

Ohio State University Horticulture and Crop Science

Which rate of pyroxasulfone is required to provide 2-3 weeks residual control of small seeded broadleaves, efficacy of Sonic pre followed by Durango DMA

Title No. 2:
Trial ID: 11PREPOS1 Protocol ID: 11PREPOS1
Location: Western Branch F-7 Study Director: Bryan Reeb
Project ID: 11PREPOS1 Investigator: Dr. Mark M. Loux
Sponsor Contact: Eric Ott, Valent; Marvin Shultz, Dow

General Trial Information

Study Director: Bryan Reeb **Title:** Research Technician
Investigator: Dr. Mark M. Loux **Title:** Professor

Trial Location

City: South Charleston **Latitude of LL Corner °:** 39.86015 N USA 49.376656 - 24.53833
State/Prov.: Ohio **Longitude of LL Corner °:** -83.67038 W -124.715843 - -66.968887
Postal Code: 45368
Country: USA

Crop Description

Crop 1: GLXMA Glycine max Soybean
Variety: Asgrow AG 3631 **Description:** Round Up Ready
BBCH Scale: BSOY **Planting Date:** 6/6/11
Planting Method: SEEDED seeded **Rate, Unit:** 197000 S/A
Depth, Unit: 1 IN
Row Spacing, Unit: 15 IN
Seed Bed: MEDIUM medium **Soil Temperature, Unit:** 76 F
Soil Moisture: NORMAL normal **Emergence Date:** 6/13/11

Pest Description

- Pest 1 Type:** W **Code:** AMBTR Ambrosia trifida
Common Name: Giant ragweed
- Pest 2 Type:** W **Code:** IPOHE Ipomoea hederacea
Common Name: Ivyleaf morningglory
- Pest 3 Type:** W **Code:** SETFA Setaria faberi
Common Name: Giant foxtail
- Pest 4 Type:** W **Code:** CHEAL Chenopodium album
Common Name: Common lambsquarters
- Pest 5 Type:** W **Code:** ABUTH Abutilon theophrasti
Common Name: Velvetleaf
- Pest 6 Type:** W **Code:** ECHCG Echinochloa crus-galli
Common Name: Common barnyardgrass
- Pest 7 Type:** W **Code:** SIDSP Sida spinosa
Common Name: Prickly sida

Site and Design

Plot Width, Unit: 6.67 FT **Site Type:** FIELD field
Plot Length, Unit: 30 FT **Experimental Unit:** 1 PLOT plot
Plot Area, Unit: 200.1 FT2 **Tillage Type:** CONTIL conventional-till
Replications: 3 **Study Design:** RACOB Randomized Complete Block (RCB)
Untreated Arrangement: INCLUDED single control randomized in each block

Soil Description

Description Name: F-7 East
% OM: 1.8 **Texture:** SIL silt loam
pH: 5.7 **Soil Name:** Crosby Silt Loam
CEC: 16.2 **Fert. Level:** G good
Soil Drainage: G good

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Application Description

	A	B	C
Application Date:	6/6/11	6/27/11	7/21/11
Time of Day:	1:45 P.M.	8:45 A.M.	11:00 A.M
Application Method:	SPRAY	SPRAY	SPRAY
Application Placement:	BROFOL	BROFOL	BROFOL
Air Temperature, Unit:	88.6 F	67.5 F	90 F
% Relative Humidity:	37.5	72.5	69
Wind Velocity, Unit:	4.4 MPH	1.9 MPH	6 MPH
Wind Direction:	WSW	SSW	W
Dew Presence (Y/N):	N no	Y yes	N no
Soil Temperature, Unit:	76 F	62 F	79 F
Soil Moisture:	GOOD	GOOD	MOIST
% Cloud Cover:	15	75	15
Next Rain Occurred On:	6/7/11	7/2/11	7/24/11

Crop Stage At Each Application

	A	B	C
Crop 1 Code, BBCH Scale:	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY
Stage Scale Used:		BBCH	BBCH
Stage Majority, Percent:		V3	17 100
Height, Unit:		3 IN	20 IN
Height Minimum, Maximum:		3 4	20 20

Pest Stage At Each Application

	A	B	C
Pest 1 Code, Type, Scale:	AMBTR W	AMBTR W	AMBTR W
Stage Majority, Percent:		14	18 100
Height, Unit:		2 IN	15 IN
Height Minimum, Maximum:		1 2	15 15
Density, Unit:	34.66 M2	34.66 M2	34.66 M2
Pest 2 Code, Type, Scale:	IPOHE W	IPOHE W	IPOHE W
Stage Majority, Percent:		12	16 100
Height, Unit:		1 IN	4 IN
Height Minimum, Maximum:		1 1	4 4
Density, Unit:	14.66 M2	14.66 M2	14.66 M2
Pest 3 Code, Type, Scale:	SETFA W	SETFA W	SETFA W
Stage Majority, Percent:		13	
Height, Unit:		2 IN	
Height Minimum, Maximum:		2 3	
Density, Unit:	220 M2	220 M2	220 M2
Pest 4 Code, Type, Scale:	CHEAL W	CHEAL W	CHEAL W
Stage Majority, Percent:		14	
Height, Unit:		1 IN	
Height Minimum, Maximum:		1 1	
Density, Unit:	6.66 M2	6.66 M2	6.66 M2
Pest 5 Code, Type, Scale:	ABUTH W	ABUTH W	ABUTH W
Stage Majority, Percent:		13	
Height, Unit:		2 IN	
Height Minimum, Maximum:		2 2	
Pest 6 Code, Type, Scale:	ECHCG W	ECHCG W	ECHCG W
Stage Majority, Percent:			13 100
Height, Unit:			4 IN
Height Minimum, Maximum:			4 4
Pest 7 Code, Type, Scale:	SIDSP W	SIDSP W	SIDSP W
Stage Minimum, Percent:			14
Stage Maximum, Percent:			15
Height, Unit:			3 IN
Height Minimum, Maximum:			2 3
Density, Unit:	4 M2	4 M2	4 M2

Application Equipment

	A	B	C
Appl. Equipment:	Backpack		
Equipment Type:	SPRBAC		
Operating Pressure, Unit:	46 PSI		
Nozzle Type:	DG		
Nozzle Size:	8015		
Nozzle Spacing, Unit:	18 IN		
Boom Length, Unit:	6.67 FT		
Boom Height, Unit:	18 IN		
Ground Speed, Unit:	3 MPH		
Carrier:	WATER		
Spray Volume, Unit:	15 gal/ac		
Mix Size, Unit:	0.33 gallons		
Propellant:	COMCO2		

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Pest Type	W Weed	W Weed	W Weed			
Pest Code	SETFA	AMBTR	IPHOE			
Pest Scientific Name	Setaria faberi Ambrosia trifi> Ipomoea hederat>					
Pest Name	Giant foxtail Giant ragweed Ivyleaf mornin>					
Crop Code	GLXMA				GLXMA	GLXMA
BBCH Scale	BSOY				BSOY	BSOY
Crop Scientific Name	Glycine max				Glycine max	Glycine max
Crop Name	Soybean				Soybean	Soybean
Rating Date	6/23/11	6/23/11	6/23/11	6/23/11	7/5/11	7/11/11
Rating Type	PHYGEN	CONTRO	CONTRO	CONTRO	PHYGEN	PHYGEN
Rating Unit	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1
Rating Timing	AT POST	AT POST	AT POST	AT POST		
Days After First/Last Applic.	17 17	17 17	17 17	17 17	29 8	35 14
Trt-Eval Interval	17 DA-A	17 DA-A	17 DA-A	17 DA-A	8 DA-B	14 DA-B
Plant-Eval Interval	17 DP-1	17 DP-1	17 DP-1	17 DP-1	29 DP-1	35 DP-1
Days After Emergence	10 DE-1	10 DE-1	10 DE-1	10 DE-1	22 DE-1	28 DE-1
Number of Decimals	0	0	0	0	0	0

Trt No.	Treatment Name	Form Conc	Other Rate	Other Rate	Appl Unit	Code	1	2	3	4	5	6
1	UTC						0	0	0	0	0	0
2	Fierce	76	3 oz/a		A		3	92	47	83	1	1
3	Fierce	76	3 oz/a		A		4	87	57	82	4	2
	3 Roundup Power Max	4.5	22 oz/a		B							
	3 N-pak ams	100	2.25 qt/a		B							
4	Fierce	76	3 oz/a		A		3	88	50	85	7	2
	4 Roundup Power Max	4.5	22 oz/a		B							
	4 V-10206	85	1 oz/a		B							
	4 N-pak ams	100	2.25 qt/a		B							
5	Fierce	76	3 oz/a		A		3	78	37	80	5	3
	5 Roundup Power Max	4.5	22 oz/a		B							
	5 V-10206	85	1.5 oz/a		B							
	5 N-pak ams	100	2.25 qt/a		B							
6	Fierce	76	3 oz/a		A		3	92	47	72	7	3
	6 Roundup Power Max	4.5	22 oz/a		B							
	6 V-10206	85	2 oz/a		B							
	6 N-pak ams	100	2.25 qt/a		B							
7	Valor XLT @ 3.0 oz						2	77	63	85	0	0
	7 Valor SX	51	1.76 oz/a		A							
	7 Classic	25	1.24 oz/a		A							
	7 Roundup Power Max	4.5	22 oz/a		B							
	7 N-pak ams	100	2.25 qt/a		B							
8	Sonic	70	3 oz/a		A		0	55	40	60	0	0
	8 Durango DMA	4	24 oz/a		B							
	8 N-pak ams	100	1.5 qt/a		B							
9	Sonic	70	4.5 oz/a		A		1	68	57	92	0	0
	9 Durango DMA	4	24 oz/a		B							
	9 N-pak ams	100	1.5 qt/a		B							
10	Durango DMA	4	24 oz/a		B		0	0	0	0	0	0
	10 Firstrate	84	0.3 oz/a		B							
	10 N-pak ams	100	1.5 qt/a		B							
	10 Durango DMA	4	24 oz/a		C							
	10 N-pak ams	100	1.5 qt/a		C							
LSD (P=.05)							2.1	16.6	15.5	16.8	2.3	1.1

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Pest Type		W Weed	W Weed	W Weed		
Pest Code		SETFA	AMBTR	IPOHE		
Pest Scientific Name		Setaria faberi	Ambrosia trifi>	Ipomoea heder>		
Pest Name		Giant foxtail	Giant ragweed	Ivyleaf mornin>		
Crop Code	GLXMA				GLXMA	GLXMA
BCH Scale	BSOY				BSOY	BSOY
Crop Scientific Name	Glycine max				Glycine max	Glycine max
Crop Name	Soybean				Soybean	Soybean
Rating Date	6/23/11	6/23/11	6/23/11	6/23/11	7/5/11	7/11/11
Rating Type	PHYGEN	CONTRO	CONTRO	CONTRO	PHYGEN	PHYGEN
Rating Unit	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1
Rating Timing	AT POST	AT POST	AT POST	AT POST		
Days After First/Last Applic.	17 17	17 17	17 17	17 17	29 8	35 14
Trt-Eval Interval	17 DA-A	17 DA-A	17 DA-A	17 DA-A	8 DA-B	14 DA-B
Plant-Eval Interval	17 DP-1	17 DP-1	17 DP-1	17 DP-1	29 DP-1	35 DP-1
Days After Emergence	10 DE-1	10 DE-1	10 DE-1	10 DE-1	22 DE-1	28 DE-1
Number of Decimals	0	0	0	0	0	0

Trt Treatment No. Name	Form Conc	Other Rate	Other Rate	Appl Unit Code	1	2	3	4	5	6
Standard Deviation					1.2	9.7	9.0	9.8	1.4	0.6
CV					64.14	15.2	22.81	15.38	58.55	59.48
Bartlett's X2					0.415	9.378	4.035	16.068	3.993	2.602
P(Bartlett's X2)					0.995	0.227	0.672	0.025*	0.262	0.457
Replicate F					2.395	2.306	0.774	4.055	4.571	2.471
Replicate Prob(F)					0.1196	0.1284	0.4760	0.0352	0.0248	0.1127
Treatment F					5.023	40.214	18.321	37.542	13.333	12.441
Treatment Prob(F)					0.0018	0.0001	0.0001	0.0001	0.0001	0.0001

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	SETFA	AMBTR	CHEAL	IPOHE	SETFA
Pest Scientific Name	Setaria faberi	Ambrosia trifida	Chenopodium album	Ipomoea hederacea	Setaria faberi
Pest Name	Giant foxtail	Giant ragweed	Common lambsquarters	Ivyleaf morningglory	Giant foxtail
Crop Code					GLXMA
BBCH Scale					BSOY
Crop Scientific Name					Glycine max
Crop Name					Soybean
Rating Date	7/11/11	7/11/11	7/11/11	7/11/11	7/18/11
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	PHYGEN
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Rating Timing					
Days After First/Last Applic.	35 14	35 14	35 14	35 14	42 21
Trt-Eval Interval	14 DA-B	14 DA-B	14 DA-B	14 DA-B	21 DA-B
Plant-Eval Interval	35 DP-1	35 DP-1	35 DP-1	35 DP-1	42 DP-1
Days After Emergence	28 DE-1	28 DE-1	28 DE-1	28 DE-1	35 DE-1
Number of Decimals	0	0	0	0	0

Trt No.	Treatment Name	Form Conc	Other Rate	Other Rate	Appl Unit	Code	7	8	9	10	11	12
1	UTC						0	0	0	0	0	0
2	Fierce	76	3 oz/a		A		85	40	100	88	0	87
3	Fierce	76	3 oz/a		A		99	98	100	96	1	95
3	Roundup Power Max	4.5	22 oz/a		B							
3	N-pak ams	100	2.25 qt/a		B							
4	Fierce	76	3 oz/a		A		99	94	100	95	1	99
4	Roundup Power Max	4.5	22 oz/a		B							
4	V-10206	85	1 oz/a		B							
4	N-pak ams	100	2.25 qt/a		B							
5	Fierce	76	3 oz/a		A		98	95	100	94	0	100
5	Roundup Power Max	4.5	22 oz/a		B							
5	V-10206	85	1.5 oz/a		B							
5	N-pak ams	100	2.25 qt/a		B							
6	Fierce	76	3 oz/a		A		98	97	100	96	1	99
6	Roundup Power Max	4.5	22 oz/a		B							
6	V-10206	85	2 oz/a		B							
6	N-pak ams	100	2.25 qt/a		B							
7	Valor XLT @ 3.0 oz						99	98	100	95	0	96
7	Valor SX	51	1.76 oz/a		A							
7	Classic	25	1.24 oz/a		A							
7	Roundup Power Max	4.5	22 oz/a		B							
7	N-pak ams	100	2.25 qt/a		B							
8	Sonic	70	3 oz/a		A		98	98	100	95	0	99
8	Durango DMA	4	24 oz/a		B							
8	N-pak ams	100	1.5 qt/a		B							
9	Sonic	70	4.5 oz/a		A		97	97	100	93	0	98
9	Durango DMA	4	24 oz/a		B							
9	N-pak ams	100	1.5 qt/a		B							
10	Durango DMA	4	24 oz/a		B		97	96	100	87	0	95
10	Firstrate	84	0.3 oz/a		B							
10	N-pak ams	100	1.5 qt/a		B							
10	Durango DMA	4	24 oz/a		C							
10	N-pak ams	100	1.5 qt/a		C							
LSD (P=.05)							8.5	8.1	0.0	5.8	1.1	6.7

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed				
Pest Code	SETFA	AMBTR	CHEAL	IPOHE	GLXMA	SETFA				
Pest Scientific Name	Setaria faberi	Ambrosia trif>	Chenopodium al>	Ipomoea heder>	Glycine max	Setaria faberi				
Pest Name	Giant foxtail	Giant ragweed	Common lambsqu>	Ivyleaf mornin>	Soybean	Giant foxtail				
Crop Code					BSOY					
BBCH Scale					PHYGEN					
Crop Scientific Name										
Crop Name										
Rating Date	7/11/11	7/11/11	7/11/11	7/11/11	7/18/11	7/18/11				
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO				
Rating Unit	%	%	%	%	%	%				
Number of Subsamples	1	1	1	1	1	1				
Rating Timing										
Days After First/Last Applic.	35 14	35 14	35 14	35 14	42 21	42 21				
Trt-Eval Interval	14 DA-B	14 DA-B	14 DA-B	14 DA-B	21 DA-B	21 DA-B				
Plant-Eval Interval	35 DP-1	35 DP-1	35 DP-1	35 DP-1	42 DP-1	42 DP-1				
Days After Emergence	28 DE-1	28 DE-1	28 DE-1	28 DE-1	35 DE-1	35 DE-1				
Number of Decimals	0	0	0	0	0	0				
Trt Treatment No. Name	Form Conc	Other Rate	Other Rate	Appl Unit Code	7	8	9	10	11	12
Standard Deviation					5.0	4.7	0.0	3.4	0.6	3.9
CV					5.73	5.84	0.0	4.02	232.74	4.5
Bartlett's X2					22.588	8.823	0.0	4.627	0.0	13.093
P(Bartlett's X2)					0.004*	0.357	.	0.592	.	0.07
Replicate F					0.537	0.197	0.000	5.291	1.385	0.750
Replicate Prob(F)					0.5937	0.8230	1.0000	0.0156	0.2758	0.4866
Treatment F					114.961	150.871	0.000	232.214	1.692	186.156
Treatment Prob(F)					0.0001	0.0001	1.0000	0.0001	0.1635	0.0001

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Trt No.	Treatment Name	Form Conc	Other Rate	Other Rate	Appl Unit	Code	13	14	15	16
	Pest Type									
	Pest Code									
	Pest Scientific Name									
	Pest Name									
	Crop Code									
	BBCH Scale									
	Crop Scientific Name									
	Crop Name									
	Rating Date						7/18/11	7/18/11	7/18/11	
	Rating Type						CONTRO	CONTRO	CONTRO	
	Rating Unit						%	%	%	
	Number of Subsamples						1	1	1	
	Rating Timing									
	Days After First/Last Applic.						42 21	42 21	42 21	
	Trt-Eval Interval						21 DA-B	21 DA-B	21 DA-B	
	Plant-Eval Interval						42 DP-1	42 DP-1	42 DP-1	
	Days After Emergence						35 DE-1	35 DE-1	35 DE-1	
	Number of Decimals						0	0	0	
	W Weed						AMBTR	IPOHE	CHEAL	
	W Weed						Ipomoea hederata>	Ivyleaf mornin>	Chenopodium al>	
	W Weed						Giant ragweed	Common lambsqu>		
1	UTC						0	0	0	
2	Fierce	76	3 oz/a		A		33	93	97	
3	Fierce	76	3 oz/a		A		93	100	100	
3	Roundup Power Max	4.5	22 oz/a		B					
3	N-pak ams	100	2.25 qt/a		B					
4	Fierce	76	3 oz/a		A		94	100	100	
4	Roundup Power Max	4.5	22 oz/a		B					
4	V-10206	85	1 oz/a		B					
4	N-pak ams	100	2.25 qt/a		B					
5	Fierce	76	3 oz/a		A		90	97	100	
5	Roundup Power Max	4.5	22 oz/a		B					
5	V-10206	85	1.5 oz/a		B					
5	N-pak ams	100	2.25 qt/a		B					
6	Fierce	76	3 oz/a		A		100	100	100	
6	Roundup Power Max	4.5	22 oz/a		B					
6	V-10206	85	2 oz/a		B					
6	N-pak ams	100	2.25 qt/a		B					
7	Valor XLT @ 3.0 oz						100	100	100	
7	Valor SX	51	1.76 oz/a		A					
7	Classic	25	1.24 oz/a		A					
7	Roundup Power Max	4.5	22 oz/a		B					
7	N-pak ams	100	2.25 qt/a		B					
8	Sonic	70	3 oz/a		A		97	100	100	
8	Durango DMA	4	24 oz/a		B					
8	N-pak ams	100	1.5 qt/a		B					
9	Sonic	70	4.5 oz/a		A		100	100	100	
9	Durango DMA	4	24 oz/a		B					
9	N-pak ams	100	1.5 qt/a		B					
10	Durango DMA	4	24 oz/a		B		97	92	100	
10	Firstrate	84	0.3 oz/a		B					
10	N-pak ams	100	1.5 qt/a		B					
10	Durango DMA	4	24 oz/a		C					
10	N-pak ams	100	1.5 qt/a		C					
	LSD (P=.05)						8.0	7.8	3.1	

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Pest Type	W Weed	W Weed	W Weed
Pest Code	AMBTR	IPOHE	CHEAL
Pest Scientific Name	Ambrosia trifida	Ipomoea hederacea	Chenopodium album
Pest Name	Giant ragweed	Ivyleaf mornin	Common lambsqu
Crop Code			
BBCH Scale			
Crop Scientific Name			
Crop Name			
Rating Date	7/18/11	7/18/11	7/18/11
Rating Type	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%
Number of Subsamples	1	1	1
Rating Timing			
Days After First/Last Applic.	42 21	42 21	42 21
Trt-Eval Interval	21 DA-B	21 DA-B	21 DA-B
Plant-Eval Interval	42 DP-1	42 DP-1	42 DP-1
Days After Emergence	35 DE-1	35 DE-1	35 DE-1
Number of Decimals	0	0	0
Trt No.	13	14	15
Treatment Name			16
Form Conc			
Other Rate			
Other Rate			
Appl Unit Code			
Standard Deviation	4.6	4.5	1.8
CV	5.77	5.13	2.04
Bartlett's X2	2.331	0.932	0.0
P(Bartlett's X2)	0.802	0.627	.
Replicate F	0.261	1.995	1.000
Replicate Prob(F)	0.7729	0.1649	0.3874
Treatment F	167.209	142.122	894.333
Treatment Prob(F)	0.0001	0.0001	0.0001

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Sponsor Contact: Eric Ott, Valent; Marvin Shultz, Dow

Pest Type

W, Weed, G-BYRW7, G-WedStg = Weed or volunteer crop

Pest Code

SETFA, Setaria faberi, = US
AMBTR, Ambrosia trifida, = US
IPOHE, Ipomoea hederacea, = US
CHEAL, Chenopodium album, = US

Crop Code

GLXMA, BSOY, Glycine max, = US

Rating Type

PHYGEN = phytotoxicity - general / injury
CONTRO = control / burndown or knockdown

Rating Unit

% = percent

Plant-Eval Interval

17 DP-1 = 1 6/6/11
29 DP-1 = 1 6/6/11
35 DP-1 = 1 6/6/11
42 DP-1 = 1 6/6/11