

# North Carolina State University

## Control of Poa annua in an Overseeded Bermudagrass Fairway

Trial ID: 05-D02  
Protocol ID: Study Director: Travis Gannon  
Location: Tobacco Road GC 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@ncsu.edu  
**Investigator:** Fred Yelverton **Title:** Professor  
**Affiliation:** North Carolina State University  
**Postal Code:** 27695 **E-mail:** fred\_yelverton@ncsu.edu

### Trial Location

**City:** Raleigh **Trial Status:** Completed  
**State/Prov.:** NC  
**Postal Code:** 27332 **Initiation Date:** 8-3-04  
**Country:** USA  
**Directions:**

**Objectives:**

**Conclusions:**

### Cooperator/Landowner

**Cooperator:** Morgan Stevenson **Country:** USA  
**Organization:** Tobacco Road Golf Course **Phone No:** 919.776.4943  
**Address 1:** 442 Tobacco Road  
**City:** Sanford  
**State/Prov:** NC  
**Postal Code:** 27332

### Crop Description

**Crop 1:** CYNDA Cynodon dactylon Bermuda grass  
**Variety:** Tifway 419  
**BBCH Scale:** BGRM  
**Crop 2:** LOLPE Lolium perenne Ryegrass, perennial  
**Variety:** Magnum mixture **Description:** Allaire II, Penguin, Hawkeye  
**BBCH Scale:** BGRM **Planting Date:** 9-29-04  
**Planting Method:** Broadcast **Rate, Unit:** 300 LB/A  
**Seed Bed:** Scalped

### Pest Description

**Pest 1 Type:** W **Code:** POAAN Poa annua  
**Common Name:** Annual bluegrass

### Site and Design

**Plot Width, Unit:** 5 FT **Site Type:** Golf Course Fairway  
**Plot Length, Unit:** 7 FT  
**Replications:** 4 **Study Design:** Randomized Complete Block

**Trial Initiation Comments:**

**Field Prep./Maintenance:**

### Soil Description

**% OM:** 0.56 **Texture:** Mineral  
**pH:** 5.9  
**CEC:** 6.8 **Fert. Level:** Good

### Moisture Conditions

**Overall Moisture Conditions:** Irrigated as needed

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### Application Description

	A	B	C	D	E	F
Application Date:	8-3-04	8-16-04	8-30-04	9-13-04	11-22-04	12-13-04
Time of Day:	8-9 AM	9-10 AM	4-5 PM	7-10 AM	7-8 AM	9-10 AM
Application Method:	SPRY/SPRD	SPRY/SPRD	SPRY/SPRD	SPRAY	SPRAY	SPRAY
Application Timing:	AUG 3	AUG 16	AUG 30	SEPT 13	NOV 22	DEC 13
Application Placement:	FOL/SOIL	FOL/SOIL	FOL/SOIL	FOL/SOIL	FOLIAR	FOLIAR
Applied By:	T GANNON	T GANNON	T GANNON	T GANNON	T GANNON	T GANNON
Air Temperature, Unit:	74.6 F	71.3 F	84.3 F	70.8 F	61.0 F	49.7 F
% Relative Humidity:	100	100	98	100	100	90
Wind Velocity, Unit:	0.8 MPH	1.5 MPH	1.0 MPH	0.6 MPH	0.4 MPH	2.3 MPH
Dew Presence (Y/N):	Y	Y	N	N	N	N
Soil Temperature, Unit:	76 F	70 F	79 F	70 F	60 F	45 F
Soil Moisture:	ADEQUATE	ADEQUATE	EXCESSIVE	ADEQUATE	ADEQUATE	ADEQUATE
% Cloud Cover:	100	100	40	50	100	5

### Crop Stage At Each Application

	A	B	C	D	E	F
Crop 1 Code, BBCH Scale:	CYNDA BGRM	CYNDA BGRM	CYNDA BGRM	CYNDA BGRM	CYNDA BGRM	CYNDA BGRM
Stage Scale Used:	MOWED	MOWED	MOWED	MOWED	MOWED	MOWED
Height, Unit:	0.5 IN	0.5 IN	0.5 IN	0.5 IN	0.5 IN	0.5 IN
Height Minimum, Maximum:	0.5 0.5	0.5 0.5	0.5 0.5	0.5 0.5	0.5 0.5	0.5 0.5
Crop 2 Code, BBCH Scale:	LOLPE BGRM	LOLPE BGRM	LOLPE BGRM	LOLPE BGRM	LOLPE BGRM	LOLPE BGRM
Stage Scale Used:	PRE	PRE	PRE	PRE	BBCH	BBCH
Stage Majority, Percent:					1 TILLER 50	2 TILLER 50
Stage Minimum, Percent:					2 LEAF 15	2 LEAF 15
Stage Maximum, Percent:					2 TILLER 15	3 TILLER 15
Height, Unit:					0.5 IN	0.5 IN
Height Minimum, Maximum:					0.5 0.5	0.5 0.5

### Pest Stage At Each Application

	A	B	C	D	E
Pest 1 Code, Disc., Scale:	POAAN W PRE	POAAN W PRE	POAAN W PRE	POAAN W PRE	POAAN W
Stage Majority, Percent:					4 LEAF 50
Stage Minimum, Percent:					2 LEAF 15
Stage Maximum, Percent:					2 TILL 15
Height, Unit:					0.5 IN
Height Minimum, Maximum:					0.5 0.5
Density, Unit:					2 FT2
Coverage, Unit:					10 %

	F
Pest 1 Code, Disc., Scale:	POAAN W
Stage Majority, Percent:	4 LEAF 50
Stage Minimum, Percent:	2 LEAF 15
Stage Maximum, Percent:	2 TILL 15
Height, Unit:	0.5 IN
Height Minimum, Maximum:	0.5 0.5
Density, Unit:	2 FT2
Coverage, Unit:	10

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## Control of *Poa annua* in an Overseeded Bermudagrass Fairway

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### Application Equipment

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

**Date**                      **By**                      **Notes**  
 8-3-04

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								LOLPE BGRM	LOLPE BGRM	LOLPE BGRM	
								Ryegrass, perennial 10-11-04 COVER %	Ryegrass, perennial 10-25-04 COVER %	Ryegrass, perennial 11-8-04 COVER %	
								28	42	56	
								69 DA-A	83 DA-A	97 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Other Rate Unit	Growth Stage	Appl Code	1	2	3
1	Barricade	65	WG	0.6	LB A/A		AUG 3	A	26.3 a	26.3 a	50.0 a
2	Barricade	65	WG	0.5	LB A/A		AUG 3	A	27.5 a	26.3 a	50.0 a
3	Barricade	65	WG	0.4	LB A/A		AUG 3	A	27.5 a	26.3 a	50.0 a
4	Barricade	65	WG	0.3	LB A/A		AUG 3	A	30.0 a	28.8 a	52.5 a
5	Dimension Ultra	40	WP	0.5	LB A/A		AUG 3	A	28.8 a	28.8 a	48.8 a
6	Ronstar	2	G	2	LB A/A		AUG 3	A	28.8 a	27.5 a	50.0 a
7	Balan	2.5	G	2.75	LB A/A		AUG 3	A	30.0 a	30.0 a	51.3 a
8	Pendulum	60	WG	2	LB A/A		AUG 3	A	27.5 a	27.5 a	48.8 a
9	Barricade	65	WG	0.4	LB A/A		AUG 16	B	27.5 a	27.5 a	48.8 a
10	Barricade	65	WG	0.3	LB A/A		AUG 16	B	30.0 a	27.5 a	51.3 a
11	Balan	2.5	G	2.75	LB A/A		AUG 16	B	28.8 a	25.0 a	51.3 a
12	Dimension Ultra	40	WP	0.5	LB A/A		AUG 16	B	31.3 a	27.5 a	50.0 a
13	Balan	2.5	G	2.75	LB A/A		AUG 30	C	27.5 a	27.5 a	50.0 a
14	Rubigan	1	L	6	FL OZ/1000 FT2		AUG 30	C	28.8 a	22.5 a	48.8 a
	Rubigan	1	L	6	FL OZ/1000 FT2		SEPT 13	D			
15	TranXit	25	DF	1	OZ/A		SEPT 13	D	31.3 a	27.5 a	50.0 a
	X-77	L		0.25	% V/V		SEPT 13	D			
16	Revolver	0.19	SC	0.4	FL OZ/1000 FT2		SEPT 13	D	28.8 a	27.5 a	50.0 a
17	Monument	75	WG	0.47	OZ/A		SEPT 13	D	31.3 a	28.8 a	51.3 a
	X-77	L		0.25	% V/V		SEPT 13	D			
18	Flazasulfuron	25	DF	1.5	OZ/A		SEPT 13	D	30.0 a	26.3 a	48.8 a
	X-77	L		0.25	% V/V		SEPT 13	D			
19	Prograss	1.5	EC	1	LB A/A		NOV 22	E	28.8 a	27.5 a	50.0 a
	Prograss	1.5	EC	1	LB A/A		DEC 13	F			
20	Prograss	1.5	EC	1.5	LB A/A		NOV 22	E	27.5 a	23.8 a	50.0 a
21	Nontreated								30.0 a	31.3 a	52.5 a
LSD (P=.05)								3.70	5.46	3.43	
Standard Deviation								2.61	3.86	2.43	
CV								9.04	14.19	4.84	
Grand Mean								28.93	27.2	50.18	
Bartlett's X2								8.015	18.476	5.184	
P(Bartlett's X2)								0.923	0.556	0.983	
Replicate F								3.774	1.671	6.515	
Replicate Prob(F)								0.0151	0.1828	0.0007	
Treatment F								1.215	1.003	0.879	
Treatment Prob(F)								0.2747	0.4728	0.6127	

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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Trial ID: 05-D02  
 Protocol ID: Study Director: Travis Gannon  
 Location: Tobacco Road GC Investigator: Fred Yelverton

								LOLPE BGRM	LOLPE BGRM	LOLPE BGRM	
Pest Code								Ryegrass, perennial	Ryegrass, perennial	Ryegrass, perennial	
Crop Code								11-22-04	12-13-04	1-4-05	
BBCH Scale								COVER	COVER	COVER	
Crop Name								%	%	%	
Rating Date								0	0	22	
Rating Data Type								111 DA-A	132 DA-A	154 DA-A	
Rating Unit											
Days After First/Last Applic.											
Trt-Eval Interval											
ARM Action Codes											
Number of Decimals											
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate Unit	Growth Stage	Appl Code	4	5	6
1	Barricade	65	WG	0.6	LB A/A		AUG 3	A	48.8 a	72.5 a	76.3 a
2	Barricade	65	WG	0.5	LB A/A		AUG 3	A	50.0 a	65.0 a	78.8 a
3	Barricade	65	WG	0.4	LB A/A		AUG 3	A	50.0 a	67.5 a	75.0 a
4	Barricade	65	WG	0.3	LB A/A		AUG 3	A	50.0 a	66.3 a	77.5 a
5	Dimension Ultra	40	WP	0.5	LB A/A		AUG 3	A	50.0 a	66.3 a	77.5 a
6	Ronstar	2	G	2	LB A/A		AUG 3	A	50.0 a	66.3 a	77.5 a
7	Balan	2.5	G	2.75	LB A/A		AUG 3	A	47.5 a	67.5 a	78.8 a
8	Pendulum	60	WG	2	LB A/A		AUG 3	A	48.8 a	63.8 a	73.8 a
9	Barricade	65	WG	0.4	LB A/A		AUG 16	B	47.5 a	65.0 a	75.0 a
10	Barricade	65	WG	0.3	LB A/A		AUG 16	B	50.0 a	70.0 a	77.5 a
11	Balan	2.5	G	2.75	LB A/A		AUG 16	B	50.0 a	66.3 a	73.8 a
12	Dimension Ultra	40	WP	0.5	LB A/A		AUG 16	B	48.8 a	67.5 a	80.0 a
13	Balan	2.5	G	2.75	LB A/A		AUG 30	C	48.8 a	66.3 a	76.3 a
14	Rubigan	1	L	6	FL OZ/1000 FT2		AUG 30	C	48.8 a	63.8 a	76.3 a
	Rubigan	1	L	6	FL OZ/1000 FT2		SEPT 13	D			
15	TranXit	25	DF	1	OZ/A		SEPT 13	D	47.5 a	65.0 a	76.3 a
	X-77	L		0.25	% V/V		SEPT 13	D			
16	Revolver	0.19	SC	0.4	FL OZ/1000 FT2		SEPT 13	D	47.5 a	65.0 a	73.8 a
17	Monument	75	WG	0.47	OZ/A		SEPT 13	D	47.5 a	67.5 a	77.5 a
	X-77	L		0.25	% V/V		SEPT 13	D			
18	Flazasulfuron	25	DF	1.5	OZ/A		SEPT 13	D	47.5 a	63.8 a	77.5 a
	X-77	L		0.25	% V/V		SEPT 13	D			
19	Prograss	1.5	EC	1	LB A/A		NOV 22	E	48.8 a	62.5 a	70.0 a
	Prograss	1.5	EC	1	LB A/A		DEC 13	F			
20	Prograss	1.5	EC	1.5	LB A/A		NOV 22	E	48.8 a	65.0 a	66.3 a
21	Nontreated								48.8 a	66.3 a	76.3 a
LSD (P=.05)								3.46	8.05	8.20	
Standard Deviation								2.45	5.69	5.80	
CV								5.02	8.61	7.65	
Grand Mean								48.81	66.13	75.77	
Bartlett's X2								4.109	18.229	34.124	
P(Bartlett's X2)								0.995	0.572	0.018*	
Replicate F								2.252	18.258	0.882	
Replicate Prob(F)								0.0915	0.0001	0.4555	
Treatment F								0.675	0.615	1.143	
Treatment Prob(F)								0.8339	0.8856	0.3343	

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 Location: Tobacco Road GC Investigator: Fred Yelverton

								LOLPE BGRM	LOLPE BGRM	LOLPE BGRM	
								Ryegrass, perennial 2-1-05 COVER %	Ryegrass, perennial 3-1-05 COVER %	Ryegrass, perennial 3-21-05 COVER %	
								50	78	98	
								182 DA-A	210 DA-A	230 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate Unit	Growth Stage	Appl Code	7	8	9
1	Barricade	65	WG	0.6	LB A/A		AUG 3	A	70.0 a	80.0 a	88.8 abc
2	Barricade	65	WG	0.5	LB A/A		AUG 3	A	72.5 a	78.8 a	91.3 ab
3	Barricade	65	WG	0.4	LB A/A		AUG 3	A	72.5 a	78.8 a	85.0 b-f
4	Barricade	65	WG	0.3	LB A/A		AUG 3	A	70.0 a	77.5 a	82.5 c-f
5	Dimension Ultra	40	WP	0.5	LB A/A		AUG 3	A	67.5 a	75.0 a	82.5 c-f
6	Ronstar	2	G	2	LB A/A		AUG 3	A	71.3 a	77.5 a	81.3 def
7	Balan	2.5	G	2.75	LB A/A		AUG 3	A	75.0 a	78.8 a	80.0 ef
8	Pendulum	60	WG	2	LB A/A		AUG 3	A	68.8 a	78.8 a	78.8 f
9	Barricade	65	WG	0.4	LB A/A		AUG 16	B	72.5 a	78.8 a	85.0 b-f
10	Barricade	65	WG	0.3	LB A/A		AUG 16	B	72.5 a	81.3 a	86.3 a-e
11	Balan	2.5	G	2.75	LB A/A		AUG 16	B	71.3 a	75.0 a	85.0 b-f
12	Dimension Ultra	40	WP	0.5	LB A/A		AUG 16	B	73.8 a	77.5 a	83.8 c-f
13	Balan	2.5	G	2.75	LB A/A		AUG 30	C	68.8 a	78.8 a	88.8 abc
14	Rubigan	1	L	6	FL OZ/1000 FT2		AUG 30	C	72.5 a	76.3 a	85.0 b-f
	Rubigan	1	L	6	FL OZ/1000 FT2		SEPT 13	D			
15	TranXit	25	DF	1	OZ/A		SEPT 13	D	72.5 a	76.3 a	85.0 b-f
	X-77	L		0.25	% V/V		SEPT 13	D			
16	Revolver	0.19	SC	0.4	FL OZ/1000 FT2		SEPT 13	D	70.0 a	76.3 a	81.3 def
17	Monument	75	WG	0.47	OZ/A		SEPT 13	D	71.3 a	76.3 a	87.5 a-d
	X-77	L		0.25	% V/V		SEPT 13	D			
18	Flazasulfuron	25	DF	1.5	OZ/A		SEPT 13	D	72.5 a	75.0 a	81.3 def
	X-77	L		0.25	% V/V		SEPT 13	D			
19	Prograss	1.5	EC	1	LB A/A		NOV 22	E	65.0 a	71.3 a	92.5 a
	Prograss	1.5	EC	1	LB A/A		DEC 13	F			
20	Prograss	1.5	EC	1.5	LB A/A		NOV 22	E	66.3 a	71.3 a	91.3 ab
21	Nontreated								70.0 a	76.3 a	78.8 f
LSD (P=.05)								6.32	6.78	7.27	
Standard Deviation								4.47	4.80	5.14	
CV								6.31	6.24	6.06	
Grand Mean								70.77	76.9	84.82	
Bartlett's X2								18.972	19.429	27.534	
P(Bartlett's X2)								0.459	0.494	0.093	
Replicate F								3.078	14.592	5.964	
Replicate Prob(F)								0.0342	0.0001	0.0013	
Treatment F								1.237	1.103	2.493	
Treatment Prob(F)								0.2583	0.3703	0.0034	

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								LOLPE BGRM Ryegrass, perennial 4-4-05 COVER %	LOLPE BGRM Ryegrass, perennial 4-25-05 COVER %	TURF 10-11-04 QUALITY 1-9 28 69 DA-A	TURF 10-25-04 QUALITY 1-9 42 83 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate Unit	Growth Stage	Appl Code	10	11	12	13
1	Barricade	65	WG	0.6	LB A/A		AUG 3	A	86.3 ab	87.8 a	7.0 a	7.0 a
2	Barricade	65	WG	0.5	LB A/A		AUG 3	A	85.0 ab	86.3 a	7.0 a	7.0 a
3	Barricade	65	WG	0.4	LB A/A		AUG 3	A	61.3 c-g	58.8 cd	7.0 a	7.0 a
4	Barricade	65	WG	0.3	LB A/A		AUG 3	A	56.3 e-h	65.0 bcd	7.0 a	7.0 a
5	Dimension Ultra	40	WP	0.5	LB A/A		AUG 3	A	40.0 h	50.0 d	7.0 a	7.0 a
6	Ronstar	2	G	2	LB A/A		AUG 3	A	47.5 gh	47.5 d	7.0 a	7.0 a
7	Balan	2.5	G	2.75	LB A/A		AUG 3	A	47.5 gh	52.5 d	7.0 a	7.0 a
8	Pendulum	60	WG	2	LB A/A		AUG 3	A	47.5 gh	48.8 d	7.0 a	7.0 a
9	Barricade	65	WG	0.4	LB A/A		AUG 16	B	67.5 b-f	61.3 cd	7.0 a	7.0 a
10	Barricade	65	WG	0.3	LB A/A		AUG 16	B	72.5 b-e	71.3 abc	7.0 a	7.0 a
11	Balan	2.5	G	2.75	LB A/A		AUG 16	B	47.5 gh	55.0 cd	7.0 a	7.0 a
12	Dimension Ultra	40	WP	0.5	LB A/A		AUG 16	B	45.0 gh	57.5 cd	7.0 a	7.0 a
13	Balan	2.5	G	2.75	LB A/A		AUG 30	C	77.5 abc	82.5 ab	7.0 a	7.0 a
14	Rubigan	1	L	6	FL OZ/1000 FT2		AUG 30	C	50.0 fgh	52.5 d	7.0 a	7.0 a
	Rubigan	1	L	6	FL OZ/1000 FT2		SEPT 13	D				
15	TranXit	25	DF	1	OZ/A		SEPT 13	D	53.8 e-h	60.0 cd	7.0 a	7.0 a
	X-77	L		0.25	% V/V		SEPT 13	D				
16	Revolver	0.19	SC	0.4	FL OZ/1000 FT2		SEPT 13	D	57.5 d-h	60.0 cd	7.0 a	7.0 a
17	Monument	75	WG	0.47	OZ/A		SEPT 13	D	56.3 e-h	65.0 bcd	7.0 a	7.0 a
	X-77	L		0.25	% V/V		SEPT 13	D				
18	Flazasulfuron	25	DF	1.5	OZ/A		SEPT 13	D	48.8 fgh	53.8 cd	7.0 a	7.0 a
	X-77	L		0.25	% V/V		SEPT 13	D				
19	Prograss	1.5	EC	1	LB A/A		NOV 22	E	76.3 a-d	71.3 abc	7.0 a	7.0 a
	Prograss	1.5	EC	1	LB A/A		DEC 13	F				
20	Prograss	1.5	EC	1.5	LB A/A		NOV 22	E	93.3 a	82.5 ab	7.0 a	7.0 a
21	Nontreated								48.8 fgh	53.8 cd	7.0 a	7.0 a
LSD (P=.05)								19.44	17.56	0.00	0.00	
Standard Deviation								13.75	12.42	0.00	0.00	
CV								22.81	19.71	0.0	0.0	
Grand Mean								60.27	62.99	7.0	7.0	
Bartlett's X2								29.597	11.225	0.0	0.0	
P(Bartlett's X2)								0.077	0.94	.	.	
Replicate F								6.887	5.041	0.000	0.000	
Replicate Prob(F)								0.0005	0.0035	1.0000	1.0000	
Treatment F								5.162	4.144	0.000	0.000	
Treatment Prob(F)								0.0001	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.

# North Carolina State University

## Control of *Poa annua* in an Overseeded Bermudagrass Fairway

Trial ID: 05-D02  
 Protocol ID:  
 Location: Tobacco Road GC

Study Director: Travis Gannon  
 Investigator: Fred Yelverton

								TURF	TURF	TURF	TURF	TURF	
								11-8-04	11-22-04	12-13-04	1-4-05	2-1-05	
								QUALITY	QUALITY	QUALITY	QUALITY	QUALITY	
								1-9	1-9	1-9	1-9	1-9	
								56	0	0	22	50	
								97 DA-A	111 DA-A	132 DA-A	154 DA-A	182 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate Unit	Growth Stage	Appl Code	14	15	16	17	18
1	Barricade	65	WG	0.6	LB A/A		AUG 3	A	7.0 a	7.0 a	7.0 a	6.5 a	6.0 a
2	Barricade	65	WG	0.5	LB A/A		AUG 3	A	7.0 a	7.0 a	7.0 a	6.6 a	6.0 a
3	Barricade	65	WG	0.4	LB A/A		AUG 3	A	7.0 a	7.0 a	7.0 a	6.5 a	6.0 a
4	Barricade	65	WG	0.3	LB A/A		AUG 3	A	7.0 a	7.0 a	7.0 a	6.6 a	6.0 a
5	Dimension Ultra	40	WP	0.5	LB A/A		AUG 3	A	7.0 a	7.0 a	7.0 a	6.6 a	5.9 a
6	Ronstar	2	G	2	LB A/A		AUG 3	A	7.0 a	7.0 a	7.0 a	6.6 a	6.0 a
7	Balan	2.5	G	2.75	LB A/A		AUG 3	A	7.0 a	7.0 a	7.0 a	6.6 a	6.0 a
8	Pendulum	60	WG	2	LB A/A		AUG 3	A	7.0 a	7.0 a	7.0 a	6.5 a	5.9 a
9	Barricade	65	WG	0.4	LB A/A		AUG 16	B	7.0 a	7.0 a	7.0 a	6.6 a	6.0 a
10	Barricade	65	WG	0.3	LB A/A		AUG 16	B	7.0 a	7.0 a	7.0 a	6.6 a	6.0 a
11	Balan	2.5	G	2.75	LB A/A		AUG 16	B	7.0 a	7.0 a	7.0 a	6.3 a	5.9 a
12	Dimension Ultra	40	WP	0.5	LB A/A		AUG 16	B	7.0 a	7.0 a	7.0 a	6.9 a	6.0 a
13	Balan	2.5	G	2.75	LB A/A		AUG 30	C	7.0 a	7.0 a	7.0 a	6.6 a	5.9 a
14	Rubigan	1	L	6	FL OZ/1000 FT2		AUG 30	C	7.0 a	7.0 a	7.0 a	6.5 a	6.0 a
	Rubigan	1	L	6	FL OZ/1000 FT2		SEPT 13	D					
15	TranXit	25	DF	1	OZ/A		SEPT 13	D	7.0 a	7.0 a	7.0 a	6.5 a	6.0 a
	X-77	L		0.25	% V/V		SEPT 13	D					
16	Revolver	0.19	SC	0.4	FL OZ/1000 FT2		SEPT 13	D	7.0 a	7.0 a	7.0 a	6.4 a	5.9 a
17	Monument	75	WG	0.47	OZ/A		SEPT 13	D	7.0 a	7.0 a	7.0 a	6.6 a	6.1 a
	X-77	L		0.25	% V/V		SEPT 13	D					
18	Flazasulfuron	25	DF	1.5	OZ/A		SEPT 13	D	7.0 a	7.0 a	7.0 a	6.8 a	6.0 a
	X-77	L		0.25	% V/V		SEPT 13	D					
19	Prograss	1.5	EC	1	LB A/A		NOV 22	E	7.0 a	7.0 a	7.0 a	6.3 a	5.6 a
	Prograss	1.5	EC	1	LB A/A		DEC 13	F					
20	Prograss	1.5	EC	1.5	LB A/A		NOV 22	E	7.0 a	7.0 a	7.0 a	6.1 a	5.8 a
21	Nontreated								7.0 a	7.0 a	7.0 a	6.8 a	6.0 a
LSD (P=.05)								0.00	0.00	0.00	0.46	0.34	
Standard Deviation								0.00	0.00	0.00	0.33	0.24	
CV								0.0	0.0	0.0	5.01	4.08	
Grand Mean								7.0	7.0	7.0	6.55	5.95	
Bartlett's X2								0.0	0.0	0.0	15.974	10.483	
P(Bartlett's X2)								.	.	.	0.659	0.163	
Replicate F								0.000	0.000	0.000	13.260	3.019	
Replicate Prob(F)								1.0000	1.0000	1.0000	0.0001	0.0367	
Treatment F								0.000	0.000	0.000	1.188	0.804	
Treatment Prob(F)								1.0000	1.0000	1.0000	0.2961	0.6984	

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.

# North Carolina State University

## Control of *Poa annua* in an Overseeded Bermudagrass Fairway

Trial ID: 05-D02  
 Protocol ID:  
 Location: Tobacco Road GC

Study Director: Travis Gannon  
 Investigator: Fred Yelverton

								TURF	TURF	TURF	TURF	POAAN	
								3-1-05	3-21-05	4-4-05	4-25-05	4-4-05	
								QUALITY	QUALITY	QUALITY	QUALITY	COVER	
								1-9	1-9	1-9	1-9	%	
								78	98	112	133	112	
								210 DA-A	230 DA-A	244 DA-A	265 DA-A	244 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate Unit	Growth Stage	Appl Code	19	20	21	22	23
1	Barricade	65	WG	0.6	LB A/A		AUG 3	A	7.0 a	7.0 a	6.8 ab	6.9 a	13.8 gh
2	Barricade	65	WG	0.5	LB A/A		AUG 3	A	7.0 a	7.0 a	6.9 ab	6.3 abc	15.0 gh
3	Barricade	65	WG	0.4	LB A/A		AUG 3	A	7.0 a	6.9 ab	5.6 c-f	5.4 def	38.8 b-f
4	Barricade	65	WG	0.3	LB A/A		AUG 3	A	7.0 a	6.8 abc	5.5 def	5.5 c-f	43.8 a-d
5	Dimension Ultra	40	WP	0.5	LB A/A		AUG 3	A	7.0 a	6.6 a-d	4.9 f	5.1 ef	60.0 a
6	Ronstar	2	G	2	LB A/A		AUG 3	A	7.0 a	6.5 bcd	5.0 ef	5.1 ef	52.5 ab
7	Balan	2.5	G	2.75	LB A/A		AUG 3	A	7.0 a	6.4 cd	5.1 ef	5.1 ef	52.5 ab
8	Pendulum	60	WG	2	LB A/A		AUG 3	A	7.0 a	6.4 cd	5.1 ef	5.5 c-f	52.5 ab
9	Barricade	65	WG	0.4	LB A/A		AUG 16	B	7.0 a	6.8 abc	5.8 cde	5.4 def	32.5 c-g
10	Barricade	65	WG	0.3	LB A/A		AUG 16	B	7.0 a	6.9 ab	6.1 bcd	5.6 b-f	27.5 d-g
11	Balan	2.5	G	2.75	LB A/A		AUG 16	B	7.0 a	6.5 bcd	5.3 ef	5.3 ef	52.5 ab
12	Dimension Ultra	40	WP	0.5	LB A/A		AUG 16	B	7.0 a	6.6 a-d	5.1 ef	5.1 ef	55.0 ab
13	Balan	2.5	G	2.75	LB A/A		AUG 30	C	7.0 a	7.0 a	6.4 bc	6.4 ab	22.5 fgh
14	Rubigan	1	L	6	FL OZ/1000 FT2		AUG 30	C	7.0 a	6.6 a-d	5.4 def	5.0 f	50.0 abc
	Rubigan	1	L	6	FL OZ/1000 FT2		SEPT 13	D					
15	TranXit	25	DF	1	OZ/A		SEPT 13	D	7.0 a	6.6 a-d	5.6 c-f	5.4 def	46.3 a-d
	X-77	L		0.25	% V/V		SEPT 13	D					
16	Revolver	0.19	SC	0.4	FL OZ/1000 FT2		SEPT 13	D	7.0 a	6.6 a-d	5.4 def	5.4 def	42.5 a-e
17	Monument	75	WG	0.47	OZ/A		SEPT 13	D	7.0 a	6.6 a-d	5.6 c-f	5.5 c-f	43.8 a-d
	X-77	L		0.25	% V/V		SEPT 13	D					
18	Flazasulfuron	25	DF	1.5	OZ/A		SEPT 13	D	7.0 a	6.5 bcd	5.3 ef	5.1 ef	51.3 abc
	X-77	L		0.25	% V/V		SEPT 13	D					
19	Prograss	1.5	EC	1	LB A/A		NOV 22	E	6.8 a	7.0 a	6.6 ab	5.9 b-e	23.8 e-h
	Prograss	1.5	EC	1	LB A/A		DEC 13	F					
20	Prograss	1.5	EC	1.5	LB A/A		NOV 22	E	6.8 a	7.0 a	7.4 a	6.1 a-d	6.8 h
21	Nontreated								7.0 a	6.3 d	5.5 def	5.4 def	51.3 abc
LSD (P=.05)								0.21	0.45	0.87	0.75	19.44	
Standard Deviation								0.15	0.32	0.62	0.53	13.75	
CV								2.16	4.71	10.78	9.58	34.61	
Grand Mean								6.98	6.69	5.73	5.54	39.73	
Bartlett's X2								0.0	9.232	20.378	27.697	29.597	
P(Bartlett's X2)								0.001*	0.865	0.435	0.089	0.077	
Replicate F								2.105	7.273	5.929	7.552	6.887	
Replicate Prob(F)								0.1090	0.0003	0.0013	0.0002	0.0005	
Treatment F								1.000	2.179	5.065	3.420	5.162	
Treatment Prob(F)								0.4756	0.0107	0.0001	0.0001	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.

# North Carolina State University

## Control of *Poa annua* in an Overseeded Bermudagrass Fairway

Trial ID: 05-D02  
 Protocol ID: Study Director: Travis Gannon  
 Location: Tobacco Road GC Investigator: Fred Yelverton

								POAAN	POAAN	POAAN	
Pest Code											
Crop Code											
BBCH Scale											
Crop Name											
Rating Date								4-25-05	4-4-05	4-25-05	
Rating Data Type								COVER	CONTROL	CONTROL	
Rating Unit								%	%	%	
Days After First/Last Applic.								133	112	133	
Trt-Eval Interval								265 DA-A	244 DA-A	265 DA-A	
ARM Action Codes									T3	T4	
Number of Decimals									1	1	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate Unit	Growth Stage	Appl Code	24	25	26
1	Barricade	65	WG	0.6	LB A/A		AUG 3	A	12.3 d	73.2 ab	73.5 a
2	Barricade	65	WG	0.5	LB A/A		AUG 3	A	13.8 d	70.8 abc	70.3 a
3	Barricade	65	WG	0.4	LB A/A		AUG 3	A	41.3 ab	24.5 e-h	12.9 cd
4	Barricade	65	WG	0.3	LB A/A		AUG 3	A	35.0 abc	25.6 e-h	26.4 cd
5	Dimension Ultra	40	WP	0.5	LB A/A		AUG 3	A	50.0 a	0.6 gh	8.8 d
6	Ronstar	2	G	2	LB A/A		AUG 3	A	52.5 a	13.5 fgh	4.1 d
7	Balan	2.5	G	2.75	LB A/A		AUG 3	A	47.5 a	15.9 fgh	12.2 cd
8	Pendulum	60	WG	2	LB A/A		AUG 3	A	51.3 a	17.7 fgh	16.9 cd
9	Barricade	65	WG	0.4	LB A/A		AUG 16	B	38.8 ab	36.6 def	23.7 cd
10	Barricade	65	WG	0.3	LB A/A		AUG 16	B	28.8 bcd	46.4 cde	37.9 bc
11	Balan	2.5	G	2.75	LB A/A		AUG 16	B	45.0 ab	12.8 fgh	14.9 cd
12	Dimension Ultra	40	WP	0.5	LB A/A		AUG 16	B	42.5 ab	3.1 gh	15.6 cd
13	Balan	2.5	G	2.75	LB A/A		AUG 30	C	17.5 cd	56.1 bcd	62.2 ab
14	Rubigan	1	L	6	FL OZ/1000 FT2		AUG 30	C	47.5 a	15.9 fgh	4.8 d
	Rubigan	1	L	6	FL OZ/1000 FT2		SEPT 13	D			
15	TranXit	25	DF	1	OZ/A		SEPT 13	D	40.0 ab	23.2 e-h	21.0 cd
	X-77	L		0.25	% V/V		SEPT 13	D			
16	Revolver	0.19	SC	0.4	FL OZ/1000 FT2		SEPT 13	D	40.0 ab	26.3 efg	20.3 cd
17	Monument	75	WG	0.47	OZ/A		SEPT 13	D	35.0 abc	19.0 fgh	26.4 cd
	X-77	L		0.25	% V/V		SEPT 13	D			
18	Flazasulfuron	25	DF	1.5	OZ/A		SEPT 13	D	46.3 ab	8.6 gh	12.2 cd
	X-77	L		0.25	% V/V		SEPT 13	D			
19	Prograss	1.5	EC	1	LB A/A		NOV 22	E	28.8 bcd	53.7 bcd	37.9 bc
	Prograss	1.5	EC	1	LB A/A		DEC 13	F			
20	Prograss	1.5	EC	1.5	LB A/A		NOV 22	E	17.5 cd	86.8 a	62.2 ab
21	Nontreated								46.3 ab	0.0 h	0.0 d
LSD (P=.05)								17.56	26.00	27.90	
Standard Deviation								12.42	18.39	19.73	
CV								33.55	61.27	73.42	
Grand Mean								37.01	30.01	26.87	
Bartlett's X2								11.225	35.802	19.407	
P(Bartlett's X2)								0.94	0.011*	0.431	
Replicate F								5.041	5.521	3.637	
Replicate Prob(F)								0.0035	0.0020	0.0177	
Treatment F								4.144	7.462	5.108	
Treatment Prob(F)								0.0001	0.0001	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.

Column 25: T3 = (100-((23/51.3)\*100))  
 Column 26: T4 = (100-((24/46.3)\*100))

### Trial Comments

5-9-05 - Unable to further evaluate for annual bluegrass control as population has begun to dessicate.