

North Carolina State University

TRIFLOXYSULFURON TOLERANCE TO PERENNIAL RYEGRASS PRIOR TO FALL OVERSEEDING AND
ANNUAL BLUEGRASS CONTROL

Trial ID: 04-T2

Study Dir.: L.S. WARREN

Location: PORTER'S NECK

Investigator: Fred Yelverton

APPLICATION EQUIPMENT

	A	B	C	D
Appl. Equipment:	BACSPR	BACSPR	BACSPR	BACSPR
Operating Pressure:	35 PSI	35 PSI	35 PSI	25 PSI
Nozzle Type:	FLAT FAN	FLAT FAN	FLAT FAN	FLAT FAN
Nozzle Size:	XR 8002VS	XR 8002VS	XR 8002VS	XR 8002VS
Nozzle Spacing, Unit:	10 IN	10 IN	10 IN	10 IN
Band Width, Unit:	40 IN	40 IN	40 IN	40 IN
Boom Length, Unit:	40 IN	40 IN	40 IN	40 IN
Boom Height, Unit:	10 IN	10 IN	10 IN	10 IN
Ground Speed, Unit:	3 MPH	3 MPH	3 MPH	3 MPH
Carrier:	WATER	WATER	WATER	WATER
Spray Volume, Unit:	32.5 GPA	32.5 GPA	32.5 GPA	32.5 GPA
Propellant:	COMCO2	COMCO2	COMCO2	COMCO2
Tank Mix (Y/N):	Y	Y	Y	Y

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Trial ID: 04-T2
Location: PORTER'S NECK

Study Dir.: L.S. WARREN
Investigator: Fred Yelverton

Crop Code							LOLPE	LOLPE	LOLPE	LOLPE		
Rating Data Type							COVER	COVER	COVER	COVER		
Rating Unit							PERCENT	PERCENT	PERCENT	PERCENT		
Rating Date							10-28-03	11-4-03	11-11-03	11-26-03		
Assessed By							T.W. GANNON	L.S. WARREN	L.S. WARREN	L.S. WARREN		
Trt-Eval Interval							13 DA-D	20 DA-D	27 DA-D	42 DA-D		
ARM Action Codes							P	P	P	P		
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	MONUMENT	75 WG	L	0.3 oz wt/a			14 DBO A	A	30.0 a-d	40.0 abc	52.5 b	55.0 abc
	X-77 SPREADER	L		0.25 % v/v			14 DBO A					
2	MONUMENT	75 WG	L	0.45 oz wt/a			14 DBO A	A	35.0 ab	33.3 bc	61.7 ab	61.7 ab
	X-77 SPREADER	L		0.25 % v/v			14 DBO A					
3	MONUMENT	75 WG	L	0.56 oz wt/a			14 DBO A	A	31.7 abc	31.7 bcd	61.7 ab	63.3 a
	X-77 SPREADER	L		0.25 % v/v			14 DBO A					
4	TRANXIT GTA	25 DF	L	2.0 oz wt/a			14 DBO A	A	40.0 a	48.3 a	71.7 a	61.7 ab
	X-77 SPREADER	L		0.25 % v/v			14 DBO A					
5	MONUMENT	75 WG	L	0.3 oz wt/a			5 DBO B	B	35.0 ab	38.3 abc	48.3 bc	60.0 ab
	X-77 SPREADER	L		0.25 % v/v			5 DBO B					
6	MONUMENT	75 WG	L	0.45 oz wt/a			5 DBO B	B	21.7 c-f	21.7 def	26.7 de	53.3 abc
	X-77 SPREADER	L		0.25 % v/v			5 DBO B					
7	MONUMENT	75 WG	L	0.56 oz wt/a			5 DBO B	B	23.3 b-e	10.0 ghi	20.0 def	25.0 def
	X-77 SPREADER	L		0.25 % v/v			5 DBO B					
8	TRANXIT GTA	25 DF	L	2.0 oz wt/a			5 DBO B	B	20.0 c-g	30.0 cde	56.7 ab	48.3 abc
	X-77 SPREADER	L		0.25 % v/v			5 DBO B					
9	MONUMENT	75 WG	L	0.3 oz wt/a			2 DBO C	C	18.3 d-g	20.0 efg	33.3 cd	46.7 abc
	X-77 SPREADER	L		0.25 % v/v			2 DBO C					
10	MONUMENT	75 WG	L	0.45 oz wt/a			2 DBO C	C	13.3 efg	5.7 hi	9.0 f	15.0 ef
	X-77 SPREADER	L		0.25 % v/v			2 DBO C					
11	MONUMENT	75 WG	L	0.56 oz wt/a			2 DBO C	C	18.3 d-g	10.0 ghi	10.0 ef	10.0 f
	X-77 SPREADER	L		0.25 % v/v			2 DBO C					
12	TRANXIT GTA	25 DF	L	2.0 oz wt/a			2 DBO C	C	13.3 efg	16.7 fg	31.7 cd	38.3 cd
	X-77 SPREADER	L		0.25 % v/v			2 DBO C					
13	MONUMENT	75 WG	L	0.3 oz wt/a			0 DBO D	D	15.0 efg	15.0 fgh	18.3 def	41.7 bcd
	X-77 SPREADER	L		0.25 % v/v			0 DBO D					
14	MONUMENT	75 WG	L	0.45 oz wt/a			0 DBO D	D	18.3 d-g	10.0 ghi	10.0 ef	15.0 ef
	X-77 SPREADER	L		0.25 % v/v			0 DBO D					
15	MONUMENT	75 WG	L	0.56 oz wt/a			0 DBO D	D	10.0 fg	4.0 i	4.0 f	5.0 f
	X-77 SPREADER	L		0.25 % v/v			0 DBO D					
16	TRANXIT GTA	25 DF	L	2.0 oz wt/a			0 DBO D	D	8.3 g	16.7 fg	28.3 d	35.0 cde
	X-77 SPREADER	L		0.25 % v/v			0 DBO D					
17	CHECK								38.3 a	41.7 ab	70.0 a	61.7 ab
LSD (P=.05)							12.98	10.46	16.79	20.29		
Standard Deviation							7.78	6.27	10.07	12.17		
CV							33.93	27.14	27.89	29.69		
Grand Mean							22.94	23.12	36.11	40.98		
Bartlett's X2							10.237	11.333	14.609	21.852		
P(Bartlett's X2)							0.805	0.729	0.553	0.112		
Friedman's X2							33.105	41.712	41.301	35.497		
P(Friedman's X2)							0.007	0.001	0.001	0.003		
Replicate F							5.266	5.745	0.380	3.748		
Replicate Prob(F)							0.0107	0.0075	0.6870	0.0349		
Treatment F							5.098	14.620	15.606	8.210		
Treatment Prob(F)							0.0001	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.

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Trial ID: 04-T2
Location: PORTER'S NECK

Study Dir.: L.S. WARREN
Investigator: Fred Yelverton

Crop Code							LOLPE	LOLPE	LOLPE	LOLPE
Rating Data Type							COVERAGE	COVERAGE	COVERAGE	QUALITY
Rating Unit							PERCENT	PERCENT	PERCENT	1-9SCALE
Rating Date							12-31-03	2-20-04	3-19-04	10-28-03
Assessed By							L.S. WARREN	L.S. WARREN	L.S. WARREN	T.W. GANNON
Trt-Eval Interval							77 DA-D	128 DA-D	156 DA-D	13 DA-D
ARM Action Codes							P	P	P	B
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Product Rate	Product Rate	Grow Unit	Appl Stg	Code	
1	MONUMENT	75 WG	L	0.3 oz wt/a			14 DBO	A		67.5 ab
	X-77 SPREADER	L		0.25 % v/v			14 DBO	A		57.5 ab
2	MONUMENT	75 WG	L	0.45 oz wt/a			14 DBO	A		73.3 a
	X-77 SPREADER	L		0.25 % v/v			14 DBO	A		51.7 abc
3	MONUMENT	75 WG	L	0.56 oz wt/a			14 DBO	A		73.3 a
	X-77 SPREADER	L		0.25 % v/v			14 DBO	A		66.7 a
4	TRANXIT GTA	25 DF	L	2.0 oz wt/a			14 DBO	A		63.3 ab
	X-77 SPREADER	L		0.25 % v/v			14 DBO	A		50.0 abc
5	MONUMENT	75 WG	L	0.3 oz wt/a			5 DBO	B		66.7 ab
	X-77 SPREADER	L		0.25 % v/v			5 DBO	B		56.7 ab
6	MONUMENT	75 WG	L	0.45 oz wt/a			5 DBO	B		60.0 ab
	X-77 SPREADER	L		0.25 % v/v			5 DBO	B		60.0 ab
7	MONUMENT	75 WG	L	0.56 oz wt/a			5 DBO	B		61.7 ab
	X-77 SPREADER	L		0.25 % v/v			5 DBO	B		53.3 abc
8	TRANXIT GTA	25 DF	L	2.0 oz wt/a			5 DBO	B		65.0 ab
	X-77 SPREADER	L		0.25 % v/v			5 DBO	B		60.0 ab
9	MONUMENT	75 WG	L	0.3 oz wt/a			2 DBO	C		58.3 ab
	X-77 SPREADER	L		0.25 % v/v			2 DBO	C		56.7 ab
10	MONUMENT	75 WG	L	0.45 oz wt/a			2 DBO	C		46.7 bc
	X-77 SPREADER	L		0.25 % v/v			2 DBO	C		46.7 bc
11	MONUMENT	75 WG	L	0.56 oz wt/a			2 DBO	C		31.7 cd
	X-77 SPREADER	L		0.25 % v/v			2 DBO	C		38.3 cd
12	TRANXIT GTA	25 DF	L	2.0 oz wt/a			2 DBO	C		56.7 ab
	X-77 SPREADER	L		0.25 % v/v			2 DBO	C		56.7 ab
13	MONUMENT	75 WG	L	0.3 oz wt/a			0 DBO	D		51.7 bc
	X-77 SPREADER	L		0.25 % v/v			0 DBO	D		46.7 bc
14	MONUMENT	75 WG	L	0.45 oz wt/a			0 DBO	D		56.7 ab
	X-77 SPREADER	L		0.25 % v/v			0 DBO	D		55.0 abc
15	MONUMENT	75 WG	L	0.56 oz wt/a			0 DBO	D		15.0 d
	X-77 SPREADER	L		0.25 % v/v			0 DBO	D		23.3 d
16	TRANXIT GTA	25 DF	L	2.0 oz wt/a			0 DBO	D		50.0 bc
	X-77 SPREADER	L		0.25 % v/v			0 DBO	D		43.3 bc
17	CHECK									55.0 ab
LSD (P=.05)							20.99	17.96	19.09	0.78
Standard Deviation							12.59	10.77	11.45	0.47
CV							22.47	20.99	24.46	7.72
Grand Mean							56.03	51.32	46.81	6.04
Bartlett's X2							20.627	5.517	12.547	15.609
P(Bartlett's X2)							0.193	0.993	0.706	0.409
Friedman's X2							24.007	24.569	28.68	35.268
P(Friedman's X2)							0.089	0.078	0.026	0.004
Replicate F							4.206	0.421	2.093	6.614
Replicate Prob(F)							0.0242	0.6599	0.1404	0.0041
Treatment F							4.084	2.569	3.850	6.343
Treatment Prob(F)							0.0004	0.0119	0.0006	0.0001

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Location: PORTER'S NECK

Study Dir.: L.S. WARREN
Investigator: Fred Yelverton

Crop Code							LOLPE	LOLPE	LOLPE	LOLPE		
Rating Data Type							QUALITY	QUALITY	QUALITY	QUALITY		
Rating Unit							1-9SCALE	1-9SCALE	1-9SCALE	1-9SCALE		
Rating Date							11-4-03	11-11-03	11-26-03	12-31-03		
Assessed By							L.S. WARREN	L.S. WARREN	L.S. WARREN	L.S. WARREN		
Trt-Eval Interval							20 DA-D	27 DA-D	42 DA-D	77 DA-D		
ARM Action Codes							B	B	B	B		
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code				
1	MONUMENT	75 WG	L	0.3 oz wt/a			14 DBO A	A	6.5 ab	6.3 abc	7.0 ab	7.0 ab
	X-77 SPREADER	L		0.25 % v/v			14 DBO A					
2	MONUMENT	75 WG	L	0.45 oz wt/a			14 DBO A	A	6.8 a	6.8 ab	7.0 ab	6.5 abc
	X-77 SPREADER	L		0.25 % v/v			14 DBO A					
3	MONUMENT	75 WG	L	0.56 oz wt/a			14 DBO A	A	7.2 a	6.7 ab	6.7 abc	7.2 a
	X-77 SPREADER	L		0.25 % v/v			14 DBO A					
4	TRANXIT GTA	25 DF	L	2.0 oz wt/a			14 DBO A	A	7.3 a	7.2 a	7.2 a	6.5 abc
	X-77 SPREADER	L		0.25 % v/v			14 DBO A					
5	MONUMENT	75 WG	L	0.3 oz wt/a			5 DBO B	B	6.2 abc	6.3 abc	6.7 abc	6.8 abc
	X-77 SPREADER	L		0.25 % v/v			5 DBO B					
6	MONUMENT	75 WG	L	0.45 oz wt/a			5 DBO B	B	5.2 bcd	5.3 bc	5.8 a-d	7.2 a
	X-77 SPREADER	L		0.25 % v/v			5 DBO B					
7	MONUMENT	75 WG	L	0.56 oz wt/a			5 DBO B	B	3.3 ef	3.2 ef	3.8 ef	5.8 abc
	X-77 SPREADER	L		0.25 % v/v			5 DBO B					
8	TRANXIT GTA	25 DF	L	2.0 oz wt/a			5 DBO B	B	6.2 abc	6.7 ab	6.2 a-d	6.8 abc
	X-77 SPREADER	L		0.25 % v/v			5 DBO B					
9	MONUMENT	75 WG	L	0.3 oz wt/a			2 DBO C	C	5.0 cd	5.0 cd	5.3 b-e	6.3 abc
	X-77 SPREADER	L		0.25 % v/v			2 DBO C					
10	MONUMENT	75 WG	L	0.45 oz wt/a			2 DBO C	C	1.7 g	2.0 fg	2.2 fg	5.2 c
	X-77 SPREADER	L		0.25 % v/v			2 DBO C					
11	MONUMENT	75 WG	L	0.56 oz wt/a			2 DBO C	C	3.5 ef	2.0 fg	1.8 g	3.3 d
	X-77 SPREADER	L		0.25 % v/v			2 DBO C					
12	TRANXIT GTA	25 DF	L	2.0 oz wt/a			2 DBO C	C	4.7 de	5.0 cd	4.8 de	6.8 abc
	X-77 SPREADER	L		0.25 % v/v			2 DBO C					
13	MONUMENT	75 WG	L	0.3 oz wt/a			0 DBO D	D	4.5 de	3.7 de	5.2 cde	6.3 abc
	X-77 SPREADER	L		0.25 % v/v			0 DBO D					
14	MONUMENT	75 WG	L	0.45 oz wt/a			0 DBO D	D	2.8 fg	2.5 efg	2.2 fg	5.3 bc
	X-77 SPREADER	L		0.25 % v/v			0 DBO D					
15	MONUMENT	75 WG	L	0.56 oz wt/a			0 DBO D	D	1.8 g	1.7 g	1.5 g	2.5 d
	X-77 SPREADER	L		0.25 % v/v			0 DBO D					
16	TRANXIT GTA	25 DF	L	2.0 oz wt/a			0 DBO D	D	3.8 def	3.5 e	4.7 de	5.2 c
	X-77 SPREADER	L		0.25 % v/v			0 DBO D					
17	CHECK								7.2 a	7.2 a	6.8 abc	6.2 abc
LSD (P=.05)							1.46	1.44	1.76	1.71		
Standard Deviation							0.87	0.87	1.05	1.03		
CV							17.77	18.22	21.13	17.25		
Grand Mean							4.92	4.75	4.99	5.94		
Bartlett's X2							29.484	14.686	17.115	20.401		
P(Bartlett's X2)							0.021*	0.548	0.312	0.203		
Friedman's X2							42.889	41.68	38.327	28.222		
P(Friedman's X2)							0.001	0.001	0.001	0.03		
Replicate F							9.922	1.147	4.660	2.183		
Replicate Prob(F)							0.0005	0.3306	0.0170	0.1297		
Treatment F							13.700	15.778	10.731	4.945		
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0001		

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Location: PORTER'S NECK

Study Dir.: L.S. WARREN
Investigator: Fred Yelverton

Crop Code							LOLPE	LOLPE
Rating Data Type							QUALITY	QUALITY
Rating Unit							1-9SCALE	1-9SCALE
Rating Date							2-20-04	3-19-04
Assessed By							L.S. WARREN	L.S. WARREN
Trt-Eval Interval							128 DA-D	156 DA-D
ARM Action Codes							B	B
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Product Rate	Product Rate Unit	Grow Stg	Appl Code
1	MONUMENT	75 WG	L	0.3 oz wt/a			14 DBO A	6.5 a
	X-77 SPREADER	L		0.25 % v/v			14 DBO A	6.8 ab
2	MONUMENT	75 WG	L	0.45 oz wt/a			14 DBO A	5.8 ab
	X-77 SPREADER	L		0.25 % v/v			14 DBO A	6.6 ab
3	MONUMENT	75 WG	L	0.56 oz wt/a			14 DBO A	6.5 a
	X-77 SPREADER	L		0.25 % v/v			14 DBO A	6.0 ab
4	TRANXIT GTA	25 DF	L	2.0 oz wt/a			14 DBO A	5.7 abc
	X-77 SPREADER	L		0.25 % v/v			14 DBO A	6.2 ab
5	MONUMENT	75 WG	L	0.3 oz wt/a			5 DBO B	5.7 abc
	X-77 SPREADER	L		0.25 % v/v			5 DBO B	5.5 ab
6	MONUMENT	75 WG	L	0.45 oz wt/a			5 DBO B	6.2 ab
	X-77 SPREADER	L		0.25 % v/v			5 DBO B	6.9 a
7	MONUMENT	75 WG	L	0.56 oz wt/a			5 DBO B	5.5 abc
	X-77 SPREADER	L		0.25 % v/v			5 DBO B	5.9 ab
8	TRANXIT GTA	25 DF	L	2.0 oz wt/a			5 DBO B	6.5 a
	X-77 SPREADER	L		0.25 % v/v			5 DBO B	7.0 a
9	MONUMENT	75 WG	L	0.3 oz wt/a			2 DBO C	5.8 ab
	X-77 SPREADER	L		0.25 % v/v			2 DBO C	6.8 ab
10	MONUMENT	75 WG	L	0.45 oz wt/a			2 DBO C	5.3 a-d
	X-77 SPREADER	L		0.25 % v/v			2 DBO C	4.8 b
11	MONUMENT	75 WG	L	0.56 oz wt/a			2 DBO C	4.0 de
	X-77 SPREADER	L		0.25 % v/v			2 DBO C	2.7 c
12	TRANXIT GTA	25 DF	L	2.0 oz wt/a			2 DBO C	6.2 ab
	X-77 SPREADER	L		0.25 % v/v			2 DBO C	6.9 a
13	MONUMENT	75 WG	L	0.3 oz wt/a			0 DBO D	5.0 bcd
	X-77 SPREADER	L		0.25 % v/v			0 DBO D	5.8 ab
14	MONUMENT	75 WG	L	0.45 oz wt/a			0 DBO D	5.5 abc
	X-77 SPREADER	L		0.25 % v/v			0 DBO D	4.8 b
15	MONUMENT	75 WG	L	0.56 oz wt/a			0 DBO D	3.2 e
	X-77 SPREADER	L		0.25 % v/v			0 DBO D	2.7 c
16	TRANXIT GTA	25 DF	L	2.0 oz wt/a			0 DBO D	4.3 cde
	X-77 SPREADER	L		0.25 % v/v			0 DBO D	5.3 ab
17	CHECK							5.5 abc
								5.8 ab
LSD (P=.05)							1.48	1.94
Standard Deviation							0.89	1.16
CV							16.25	20.46
Grand Mean							5.48	5.68
Bartlett's X2							7.304	25.559
P(Bartlett's X2)							0.967	0.043*
Friedman's X2							27.242	25.111
P(Friedman's X2)							0.039	0.068
Replicate F							1.212	0.621
Replicate Prob(F)							0.3114	0.5438
Treatment F							3.191	3.905
Treatment Prob(F)							0.0027	0.0006

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

10-15-03: TEST AREA VERTICUT AND MOWED, THEN TREATMENTS APPLIED
QUICK TRANS PERENNIAL RYEGRASS SEEDED AT 12 LB/1000 FT2 IMMEDIATELY AFTER APPLICATION
TEST AREA IRRIGATED DAILY TO PROMOTE GERMINATION

10-22-03: GENERAL OBSERVATIONS
(14 DBO) TRANXIT GTA SIMILAR TO NONTREATED PLOTS WITH LOLPE 0.25 TO 0.75 INCHES TALL

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Location: PORTER'S NECK

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ALL MONUMENT 75WG TREATMENTS SLIGHTLY AFFECTED LOLPE GERMINATION AND GROWTH WITH LOLPE RANGING FROM 0.125 TO 0.5 INCHES TALL AND APPEARING LESS DENSE

(5 DBO) LOLPE IN TRANXIT GTA TREATED PLOTS WAS 0.25 TO 0.5 INCHES TALL AND ALSO APPEARED SLIGHTLY LESS DENSE THAN THE NONTREATED PLOTS

RATE RESPONSE WAS SEEN IN MONUMENT 75WG TREATED PLOTS WITH LOLPE RANGING FROM SWOLLEN SEEDS AND VERY SLIGHT GERMINATION IN 0.56 OZ/A PLOTS TO PLANTS 0.25 TO 0.5 INCHES TALL AND LESS DENSE THAN NONTREATED PLOTS IN 0.3 OZ/A PLOTS

(2 DBO) LOLPE SEEDS WERE SWOLLEN WITH SLIGHT GERMINATION IN TRANXIT GTA TREATED PLOTS
LOLPE SEEDS WERE SWOLLEN WITH EXTREMELY SLIGHT GERMINATION IN MONUMENT 75WG TREATED PLOTS

(0 DBO) LOLPE NOT GERMINATED IN ANY OF THE TREATED PLOTS

11-04-03: LOLPE IN 1 TO 2 LEAF STAGE AND 1 TO 1.5 INCHES TALL IN NONTREATED AND NONAFFECTED PLOTS

11-11-03: LOLPE IN 2 LEAF STAGE AND 1.5 INCHES TALL IN NONTREATED AND NONAFFECTED PLOTS