v/v	1-3 lf 1-3 lf 1-3 lf	A A A	100 a
3	Barricade 4L + Nonionic surfactant	480	SC	730	g ai/ha 0.25 % v/v	1-3 lf 1-3 lf	B B	0 b
4	Mesotrione + Barricade 4L + Nonionic surfactant	480	SC	70	g ai/ha 730 g ai/ha 0.25 % v/v	1-3 lf 1-3 lf 1-3 lf	B B B	100 a
5	Mesotrione + Barricade 4L + Nonionic surfactant	480	SC	140	g ai/ha 730 g ai/ha 0.25 % v/v	1-3 lf 1-3 lf 1-3 lf	B B B	100 a
6	Mesotrione + Barricade 4L + Nonionic surfactant	480	SC	210	g ai/ha 730 g ai/ha 0.25 % v/v	1-3 lf 1-3 lf 1-3 lf	B B B	100 a
7	Mesotrione + Barricade 4L + Nonionic surfactant FB Mesotrione + Barricade 4L + Nonionic surfactant	480	SC	140	g ai/ha 730 g ai/ha 0.25 % v/v 140 g ai/ha 730 g ai/ha 0.25 % v/v	1-3 lf 1-3 lf 1-3 lf 4-6 lf 4-6 lf 4-6 lf	B B B C C C	100 a
8	Mesotrione + Barricade 4L + Nonionic surfactant FB Mesotrione + Barricade 4L + Nonionic surfactant	480	SC	210	g ai/ha 730 g ai/ha 0.25 % v/v 210 g ai/ha 730 g ai/ha 0.25 % v/v	1-3 lf 1-3 lf 1-3 lf 4-6 lf 4-6 lf 4-6 lf	B B B C C C	100 a
9	Barricade 4L + Nonionic surfactant FB Mesotrione + Barricade 4L + Nonionic surfactant	480	SC	730	g ai/ha 0.25 % v/v 280 g ai/ha 730 g ai/ha 0.25 % v/v	1-3 lf 1-3 lf 4-6 lf 4-6 lf 4-6 lf	B B C C C	67 a
10	Untreated Check							0 b
	LSD (P=.05)							31.3
	Standard Deviation							18.3
	CV							27.39

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