

The Ohio State University

Evaluation of pre and post soybean products

Trial ID: 13 PREPOS2
Protocol ID: 13 PREPOS2
Project ID: USHES0Y004, DAS showcase

Location: Western Branch
Investigator: Dr. Mark M. Loux
Study Director: Bryan Reeb
Sponsor Contact: Dain Bruns, Syngenta; Brad Hopkins, Dow

Trial Year: 2013

Crop Description

Crop 1: GLXMA Glycine max
Variety: Seed Consultants 9362
Description: Roundup Ready
Planting Rate, Unit: 140000 S/A
Depth, Unit: 0.75 IN
Row Spacing, Unit: 15 IN
Soil Moisture: GOOD good
Seed Bed: FINE fine

Soybean
BBCH Scale: BSOY
Planting Date: May-15-2013
Planting Method: PLANTD planted
Planting Equipment: PP Plot Planter
Emergence Date: May-23-2013

Pest Description

- Pest 1 Type:** W **Code:** AMBTR Ambrosia trifida
Common Name: Giant ragweed
- Pest 2 Type:** W **Code:** SETFA Setaria faberi
Common Name: Giant foxtail
- Pest 3 Type:** W **Code:** CHEAL Chenopodium album
Common Name: Common lambsquarters
- Pest 4 Type:** W **Code:** AMARE Amaranthus retroflexus
Common Name: Redroot pigweed

Site and Design

Treated Plot Width: 6.67 FT
Treated Plot Length: 40 FT
Treated Plot Area: 266.8 FT2
Replications: 4
Site Type: FIELD field
Experimental Unit: 1 PLOT plot
Tillage Type: CONTIL conventional-till
Study Design: RACOBL Randomized Complete Block (RCB)

Soil Description

Description Name: F-7 West
% OM: 3.1
pH: 7.1
CEC: 22.2
Texture: SICL silty clay loam
Soil Name: Kokomo Silty Clay Loam
Fert. Level: G good
Soil Drainage: G good

Application Description

	A	B
Application Date:	May-16-2013	Jun-12-2013
Appl. Start Time:	8:30	8:30 AM
Appl. Stop Time:	8:45 AM	
Application Method:	SPRAY	SPRAY
Application Timing:	PRE	POST
Application Placement:	BROS0I	BROFOL
Air Temperature, Unit:	67.8 F	75.1 F
% Relative Humidity:	78.4	82.2
Wind Velocity, Unit:	1.9 MPH	2.3 MPH
Wind Direction:	NNW	SSW
Dew Presence (Y/N):		N no
Soil Temperature, Unit:	62 F	68 F
Soil Moisture:	NORMAL	MOIST
% Cloud Cover:	100	
Next Moisture Occurred On:	May-17-2013	Jun-13-2013

Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale:	GLXMA BSOY	GLXMA BSOY
Stage Scale Used:		BBCH
Stage Majority, Percent:		13
Height, Unit:		8 IN
Height Minimum, Maximum:		7 9

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Pest Stage At Each Application

	A		B	
Pest 1 Code, Type, Scale:	AMBTR	W	AMBTR	W
Stage Majority, Percent:			19	100
Stage Minimum, Percent:			19	100
Stage Maximum, Percent:			19	100
Height, Unit:			8	IN
Height Minimum, Maximum:			8	12
Density, Unit:			28	M2
Pest 2 Code, Type, Scale:	SETFA	W	SETFA	W
Height, Unit:			3	IN
Height Minimum, Maximum:			3	11
Density, Unit:			252	M2
Pest 3 Code, Type, Scale:	CHEAL	W	CHEAL	W
Stage Majority, Percent:			19	100
Stage Minimum, Percent:			19	100
Stage Maximum, Percent:			19	100
Height, Unit:			3	IN
Height Minimum, Maximum:			3	6
Density, Unit:			28	M2
Pest 4 Code, Type, Scale:	AMARE	W	AMARE	W
Stage Majority, Percent:			19	100
Stage Minimum, Percent:			19	100
Stage Maximum, Percent:			19	100
Height, Unit:			3	IN
Height Minimum, Maximum:			3	8
Density, Unit:			16	M2

Application Equipment

	A		B	
Appl. Equipment:	Backpack		Backpack	
Equipment Type:	SPRBAC		SPRBAC	
Operation Pressure, Unit:	48	PSI	48	PSI
Nozzle Type:	AIXR		AIXR	
Nozzle Size:	110015		110015	
Nozzle Spacing, Unit:	18	IN	18	IN
Boom Length, Unit:	6	FT	6	FT
Boom Height, Unit:	18	IN	18	IN
Ground Speed, Unit:	3	MPH	3	MPH
Carrier:	WATER		WATER	
Spray Volume, Unit:	15	gal/ac	15	gal/ac
Mix Size, Unit:	1	Liters	1	Liters
Propellant:	COMCO2		COMCO2	

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Pest Code												
Crop Code												
Rating Date												
Rating Type												
Rating Unit												
Days After First/Last Applic.												
Trt-Eval Interval												
Plant-Eval Interval												
Days After Emergence												
Trt No.	Treatment Name	Other Rate	Other Rate Unit	Growth Stage	Appl Code	1	2	3	4	5	6	7
1	Prefix	2 pt/a		PRE	A	0	55	17	100	63	99	1
	1 Touchdown Total	24 oz/a		POST	B							
	1 N-pak ams	1.5 qt/a		POST	B							
2	Boundary	1.75 pt/a		PRE	A	0	73	15	99	72	99	0
	2 Touchdown Total	24 oz/a		POST	B							
	2 N-pak ams	1.5 qt/a		POST	B							
3	Boundary	1.5 pt/a		PRE	A	1	76	12	100	77	96	10
	3 Flexstar GT 3.5	3.5 pt/a		POST	B							
	3 MSO	0.6 qt/a		POST	B							
	3 N-pak ams	1.5 qt/a		POST	B							
4	Prefix	2 pt/a		PRE	A	0	66	48	98	81	93	0
	4 Sharpen	1 oz/a		PRE	A							
	4 Touchdown Total	24 oz/a		POST	B							
	4 N-pak ams	1.5 qt/a		POST	B							
5	Prefix	2 pt/a		PRE	A	1	76	43	100	74	94	0
	5 Touchdown Total	24 oz/a		POST	B							
	5 Sequence	1 pt/a		POST	B							
	5 N-pak ams	1.5 qt/a		POST	B							
6	Fierce	3 oz/a		PRE	A	6	63	17	100	88	99	10
	6 Touchdown Total	24 oz/a		POST	B							
	6 N-pak ams	1.5 qt/a		POST	B							
7	Anthem	5 oz/a		PRE	A	0	45	12	83	50	95	2
	7 Touchdown Total	24 oz/a		POST	B							
	7 N-pak ams	1.5 qt/a		POST	B							
8	OpTill	2 oz/a		PRE	A	0	75	39	99	93	97	0
	8 Outlook	10 oz/a		PRE	A							
	8 Touchdown Total	24 oz/a		POST	B							
	8 N-pak ams	1.5 qt/a		POST	B							
9	Sonic	3 oz/a		PRE	A	0	59	34	95	98	99	0
	9 Durango DMA	24 oz/a		POST	B							
	9 N-pak ams	1.5 qt/a		POST	B							
10	Sonic	4.5 oz/a		PRE	A	0	64	37	95	94	99	0
	10 Durango DMA	24 oz/a		POST	B							
	10 N-pak ams	1.5 qt/a		POST	B							
11	Sonic	6 oz/a		PRE	A	0	75	34	100	100	100	0
	11 Durango DMA	24 oz/a		POST	B							
	11 N-pak ams	1.5 qt/a		POST	B							

t=Mean descriptions are reported in transformed data units, and are not de-transformed.
 Missing data estimates are included in columns: Yates=6

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Pest Code	GLXMA		SETFA	AMBTR	AMARE	CHEAL	POLPY	GLXMA			
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA			
Rating Date	Jun-12-2013	Jun-12-2013	Jun-12-2013	Jun-12-2013	Jun-12-2013	Jun-12-2013	Jun-12-2013	Jun-26-2013			
Rating Type	PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	PHYGEN			
Rating Unit	%	%	%	%	%	%	%	%			
Days After First/Last Applic.	27 27	27 27	27 27	27 27	27 27	27 27	27 27	41 14			
Trt-Eval Interval	27 DA-A	27 DA-A	27 DA-A	27 DA-A	27 DA-A	27 DA-A	27 DA-A	14 DA-B			
Plant-Eval Interval	28 DP-1	28 DP-1	28 DP-1	28 DP-1	28 DP-1	28 DP-1	28 DP-1	42 DP-1			
Days After Emergence	20 DE-1	20 DE-1	20 DE-1	20 DE-1	20 DE-1	20 DE-1	20 DE-1	34 DE-1			
Trt Treatment No. Name	Other Rate	Other Rate Unit	Growth Stage	Appl Code	1	2	3	4	5	6	7
12 Sonic	4.5 oz/a		PRE	A	0	76	27	100	100	100	0
12 Sencor DF	4 oz/a		PRE	A							
12 Durango DMA	24 oz/a		POST	B							
12 N-pak ams	1.5 qt/a		POST	B							
LSD (P=.05)					3.1	14.1	1.6t	14.0t	16.4t	14.4t	4.8
Standard Deviation					2.2	9.8	1.1t	9.7t	11.4t	10.0t	3.3
CV					313.05	14.59	21.56	11.6	16.71	12.11	169.8
Bartlett's X2					31.311	4.071	8.019	8.734	6.399	5.032	43.118
P(Bartlett's X2)					0.001*	0.968	0.712	0.272	0.845	0.754	0.001*
Skewness					5.0026*	-0.5517	-0.0311	-2.146*	-0.2569	-1.5389*	3.3665*
Kurtosis					26.8431*	-0.261	0.1175	4.0169*	-0.9358	1.4465*	13.5224*
Replicate F					0.820	38.380	3.565	6.010	2.077	8.704	0.910
Replicate Prob(F)					0.4921	0.0001	0.0244	0.0022	0.1221	0.0003	0.4465
Treatment F					2.317	4.360	5.057	2.328	5.706	0.993	5.040
Treatment Prob(F)					0.0307	0.0005	0.0001	0.0300	0.0001	0.4747	0.0001

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Pest Code	SETFA	AMBTR	AMARE	CHEAL	POLPY	AMBTR						
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA						
Rating Date	Jun-26-2013	Jun-26-2013	Jun-26-2013	Jun-26-2013	Jun-26-2013	Jul-9-2013						
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	PHYGEN						
Rating Unit	%	%	%	%	%	%						
Days After First/Last Applic.	41 14	41 14	41 14	41 14	41 14	54 27						
Trt-Eval Interval	14 DA-B	14 DA-B	14 DA-B	14 DA-B	14 DA-B	27 DA-B						
Plant-Eval Interval	42 DP-1	42 DP-1	42 DP-1	42 DP-1	42 DP-1	55 DP-1						
Days After Emergence	34 DE-1	34 DE-1	34 DE-1	34 DE-1	34 DE-1	47 DE-1						
Trt No.	Treatment Name	Other Rate	Other Rate Unit	Growth Stage	Appl Code	8	9	10	11	12	13	14
1	Prefix	2 pt/a		PRE	A	97	81	100	98	100	1	91
	1 Touchdown Total	24 oz/a		POST	B							
	1 N-pak ams	1.5 qt/a		POST	B							
2	Boundary	1.75 pt/a		PRE	A	99	67	99	95	100	1	68
	2 Touchdown Total	24 oz/a		POST	B							
	2 N-pak ams	1.5 qt/a		POST	B							
3	Boundary	1.5 pt/a		PRE	A	99	70	99	97	100	1	75
	3 Flexstar GT 3.5	3.5 pt/a		POST	B							
	3 MSO	0.6 qt/a		POST	B							
	3 N-pak ams	1.5 qt/a		POST	B							
4	Prefix	2 pt/a		PRE	A	99	86	100	99	100	1	94
	4 Sharpen	1 oz/a		PRE	A							
	4 Touchdown Total	24 oz/a		POST	B							
	4 N-pak ams	1.5 qt/a		POST	B							
5	Prefix	2 pt/a		PRE	A	99	75	100	100	100	1	95
	5 Touchdown Total	24 oz/a		POST	B							
	5 Sequence	1 pt/a		POST	B							
	5 N-pak ams	1.5 qt/a		POST	B							
6	Fierce	3 oz/a		PRE	A	98	67	100	100	100	1	63
	6 Touchdown Total	24 oz/a		POST	B							
	6 N-pak ams	1.5 qt/a		POST	B							
7	Anthem	5 oz/a		PRE	A	97	67	100	94	99	1	68
	7 Touchdown Total	24 oz/a		POST	B							
	7 N-pak ams	1.5 qt/a		POST	B							
8	OpTill	2 oz/a		PRE	A	97	74	100	100	100	0	71
	8 Outlook	10 oz/a		PRE	A							
	8 Touchdown Total	24 oz/a		POST	B							
	8 N-pak ams	1.5 qt/a		POST	B							
9	Sonic	3 oz/a		PRE	A	96	77	100	100	100	1	81
	9 Durango DMA	24 oz/a		POST	B							
	9 N-pak ams	1.5 qt/a		POST	B							
10	Sonic	4.5 oz/a		PRE	A	98	80	100	100	99	0	81
	10 Durango DMA	24 oz/a		POST	B							
	10 N-pak ams	1.5 qt/a		POST	B							
11	Sonic	6 oz/a		PRE	A	99	73	100	100	100	1	88
	11 Durango DMA	24 oz/a		POST	B							
	11 N-pak ams	1.5 qt/a		POST	B							

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Pest Code	SETFA	AMBTR	AMARE	CHEAL	POLPY	AMBTR					
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA					
Rating Date	Jun-26-2013	Jun-26-2013	Jun-26-2013	Jun-26-2013	Jun-26-2013	Jul-9-2013					
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	PHYGEN					
Rating Unit	%	%	%	%	%	%					
Days After First/Last Applic.	41 14	41 14	41 14	41 14	41 14	54 27					
Trt-Eval Interval	14 DA-B	14 DA-B	14 DA-B	14 DA-B	14 DA-B	27 DA-B					
Plant-Eval Interval	42 DP-1	42 DP-1	42 DP-1	42 DP-1	42 DP-1	55 DP-1					
Days After Emergence	34 DE-1	34 DE-1	34 DE-1	34 DE-1	34 DE-1	47 DE-1					
Trt Treatment No. Name	Other Rate	Other Rate Unit	Growth Stage	Appl Code	8	9	10	11	12	13	14
12 Sonic	4.5 oz/a		PRE	A	97	72	100	100	100	1	88
12 Sencor DF	4 oz/a		PRE	A							
12 Durango DMA	24 oz/a		POST	B							
12 N-pak ams	1.5 qt/a		POST	B							
LSD (P=.05)	6.3t	0.0t	1.2	9.2t	1.5	0.9	11.3				
Standard Deviation	4.4t	0.0t	0.8	6.4t	1.1	0.6	7.8				
CV	5.34	1.62	0.81	7.55	1.07	106.9	9.76				
Bartlett's X2	9.037	7.415	1.614	11.451	2.48	3.26	5.745				
P(Bartlett's X2)	0.618	0.686	0.204	0.177	0.289	0.975	0.89				
Skewness	0.1564	0.5417	-5.0247*	-1.1313*	-4.3015*	0.3525	-0.1664				
Kurtosis	-0.0282	-0.4998	27.1926*	-0.1044	17.8987*	-0.7371	-1.1436				
Replicate F	0.296	0.476	0.539	1.275	0.933	0.143	1.099				
Replicate Prob(F)	0.8283	0.7014	0.6590	0.2989	0.4357	0.9335	0.3633				
Treatment F	0.880	4.838	1.184	2.665	0.844	0.623	8.188				
Treatment Prob(F)	0.5679	0.0002	0.3348	0.0145	0.5999	0.7957	0.0001				

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		SETFA	AMARE	CHEAL	POLPY				
		GLXMA	GLXMA	GLXMA	GLXMA				
		Jul-9-2013	Jul-9-2013	Jul-9-2013	Jul-9-2013				
		CONTRO	CONTRO	CONTRO	CONTRO				
		%	%	%	%				
Days After First/Last Applic.		54 27	54 27	54 27	54 27				
Trt-Eval Interval		27 DA-B	27 DA-B	27 DA-B	27 DA-B				
Plant-Eval Interval		55 DP-1	55 DP-1	55 DP-1	55 DP-1				
Days After Emergence		47 DE-1	47 DE-1	47 DE-1	47 DE-1				
Trt No.	Treatment Name	Other Rate	Other Rate Unit	Growth Stage	Appl Code	15	16	17	18
1	Prefix	2 pt/a		PRE	A	99	100	100	100
1	Touchdown Total	24 oz/a		POST	B				
1	N-pak ams	1.5 qt/a		POST	B				
2	Boundary	1.75 pt/a		PRE	A	97	100	100	100
2	Touchdown Total	24 oz/a		POST	B				
2	N-pak ams	1.5 qt/a		POST	B				
3	Boundary	1.5 pt/a		PRE	A	99	100	99	100
3	Flexstar GT 3.5	3.5 pt/a		POST	B				
3	MSO	0.6 qt/a		POST	B				
3	N-pak ams	1.5 qt/a		POST	B				
4	Prefix	2 pt/a		PRE	A	100	100	100	100
4	Sharpen	1 oz/a		PRE	A				
4	Touchdown Total	24 oz/a		POST	B				
4	N-pak ams	1.5 qt/a		POST	B				
5	Prefix	2 pt/a		PRE	A	100	100	100	100
5	Touchdown Total	24 oz/a		POST	B				
5	Sequence	1 pt/a		POST	B				
5	N-pak ams	1.5 qt/a		POST	B				
6	Fierce	3 oz/a		PRE	A	86	100	100	100
6	Touchdown Total	24 oz/a		POST	B				
6	N-pak ams	1.5 qt/a		POST	B				
7	Anthem	5 oz/a		PRE	A	97	100	98	100
7	Touchdown Total	24 oz/a		POST	B				
7	N-pak ams	1.5 qt/a		POST	B				
8	OpTill	2 oz/a		PRE	A	96	100	100	100
8	Outlook	10 oz/a		PRE	A				
8	Touchdown Total	24 oz/a		POST	B				
8	N-pak ams	1.5 qt/a		POST	B				
9	Sonic	3 oz/a		PRE	A	99	100	100	100
9	Durango DMA	24 oz/a		POST	B				
9	N-pak ams	1.5 qt/a		POST	B				
10	Sonic	4.5 oz/a		PRE	A	97	100	100	100
10	Durango DMA	24 oz/a		POST	B				
10	N-pak ams	1.5 qt/a		POST	B				
11	Sonic	6 oz/a		PRE	A	97	100	100	100
11	Durango DMA	24 oz/a		POST	B				
11	N-pak ams	1.5 qt/a		POST	B				

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Pest Code	SETFA	AMARE	CHEAL	POLPY
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA
Rating Date	Jul-9-2013	Jul-9-2013	Jul-9-2013	Jul-9-2013
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%
Days After First/Last Applic.	54 27	54 27	54 27	54 27
Trt-Eval Interval	27 DA-B	27 DA-B	27 DA-B	27 DA-B
Plant-Eval Interval	55 DP-1	55 DP-1	55 DP-1	55 DP-1
Days After Emergence	47 DE-1	47 DE-1	47 DE-1	47 DE-1

Trt No.	Treatment Name	Other Rate	Other Rate Unit	Growth Stage	Appl Code	15	16	17	18
12	Sonic	4.5 oz/a		PRE	A	100	100	100	100
12	Sencor DF	4 oz/a		PRE	A				
12	Durango DMA	24 oz/a		POST	B				
12	N-pak ams	1.5 qt/a		POST	B				

LSD (P=.05)	9.0t	0.0	6.8t	0.0
Standard Deviation	6.2t	0.0	4.7t	0.0
CV	7.62	0.0	5.39	0.0
Bartlett's X2	13.215	0.0	3.577	0.0
P(Bartlett's X2)	0.28	.	0.612	.
Skewness	-0.8554*	.	-2.4655*	.
Kurtosis	1.1645	.	4.92*	.

Replicate F	0.526	0.000	1.820	0.000
Replicate Prob(F)	0.6678	1.0000	0.1627	1.0000
Treatment F	3.139	0.000	1.096	0.000
Treatment Prob(F)	0.0053	1.0000	0.3942	1.0000

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Pest Code

SETFA, *Setaria faberi*, = US
AMBTR, *Ambrosia trifida*, = US
AMARE, *Amaranthus retroflexus*, = US
CHEAL, *Chenopodium album*, = US
POLPY, *Persicaria pensylvanica*, = 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

28 DP-1 = 1 GLXMA May-15-2013
42 DP-1 = 1 GLXMA May-15-2013
55 DP-1 = 1 GLXMA May-15-2013