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Pre emergence weed control in soybeans.

Trial ID: 10S-THP-CTS-74 Protocol ID: 10S-THP-CTS-74
 Location: Throckmorton Study Director: White/Marquardt
 Project ID: Investigator: Dr. Bill Johnson
 Sponsor Contact: Valent - Eric Ott

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: 3-24-2010

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: 6-7-2010

Row Spacing, Unit: 30 IN

Soil Temperature, Unit: 80 F

Soil Moisture: DRY dry

Emergence Date: 6-13-2010

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:** AMARE Amaranthus retroflexus
Common Name: Redroot pigweed

Site and Design

Plot Width, Unit: 10 FT

Site Type: FIELD field

Plot Length, Unit: 30 FT

Experimental Unit: 1 PLOT plot

Plot Area, Unit: 300 FT2

Tillage Type: CONTIL conventional-till

Replications: 4

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 5
% OM: 2.3 **Texture:** SIL silt loam
pH: 6.6 **Soil Name:** Longlois
CEC: 9.9

Application Description

	A	B
Application Date:	6-8-2010	7-6-2010
Time of Day:	7:30-7:50	8:17 AM
Application Method:	SPRAY	SPRAY
Application Timing:	ATPLA	EAPOWE
Application Placement:	FOLIAR	FOLIAR
Applied By:	MH	MH
Air Temperature, Unit:	65 F	75 F
% Relative Humidity:	66	69.4
Wind Velocity, Unit:	1.3 MPH	1.4 MPH
Wind Direction:	SW	N
Dew Presence (Y/N):	N no	N no
Soil Temperature, Unit:	70 F	77 F
Soil Moisture:	DRY	DRY
% Cloud Cover:	100	0

Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale:	GLXMA BSOY	GLXMA BSOY
Stage Scale Used:		BBCH
Stage Majority, Percent:		V3
Height, Unit:		9 IN
Height Minimum, Maximum:		8 10

Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale:	AMBTR W	AMBTR W
Height, Unit:		8 IN
Height Minimum, Maximum:		6 10
Density, Unit:		12 YD2
Pest 2 Code, Type, Scale:	SETFA W	SETFA W
Height, Unit:		11 IN
Height Minimum, Maximum:		8 14
Density, Unit:		30 YD2
Pest 3 Code, Type, Scale:	AMARE W	AMARE W
Height, Unit:		5 IN
Height Minimum, Maximum:		4 6
Density, Unit:		7 YD2

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Application Equipment		
	A	B
Appl. Equipment:	CO2 Backpack	CO2 Backpack
Operating Pressure, Unit:	17 PSI	17 PSI
Nozzle Type:	Flat Fan	Flat Fan
Nozzle Size:	XR11002	XR11002
Nozzle Spacing, Unit:	15 IN	15 IN
Nozzles/Row:	6	6
Boom Length, Unit:	7.5 FT	7.5 FT
Boom Height, Unit:	18 IN	18 IN
Ground Speed, Unit:	3 MPH	3 MPH
Carrier:	MEIGS	MEIGS
Water Hardness (ppm CaCO3):	150	150
Spray Volume, Unit:	15 GAL/AC	15 GAL/AC
Mix Size, Unit:	1.8 Liters	1.8 Liters
Propellant:	CO2	CO2
Tank Mix (Y/N):	N no	N no

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 Location: Throckmorton Study Director: White/Marquardt
 Project ID: Investigator: Dr. Bill Johnson
 Sponsor Contact: Valent - Eric Ott

Pest Type	W Weed SETFA	W Weed AMBTR	W Weed AMARE	W Weed SETFA	W Weed AMBTR	W Weed AMARE	W Weed IPOHE			
Pest Code	Setaria faberi	Ambrosia trifi>	Amaranthus ret>	Setaria faberi	Ambrosia trifi>	Amaranthus ret>	Ipomoea heder>			
Pest Scientific Name	Giant foxtail	Giant ragweed	Redroot pigweed	Giant foxtail	Giant ragweed	Redroot pigweed	Ivyleaf mornin>			
Pest Name	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA			
Crop Code	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY			
BBCH Scale	Glycine max Soybean	Glycine max Soybean	Glycine max Soybean	Glycine max Soybean	Glycine max Soybean	Glycine max Soybean	Glycine max Soybean			
Crop Scientific Name										
Crop Name										
Crop Variety										
Description										
Rating Date	7-6-2010	7-6-2010	7-6-2010	7-12-2010	7-12-2010	7-12-2010	7-12-2010			
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO			
Rating Unit	%	%	%	%	%	%	%			
Number of Subsamples	1	1	1	1	1	1	1			
Crop Stage Majority										
Pest Stage Majority	6"	12"	4"	14"	18"	6"				
Pest Density, Unit	90 YD2	10 YD2	3 YD2	60 YD2	10 YD2	5 YD2				
Assessed By	MW	MW	MW	MW	MW	MW	MW			
Trt Treatment No. Name	Rate	Appl Unit	Code	1	2	3	4	5	6	7
1 Untreated Check				0.0 c	0.0 e	0.0 b	0.0 e	0.0 f	0.0 b	0.0 b
2 Valor SX (51 WG)	0.064 lb ai/a	A		85.0 a	57.5 cd	99.0 a	76.3 c	55.0 cd	94.3 a	99.0 a
3 Valor SX (51 WG) Classic	0.056 lb ai/a 0.0194 lb ai/a	A A		93.8 a	94.5 a	99.0 a	90.0 ab	91.8 a	99.0 a	98.0 a
4 FirstRate (84 WG) Valor SX (51 WG)	0.021 lb ai/a 0.064 lb ai/a	A A		94.8 a	94.8 a	99.0 a	90.0 ab	92.3 a	99.0 a	97.0 a
5 V-10233 (76 WG)	0.143 lb ai/a	A		95.5 a	70.0 abc	99.0 a	94.3 ab	58.8 bcd	99.0 a	93.3 a
6 Authority Assist (4 SC)	0.156 lb ai/a	A		10.0 b	7.5 e	99.0 a	47.5 d	7.5 ef	91.8 a	74.5 a
7 Prefix (5.29 EC)	1.32 lb ai/a	A		96.5 a	89.8 a	99.0 a	96.0 a	81.3 abc	99.0 a	79.8 a
8 Authority First (70 WG)	0.14 lb ai/a	A		87.5 a	89.8 a	99.0 a	82.5 bc	82.5 abc	96.8 a	99.0 a
9 V-10233 (76 WG)	0.178 lb ai/a	A		95.5 a	78.8 ab	99.0 a	94.8 ab	73.8 a-d	99.0 a	87.3 a
10 Optil (68 WG)	0.085 lb ai/a	A		93.5 a	83.5 ab	99.0 a	91.8 ab	84.8 ab	96.8 a	91.3 a
11 V-10206 (85 WG) Valor SX (51 WG) Classic	0.053 lb ai/a 0.056 lb ai/a 0.0194 lb ai/a	A A A		95.0 a	79.8 ab	99.0 a	93.8 ab	80.0 abc	99.0 a	97.0 a
12 Prowl H2O (3.8 L)	1.19 lb ai/a	A		91.0 a	45.0 d	99.0 a	86.3 ab	22.5 e	87.0 a	84.8 a
13 Valor SX (51 WG) V-10206 (85 WG)	0.064 lb ai/a 0.053 lb ai/a	A A		96.3 a	65.0 bc	99.0 a	93.8 ab	52.5 d	94.3 a	93.5 a
14 Sonic (70 WG)	0.197 lb ai/a	A		96.0 a	92.0 a	99.0 a	92.5 ab	82.5 abc	99.0 a	98.0 a

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed				
Pest Code	SETFA	AMBTR	AMARE	SETFA	AMBTR	AMARE	IPHOE				
Pest Scientific Name	Setaria faberi	Ambrosia trifida	Amaranthus retrofractus	Setaria faberi	Ambrosia trifida	Amaranthus retrofractus	Ipomoea hederifolia				
Pest Name	Giant foxtail	Giant ragweed	Redroot pigweed	Giant foxtail	Giant ragweed	Redroot pigweed	Ipomoea hederifolia				
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	7-6-2010	7-6-2010	7-6-2010	7-12-2010	7-12-2010	7-12-2010	7-12-2010				
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO				
Rating Unit	%	%	%	%	%	%	%				
Number of Subsamples	1	1	1	1	1	1	1				
Crop Stage Majority											
Pest Stage Majority	6"	12"	4"	14"	18"	6"					
Pest Density, Unit Assessed By	90 YD2 MW	10 YD2 MW	3 YD2 MW	60 YD2 MW	10 YD2 MW	5 YD2 MW	MW				
Trt No.	Treatment Name	Rate	Appl Unit	Code	1	2	3	4	5	6	7
15	Sonic Durango DMA N-PAK AMS	0.131 lb ai/a 0.75 lb ae/a 2 % v/v	A B B		88.8 a	85.0 ab	99.0 a	91.8 ab	90.3 a	99.0 a	99.0 a
16	Sonic Durango DMA N-PAK AMS	0.197 lb ai/a 0.75 lb ae/a 2 % v/v	A B B		92.5 a	94.8 a	99.0 a	96.0 a	97.5 a	99.0 a	99.0 a
17	FirstRate Durango DMA N-PAK AMS Durango DMA N-PAK AMS	0.0158 lb ai/a 0.75 lb ae/a 2 % v/v 0.75 lb ae/a 2 % v/v	B B B C C		0.0 c	0.0 e	99.0 a	86.3 ab	81.3 abc	99.0 a	84.3 a
	LSD (P=.05)				7.94	15.26	0.00	7.53	17.79	8.81	18.27
	Standard Deviation				5.56	10.68	0.00	5.27	12.45	6.17	12.79
	CV				7.21	16.1	0.0	6.38	18.67	6.76	14.74
	Bartlett's X2				51.995	24.57	0.0	43.516	39.215	6.667	46.63
	P(Bartlett's X2)				0.001*	0.039*	.	0.001*	0.001*	0.247	0.001*
	Replicate F				2.478	1.790	0.000	6.430	1.147	0.821	0.525
	Replicate Prob(F)				0.0725	0.1617	1.0000	0.0009	0.3397	0.4887	0.6671
	Treatment F				162.477	39.351	0.000	84.556	23.488	59.301	13.617
	Treatment Prob(F)				0.0001	0.0001	1.0000	0.0001	0.0001	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; US; control / burndown or knockdown; percent; 6"; per square yard; MW
Column 2: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 12"; per square yard; MW
Column 3: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 4"; per square yard; MW
Column 4: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 14"; per square yard; MW
Column 5: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 18"; per square yard; MW
Column 6: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 6"; per square yard; MW
Column 7: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; MW
Column 8: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; R1; 18"; per square yard; MW
Column 9: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 36"; per square yard; MW
Column 10: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; MW
Column 11: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 48-60"; per square foot; WGJ
Column 12: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; 48-60"; per square foot; WGJ
Column 13: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; WGJ
Column 14: Weed or volunteer crop; US; US; control / burndown or knockdown; percent; WGJ

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Pest Type	W Weed SETFA	W Weed AMBTR	W Weed IPOHE	W Weed SETFA	W Weed AMBTR	W Weed SETFA	W Weed AMBTR										
Pest Scientific Name	Setaria faberi	Ambrosia trifida	Ipomoea hederifolia	Setaria faberi	Ambrosia trifida	Setaria faberi	Ambrosia trifida										
Pest Name	Giant foxtail	Giant ragweed	Ipomoea hederifolia	Giant foxtail	Giant ragweed	Giant foxtail	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	7-19-2010	7-19-2010	7-19-2010	7-26-2010	7-26-2010	8-5-2010	8-5-2010										
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO										
Rating Unit	%	%	%	%	%	%	%										
Number of Subsamples	1	1	1	1	1	1	1										
Crop Stage Majority	R1																
Pest Stage Majority	18"	36"		48-60"	48-60"												
Pest Density, Unit	50 YD2	10 YD2		5 FT2	2 FT2												
Assessed By	MW	MW	MW	WGJ	WGJ	WGJ	WGJ										
Trt Treatment	Rate	Appl															
No. Name	Rate	Unit	Code	8	9	10	11	12	13	14							
1 Untreated Check	0.0	c		0.0	e	0.0	b	0.0	e	0.0	b	0.0	d				
2 Valor SX (51 WG)	0.064	lb ai/a	A	77.5	a	40.0	d	94.3	a	33.8	cde	42.5	cd	65.0	a	47.5	abc
3 Valor SX (51 WG) Classic	0.056 0.0194	lb ai/a lb ai/a	A A	90.0	a	86.0	a	96.8	a	65.0	abc	93.8	a	86.3	a	92.5	ab
4 FirstRate (84 WG) Valor SX (51 WG)	0.021 0.064	lb ai/a lb ai/a	A A	91.3	a	89.8	a	96.8	a	75.0	a	91.0	ab	91.0	a	92.3	ab
5 V-10233 (76 WG)	0.143	lb ai/a	A	92.5	a	52.5	bcd	95.5	a	80.0	a	48.8	cd	85.0	a	40.0	bcd
6 Authority Assist (4 SC)	0.156	lb ai/a	A	15.0	b	5.0	e	95.5	a	12.5	de	7.5	e	12.5	b	17.5	cd
7 Prefix (5.29 EC)	1.32	lb ai/a	A	96.0	a	81.0	ab	89.5	a	92.0	a	80.0	abc	99.0	a	80.0	ab
8 Authority First (70 WG)	0.14	lb ai/a	A	80.0	a	75.0	abc	98.0	a	40.0	bcd	78.8	abc	81.0	a	79.8	ab
9 V-10233 (76 WG)	0.178	lb ai/a	A	96.0	a	71.3	abc	89.3	a	69.5	ab	57.5	abc	94.5	a	58.8	abc
10 Optil (68 WG)	0.085	lb ai/a	A	91.8	a	72.3	abc	99.0	a	79.8	a	79.8	abc	83.3	a	74.8	ab
11 V-10206 (85 WG) Valor SX (51 WG) Classic	0.053 0.056 0.0194	lb ai/a lb ai/a lb ai/a	A A A	91.3	a	75.0	abc	92.0	a	85.0	a	82.5	abc	92.3	a	71.3	ab
12 Prowl H2O (3.8 L)	1.19	lb ai/a	A	80.0	a	25.0	de	99.0	a	32.5	cde	20.0	de	25.0	b	15.0	cd
13 Valor SX (51 WG) V-10206 (85 WG)	0.064 0.053	lb ai/a lb ai/a	A A	95.5	a	45.0	cd	99.0	a	78.8	a	51.3	bcd	68.8	a	54.8	abc
14 Sonic (70 WG)	0.197	lb ai/a	A	91.3	a	78.5	ab	99.0	a	81.3	a	83.5	abc	95.8	a	77.3	ab

