

North Carolina State University

TOLERANCE OF SEEDLING 'RIVIERA' BERMUDAGRASS TO VARIOUS POSTEMERGENCE HERBICIDES

Trial ID: 04-D36
Location: SANDHILLS STATION

Study Director: TRAVIS GANNON
Investigator: Fred Yelverton

General Trial Information

Study Director: TRAVIS GANNON **Title:** RESEARCH ASSOCIATE
Affiliation: NORTH CAROLINA STATE UNIVERSITY
Postal Code: 27695 **E-mail:** TRAVIS_GANNON@NCSSU.EDU
Investigator: FRED YELVERTON **Title:** PROFESSOR
Affiliation: NORTH CAROLINA STATE UNIVERSITY
Postal Code: 27695 **E-mail:** FRED_YELVERTON@NCSSU.EDU

Trial Location

City: JACKSON SPRINGS **Trial Status:** COMPLETED
State/Prov.: NC
Postal Code: 27281 **Initiation Date:** 6-16-04
Country: USA
Directions:

Objectives:

Conclusions:

Cooperator/Landowner

Cooperator: MARK THOMPSON **Country:** USA
Organization: SANDHILLS RESEARCH STATION **Phone No:** 910.974.4673
Address 1: 2148 WINDBLOW RD
City: JACKSON SPRINGS
State/Prov: NC
Postal Code: 27281

Crop Description

Crop 1: CYNDA Cynodon dactylon Bermuda grass
Variety: RIVIERA
BBCH Scale: BGRM **Planting Date:** 6-16-04
Planting Method: DROP SPREAD **Rate, Unit:** 1 LB/1000FT2

Site and Design

Plot Width, Unit: 4 FT **Site Type:** GOLF COURSE FAIRWAY
Plot Length, Unit: 10 FT
Replications: 4 **Study Design:** Randomized Complete Block

Trial Initiation Comments:

Field Prep./Maintenance:

Soil Description

% OM: 0.56 **Texture:** MINERAL
pH: 5.0
CEC: 5.5 **Fert. Level:** GOOD

Moisture Conditions

Overall Moisture Conditions: IRRIGATED AS NEEDED

Application Description

	A	B
Application Date:	7-20-04	7-28-04
Time of Day:	10-12NOON	9-10 AM
Application Method:	SPRAY	SPRAY
Application Timing:	JULY 20	JULY 28
Application Placement:	FOLIAR	FOLIAR
Applied By:	T GANNON	T GANNON
Air Temperature, Unit:	82.1 F	78.1 F
% Relative Humidity:	87	98
Wind Velocity, Unit:	1.1 MPH	1.2 MPH
Dew Presence (Y/N):	N	Y
Soil Temperature, Unit:	79 F	79 F
Soil Moisture:	GOOD	GOOD
% Cloud Cover:	5	40

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Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale:	CYNDA BGRM	CYNDA BGRM
Stage Scale Used:	44PLT/FT2	44PLT/FT2
Stage Majority, Percent:	2 LEAF 50	2 LEAF 50
Stage Minimum, Percent:	1 LEAF 10	1 LEAF 10
Stage Maximum, Percent:	4 LEAF 10	4 LEAF 10
Height, Unit:	0.5 IN	0.5 IN
Height Minimum, Maximum:	0.5 0.5	0.5 0.5

Application Equipment

	A	B
Appl. Equipment:	CO2 SPRAY	CO2 SPRAY
Operating Pressure:	25	25
Pressure Unit:	PSI	PSI
Nozzle Type:	FLAT FAN	FLAT FAN
Nozzle Size:	VS8002XR	VS8002XR
Nozzle Spacing, Unit:	10 INCH	10 INCH
Nozzles/Row:	4	4
Boom Length, Unit:	40 INCH	40 INCH
Boom Height, Unit:	10 INCH	10 INCH
Ground Speed, Unit:	3 MPH	3 MPH
Carrier:	WATER	WATER
Spray Volume:	32.5	32.5
Volume Unit:	GPA	GPA
Propellant:	COMP CO2	COMP CO2

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					CYNDA	CYNDA	CYNDA	CYNDA
					BGRM	BGRM	BGRM	BGRM
					Bermuda grass	Bermuda grass	Bermuda grass	Bermuda grass
					7-28-04	8-3-04	8-11-04	8-16-04
					PHYTO	PHYTO	PHYTO	PHYTO
					%	%	%	%
					0	6	14	19
					8 DA-A	14 DA-A	22 DA-A	27 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Other Rate	Other Rate	Growth Unit	Appl Code
1	AATREX	4.0 L		1.0 lb ai/a			JULY 20 A	
2	BUENO 6	6.0 L		1.0 lb ai/a			JULY 20 A	
	BUENO 6	6.0 L		1.0 lb ai/a			JULY 28 B	
3	BUENO 6	6.0 L		1.5 lb ai/a			JULY 20 A	
	BUENO 6	6.0 L		1.5 lb ai/a			JULY 28 B	
4	BUENO 6	6.0 L		2.0 lb ai/a			JULY 20 A	
	BUENO 6	6.0 L		2.0 lb ai/a			JULY 28 B	
5	CONFRONT	3.0 SL		1.0 pt/a			JULY 20 A	
6	CONFRONT	3.0 SL		2.0 pt/a			JULY 20 A	
7	DRIVE	75 DF		0.75 lb ai/a			JULY 20 A	
	DYNEAMIC	L		1.5 pt/a			JULY 20 A	
8	MILLENNIUM ULTRA	3.75 L		1.25 pt/a			JULY 20 A	
9	MILLENNIUM ULTRA	3.75 L		2.5 pt/a			JULY 20 A	
10	MONUMENT	75 WG		0.47 oz wt/a			JULY 20 A	
	X-77 SPREADER	L		0.25 % v/v			JULY 20 A	
11	REVOLVER	0.19 L		17.42 fl oz/a			JULY 20 A	
12	TRIMEC CLASSIC	2.72 L		1.75 pt/a			JULY 20 A	
13	TRIMEC CLASSIC	2.72 L		3.5 pt/a			JULY 20 A	
14	NONTREATED							
LSD (P=.05)					0.00	1.43	0.00	0.00
Standard Deviation					0.00	1.00	0.00	0.00
CV					0.0	13.15	0.0	0.0
Grand Mean					0.0	7.59	7.14	7.14
Bartlett's X2					0.0	0.061	0.0	0.0
P(Bartlett's X2)					.	0.805	.	.
Friedman's X2					0.0	17.086	10.4	10.4
P(Friedman's X2)					1.00	0.195	0.661	0.661
Replicate F					0.000	1.644	0.000	0.000
Replicate Prob(F)					1.0000	0.1950	1.0000	1.0000
Treatment F					0.000	2846.793	0.000	0.000
Treatment Prob(F)					1.0000	0.0001	1.0000	1.0000

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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					CYNDA	CYNDA	CYNDA	CYNDA
					BGRM	BGRM	BGRM	BGRM
					Bermuda grass	Bermuda grass	Bermuda grass	Bermuda grass
					8-23-04	9-13-04	7-28-04	8-3-04
					PHYTO	PHYTO	COVER	COVER
					%	%	%	%
					26	47	0	6
Trt-Eval Interval					34 DA-A	55 DA-A	8 DA-A	14 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Other Rate	Other Rate	Growth Unit	Appl Code
1	AATREX	4.0 L		1.0 lb ai/a			JULY 20 A	0.0 a
2	BUENO 6	6.0 L		1.0 lb ai/a			JULY 20 A	0.0 a
	BUENO 6	6.0 L		1.0 lb ai/a			JULY 28 B	1.5 a
3	BUENO 6	6.0 L		1.5 lb ai/a			JULY 20 A	0.0 a
	BUENO 6	6.0 L		1.5 lb ai/a			JULY 28 B	0.0 a
4	BUENO 6	6.0 L		2.0 lb ai/a			JULY 20 A	0.0 a
	BUENO 6	6.0 L		2.0 lb ai/a			JULY 28 B	0.0 a
5	CONFRONT	3.0 SL		1.0 pt/a			JULY 20 A	0.0 a
6	CONFRONT	3.0 SL		2.0 pt/a			JULY 20 A	0.0 a
7	DRIVE	75 DF		0.75 lb ai/a			JULY 20 A	0.0 a
	DYNEAMIC	L		1.5 pt/a			JULY 20 A	0.0 a
8	MILLENNIUM ULTRA	3.75 L		1.25 pt/a			JULY 20 A	0.0 a
9	MILLENNIUM ULTRA	3.75 L		2.5 pt/a			JULY 20 A	0.0 a
10	MONUMENT	75 WG		0.47 oz wt/a			JULY 20 A	0.0 a
	X-77 SPREADER	L		0.25 % v/v			JULY 20 A	0.0 a
11	REVOLVER	0.19 L		17.42 fl oz/a			JULY 20 A	0.0 a
12	TRIMEC CLASSIC	2.72 L		1.75 pt/a			JULY 20 A	0.0 a
13	TRIMEC CLASSIC	2.72 L		3.5 pt/a			JULY 20 A	0.0 a
14	NONTREATED							0.0 a
LSD (P=.05)					0.00	0.00	3.67	4.01
Standard Deviation					0.00	0.00	2.57	2.81
CV					0.0	0.0	70.89	70.45
Grand Mean					0.0	0.0	3.63	3.98
Bartlett's X2					0.0	0.0	16.085	14.059
P(Bartlett's X2)					.	.	0.187	0.297
Friedman's X2					0.0	0.0	16.221	15.929
P(Friedman's X2)					1.00	1.00	0.237	0.253
Replicate F					0.000	0.000	6.975	6.072
Replicate Prob(F)					1.0000	1.0000	0.0007	0.0017
Treatment F					0.000	0.000	1.437	1.591
Treatment Prob(F)					1.0000	1.0000	0.1866	0.1300

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					CYNDA	CYNDA	CYNDA	CYNDA
					BGRM	BGRM	BGRM	BGRM
					Bermuda grass	Bermuda grass	Bermuda grass	Bermuda grass
					8-11-04	8-16-04	8-23-04	8-30-04
					COVER	COVER	COVER	COVER
					%	%	%	%
					14	19	26	33
Trt-Eval Interval					22 DA-A	27 DA-A	34 DA-A	41 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code
1	AATREX	4.0 L		1.0 lb ai/a			JULY 20 A	0.0 a
2	BUENO 6	6.0 L		1.0 lb ai/a			JULY 20 A	2.8 a
	BUENO 6	6.0 L		1.0 lb ai/a			JULY 28 B	3.8 bc
3	BUENO 6	6.0 L		1.5 lb ai/a			JULY 20 A	7.3 a
	BUENO 6	6.0 L		1.5 lb ai/a			JULY 28 B	7.5 ab
4	BUENO 6	6.0 L		2.0 lb ai/a			JULY 20 A	2.8 a
	BUENO 6	6.0 L		2.0 lb ai/a			JULY 28 B	6.3 ab
5	CONFRONT	3.0 SL		1.0 pt/a			JULY 20 A	6.3 a
6	CONFRONT	3.0 SL		2.0 pt/a			JULY 20 A	4.3 a
7	DRIVE	75 DF		0.75 lb ai/a			JULY 20 A	3.5 a
	DYNEAMIC	L		1.5 pt/a			JULY 20 A	5.0 ab
8	MILLENNIUM ULTRA	3.75 L		1.25 pt/a			JULY 20 A	6.3 a
9	MILLENNIUM ULTRA	3.75 L		2.5 pt/a			JULY 20 A	6.0 a
10	MONUMENT	75 WG		0.47 oz wt/a			JULY 20 A	2.3 a
	X-77 SPREADER	L		0.25 % v/v			JULY 20 A	3.8 bc
11	REVOLVER	0.19 L		17.42 fl oz/a			JULY 20 A	6.8 a
12	TRIMEC CLASSIC	2.72 L		1.75 pt/a			JULY 20 A	5.5 a
13	TRIMEC CLASSIC	2.72 L		3.5 pt/a			JULY 20 A	3.5 a
14	NONTREATED							5.0 a
LSD (P=.05)					4.97	4.49	5.00	4.80
Standard Deviation					3.48	3.14	3.50	3.36
CV					78.58	54.16	55.94	55.44
Grand Mean					4.43	5.8	6.25	6.05
Bartlett's X2					17.019	8.374	6.661	6.138
P(Bartlett's X2)					0.149	0.592	0.826	0.864
Friedman's X2					15.371	18.85	16.614	15.329
P(Friedman's X2)					0.285	0.128	0.218	0.287
Replicate F					5.029	5.348	6.086	6.602
Replicate Prob(F)					0.0048	0.0035	0.0017	0.0010
Treatment F					1.415	2.298	1.966	1.835
Treatment Prob(F)					0.1964	0.0226	0.0518	0.0718

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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code	
	Crop Code									CYNDA
	BBCH Scale									BGRM
	Crop Name									Bermuda grass
	Rating Date									9-13-04
	Rating Data Type									COVER
	Rating Unit									%
	Days After Last Applic.									47
	Trt-Eval Interval									55 DA-A
1	AATREX	4.0 L		1.0 lb ai/a				JULY 20 A		0.5 a
2	BUENO 6	6.0 L		1.0 lb ai/a				JULY 20 A		5.0 a
	BUENO 6	6.0 L		1.0 lb ai/a				JULY 28 B		
3	BUENO 6	6.0 L		1.5 lb ai/a				JULY 20 A		11.3 a
	BUENO 6	6.0 L		1.5 lb ai/a				JULY 28 B		
4	BUENO 6	6.0 L		2.0 lb ai/a				JULY 20 A		7.5 a
	BUENO 6	6.0 L		2.0 lb ai/a				JULY 28 B		
5	CONFRONT	3.0 SL		1.0 pt/a				JULY 20 A		10.0 a
6	CONFRONT	3.0 SL		2.0 pt/a				JULY 20 A		10.0 a
7	DRIVE	75 DF		0.75 lb ai/a				JULY 20 A		7.5 a
	DYNEAMIC	L		1.5 pt/a				JULY 20 A		
8	MILLENNIUM ULTRA	3.75 L		1.25 pt/a				JULY 20 A		10.0 a
9	MILLENNIUM ULTRA	3.75 L		2.5 pt/a				JULY 20 A		10.0 a
10	MONUMENT	75 WG		0.47 oz wt/a				JULY 20 A		8.8 a
	X-77 SPREADER	L		0.25 % v/v				JULY 20 A		
11	REVOLVER	0.19 L		17.42 fl oz/a				JULY 20 A		11.8 a
12	TRIMEC CLASSIC	2.72 L		1.75 pt/a				JULY 20 A		8.8 a
13	TRIMEC CLASSIC	2.72 L		3.5 pt/a				JULY 20 A		4.3 a
14	NONTREATED									11.3 a
	LSD (P=.05)									7.18
	Standard Deviation									5.02
	CV									60.34
	Grand Mean									8.32
	Bartlett's X2									17.153
	P(Bartlett's X2)									0.192
	Friedman's X2									17.364
	P(Friedman's X2)									0.183
	Replicate F									4.998
	Replicate Prob(F)									0.0050
	Treatment F									1.595
	Treatment Prob(F)									0.1288

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Trial Comments