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Controlling volunteer glyphosate-resistant corn in soybeans

Trial ID: 10S-THP-CTS-05 Protocol ID: 10S-THP-CTS-05
 Location: Throckmorton Study Director: Paul Marquardt/Mike White
 Project ID: Investigator: Dr. Bill Johnson
 Sponsor Contact: Nick Vanderwort (Gowan)

General Trial Information

Study Director: Paul Marquardt/Mike White **Title:** Research Associate
Investigator: Dr. William G. Johnson **Title:** Professor

Discipline: H herbicide
Trial Status: E established
Initiation Date: 3-4-2010

Trial Location

City: Lafayette USA 49.376656 - 24.53833
State/Prov.: IN -124.715843 - -66.968887
Postal Code: 47909
Country: USA

Personnel

Study Director: Paul Marquardt/Mike White **Title:** Research Associate

Affiliation: Purdue University
Address: 915 W. State St., Botany and Plant Pathology
Location: West Lafayette, IN

Postal Code: 47907 **E-mail:** pmarquar@purdue.edu

Phone No.: 765-494-4621 **Mobile No.:** 765-409-6369

Investigator: Dr. William G. Johnson **Title:** Professor

Affiliation: Purdue University
Address: 915 W. State St.
Location: West Lafayette, IN USA

Postal Code: 47907 **E-mail:** wgj@purdue.edu

Phone No.: 765-494-4656

Cooperator/Landowner

Cooperator: Throckmorton Purdue Ag Center **Role:** Purdue Ag Center
Organization: Purdue University
Address 1: 8343 US 231 S

City: Lafayette

Phone No.: 765-538-3422

Fax No.: 765-538-3423

State/Prov.: IN

Postal Code: 47909

E-mail: jayyoung@purdue.edu

Country: US

Crop Description

Crop 1: GLXMA Glycine max Soybean
Variety: ASGROW AG2939 **Description:** Roundup Ready
BBCH Scale: BSOY **Planting Date:** 5-28-2010

Row Spacing, Unit: 15 IN

Soil Temperature, Unit: 70 F

Soil Moisture: DRY dry **Emergence Date:** 6-3-2010

Pest Description

Pest 1 Type: W **Code:** SETFA *Setaria faberi*
Common Name: Giant foxtail

Pest 2 Type: W **Code:** AMBTR *Ambrosia trifida*
Common Name: Giant ragweed

Pest 3 Type: W **Code:** IPOHE *Ipomoea hederacea*
Common Name: Ivyleaf morningglory

Site and Design

Plot Width, Unit: 10 FT

Plot Length, Unit: 30 FT

Plot Area, Unit: 300 FT²

Replications: 4

Site Type: FIELD field

Experimental Unit: 1 PLOT plot

Tillage Type: CONTIL conventional-till

Study Design: RACOB Randomized Complete Block (RCB)

Untreated Arrangement: INCLUDED single control randomized in each block

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Soil Description

Description Name: TPAC Field 4B
% OM: 2.9 **Texture:** SIL silt loam
pH: 6.2 **Soil Name:** Toronto-Millbrook
CEC: 13.3 **Fert. Level:** G good

Application Description

	A	B	C
Application Date:	5-28-2010	5-17-2010	6-25-2010
Time of Day:	10-10:30	7:45 AM	9:20 AM
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	EP	MIPOWE
Application Placement:	FOLIAR	FOLIAR	FOLIAR
Applied By:	MH	MH	MH
Air Temperature, Unit:	72 F	92 F	74 F
% Relative Humidity:	67	71	70
Wind Velocity, Unit:	5 MPH	1 MPH	1 MPH
Wind Direction:	SW	N	S
Dew Presence (Y/N):	N no	Y yes	Y yes
Soil Temperature, Unit:	70 F	75 F	70 F
Soil Moisture:	DRY	WET	WET
% Cloud Cover:	0	50	0

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:		V2	V2
Height, Unit:		7 IN	7.5 IN
Height Minimum, Maximum:		6 8	6 9

Pest Stage At Each Application

	A	B	C
Pest 1 Code, Type, Scale:	SETFA W	SETFA W	SETFA W
Height, Unit:		2.5 IN	5 IN
Height Minimum, Maximum:		1 4	2 8
Density, Unit:		20 YD2	20 YD2
Pest 2 Code, Type, Scale:	AMBTR W	AMBTR W	AMBTR W
Height, Unit:		4 IN	8 IN
Height Minimum, Maximum:		3 5	6 8
Density, Unit:		7 YD2	6 YD2
Pest 3 Code, Type, Scale:	IPOHE W	IPOHE W	IPOHE W
Height, Unit:		2 IN	5 IN
Height Minimum, Maximum:		1 3	4 6
Density, Unit:		4 YD2	3 YD2

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Application Equipment			
	A	B	C
Appl. Equipment:	CO2 BKPK	CO2 BKPK	CO2 BKPK
Equipment Type:	SPRBAC	SPRBAC	SPRBAC
Operating Pressure, Unit:	17 PSI	17 PSI	17 PSI
Nozzle Type:	FLAT FAN	FLAT FAN	FLAT FAN
Nozzle Size:	XR 110 02	XR 110 02	XR 110 02
Nozzle Spacing, Unit:	15 IN	15 IN	15 IN
Nozzles/Row:	8	8	8
Boom Length, Unit:	10 FT	10 FT	10 FT
Boom Height, Unit:	18 IN	18 IN	18 IN
Ground Speed, Unit:	3 MPH	3 MPH	3 MPH
Carrier:	MEIGS	H20	MEIGS
Water Hardness (ppm CaCO3):	150	150	150
Spray Volume, Unit:	15 gal/ac	15 gal/ac	15 gal/ac
Mix Size, Unit:	1.8 liters	1.8 liters	1.8 liters
Propellant:	CO2	CO2	CO2
Tank Mix (Y/N):	N no	N no	N no

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 Location: Throckmorton Study Director: Paul Marquardt/Mike White
 Project ID: Investigator: Dr. Bill Johnson
 Sponsor Contact: Nick Vanderwort (Gowan)

Pest Type	W Weed	W Weed	W Weed			W Weed	W Weed			
Pest Code		SETFA	AMBEL				AMBTR			
Pest Scientific Name		Setaria faberi	Ambrosia artem>				Ambrosia trifi>			
Pest Name	VOLUNTEER CORN	Giant foxtail	Common ragweed			VOLUNTEER CORN	Giant ragweed			
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA			
BBCH Scale	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY			
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max			
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean			
Crop Variety										
Description										
Rating Date	6-24-2010	6-24-2010	6-24-2010	6-24-2010	6-24-2010	6-30-2010	6-30-2010			
Rating Type	CONTRO	CONTRO	CONTRO	PHYNLB	PHYBLE	CONTRO	CONTRO			
Rating Unit	%	%	%	%	%	%	%			
Number of Subsamples	1	1	1	1	1	1	1			
Crop Stage Majority	V3					V3				
Pest Stage Majority	24"	8"	10"			36"	24"			
Pest Density, Unit	6 YD2	20 YD2	7 YD2			4 YD2	5 YD2			
Assessed By	MW	MW	MW	MW	MW	MW	MW			
Trt Treatment	Rate	Appl								
No. Name	Rate	Unit	Code	1	2	3	4	5	6	7
1 Untreated Check				0.0 f	0.0 c	0.0 d	0.0 c	0.0 b	0.0 g	0.0 d
2 Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	A A A		2.5 f	97.5 b	70.0 c	4.5 a	0.0 b	0.0 g	81.3 abc
3 Targa (0.88 EC) Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.0344 lb ai/a 0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	A A A A		94.8 a	99.0 a	76.3 bc	1.5 c	0.8 b	99.0 a	77.5 abc
4 Targa (0.88 EC) Roundup PowerMax 4.5 SL COC AMS - Liquid	0.0344 lb ai/a 0.75 lb ae/a 0.5 % v/v 2.46 lb ai/a	A A A A		95.0 a	99.0 a	85.0 b	2.8 b	2.0 ab	99.0 a	83.8 abc
5 Select (2 EC) Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.0625 lb ai/a 0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	A A A A		81.3 c	99.0 a	81.3 bc	0.0 c	0.0 b	92.5 a	80.0 abc
6 Select Max (0.97 EC) Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.0455 lb ai/a 0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	A A A A		86.3 bc	99.0 a	84.8 b	0.0 c	0.0 b	93.8 a	87.5 abc
7 Select Max (0.97 EC) Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.091 lb ai/a 0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	A A A A		90.0 ab	99.0 a	82.5 bc	0.0 c	0.0 b	94.8 a	83.8 abc
8 Raptor (1.0 EC) Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.039 lb ai/a 0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	A A A A		47.5 e	99.0 a	73.8 bc	0.8 c	2.5 a	88.8 ab	85.0 abc

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Pest Type	W Weed	W Weed	W Weed			W Weed	W Weed				
Pest Code		SETFA	AMBEL				AMBTR				
Pest Scientific Name		Setaria faberi	Ambrosia artem>				Ambrosia trifi>				
Pest Name	VOLUNTEER CORN	Giant foxtail	Common ragweed			VOLUNTEER CORN	Giant ragweed				
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA				
BBCH Scale	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY				
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max				
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean				
Crop Variety											
Description											
Rating Date	6-24-2010	6-24-2010	6-24-2010	6-24-2010	6-24-2010	6-30-2010	6-30-2010				
Rating Type	CONTRO	CONTRO	CONTRO	PHYNLB	PHYBLE	CONTRO	CONTRO				
Rating Unit	%	%	%	%	%	%	%				
Number of Subsamples	1	1	1	1	1	1	1				
Crop Stage Majority	V3					V3					
Pest Stage Majority	24"	8"	10"			36"	24"				
Pest Density, Unit	6 YD2	20 YD2	7 YD2			4 YD2	5 YD2				
Assessed By	MW	MW	MW	MW	MW	MW	MW				
Trt No.	Treatment Name	Rate	Appl Unit	Code	1	2	3	4	5	6	7
18	Fusilade EX (2.0 EC)	0.094 lb ai/a	B		0.0 f	0.0 c	0.0 d	0.0 c	0.0 b	40.0 e	76.0 abc
	Roundup PowerMax 4.5 SL	0.75 lb ae/a	B								
	NIS	0.125 % v/v	B								
	AMS - Liquid	2.46 lb ai/a	B								
19	Ignite 280 (2.34 SL)	0.53 lb ai/a	B		0.0 f	0.0 c	0.0 d	0.0 c	0.0 b	71.3 bc	88.8 ab
	AMS - Liquid	2.97 lb ai/a	B								
LSD (P=.05)		5.36			0.62	9.68	1.22	1.35	15.05	11.77	
Standard Deviation		3.79			0.44	6.84	0.86	0.95	10.64	8.32	
CV		10.94			0.94	17.57	151.78	326.55	19.33	10.92	
Bartlett's X2		8.256			0.0	20.996	1.497	1.2	46.098	22.293	
P(Bartlett's X2)		0.311			.	0.007*	0.827	0.549	0.001*	0.134	
Replicate F		1.451			1.000	4.851	0.068	1.281	2.177	2.275	
Replicate Prob(F)		0.2383			0.4000	0.0046	0.9766	0.2908	0.1013	0.0902	
Treatment F		506.324			53282.458	154.589	7.985	2.407	51.726	22.857	
Treatment Prob(F)		0.0001			0.0001	0.0001	0.0001	0.0081	0.0001	0.0001	

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Column 1: Weed or volunteer crop; US; control / burndown or knockdown; percent; V3; 24"; per square yard; MW
Column 2: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 8"; per square yard; MW
Column 3: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 10"; per square yard; MW
Column 4: US; phytotoxicity - necrosis, leaf blotch; percent; MW
Column 5: US; phytotoxicity - bleaching; percent; MW
Column 6: Weed or volunteer crop; US; control / burndown or knockdown; percent; V3; 36"; per square yard; MW
Column 7: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 24"; per square yard; MW
Column 8: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 12"; per square yard; MW
Column 9: US; phytotoxicity - chlorosis; percent; MW
Column 10: US; phytotoxicity - necrosis, leaf spot; percent; MW
Column 11: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; V6; 20"; per square yard; MW
Column 12: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 38"; per square yard; MW
Column 13: Weed or volunteer crop; US; control / burndown or knockdown; percent; 40"; per square yard; MW
Column 14: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; MW
Column 15: US; STUNT; percent; MW
Column 16: US; phytotoxicity - leaf malformation; percent; MW
Column 17: US; phytotoxicity - necrosis / burn; percent; MW
Column 18: Weed or volunteer crop; US; control / burndown or knockdown; percent; R1; 72"; per square yard; MW
Column 19: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 40"; per square yard; MW
Column 20: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 60"; per square yard; MW
Column 21: US; STUNT; percent; MW
Column 22: US; phytotoxicity - leaf malformation; percent; MW
Column 23: Weed or volunteer crop; US; control / burndown or knockdown; percent; R1; 60"; per square yard; MW
Column 24: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 24"; per square yard; MW
Column 25: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 48"; per square yard; MW
Column 26: US; STUNT; percent; MW
Column 27: US; phytotoxicity - leaf malformation; percent; MW
Column 28: US; yield; bushel 60 lb

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Pest Type	W Weed			W Weed	W Weed	W Weed	W Weed			
Pest Code	SETFA			SETFA	AMBTR		IPOHE			
Pest Scientific Name	Setaria faberi			Setaria faberi	Ambrosia trifi>		Ipomoea hedera>			
Pest Name	Giant foxtail			Giant foxtail	Giant ragweed	VOLUNTEER CORN	Ivyleaf mornin>			
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA			
BBCH Scale	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY			
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max			
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean			
Crop Variety										
Description										
Rating Date	6-30-2010	6-30-2010	6-30-2010	7-8-2010	7-8-2010	7-8-2010	7-8-2010			
Rating Type	CONTRO	PHYCHL	PHYNLS	CONTRO	CONTRO	CONTRO	CONTRO			
Rating Unit	%	%	%	%	%	%	%			
Number of Subsamples	1	1	1	1	1	1	1			
Crop Stage Majority				V6						
Pest Stage Majority	12"			20"	38"	40"				
Pest Density, Unit	20 YD2			50 YD2	7 YD2	5 YD2				
Assessed By	MW	MW	MW	MW	MW	MW	MW			
Trt Treatment	Rate	Appl								
No. Name	Rate	Unit	Code	8	9	10	11	12	13	14
1 Untreated Check				0.0 e	0.0 b	0.0 b	0.0 b	0.0 b	0.0 f	0.0 b
2 Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	A A A		98.0 ab	0.0 b	0.0 b	98.0 a	87.5 a	0.0 f	95.5 a
3 Targa (0.88 EC) Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.0344 lb ai/a 0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	A A A A		97.5 ab	0.8 b	0.0 b	95.3 a	81.3 a	97.0 a	95.5 a
4 Targa (0.88 EC) Roundup PowerMax 4.5 SL COC AMS - Liquid	0.0344 lb ai/a 0.75 lb ae/a 0.5 % v/v 2.46 lb ai/a	A A A A		96.5 ab	0.0 b	0.0 b	95.0 a	87.5 a	99.0 a	96.8 a
5 Select (2 EC) Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.0625 lb ai/a 0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	A A A A		95.8 ab	0.0 b	0.0 b	95.8 a	83.8 a	93.8 ab	96.8 a
6 Select Max (0.97 EC) Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.0455 lb ai/a 0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	A A A A		98.0 ab	0.0 b	0.0 b	94.8 a	87.0 a	98.5 a	99.0 a
7 Select Max (0.97 EC) Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.091 lb ai/a 0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	A A A A		97.5 ab	0.0 b	0.0 b	96.5 a	78.8 a	99.0 a	96.8 a
8 Raptor (1.0 EC) Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.039 lb ai/a 0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	A A A A		98.0 ab	2.0 b	0.0 b	97.0 a	92.3 a	96.5 a	96.8 a

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Pest Type				W Weed	W Weed	W Weed					
Pest Code					SETFA	AMBTR					
Pest Scientific Name				VOLUNTEER CORN	Setaria faberi	Ambrosia trifi>					
Pest Name					Giant foxtail	Giant ragweed					
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA			
BBCH Scale	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY			
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max			
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean			
Crop Variety											
Description											
Rating Date	7-8-2010	7-8-2010	7-8-2010	7-20-2010	7-20-2010	7-20-2010	7-20-2010	7-20-2010			
Rating Type	STUNT	PHYLMA	PHYNEC	CONTRO	CONTRO	CONTRO	STUNT	PHYLMA			
Rating Unit	%	%	%	%	%	%	%	%			
Number of Subsamples	1	1	1	1	1	1	1	1			
Crop Stage Majority				R1							
Pest Stage Majority				72"	40"	60"					
Pest Density, Unit				4 YD2	40 YD2	6 YD2					
Assessed By	MW	MW	MW	MW	MW	MW	MW	MW			
Trt Treatment	Rate	Appl									
No. Name	Rate	Unit	Code	15	16	17	18	19	20	21	22
1 Untreated Check				0.8 a	0.0 a	0.0 a	0.0 d	0.0 c	0.0 f	0.0 a	0.0 c
2 Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	A A A		2.5 a	1.8 a	0.0 a	0.0 d	99.0 a	87.3 a-d	0.8 a	0.0 c
3 Targa (0.88 EC) Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.0344 lb ai/a 0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	A A A A		0.0 a	0.8 a	0.0 a	94.5 a	99.0 a	65.0 e	1.5 a	0.0 c
4 Targa (0.88 EC) Roundup PowerMax 4.5 SL COC AMS - Liquid	0.0344 lb ai/a 0.75 lb ae/a 0.5 % v/v 2.46 lb ai/a	A A A A		0.0 a	0.8 a	0.0 a	99.0 a	96.8 a	80.0 bcd	1.3 a	0.0 c
5 Select (2 EC) Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.0625 lb ai/a 0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	A A A A		1.3 a	0.0 a	0.0 a	95.5 a	99.0 a	75.0 de	0.8 a	0.0 c
6 Select Max (0.97 EC) Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.0455 lb ai/a 0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	A A A A		1.5 a	0.0 a	0.0 a	96.8 a	99.0 a	80.0 bcd	2.0 a	0.0 c
7 Select Max (0.97 EC) Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.091 lb ai/a 0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	A A A A		0.0 a	0.0 a	0.0 a	99.0 a	95.8 a	76.3 cde	2.8 a	0.8 c
8 Raptor (1.0 EC) Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.039 lb ai/a 0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	A A A A		2.3 a	0.0 a	0.0 a	99.0 a	99.0 a	83.8 a-d	3.5 a	0.0 c

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Pest Type Pest Code Pest Scientific Name Pest Name Crop Code BBCH Scale Crop Scientific Name Crop Name Crop Variety Description Rating Date Rating Type Rating Unit Number of Subsamples Crop Stage Majority Pest Stage Majority Pest Density, Unit Assessed By	GLXMA BSOY Glycine max Soybean	GLXMA BSOY Glycine max Soybean	GLXMA BSOY Glycine max Soybean	VOLUNTEER CORN GLXMA BSOY Glycine max Soybean	W Weed SETFA Setaria faberi Giant foxtail GLXMA BSOY Glycine max Soybean	W Weed AMBTR Ambrosia trifi-> Giant ragweed GLXMA BSOY Glycine max Soybean	GLXMA BSOY Glycine max Soybean	GLXMA BSOY Glycine max Soybean				
7-8-2010 STUNT % 1 R1 72" 4 YD2 MW	7-8-2010 PHYLMA % 1 MW	7-8-2010 PHYNEC % 1 MW	7-20-2010 CONTRO % 1 R1 72" 4 YD2 MW	7-20-2010 CONTRO % 1 40" 6 YD2 MW	7-20-2010 CONTRO % 1 60" 6 YD2 MW	7-20-2010 STUNT % 1 MW	7-20-2010 PHYLMA % 1 MW					
Trt No.	Treatment Name	Rate	Appl Unit	Code	15	16	17	18	19	20	21	22
9	Fusilade EX (2.0 EC) Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.094 lb ai/a 0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	A A A A		0.8 a	0.8 a	0.0 a	99.0 a	99.0 a	81.3 bcd	0.8 a	0.0 c
10	Ignite 280 (2.34 SL) AMS - Liquid	0.53 lb ai/a 2.97 lb ai/a	A A					45.0 c	83.8 b	77.5 b-e		
11	Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	B B B		0.8 a	0.0 a	0.0 a	5.0 d	99.0 a	99.0 a	0.0 a	0.0 c
12	Targa (0.88 EC) Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.0344 lb ai/a 0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	B B B B		2.5 a	1.3 a	0.0 a	99.0 a	98.0 a	94.5 ab	2.5 a	0.0 c
13	Targa (0.88 EC) Roundup PowerMax 4.5 SL COC AMS - Liquid	0.0344 lb ai/a 0.75 lb ae/a 0.5 % v/v 2.46 lb ai/a	B B B B		0.8 a	2.8 a	0.8 a	99.0 a	99.0 a	93.3 ab	1.5 a	4.5 a
14	Select (2 EC) Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.0625 lb ai/a 0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	B B B B		0.0 a	1.5 a	0.0 a	85.0 a	99.0 a	89.5 a-d	0.8 a	3.3 ab
15	Select Max (0.97 EC) Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.0455 lb ai/a 0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	B B B B		0.0 a	0.8 a	0.0 a	96.8 a	99.0 a	99.0 a	1.5 a	0.0 c
16	Select Max (0.97 EC) Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.091 lb ai/a 0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	B B B B		0.0 a	0.0 a	0.8 a	99.0 a	99.0 a	94.3 ab	1.5 a	0.0 c
17	Raptor (1.0 EC) Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.039 lb ai/a 0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	B B B B		2.8 a	3.0 a	1.5 a	92.5 a	99.0 a	99.0 a	3.3 a	2.5 bc

Purdue University

Pest Type	GLXMA		GLXMA		GLXMA		GLXMA		GLXMA			
Pest Code	BSOY		BSOY		BSOY		BSOY		BSOY			
Pest Scientific Name	Glycine max Soybean		Glycine max Soybean		Glycine max Soybean		Glycine max Soybean		Glycine max Soybean			
Pest Name	Soybean		Soybean		Soybean		Soybean		Soybean			
Crop Code	GLXMA		GLXMA		GLXMA		GLXMA		GLXMA			
BBCH Scale	BSOY		BSOY		BSOY		BSOY		BSOY			
Crop Scientific Name	Glycine max Soybean		Glycine max Soybean		Glycine max Soybean		Glycine max Soybean		Glycine max Soybean			
Crop Name	Soybean		Soybean		Soybean		Soybean		Soybean			
Crop Variety	MW		MW		MW		MW		MW			
Description	7-8-2010 STUNT		7-8-2010 PHYLMA		7-8-2010 PHYNEC		7-20-2010 CONTRO		7-20-2010 CONTRO			
Rating Date	7-8-2010		7-8-2010		7-8-2010		7-20-2010		7-20-2010			
Rating Type	STUNT		PHYLMA		PHYNEC		CONTRO		CONTRO			
Rating Unit	%		%		%		%		%			
Number of Subsamples	1		1		1		1		1			
Crop Stage Majority	R1		R1		R1		R1		R1			
Pest Stage Majority	72"		72"		72"		40"		60"			
Pest Density, Unit	4 YD2		4 YD2		4 YD2		40 YD2		6 YD2			
Assessed By	MW		MW		MW		MW		MW			
Trt No.	Treatment Name	Rate	Unit	Appl Code	15	16	17	18	19	20	21	22
18	Fusilade EX (2.0 EC)	0.094	lb ai/a	B	0.0 a	1.5 a	0.0 a	97.0 a	99.0 a	92.0 abc	1.3 a	0.0 c
	Roundup PowerMax 4.5 SL	0.75	lb ae/a	B								
	NIS	0.125	% v/v	B								
	AMS - Liquid	2.46	lb ai/a	B								
19	Ignite 280 (2.34 SL)	0.53	lb ai/a	B				72.5 b	87.5 b	86.3 a-d		
	AMS - Liquid	2.97	lb ai/a	B								
LSD (P=.05)		2.94			2.49	0.98	10.19	3.89	10.08	2.89	1.50	
Standard Deviation		2.06			1.74	0.68	7.20	2.75	7.13	2.02	1.05	
CV		221.99			200.7	387.97	9.29	2.99	8.72	134.74	161.9	
Bartlett's X2		14.874			6.841	0.084	23.598	4.721	5.766	13.043	4.332	
P(Bartlett's X2)		0.094			0.654	0.959	0.005*	0.317	0.954	0.523	0.228	
Replicate F		1.672			0.626	0.000	0.085	0.534	0.730	2.443	2.073	
Replicate Prob(F)		0.1854			0.6020	1.0000	0.9680	0.6607	0.5384	0.0754	0.1162	
Treatment F		0.981			1.248	1.518	101.066	271.673	37.743	1.025	6.950	
Treatment Prob(F)		0.4914			0.2689	0.1326	0.0001	0.0001	0.0001	0.4487	0.0001	

Purdue University

Pest Type	W Weed	W Weed	W Weed							
Pest Code		SETFA	AMBTR							
Pest Scientific Name		Setaria faberi	Ambrosia trifida							
Pest Name	VOLUNTEER CORN	Giant foxtail	Giant ragweed							
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA				
BBCH Scale	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY				
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max				
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean				
Crop Variety										
Description										
Rating Date	7-15-2010	7-15-2010	7-15-2010	7-15-2010	7-15-2010	10-15-2010				
Rating Type	CONTRO	CONTRO	CONTRO	STUNT	PHYLMA	YIELD				
Rating Unit	%	%	%	%	%	BU60LB				
Number of Subsamples	1	1	1	1	1	1				
Crop Stage Majority	R1									
Pest Stage Majority	60"	24"	48"							
Pest Density, Unit	3 YD2	50 YD2	6 YD2							
Assessed By	MW	MW	MW	MW	MW					
Trt No.	Treatment Name	Rate	Appl Unit	Code	23	24	25	26	27	28
1	Untreated Check				0.0 e	0.0 d	0.0 d	0.0 a	0.0 b	56.23 c
2	Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	A A A		0.0 e	99.0 a	88.5 abc	0.0 a	0.0 b	105.53 a
3	Targa (0.88 EC) Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.0344 lb ai/a 0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	A A A A		89.8 abc	97.5 a	78.8 c	0.0 a	0.0 b	65.70 bc
4	Targa (0.88 EC) Roundup PowerMax 4.5 SL COC AMS - Liquid	0.0344 lb ai/a 0.75 lb ae/a 0.5 % v/v 2.46 lb ai/a	A A A A		99.0 a	98.0 a	85.0 abc	1.3 a	0.0 b	71.70 bc
5	Select (2 EC) Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.0625 lb ai/a 0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	A A A A		92.0 ab	98.0 a	86.0 abc	0.0 a	0.0 b	71.48 bc
6	Select Max (0.97 EC) Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.0455 lb ai/a 0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	A A A A		99.0 a	98.0 a	87.3 abc	0.0 a	0.0 b	73.18 bc
7	Select Max (0.97 EC) Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.091 lb ai/a 0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	A A A A		98.0 a	97.0 a	80.0 bc	2.5 a	0.0 b	64.95 bc
8	Raptor (1.0 EC) Roundup PowerMax 4.5 SL NIS AMS - Liquid	0.039 lb ai/a 0.75 lb ae/a 0.125 % v/v 2.46 lb ai/a	A A A A		99.0 a	99.0 a	85.0 abc	0.8 a	0.8 b	69.50 bc

Purdue University

Pest Type	W Weed	W Weed	W Weed							
Pest Code		SETFA	AMBTR							
Pest Scientific Name		Setaria faberi	Ambrosia trifida							
Pest Name	VOLUNTEER CORN	Giant foxtail	Giant ragweed							
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA				
BCH Scale	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY				
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max				
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean				
Crop Variety										
Description										
Rating Date	7-15-2010	7-15-2010	7-15-2010	7-15-2010	7-15-2010	10-15-2010				
Rating Type	CONTRO	CONTRO	CONTRO	STUNT	PHYLMA	YIELD				
Rating Unit	%	%	%	%	%	BU60LB				
Number of Subsamples	1	1	1	1	1	1				
Crop Stage Majority	R1									
Pest Stage Majority	60"	24"	48"							
Pest Density, Unit	3 YD2	50 YD2	6 YD2							
Assessed By	MW	MW	MW	MW	MW					
Trt No.	Treatment Name	Rate	Appl Unit	Code	23	24	25	26	27	28
9	Fusilade EX (2.0 EC)	0.094 lb ai/a	A		96.8 a	99.0 a	88.5 abc	0.0 a	0.0 b	62.45 bc
	Roundup PowerMax 4.5 SL	0.75 lb ae/a	A							
	NIS	0.125 % v/v	A							
	AMS - Liquid	2.46 lb ai/a	A							
10	Ignite 280 (2.34 SL)	0.53 lb ai/a	A		43.8 d	82.5 c	82.5 abc			37.80 d
	AMS - Liquid	2.97 lb ai/a	A							
11	Roundup PowerMax 4.5 SL	0.75 lb ae/a	B		5.0 e	99.0 a	95.5 abc	0.0 a	0.0 b	105.23 a
	NIS	0.125 % v/v	B							
	AMS - Liquid	2.46 lb ai/a	B							
12	Targa (0.88 EC)	0.0344 lb ai/a	B		98.0 a	99.0 a	95.8 abc	1.3 a	0.8 b	82.13 b
	Roundup PowerMax 4.5 SL	0.75 lb ae/a	B							
	NIS	0.125 % v/v	B							
	AMS - Liquid	2.46 lb ai/a	B							
13	Targa (0.88 EC)	0.0344 lb ai/a	B		98.5 a	99.0 a	88.5 abc	0.0 a	4.8 a	80.98 b
	Roundup PowerMax 4.5 SL	0.75 lb ae/a	B							
	COC	0.5 % v/v	B							
	AMS - Liquid	2.46 lb ai/a	B							
14	Select (2 EC)	0.0625 lb ai/a	B		80.0 bc	99.0 a	95.5 abc	0.8 a	1.3 b	79.85 b
	Roundup PowerMax 4.5 SL	0.75 lb ae/a	B							
	NIS	0.125 % v/v	B							
	AMS - Liquid	2.46 lb ai/a	B							
15	Select Max (0.97 EC)	0.0455 lb ai/a	B		95.0 a	98.0 a	96.8 ab	0.0 a	0.0 b	78.88 b
	Roundup PowerMax 4.5 SL	0.75 lb ae/a	B							
	NIS	0.125 % v/v	B							
	AMS - Liquid	2.46 lb ai/a	B							
16	Select Max (0.97 EC)	0.091 lb ai/a	B		96.0 a	99.0 a	91.0 abc	0.0 a	0.8 b	79.00 b
	Roundup PowerMax 4.5 SL	0.75 lb ae/a	B							
	NIS	0.125 % v/v	B							
	AMS - Liquid	2.46 lb ai/a	B							
17	Raptor (1.0 EC)	0.039 lb ai/a	B		86.3 abc	99.0 a	99.0 a	3.3 a	2.5 b	76.28 bc
	Roundup PowerMax 4.5 SL	0.75 lb ae/a	B							
	NIS	0.125 % v/v	B							
	AMS - Liquid	2.46 lb ai/a	B							

Purdue University

Pest Type	W Weed	W Weed	W Weed			
Pest Code		SETFA	AMBTR			
Pest Scientific Name		Setaria faberi	Ambrosia trifi>			
Pest Name	VOLUNTEER CORN	Giant foxtail	Giant ragweed			
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA
BBCH Scale	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean
Crop Variety						
Description						
Rating Date	7-15-2010	7-15-2010	7-15-2010	7-15-2010	7-15-2010	10-15-2010
Rating Type	CONTRO	CONTRO	CONTRO	STUNT	PHYLMA	YIELD
Rating Unit	%	%	%	%	%	BU60LB
Number of Subsamples	1	1	1	1	1	1
Crop Stage Majority	R1					
Pest Stage Majority	60"	24"	48"			
Pest Density, Unit	3 YD2	50 YD2	6 YD2			
Assessed By	MW	MW	MW	MW	MW	
Trt No.						
Treatment Name						
Rate						
Unit						
Appl Code						
	23	24	25	26	27	28
18 Fusilade EX (2.0 EC)	0.094 lb ai/a					
Roundup PowerMax 4.5 SL	0.75 lb ae/a					
NIS	0.125 % v/v					
AMS - Liquid	2.46 lb ai/a					
	96.0 a	99.0 a	90.8 abc	0.0 a	0.0 b	78.15 b
19 Ignite 280 (2.34 SL)	0.53 lb ai/a					
AMS - Liquid	2.97 lb ai/a					
	77.5 c	88.8 b	92.3 abc			22.65 e
LSD (P=.05)	10.23	3.92	9.51	1.94	2.10	12.428
Standard Deviation	7.23	2.77	6.72	1.36	1.47	8.788
CV	9.48	3.01	7.95	236.56	232.64	12.26
Bartlett's X2	51.916	19.23	5.427	2.06	4.391	11.327
P(Bartlett's X2)	0.001*	0.007*	0.993	0.841	0.495	0.88
Replicate F	0.743	0.198	1.056	0.796	0.134	0.991
Replicate Prob(F)	0.5310	0.8970	0.3755	0.5020	0.9395	0.4040
Treatment F	97.028	268.114	39.943	2.101	2.918	19.178
Treatment Prob(F)	0.0001	0.0001	0.0001	0.0244	0.0021	0.0001