



# North Carolina State University

## SULFONYLUREA HERBICIDES FOR SPRING TRANSITION FROM PERENNIAL RYEGRASS TO BERMUDAGRASS

Trial ID: 04-D12

Study Director: TRAVIS GANNON

Location: NCSU TURF FIELD LAB

Investigator: Fred Yelverton

### Application Description

A	
Application Date:	4-27-04
Time of Day:	5-7 PM
Application Method:	SPRAY
Application Timing:	APRIL 27
Application Placement:	FOLIAR
Applied By:	T GANNON
Air Temperature, Unit:	62.9 F
% Relative Humidity:	64
Wind Velocity, Unit:	1.8 MPH
Dew Presence (Y/N):	N
Soil Temperature, Unit:	61 F
Soil Moisture:	GOOD
% Cloud Cover:	20

### Crop Stage At Each Application

A	
Crop 1 Code, BBCH Scale:	CYNDA BGRM
Stage Scale Used:	80%GREEN
Stage Majority, Percent:	80%GREEN 80
Stage Minimum, Percent:	70%GREEN 10
Stage Maximum, Percent:	90%GREEN 10
Height, Unit:	0.5 IN
Height Minimum, Maximum:	0.5 0.5

### Pest Stage At Each Application

A	
Pest 1 Code, Disc., Scale:	LOLPE W
Height, Unit:	0.5 IN
Height Minimum, Maximum:	0.5 0.5
Coverage, Unit:	80 %

### Application Equipment

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

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Pest Code					LOLPE	LOLPE	LOLPE	LOLPE	LOLPE
Crop Code					5-5-04	5-11-04	5-19-04	5-24-04	6-2-04
Rating Date					CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Data Type					%	%	%	%	%
Rating Unit					8	14	22	27	36
Days After Last Applic.					8 DA-A	14 DA-A	22 DA-A	27 DA-A	36 DA-A
Trt-Eval Interval									
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Other Rate	Other Rate	Growth Unit	Stage	Appl Code
1	DPX-F5384 X-77	60 DF	L	1.67 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A	0.0 e
2	DPX-F6025 X-77	25 WDG	L	1 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A	0.0 e
3	DPX-W4189 X-77	75 DF	L	5 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A	3.8 bc
4	DPX-T6376 X-77	60 DF	L	0.5 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A	5.0 b
5	DPX-V9360 X-77	75 WDG	L	1.33 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A	5.0 b
6	DPX-E9636 X-77	25 DF	L	1 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A	3.8 bc
7	DPX-T5648 X-77	75 WDG	L	1 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A	5.0 b
8	DPX-M6316 X-77	75 DF	L	0.75 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A	5.0 b
9	DPX-66037 X-77	50 DF	L	1 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A	2.5 cd
10	DPX-747 DPX-M6316 X-77	75 DF	L	0.75 oz/a 0.375 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A	5.0 b
11	DPX-747 X-77	75 DF	L	0.75 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A	5.0 b
12	DPX-KU253 X-77	42 DG	L	0.5 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A	5.0 b
13	DPX-T6376 DPX-F6025 X-77	60 DF	L	0.104 oz/a 0.64 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A	5.0 b
14	DPX-F5384 DPX-T6376 X-77	60 DF	L	1.33 oz/a 0.104 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A	3.8 bc
15	DPX-G8311 X-77	75 WDG	L	0.5 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A	5.0 b
16	DPX-KV141 X-77	75 WDG	L	1 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A	5.0 b
17	DPX-R9674 X-77	75 WDG	L	0.75 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A	2.5 cd
18	DPX-T6376 DPX-M6316 DPX-L5300 X-77	60 DF	L	0.125 oz/a 0.25 oz/a 0.125 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A	5.0 b
19	MONUMENT X-77	75 WG	L	0.33 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A	5.0 b
20	MONUMENT X-77	75 WG	L	0.44 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A	5.0 b
21	FLAZASULFURON X-77	25 DG	L	1.5 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A	7.5 a
22	KERB	50 WP		1 lb ai/a			APRIL 27 A		1.3 de
23	REVOLVER	0.19 SC		0.4 oz/1000 ft2			APRIL 27 A		5.0 b
24	NONTREATED								0.0 e
LSD (P=.05)					2.07	13.04	22.36	14.34	8.57
Standard Deviation					1.46	9.22	15.81	10.14	6.06
CV					36.99	62.55	27.15	23.32	19.05
Grand Mean					3.96	14.74	58.23	43.49	31.82
Bartlett's X2					0.208	14.788	32.192	19.59	21.4
P(Bartlett's X2)					1.00	0.736	0.041*	0.547	0.029*
Friedman's X2					36.655	40.268	48.358	78.985	78.063
P(Friedman's X2)					0.035	0.014	0.002	0.001	0.001

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**SULFONYLUREA HERBICIDES FOR SPRING TRANSITION FROM PERENNIAL RYEGRASS TO  
BERMUDAGRASS**

Trial ID: 04-D12  
Location: NCSU TURF FIELD LAB

Study Director: TRAVIS GANNON  
Investigator: Fred Yelverton

	LOLPE	LOLPE	LOLPE	LOLPE	LOLPE
Pest Code					
Crop Code					
Rating Date	5-5-04	5-11-04	5-19-04	5-24-04	6-2-04
Rating Data Type	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit	%	%	%	%	%
Days After Last Applic.	8	14	22	27	36
Trt-Eval Interval	8 DA-A	14 DA-A	22 DA-A	27 DA-A	36 DA-A
Replicate F	0.324	3.883	2.082	1.002	0.763
Replicate Prob(F)	0.8080	0.0126	0.1106	0.3974	0.5185
Treatment F	7.014	3.024	6.884	20.247	152.374
Treatment Prob(F)	0.0001	0.0002	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-D12

Study Director: TRAVIS GANNON

Location: NCSU TURF FIELD LAB

Investigator: Fred Yelverton

Pest Code				LOLPE	LOLPE	TURF	TURF	TURF	TURF	
Crop Code				6-9-04	6-16-04	5-5-04	5-11-04	5-19-04	5-24-04	
Rating Date				CONTROL	CONTROL	QUALITY	QUALITY	QUALITY	QUALITY	
Rating Data Type				%	%	1-9	1-9	1-9	1-9	
Rating Unit				43	50	8	14	22	27	
Days After Last Applic.				43 DA-A	50 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	Other Rate	Growth Unit	Stage	Appl Code	
1	DPX-F5384 X-77	60 DF	L	1.67 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A		
2	DPX-F6025 X-77	25 WDG	L	1 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A		
3	DPX-W4189 X-77	75 DF	L	5 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A		
4	DPX-T6376 X-77	60 DF	L	0.5 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A		
5	DPX-V9360 X-77	75 WDG	L	1.33 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A		
6	DPX-E9636 X-77	25 DF	L	1 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A		
7	DPX-T5648 X-77	75 WDG	L	1 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A		
8	DPX-M6316 X-77	75 DF	L	0.75 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A		
9	DPX-66037 X-77	50 DF	L	1 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A		
10	DPX-747 DPX-M6316 X-77	75 DF	L	0.75 oz/a 0.375 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A		
11	DPX-747 X-77	75 DF	L	0.75 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A		
12	DPX-KU253 X-77	42 DG	L	0.5 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A		
13	DPX-T6376 DPX-F6025 X-77	60 DF	L	0.104 oz/a 0.64 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A		
14	DPX-F5384 DPX-T6376 X-77	60 DF	L	1.33 oz/a 0.104 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A		
15	DPX-G8311 X-77	75 WDG	L	0.5 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A		
16	DPX-KV141 X-77	75 WDG	L	1 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A		
17	DPX-R9674 X-77	75 WDG	L	0.75 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A		
18	DPX-T6376 DPX-M6316 DPX-L5300 X-77	60 DF	L	0.125 oz/a 0.25 oz/a 0.125 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A		
19	MONUMENT X-77	75 WG	L	0.33 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A		
20	MONUMENT X-77	75 WG	L	0.44 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A		
21	FLAZASULFURON X-77	25 DG	L	1.5 oz/a 0.25 % v/v			APRIL 27 A	APRIL 27 A		
22	KERB	50 WP		1 lb ai/a			APRIL 27 A			
23	REVOLVER	0.19 SC		0.4 oz/1000 ft2			APRIL 27 A			
24	NONTREATED									
	LSD (P=.05)				12.23	13.80	0.00	0.00	0.25	0.24
	Standard Deviation				8.65	9.76	0.00	0.00	0.18	0.17
	CV				25.38	25.81	0.0	0.0	2.72	2.65
	Grand Mean				34.06	37.81	7.0	7.0	6.57	6.41
	Bartlett's X2				32.842	28.321	0.0	0.0	12.41	14.772
	P(Bartlett's X2)				0.008*	0.029*	.	.	0.825	0.789
	Friedman's X2				81.065	78.643	0.0	0.0	22.228	19.188
	P(Friedman's X2)				0.001	0.001	1.00	1.00	0.507	0.69

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	LOLPE	LOLPE	TURF	TURF	TURF	TURF
	6-9-04	6-16-04	5-5-04	5-11-04	5-19-04	5-24-04
	CONTROL	CONTROL	QUALITY	QUALITY	QUALITY	QUALITY
	%	%	1-9	1-9	1-9	1-9
	43	50	8	14	22	27
	43 DA-A	50 DA-A	8 DA-A	14 DA-A	22 DA-A	27 DA-A
Replicate F	0.804	4.000	0.000	0.000	0.163	4.025
Replicate Prob(F)	0.4961	0.0110	1.0000	1.0000	0.9208	0.0107
Treatment F	70.315	61.887	0.000	0.000	1.901	1.240
Treatment Prob(F)	0.0001	0.0001	1.0000	1.0000	0.0216	0.2432

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

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Study Director: TRAVIS GANNON

Location: NCSU TURF FIELD LAB

Investigator: Fred Yelverton

Pest Code					TURF	TURF	TURF	
Crop Code					6-2-04	6-9-04	6-16-04	
Rating Date					QUALITY	QUALITY	QUALITY	
Rating Data Type					1-9	1-9	1-9	
Rating Unit					36	43	50	
Days After Last Applic.					36 DA-A	43 DA-A	50 DA-A	
Trt-Eval Interval								
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Other Rate	Other Rate	Growth Unit Stage	Appl Code
1	DPX-F5384 X-77	60	DF	1.67 oz/a 0.25 % v/v			APRIL 27 A APRIL 27 A	
2	DPX-F6025 X-77	25	WDG	1 oz/a 0.25 % v/v			APRIL 27 A APRIL 27 A	
3	DPX-W4189 X-77	75	DF	5 oz/a 0.25 % v/v			APRIL 27 A APRIL 27 A	
4	DPX-T6376 X-77	60	DF	0.5 oz/a 0.25 % v/v			APRIL 27 A APRIL 27 A	
5	DPX-V9360 X-77	75	WDG	1.33 oz/a 0.25 % v/v			APRIL 27 A APRIL 27 A	
6	DPX-E9636 X-77	25	DF	1 oz/a 0.25 % v/v			APRIL 27 A APRIL 27 A	
7	DPX-T5648 X-77	75	WDG	1 oz/a 0.25 % v/v			APRIL 27 A APRIL 27 A	
8	DPX-M6316 X-77	75	DF	0.75 oz/a 0.25 % v/v			APRIL 27 A APRIL 27 A	
9	DPX-66037 X-77	50	DF	1 oz/a 0.25 % v/v			APRIL 27 A APRIL 27 A	
10	DPX-747 DPX-M6316 X-77	75	DF	0.75 oz/a	75	DF	0.375 oz/a 0.25 % v/v	
11	DPX-747 X-77	75	DF	0.75 oz/a 0.25 % v/v			APRIL 27 A APRIL 27 A	
12	DPX-KU253 X-77	42	DG	0.5 oz/a 0.25 % v/v			APRIL 27 A APRIL 27 A	
13	DPX-T6376 DPX-F6025 X-77	60	DF	0.104 oz/a	25	WDG	0.64 oz/a 0.25 % v/v	
14	DPX-F5384 DPX-T6376 X-77	60	DF	1.33 oz/a 0.104 oz/a 0.25 % v/v			APRIL 27 A APRIL 27 A APRIL 27 A	
15	DPX-G8311 X-77	75	WDG	0.5 oz/a 0.25 % v/v			APRIL 27 A APRIL 27 A	
16	DPX-KV141 X-77	75	WDG	1 oz/a 0.25 % v/v			APRIL 27 A APRIL 27 A	
17	DPX-R9674 X-77	75	WDG	0.75 oz/a 0.25 % v/v			APRIL 27 A APRIL 27 A	
18	DPX-T6376 DPX-M6316 DPX-L5300 X-77	60	DF	0.125 oz/a	75	DF	0.25 oz/a	
19	MONUMENT X-77	75	WG	0.33 oz/a 0.25 % v/v			APRIL 27 A APRIL 27 A	
20	MONUMENT X-77	75	WG	0.44 oz/a 0.25 % v/v			APRIL 27 A APRIL 27 A	
21	FLAZASULFURON X-77	25	DG	1.5 oz/a 0.25 % v/v			APRIL 27 A APRIL 27 A	
22	KERB	50	WP	1 lb ai/a			APRIL 27 A	
23	REVOLVER	0.19	SC	0.4 oz/1000 ft2			APRIL 27 A	
24	NONTREATED							
LSD (P=.05)					0.62	0.16	0.17	
Standard Deviation					0.44	0.12	0.12	
CV					6.47	1.7	1.81	
Grand Mean					6.75	6.84	6.85	
Bartlett's X2					82.49	2.9	9.767	
P(Bartlett's X2)					0.001*	1.00	0.713	
Friedman's X2					50.143	52.155	52.183	
P(Friedman's X2)					0.001	0.001	0.001	

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Pest Code			
Crop Code			
Rating Date	TURF 6-2-04	TURF 6-9-04	TURF 6-16-04
Rating Data Type	QUALITY	QUALITY	QUALITY
Rating Unit	1-9	1-9	1-9
Days After Last Applic.	36	43	50
Trt-Eval Interval	36 DA-A	43 DA-A	50 DA-A
Replicate F	3.388	1.336	5.945
Replicate Prob(F)	0.0228	0.2698	0.0011
Treatment F	1.147	6.430	7.016
Treatment Prob(F)	0.3221	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.

Trial Comments

4-27-04 - Trial was initiated on Quick Trans perennial ryegrass which was overseeded the previous fall (12 lb per 1000ft<sup>2</sup>).