

North Carolina State University

SPLIT APPLICATIONS OF DIMENSION AND DINITROANILINE HERBICIDES FOR PRE SMOOTH CRABGRASS AND GOOSEGRASS CONTROL IN BERMUDAGRASS

Trial ID: 03-T4
Location: THORNDALE C.C.

Study Dir.: L.S. WARREN
Investigator: Leon Warren

GENERAL TRIAL INFORMATION

Study Director: L.S. WARREN	Title: RESEARCH ASSOCIATE
Affiliation: NORTH CAROLINA STATE UNIVERSITY	
Postal Code: 27695	
Investigator: Leon Warren	Title: RESEARCH ASSOCIATE
Affiliation: NORTH CAROLINA STATE UNIVERSITY	
Postal Code: 27695	

TRIAL LOCATION

City: OXFORD	Trial Status: COMPLETED	
State/Prov.: NC		
	Initiation Date: 3-12-03	
Country: USA		

COOPERATOR/LANDOWNER

Cooperator: BRUCE STONE	Country: USA
Org: THORNDALE COUNTRY CLUB	Phone No: 919/693-7404
City: OXFORD	
State/Prov: NC	

Conducted Under GLP (Y/N): N **Conducted Under GEP (Y/N):** N

Objective: DETERMINE EFFICACY OF REPEAT APPLICATIONS OF DIMENSION ULTRA 40WP OR DIMENSION ULTRA 40WP AND DINITROANILINE HERBICIDES FOR PRE SMOOTH CRABGRASS AND GOOSEGRASS CONTROL IN BERMUDAGRASS

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	DIGIS	CRABGRASS, SMOOTH	DIGITARIA ISCHAEMUM (SCHREB.) MUEHLENB.
2.	ELEIN	GOOSEGRASS	ELEUSINE INDICA

Crop 1: CYNDA BERMUDAGRASS **Variety:** COMMON

SITE AND DESIGN

Plot Width, Unit: 5 FT **Plot Length, Unit:** 10 FT **Reps:** 4
Site Type: TURF - GOLF COURSE FAIRWAY
Tillage Type: NA **Study Design:** RANDOMIZED COMPLETE BLOCK

SOIL DESCRIPTION

% OM: 0.76
pH: 4.7
CEC: 4.2 **Fert. Level:** POOR

MOISTURE CONDITIONS

	Date	Time	Amount	Unit	Type	Interval	Unit
1.	3-6-03		0.58	IN	RAINFALL	6	DBT
2.	3-14-03		0.26	IN	RAINFALL	2	DAT
3.	3-17-03		0.47	IN	RAINFALL	5	DAT
4.	3-20-03		1.37	IN	RAINFALL	8	DAT
5.	4-9-03		1.80	IN	RAINFALL	28	DAT
6.	4-27-03		0.90	IN	RAINFALL	46	DAT
7.	5-6-03		0.24	IN	RAINFALL	55	DAT
8.	5-11-03		0.64	IN	RAINFALL	60	DAT
9.	5-16-03		0.78	IN	RAINFALL	65	DAT
10.	5-22-03		1.05	IN	RAINFALL	71	DAT

Overall Moisture Conditions: MAR 6.08"; APR 6.25"; MAY 6.95"; JUN 5.61"
Closest Weather Station: OXFORD AG, NC **Distance:** 0.5 **Unit:** MI

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APPLICATION DESCRIPTION

	A	B
Application Date:	3-12-03	5-6-03
Time of Day:	1:45 PM	2:30 PM
Application Method:	SPRAY	SPRAY
Application Timing:	PRE	8 WEEKS
Applic. Placement:	BROSOI	BROSOI
Air Temp., Unit:	71 F	74 F
% Relative Humidity:	50	74
Wind Velocity, Unit:	2.0 MPH	1.0 MPH
Dew Presence (Y/N):	N	N
Soil Temp., Unit:	57 F	72 F
Soil Moisture:	WET	MOIST
% Cloud Cover:	0	90

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	CYNDA DORMANT	CYNDA MOWED
Stage Scale:	NA	NA
Height, Unit:	0.5 IN	0.75 IN

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	DIGIS PRE	DIGIS 2 LEAVES
Stage Scale:	NA	0.25 INCH
Density, Unit:	0 FT2	1-2 FT2
Weed 2 Code, Stage:	ELEIN PRE	ELEIN 1-2 LEAF
Stage Scale:	NA	0.25 INCH
Density, Unit:	0 FT2	1-5 FT2

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	BACSPR	BACSPR
Operating Pressure:	35 PSI	35 PSI
Nozzle Type:	FLAT FAN	FLAT FAN
Nozzle Size:	XR 8002VS	XR 8002VS
Nozzle Spacing, Unit:	10 IN	10 IN
Band Width, Unit:	40 IN	40 IN
Boom Length, Unit:	40 IN	40 IN
Boom Height, Unit:	10 IN	10 IN
Ground Speed, Unit:	3 MPH	3 MPH
Carrier:	WATER	WATER
Spray Volume, Unit:	32.5 GPA	32.5 GPA
Propellant:	COMCO2	COMCO2
Tank Mix (Y/N):	N	N

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Trial ID: 03-T4
Location: THORNDALE C.C.

Study Dir.: L.S. WARREN
Investigator: Leon Warren

Weed Code										DIGIS	DIGIS	DIGIS	
Rating Data Type										COVER	COVER	COVER	
Rating Unit										PERCENT	PERCENT	PERCENT	
Rating Date										6-9-03	7-1-03	8-5-03	
Assessed By										L.S. WARREN	L.S. WARREN	L.S. WARREN	
Trt-Eval Interval										89 DA-A	111 DA-A	146 DA-A	
ARM Action Codes										P	P	P	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code	Spray Volume			
1	DIMENSION ULTRA	40	WP	0.5	lb ai/a			MAR 12	A		0.0 a	0.0 a	0.0 a
	DIMENSION ULTRA	40	WP	0.25	lb ai/a			MAY 6	B				
2	BARRICADE	65	WG	0.38	lb ai/a			MAR 12	A		0.1 a	0.0 a	0.3 a
	BARRICADE	65	WG	0.38	lb ai/a			MAY 6	B				
3	PRE-M	60	WG	1.5	lb ai/a			MAR 12	A		0.0 a	0.0 a	0.0 a
	PRE-M	60	WG	1.5	lb ai/a			MAY 6	B				
4	DIMENSION ULTRA	40	WP	0.5	lb ai/a			MAR 12	A		0.0 a	0.0 a	0.0 a
	BARRICADE	65	WG	0.38	lb ai/a			MAY 6	B				
5	DIMENSION ULTRA	40	WP	0.5	lb ai/a			MAR 12	A		0.0 a	0.0 a	0.0 a
	PRE-M	60	WG	1.5	lb ai/a			MAY 6	B				
6	CHECK										1.8 a	1.8 a	17.8 a
LSD (P=.05)											1.38	1.36	15.85
Standard Deviation											0.92	0.91	10.52
CV											292.97	310.37	350.71
Grand Mean											0.31	0.29	3.0
Bartlett's X2											8.769	0.0	18.968
P(Bartlett's X2)											0.003*	.	0.001*
Replicate F											0.940	1.000	0.997
Replicate Prob(F)											0.4458	0.4199	0.4213
Treatment F											2.379	2.492	1.887
Treatment Prob(F)											0.0887	0.0782	0.1564

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

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SPLIT APPLICATIONS OF DIMENSION AND DINITROANILINE HERBICIDES FOR PRE SMOOTH CRABGRASS AND GOOSEGRASS CONTROL IN BERMUDAGRASS

Trial ID: 03-T4
Location: THORNDALE C.C.

Study Dir.: L.S. WARREN
Investigator: Leon Warren

Weed Code										DIGIS	DIGIS	DIGIS	
Rating Data Type										COVERAGE	CONTROL	CONTROL	
Rating Unit										PERCENT	PERCENT	PERCENT	
Rating Date										9-2-03	6-9-03	7-1-03	
Assessed By										L.S. WARREN	L.S. WARREN	L.S. WARREN	
Trt-Eval Interval										174 DA-A	89 DA-A	111 DA-A	
ARM Action Codes										P	T3	T5	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code	Spray Volume			
1	DIMENSION ULTRA	40	WP	0.5	lb ai/a			MAR 12	A		0.0 a	100.0 a	100.0 a
	DIMENSION ULTRA	40	WP	0.25	lb ai/a			MAY 6	B				
2	BARRICADE	65	WG	0.38	lb ai/a			MAR 12	A		0.0 a	87.5 a	100.0 a
	BARRICADE	65	WG	0.38	lb ai/a			MAY 6	B				
3	PRE-M	60	WG	1.5	lb ai/a			MAR 12	A		0.0 a	100.0 a	100.0 a
	PRE-M	60	WG	1.5	lb ai/a			MAY 6	B				
4	DIMENSION ULTRA	40	WP	0.5	lb ai/a			MAR 12	A		0.0 a	100.0 a	100.0 a
	BARRICADE	65	WG	0.38	lb ai/a			MAY 6	B				
5	DIMENSION ULTRA	40	WP	0.5	lb ai/a			MAR 12	A		0.0 a	100.0 a	100.0 a
	PRE-M	60	WG	1.5	lb ai/a			MAY 6	B				
6	CHECK										11.5 a	25.0 b	25.0 b
LSD (P=.05)											11.76	33.46	30.76
Standard Deviation											7.81	22.20	20.41
CV											407.31	26.0	23.33
Grand Mean											1.92	85.42	87.5
Bartlett's X2											0.0	1.303	0.0
P(Bartlett's X2)											.	0.254	.
Replicate F											1.000	1.338	1.000
Replicate Prob(F)											0.4199	0.2994	0.4199
Treatment F											1.447	7.310	9.000
Treatment Prob(F)											0.2646	0.0012	0.0004

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Column 5: T3 = 100*(1-([C1]/[C1T6]))

Column 6: T5 = 100*(1-([C2]/[C2T6]))

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SPLIT APPLICATIONS OF DIMENSION AND DINITROANILINE HERBICIDES FOR PRE SMOOTH CRABGRASS AND GOOSEGRASS CONTROL IN BERMUDAGRASS

Trial ID: 03-T4
Location: THORNDALE C.C.

Study Dir.: L.S. WARREN
Investigator: Leon Warren

Weed Code										DIGIS	DIGIS	ELEIN	
Rating Data Type										CONTROL	CONTROL	COVERAGE	
Rating Unit										PERCENT	PERCENT	PERCENT	
Rating Date										8-5-03	9-2-03	7-1-03	
Assessed By										L.S. WARREN	L.S. WARREN	L.S. WARREN	
Trt-Eval Interval										146 DA-A	174 DA-A	111 DA-A	
ARM Action Codes										T7	T12	P	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit Unit	Product Rate	Product Rate	Grow Stg	Appl Code	Spray Volume			
1	DIMENSION ULTRA	40	WP	0.5	lb ai/a			MAR 12	A		100.0 a	100.0 a	0.0 a
	DIMENSION ULTRA	40	WP	0.25	lb ai/a			MAY 6	B				
2	BARRICADE	65	WG	0.38	lb ai/a			MAR 12	A		98.3 a	100.0 a	0.5 a
	BARRICADE	65	WG	0.38	lb ai/a			MAY 6	B				
3	PRE-M	60	WG	1.5	lb ai/a			MAR 12	A		100.0 a	100.0 a	0.0 a
	PRE-M	60	WG	1.5	lb ai/a			MAY 6	B				
4	DIMENSION ULTRA	40	WP	0.5	lb ai/a			MAR 12	A		100.0 a	100.0 a	0.0 a
	BARRICADE	65	WG	0.38	lb ai/a			MAY 6	B				
5	DIMENSION ULTRA	40	WP	0.5	lb ai/a			MAR 12	A		100.0 a	100.0 a	0.0 a
	PRE-M	60	WG	1.5	lb ai/a			MAY 6	B				
6	CHECK										25.0 b	25.0 b	7.3 a
LSD (P=.05)											30.69	30.76	5.36
Standard Deviation											20.37	20.41	3.56
CV											23.35	23.33	275.27
Grand Mean											87.22	87.5	1.29
Bartlett's X2											11.789	0.0	11.862
P(Bartlett's X2)											0.001*	.	0.001*
Replicate F											1.054	1.000	1.111
Replicate Prob(F)											0.3979	0.4199	0.3757
Treatment F											8.964	9.000	2.709
Treatment Prob(F)											0.0004	0.0004	0.0615

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Column 7: T7 = 100*(1-([C3]/[C3T6]))

Column 8: T12 = 100*(1-([4]/[T6C4]))

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Trial ID: 03-T4
Location: THORNDALE C.C.

Study Dir.: L.S. WARREN
Investigator: Leon Warren

Weed Code										ELEIN	ELEIN	ELEIN	
Rating Data Type										COVER- AGE	COVER- AGE	CONTROL	
Rating Unit										PERCENT	PERCENT	PERCENT	
Rating Date										8-5-03	9-2-03	7-1-03	
Assessed By										L.S. WARREN	L.S. WARREN	L.S. WARREN	
Trt-Eval Interval										146 DA-A	174 DA-A	111 DA-A	
ARM Action Codes										P	P	T6	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code	Spray Volume			
1	DIMENSION ULTRA	40	WP	0.5	lb ai/a			MAR 12	A		0.1	b	100.0
	DIMENSION ULTRA	40	WP	0.25	lb ai/a			MAY 6	B				
2	BARRICADE	65	WG	0.38	lb ai/a			MAR 12	A		0.8	b	93.8
	BARRICADE	65	WG	0.38	lb ai/a			MAY 6	B				
3	PRE-M	60	WG	1.5	lb ai/a			MAR 12	A		0.0	b	100.0
	PRE-M	60	WG	1.5	lb ai/a			MAY 6	B				
4	DIMENSION ULTRA	40	WP	0.5	lb ai/a			MAR 12	A		0.1	b	100.0
	BARRICADE	65	WG	0.38	lb ai/a			MAY 6	B				
5	DIMENSION ULTRA	40	WP	0.5	lb ai/a			MAR 12	A		0.1	b	100.0
	PRE-M	60	WG	1.5	lb ai/a			MAY 6	B				
6	CHECK										13.3	a	25.0
	LSD (P=.05)										8.26		30.80
	Standard Deviation										5.48		20.44
	CV										230.79		23.64
	Grand Mean										2.38		86.46
	Bartlett's X2										66.264		5.876
	P(Bartlett's X2)										0.001*		0.015*
	Replicate F										1.211		1.200
	Replicate Prob(F)										0.3399		0.3437
	Treatment F										3.789		8.741
	Treatment Prob(F)										0.0203		0.0005

Means followed by same letter do not significantly differ (P=.05, LSD)

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Column 12: T6 = 100*(1-([C9]/[C9T6]))

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Trial ID: 03-T4
Location: THORNDALE C.C.

Study Dir.: L.S. WARREN
Investigator: Leon Warren

Weed Code										ELEIN	ELEIN			
Rating Data Type										CONTROL	CONTROL			
Rating Unit										PERCENT	PERCENT			
Rating Date										8-5-03	9-2-03			
Assessed By										L.S. WARREN	L.S. WARREN			
Trt-Eval Interval										146 DA-A	174 DA-A			
ARM Action Codes										T8	T13			
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Form Rate	Unit	Product Rate	Product Rate	Unit	Grow Stg	Appl Code	Spray Volume		
1	DIMENSION ULTRA	40	WP	0.5	lb ai/a					MAR 12	A		99.8 a	97.5 a
	DIMENSION ULTRA	40	WP	0.25	lb ai/a					MAY 6	B			
2	BARRICADE	65	WG	0.38	lb ai/a					MAR 12	A		97.0 a	90.0 a
	BARRICADE	65	WG	0.38	lb ai/a					MAY 6	B			
3	PRE-M	60	WG	1.5	lb ai/a					MAR 12	A		100.0 a	100.0 a
	PRE-M	60	WG	1.5	lb ai/a					MAY 6	B			
4	DIMENSION ULTRA	40	WP	0.5	lb ai/a					MAR 12	A		99.8 a	98.8 a
	BARRICADE	65	WG	0.38	lb ai/a					MAY 6	B			
5	DIMENSION ULTRA	40	WP	0.5	lb ai/a					MAR 12	A		99.5 a	97.5 a
	PRE-M	60	WG	1.5	lb ai/a					MAY 6	B			
6	CHECK												25.0 b	25.0 b
LSD (P=.05)										30.52	30.22			
Standard Deviation										20.26	20.05			
CV										23.33	23.65			
Grand Mean										86.83	84.79			
Bartlett's X2										64.382	31.736			
P(Bartlett's X2)										0.001*	0.001*			
Replicate F										1.133	1.647			
Replicate Prob(F)										0.3676	0.2209			
Treatment F										8.958	8.656			
Treatment Prob(F)										0.0004	0.0005			

Means followed by same letter do not significantly differ (P=.05, LSD)

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Column 13: T8 = 100*(1-([C10]/[C10T6]))

Column 14: T13 = 100*(1-([11]/[T6C11]))

Trial Comments

04-11-03: DIGIS IN OPEN AREAS BEGINNING TO GERMINATE AND IN THE VERY EARLY 1 LEAF STAGE AT 0.25 INCHES

05-06-03: DIGIS IN NONTREATED OPEN BARE AREAS AT 2 LEAF STAGE AND 0.25 INCHES TALL

DIGIS WAS NOT OBSERVED IN ANY OF THE TREATED PLOTS

ELEIN JUST BEGINNING TO GERMINATE IN NONTREATED OPEN BARE AREAS

POAAN INFESTATION SEVERE WHERE DIGIS AND ELEIN COULD NOT BE ACCURATELY EVALUATED AT THIS TIME

06-09-03: DIGIS AND ELEIN STILL BASICALLY IN THE 2 TO 3 LEAF STAGE WITH VERY FEW PLANTS LARGER THAN 0.25 INCH OR TILLERING AND DIFFICULT TO EVALUATE DUE TO HEAVY POAAN INFESTATION THAT LASTED THROUGH THE FIRST OF JUNE (FAIRWAYS WERE SHAGGY ALL SPRING DUE TO FREQUENT RAINS THROUGHOUT THE ENTIRE WINTER AND SPRING)