

North Carolina State University

EARLY POSTEMERGENT CONTROL OF SMOOTH CRABGRASS IN A BERMUDAGRASS ROUGH

Trial ID: 04-D25
Location: PLYMOUTH CC

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: PLYMOUTH **Trial Status:** COMPLETED
State/Prov.: NC
Postal Code: 27962 **Initiation Date:** 5-12-04
Country: USA
Directions:

Objectives:

Conclusions:

Cooperator/Landowner

Cooperator: CHRIS KELLY **Country:** USA
Organization: PLYMOUTH COUNTRY CLUB **Phone No:** 252.793.4519
Address 1: 301 GOLF RD
City: PLYMOUTH
State/Prov: NC
Postal Code: 27962

Crop Description

Crop 1: CYNDA Cynodon dactylon Bermuda grass
BBCH Scale: BGRM

Pest Description

Pest 1 Type: W **Code:** DIGIS Digitaria ischaemum
Common Name: Crabgrass, smooth

Site and Design

Plot Width, Unit: 5 FT **Site Type:** GOLF COURSE ROUGH
Plot Length, Unit: 6 FT
Replications: 4 **Study Design:** Randomized Complete Block

Trial Initiation Comments:

Field Prep./Maintenance:

Soil Description

% OM: 0.76 **Texture:** MINERAL
pH: 5.9
CEC: 4.3 **Fert. Level:** GOOD

Moisture Conditions

Overall Moisture Conditions: IRRIGATED AS NEEDED

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Application Description

	A	B	C
Application Date:	5-12-04	5-20-04	5-26-04
Time of Day:	9-11 AM	10-11 AM	10-12NOON
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	MAY 12	MAY 20	MAY 26
Application Placement:	FOLIAR	FOLIAR	FOLIAR
Applied By:	T GANNON	T GANNON	T GANNON
Air Temperature, Unit:	81.1 F	76.4 F	86.1 F
% Relative Humidity:	57	76	79
Wind Velocity, Unit:	0.8 MPH	1.3 MPH	1.8 MPH
Dew Presence (Y/N):	N	Y	N
Soil Temperature, Unit:	80 F	74 F	81 F
Soil Moisture:	GOOD	GOOD	GOOD
% Cloud Cover:	10	60	20

Crop Stage At Each Application

	A	B	C
Crop 1 Code, BBCH Scale:	CYNDA BGRM	CYNDA BGRM	CYNDA BGRM
Stage Scale Used:	MOWED	BBCH	BBCH
Height, Unit:	2 IN	2 IN	2 IN
Height Minimum, Maximum:	1 3	1 3	1 3

Pest Stage At Each Application

	A	B	C
Pest 1 Code, Disc., Scale:	DIGIS W	DIGIS W	DIGIS W
Stage Majority, Percent:	1 TILL 80	1 TILL 80	2 TILL 80
Stage Minimum, Percent:	2 LEAF 10	2 LEAF 10	1 TILL 10
Stage Maximum, Percent:	2 TILL 10	2 TILL 10	3 TILL 10
Height, Unit:	2 IN	2 IN	2 IN
Height Minimum, Maximum:	1 3	1 3	1 3
Density, Unit:	12 FT2	12 FT2	12 FT2
Coverage, Unit:	80 %	85 %	90 %

Application Equipment

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

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						DIGIS	DIGIS	DIGIS	DIGIS	DIGIS	DIGIS	
						5-20-04	5-26-04	6-3-04	6-8-04	6-21-04	7-7-04	
						CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	
						%	%	%	%	%	%	
						0	0	8	13	26	42	
						8 DA-A	14 DA-A	22 DA-A	27 DA-A	40 DA-A	56 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Other Rate	Other Unit	Other Rate	Other Unit	Growth Stage	Appl Code		
1	FLAZASULFURON X-77	25 WG	100 SL	3.0 oz wt/a	0.0469 lb ai/a				MAY 12 A		3.8 b	5.0 de
				0.25 % v/v					MAY 12 A			0.0 d
											0.0 e	0.0 c
2	FLAZASULFURON X-77	25 WG	100 SL	3.0 oz wt/a	0.0469 lb ai/a				MAY 12 A		0.0 b	10.0 de
				0.25 % v/v					MAY 12 A			22.5 c
									MAY 26 C			20.0 bc
	FLAZASULFURON X-77	25 WG	100 SL	3.0 oz wt/a	0.0469 lb ai/a				MAY 26 C			8.8 bc
				0.25 % v/v					MAY 26 C			7.5 bc
3	FLAZASULFURON X-77	25 WG	100 SL	3.0 oz wt/a	0.0469 lb ai/a				MAY 12 A		6.3 b	20.0 bcd
				0.25 % v/v					MAY 12 A			32.5 bc
									MAY 26 C			26.3 b
	FLAZASULFURON X-77	25 WG	100 SL	1.5 oz wt/a	0.0234 lb ai/a				MAY 26 C			17.5 b
				0.25 % v/v					MAY 26 C			10.0 bc
4	FLAZASULFURON X-77	25 WG	100 SL	1.5 oz wt/a	0.0234 lb ai/a				MAY 12 A		1.3 b	12.5 cde
				0.25 % v/v					MAY 12 A			26.3 bc
									MAY 26 C			12.5 cd
	FLAZASULFURON X-77	25 WG	100 SL	1.5 oz wt/a	0.0234 lb ai/a				MAY 26 C			0.0 c
				0.25 % v/v					MAY 26 C			1.3 c
5	FLAZASULFURON X-77	25 WG	100 SL	3.0 oz wt/a	0.0469 lb ai/a				MAY 12 A		1.3 b	7.5 de
				0.25 % v/v					MAY 12 A			5.0 d
									MAY 12 A			3.8 de
	DIMENSION ULTRA	40 WP		0.625 lb/a	0.25 lb ai/a				MAY 12 A			0.0 c
												0.0 c
6	FLAZASULFURON X-77	25 WG	100 SL	3.0 oz wt/a	0.0469 lb ai/a				MAY 12 A		5.0 b	6.3 de
				0.25 % v/v					MAY 12 A			5.0 d
									MAY 12 A			5.0 de
	BARRICADE	4 SC		21 fl oz/a	0.656 lb ai/a				MAY 12 A			0.0 c
												0.0 c
7	FLAZASULFURON X-77	25 WG	100 SL	3.0 oz wt/a	0.0469 lb ai/a				MAY 12 A		32.5 a	38.8 b
				0.25 % v/v					MAY 12 A			36.3 b
									MAY 12 A			22.5 bc
	DRIVE	75 WG		1.0 lb/a	0.75 lb ai/a				MAY 12 A			21.3 b
												15.0 b
8	FLAZASULFURON X-77	25 WG	100 SL	3.0 oz wt/a	0.0469 lb ai/a				MAY 12 A		3.8 b	31.3 bc
				0.25 % v/v					MAY 12 A			36.3 b
									MAY 12 A			13.8 cd
	PENDULUM	3.3 EC		3.6 pt/a	1.485 lb ai/a				MAY 12 A			0.0 c
												0.0 c
9	MSMA	6 L		2 lb ai/a					MAY 12 A		31.3 a	87.5 a
	MSMA	6 L		2 lb ai/a					MAY 20 B			93.3 a
												91.3 a
												85.0 a
												68.8 a
10	NONTREATED										0.0 b	0.0 e
												0.0 d
												0.0 e
												0.0 c
												0.0 c
												11.26
												7.76
												75.69
												10.25
												6.616
												0.158
												19.05
												0.025
												2.700
												0.0655
												29.972
												0.0001

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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Location: PLYMOUTH CC

Study Director: TRAVIS GANNON
Investigator: Fred Yelverton

Pest Code						DIGIS	DIGIS	TURF	TURF	TURF	TURF	
Crop Code						7-21-04	9-29-04	5-20-04	5-26-04	6-3-04	6-8-04	
Rating Date						CONTROL	CONTROL	QUALITY	QUALITY	QUALITY	QUALITY	
Rating Data Type						%	%	1-9	1-9	1-9	1-9	
Rating Unit						56	126	0	0	8	13	
Days After Last Applic.						70 DA-A	140 DA-A	8 DA-A	14 DA-A	22 DA-A	27 DA-A	
Trt-Eval Interval												
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Other Rate Unit	Other Rate Unit	Growth Stage	Appl Code				
1	FLAZASULFURON X-77	25 WG		3.0 oz wt/a	0.0469 lb ai/a		MAY 12 A		0.0 b	0.0 a	7.0 a	7.0 a
		100 SL		0.25 % v/v			MAY 12 A					7.0 a
2	FLAZASULFURON X-77	25 WG		3.0 oz wt/a	0.0469 lb ai/a		MAY 12 A		0.0 b	0.0 a	7.0 a	7.0 a
		100 SL		0.25 % v/v			MAY 12 A					7.0 a
	FLAZASULFURON X-77	25 WG		3.0 oz wt/a	0.0469 lb ai/a		MAY 26 C					
		100 SL		0.25 % v/v			MAY 26 C					
3	FLAZASULFURON X-77	25 WG		3.0 oz wt/a	0.0469 lb ai/a		MAY 12 A		0.0 b	0.0 a	7.0 a	7.0 a
		100 SL		0.25 % v/v			MAY 12 A					7.0 a
	FLAZASULFURON X-77	25 WG		1.5 oz wt/a	0.0234 lb ai/a		MAY 26 C					
		100 SL		0.25 % v/v			MAY 26 C					
4	FLAZASULFURON X-77	25 WG		1.5 oz wt/a	0.0234 lb ai/a		MAY 12 A		0.0 b	0.0 a	7.0 a	7.0 a
		100 SL		0.25 % v/v			MAY 12 A					7.0 a
	FLAZASULFURON X-77	25 WG		1.5 oz wt/a	0.0234 lb ai/a		MAY 26 C					
		100 SL		0.25 % v/v			MAY 26 C					
5	FLAZASULFURON X-77	25 WG		3.0 oz wt/a	0.0469 lb ai/a		MAY 12 A		0.0 b	0.0 a	7.0 a	7.0 a
		100 SL		0.25 % v/v			MAY 12 A					7.0 a
	DIMENSION ULTRA	40 WP		0.625 lb/a	0.25 lb ai/a		MAY 12 A					
6	FLAZASULFURON X-77	25 WG		3.0 oz wt/a	0.0469 lb ai/a		MAY 12 A		0.0 b	0.0 a	7.0 a	7.0 a
		100 SL		0.25 % v/v			MAY 12 A					7.0 a
	BARRICADE	4 SC		21 fl oz/a	0.656 lb ai/a		MAY 12 A					
7	FLAZASULFURON X-77	25 WG		3.0 oz wt/a	0.0469 lb ai/a		MAY 12 A		0.0 b	0.0 a	7.0 a	7.0 a
		100 SL		0.25 % v/v			MAY 12 A					7.0 a
	DRIVE	75 WG		1.0 lb/a	0.75 lb ai/a		MAY 12 A					
8	FLAZASULFURON X-77	25 WG		3.0 oz wt/a	0.0469 lb ai/a		MAY 12 A		0.0 b	0.0 a	7.0 a	7.0 a
		100 SL		0.25 % v/v			MAY 12 A					7.0 a
	PENDULUM	3.3 EC		3.6 pt/a	1.485 lb ai/a		MAY 12 A					
9	MSMA	6 L		2 lb ai/a			MAY 12 A		65.0 a	0.0 a	7.0 a	7.0 a
	MSMA	6 L		2 lb ai/a			MAY 20 B					7.0 a
10	NONTREATED								0.0 b	0.0 a	7.0 a	7.0 a
												7.0 a
	LSD (P=.05)								5.92	0.00	0.00	0.00
	Standard Deviation								4.08	0.00	0.00	0.00
	CV								62.81	0.0	0.0	0.0
	Grand Mean								6.5	0.0	7.0	7.0
	Bartlett's X2								0.0	0.0	0.0	0.0
	P(Bartlett's X2)							
	Friedman's X2								9.818	0.0	0.0	0.0
	P(Friedman's X2)								0.365	1.00	1.00	1.00
	Replicate F								1.000	0.000	0.000	0.000
	Replicate Prob(F)								0.4079	1.0000	1.0000	1.0000
	Treatment F								101.400	0.000	0.000	0.000
	Treatment Prob(F)								0.0001	1.0000	1.0000	1.0000

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Location: PLYMOUTH CC

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Investigator: Fred Yelverton

Pest Code							TURF		
Crop Code							6-21-04		
Rating Date							QUALITY		
Rating Data Type							1-9		
Rating Unit							26		
Days After Last Applic.							40 DA-A		
Trt-Eval Interval									
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Other Rate	Other Unit	Growth Stage	Appl Code	
1	FLAZASULFURON X-77	25 WG		3.0 oz wt/a	0.0469 lb ai/a		MAY 12 A		7.0 a
		100 SL		0.25 % v/v			MAY 12 A		
2	FLAZASULFURON X-77	25 WG		3.0 oz wt/a	0.0469 lb ai/a		MAY 12 A		7.0 a
		100 SL		0.25 % v/v			MAY 12 A		
	FLAZASULFURON X-77	25 WG		3.0 oz wt/a	0.0469 lb ai/a		MAY 26 C		
		100 SL		0.25 % v/v			MAY 26 C		
3	FLAZASULFURON X-77	25 WG		3.0 oz wt/a	0.0469 lb ai/a		MAY 12 A		7.0 a
		100 SL		0.25 % v/v			MAY 12 A		
	FLAZASULFURON X-77	25 WG		1.5 oz wt/a	0.0234 lb ai/a		MAY 26 C		
		100 SL		0.25 % v/v			MAY 26 C		
4	FLAZASULFURON X-77	25 WG		1.5 oz wt/a	0.0234 lb ai/a		MAY 12 A		7.0 a
		100 SL		0.25 % v/v			MAY 12 A		
	FLAZASULFURON X-77	25 WG		1.5 oz wt/a	0.0234 lb ai/a		MAY 26 C		
		100 SL		0.25 % v/v			MAY 26 C		
5	FLAZASULFURON X-77	25 WG		3.0 oz wt/a	0.0469 lb ai/a		MAY 12 A		7.0 a
		100 SL		0.25 % v/v			MAY 12 A		
	DIMENSION ULTRA	40 WP		0.625 lb/a	0.25 lb ai/a		MAY 12 A		
6	FLAZASULFURON X-77	25 WG		3.0 oz wt/a	0.0469 lb ai/a		MAY 12 A		7.0 a
		100 SL		0.25 % v/v			MAY 12 A		
	BARRICADE	4 SC		21 fl oz/a	0.656 lb ai/a		MAY 12 A		
7	FLAZASULFURON X-77	25 WG		3.0 oz wt/a	0.0469 lb ai/a		MAY 12 A		7.0 a
		100 SL		0.25 % v/v			MAY 12 A		
	DRIVE	75 WG		1.0 lb/a	0.75 lb ai/a		MAY 12 A		
8	FLAZASULFURON X-77	25 WG		3.0 oz wt/a	0.0469 lb ai/a		MAY 12 A		7.0 a
		100 SL		0.25 % v/v			MAY 12 A		
	PENDULUM	3.3 EC		3.6 pt/a	1.485 lb ai/a		MAY 12 A		
9	MSMA	6 L		2 lb ai/a			MAY 12 A		7.0 a
	MSMA	6 L		2 lb ai/a			MAY 20 B		
10	NONTREATED								7.0 a
LSD (P=.05)									0.00
Standard Deviation									0.00
CV									0.0
Grand Mean									7.0
Bartlett's X2									0.0
P(Bartlett's X2)									.
Friedman's X2									0.0
P(Friedman's X2)									1.00
Replicate F									0.000
Replicate Prob(F)									1.0000
Treatment F									0.000
Treatment Prob(F)									1.0000

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Trial Comments

7-7-04 - Unable to evaluate turf quality, smooth crabgrass has overgrown bermudagrass.