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Anthem - Soybean PRE/POST

Trial ID: 12S-PIP-CTS-03 Protocol ID: 12S-PIP-CTS-03
 Location: PPAC Study Director: Paul Marquardt
 Project ID: 12S-PIP-CTS-03 Investigator: Dr. Bill Johnson
 Sponsor Contact: Joe Reed

General Trial Information

Study Director: Paul Marquardt **Title:** Research Associate
Investigator: Bill Johnson **Title:** Professor

Discipline: H herbicide
Trial Status: E established
Initiation Date: 5-9-2012

Trial Location

City: Wanatah
State/Prov.: IN
Postal Code: 46930
Country: USA United States

Personnel

Study Director: Paul Marquardt **Title:** Research Associate

Affiliation: Purdue University
Address: 915 W. State Street, Lilly Hall
Location: West Lafayette, IN

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

Phone No.: 765-494-0891 **Mobile No.:** 765-409-6369

Investigator: Bill Johnson **Title:** Professor

Affiliation: Purdue University
Address: 915 W. State Street, Lilly Hall
Location: West Lafayette, IN

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

Phone No.: 765-494-4656 **Mobile No.:** 765-404-9801

Cooperator/Landowner

Cooperator: Jon Leuck **Role:** Farm Manager

Organization: Pinney-Purdue Agricultural Center **Org. Type:** University

Address 1: 11402 County Line Road

City: Wanatah

State/Prov.: IN

Postal Code: 46390

Country: USA

United States

Phone No.: 765-479-3759

Fax No.: 219-733-2379

Mobile No.: 765-479-3759

E-mail: leuckj@purdue.edu

Crop Description

Crop 1: GLXMA Glycine max Soybean

Variety: AG2931

BBCH Scale: BSOY

Planting Method: DIRDRI direct drilled

Depth, Unit: 1 IN

Row Spacing, Unit: 30 IN

Seed Bed: FINE fine

Soil Moisture: DRY dry

Harvest Date: 10-11-2012

Harvested Width, Unit: 10 FT

% Standard Moisture: 13.0

Weighing Equipment: HarvestMaster 400

Description: Roundup Ready

Planting Date: 5-18-2012

Rate, Unit: 150000 S/A

Spacing Within Row, Unit: 2 IN

Soil Temperature, Unit: 67 F

Emergence Date: 5-24-2012

Harvest Equipment: Gleaner F3

Harvested Length, Unit: 25 FT

Moisture Meter: 3" Carter Blade

Pest Description

Pest 1 Type: W **Code:** ABUTH Abutilon theophrasti

Common Name: velvetleaf

Pest 2 Type: W **Code:** AMBTR Ambrosia trifida

Common Name: Giant ragweed

Pest 3 Type: W **Code:** SETFA Setaria faberi

Common Name: Giant foxtail

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Site and Design	
Plot Width, Unit: 10 FT Plot Length, Unit: 30 FT Plot Area, Unit: 300 FT ² Replications: 4	Site Type: FIELD field Experimental Unit: 1 PLOT plot Tillage Type: CONTIL conventional-till Study Design: RACOBL Randomized Complete Block (RCB) Untreated Arrangement: INCLUDED single control randomized in each block

Soil Description	
Description Name: PPAC M3 % OM: 2 pH: 6.5 CEC: 6.3	Texture: SL sandy loam Soil Drainage: E excellent

Application Description		
	A	B
Application Date:	5-18-2012	6-5-2012
Time of Day:	11 AM	10 AM
Application Method:	SPRAY	SPRAY
Application Timing:	ATPLAN	EARPOS
Application Placement:	SOIL	FOLIAR
Applied By:	JR	PM
Air Temperature, Unit:	74 F	68 F
% Relative Humidity:		66
Wind Velocity, Unit:	5 MPH	3.5 MPH
Wind Direction:	NNW	E
Dew Presence (Y/N):	N no	N no
Soil Temperature, Unit:	67 F	65 F
Soil Moisture:	DRY	DRY
% Cloud Cover:	0	5

Crop Stage At Each Application		
	A	B
Crop 1 Code, BBCH Scale:	GLXMA BSOY	GLXMA BSOY
Stage Scale Used:	BBCH	BBCH
Stage Majority, Percent:	00 100	11 80
Stage Minimum, Percent:		11 80
Stage Maximum, Percent:		12 20
Height, Unit:		3.5 IN
Height Minimum, Maximum:		3 4

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Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale:	ABUTH W	ABUTH W
Stage Majority, Percent:		12 100
Height, Unit:		1.5 IN
Height Minimum, Maximum:		1 2
Density, Unit:		5 M2
Pest 2 Code, Type, Scale:	AMBTR W	AMBTR W
Stage Majority, Percent:		30 80
Stage Minimum, Percent:		30 80
Stage Maximum, Percent:		32 20
Height, Unit:		2.5 IN
Height Minimum, Maximum:		1 4
Density, Unit:		7.5 M2
Pest 3 Code, Type, Scale:	SETFA W	SETFA W
Stage Majority, Percent:		12 100
Height, Unit:		1.5 IN
Height Minimum, Maximum:		1 2
Density, Unit:		5 M2

Application Equipment

	A	B
Appl. Equipment:	CO2 Backpack	CO2 Backpack
Equipment Type:	SPRBAC	SPRBAC
Operation Pressure, Unit:	17 PSI	17 PSI
Nozzle Type:	Flat Fan	Flat Fan
Nozzle Size:	XR11002	XR11002
Nozzle Spacing, Unit:	15 IN	15 IN
Boom Length, Unit:	10 FT	10 FT
Boom Height, Unit:	18 IN	18 IN
Ground Speed, Unit:	3 MPH	3 MPH
Carrier:	H2O	H2O
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: PPAC Study Director: Paul Marquardt
 Project ID: 12S-PIP-CTS-03 Investigator: Dr. Bill Johnson
 Sponsor Contact: Joe Reed

Pest Type	W Weed AMBTR	W Weed ABUTH			W Weed AMBTR	W Weed ABUTH	W Weed GGGAN					
Pest Scientific Name	Ambrosia trifi>	Abutilon theop>			Ambrosia trifi>	Abutilon theop>	Annual grasses					
Pest Name	Giant ragweed	velvetleaf			Giant ragweed	velvetleaf	Annual grasses					
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA				
BBCB 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	AG2931	AG2931	AG2931	AG2931	AG2931	AG2931	AG2931	AG2931				
Description	3-4 IN	3-4 IN	3-4 IN	3-4 IN	18 IN	18 IN	18 IN	18 IN				
Part Rated	PLOT P	PLOT P	PLOT C	PLOT C	PLOT P	PLOT P	PLOT P	PLOT -				
Rating Date	6-5-2012	6-5-2012	6-5-2012	6-19-2012	7-6-2012	7-6-2012	7-6-2012	10-11-2012				
Rating Type	CONTRO	CONTRO	PHYGEN	PHYGEN	CONTRO	CONTRO	CONTRO	YIELD				
Rating Unit	%	%	%	%	%	%	%	LB				
Number of Subsamples	1	1	1	1	1	1	1	1				
Crop Stage Majority	11	11	11	14	61	61	61	61				
Pest Stage Majority	1-4 IN	1-2 IN			6-36 IN	6-24 IN	6-18 IN					
Pest Density, Unit	7.5 M2	5 M2			7.5 M2	5 M2	42.5M2					
Assessed By	PM	PM	PM	PM	PM	PM	PM	PM				
Days After First/Last Applic.	18 18	18 18	18 18	32 14	49 31	49 31	49 31	146 128				
Plant-Eval Interval	18 DP-1	18 DP-1	18 DP-1	32 DP-1	49 DP-1	49 DP-1	49 DP-1	146 DP-1				
Days After Emergence	12 DE-1	12 DE-1	12 DE-1	26 DE-1	43 DE-1	43 DE-1	43 DE-1	140 DE-1				
ARM Action Codes												
Number of Decimals												
Trt No.	Treatment Name	Rate	Unit	Appl Code	1	2	3	4	5	6	7	8
1	UNTREATED	0.0	b		0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.9618656
2	Authority First	314	g ai/ha	A	96.3	92.8	0.0	0.0	93.8	91.3	96.3	14.6296878
	Select	140	g ai/ha	B								
	COC	1	% v/v	B								
3	Authority Assist	420	g ai/ha	A	79.3	91.3	0.0	0.0	70.0	100.0	99.5	14.8446498
	Select	140	g ai/ha	B								
	COC	1	% v/v	B								
4	Authority XL	320	g ai/ha	A	68.8	77.5	0.0	0.0	47.0	70.0	99.5	12.4800466
	Select	140	g ai/ha	B								
	COC	1	% v/v	B								
5	Authority MTZ	570	g ai/ha	A	70.8	62.5	0.0	0.0	57.5	45.0	100.0	13.6623473
	Select	140	g ai/ha	B								
	COC	1	% v/v	B								
6	Valor	107	g ai/ha	A	82.5	96.3	0.0	0.0	58.8	70.0	95.8	9.1884107
	Select	140	g ai/ha	B								
	COC	1	% v/v	B								
7	Valor XLT	141	g ai/ha	A	89.5	86.3	0.0	0.0	68.8	66.3	100.0	13.6220450
	Select	140	g ai/ha	B								
	COC	1	% v/v	B								
8	Fierce	160	g ai/ha	A	82.5	95.0	0.0	0.0	56.3	60.0	100.0	13.0980715
	Select	140	g ai/ha	B								
	COC	1	% v/v	B								
9	Prefix	1490	g ai/ha	A	90.8	77.0	0.0	0.0	77.5	5.0	100.0	14.0116648
	Select	140	g ai/ha	B								
	COC	1	% v/v	B								

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.

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Pest Type	W Weed	W Weed			W Weed	W Weed	W Weed					
Pest Code	AMBTR	ABUTH			AMBTR	ABUTH	GGGAN					
Pest Scientific Name	Ambrosia trifi>	Abutilon theop>			Ambrosia trifi>	Abutilon theop>	Annual grasses					
Pest Name	Giant ragweed	velvetleaf			Giant ragweed	velvetleaf	Annual grasses					
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	AG2931	AG2931	AG2931	AG2931	AG2931	AG2931	AG2931	AG2931				
Description	3-4 IN	3-4 IN	3-4 IN	3-4 IN	18 IN	18 IN	18 IN	18 IN				
Part Rated	PLOT P	PLOT P	PLOT C	PLOT C	PLOT P	PLOT P	PLOT P	PLOT -				
Rating Date	6-5-2012	6-5-2012	6-5-2012	6-19-2012	7-6-2012	7-6-2012	7-6-2012	10-11-2012				
Rating Type	CONTRO	CONTRO	PHYGEN	PHYGEN	CONTRO	CONTRO	CONTRO	YIELD				
Rating Unit	%	%	%	%	%	%	%	LB				
Number of Subsamples	1	1	1	1	1	1	1	1				
Crop Stage Majority	11	11	11	14	61	61	61	61				
Pest Stage Majority	1-4 IN	1-2 IN			6-36 IN	6-24 IN	6-18 IN					
Pest Density, Unit	7.5 M2	5 M2			7.5 M2	5 M2	42.5M2					
Assessed By	PM	PM	PM	PM	PM	PM	PM	PM				
Days After First/Last Applic.	18 18	18 18	18 18	32 14	49 31	49 31	49 31	146 128				
Plant-Eval Interval	18 DP-1	18 DP-1	18 DP-1	32 DP-1	49 DP-1	49 DP-1	49 DP-1	146 DP-1				
Days After Emergence	12 DE-1	12 DE-1	12 DE-1	26 DE-1	43 DE-1	43 DE-1	43 DE-1	140 DE-1				
ARM Action Codes												
Number of Decimals												
Trt No.	Treatment Name	Rate	Unit	Appl Code	1	2	3	4	5	6	7	8
10	Optill Select COC	95 g ai/ha 140 g ai/ha 1 % v/v	A B B		85.0 a	83.8 ab	0.0 a	0.0 a	80.0 a	90.0 a	98.3 ab	11.9023316 a
11	Authority XL Anthem Roundup PowerMAX N-Pak AMS	196 g ai/ha 151 g ai/ha 870 g ae/ha 2.5 % v/v	A B B B		57.5 a	79.5 ab	0.0 a	0.0 a	90.0 a	100.0 a	100.0 a	16.4031388 a
12	Authority MTZ Anthem Classic	504 g ai/ha 151 g ai/ha 13.1 g ai/ha	A B B		72.5 a	81.3 ab	0.0 a	0.0 a	85.0 a	100.0 a	98.8 ab	13.7295279 a
13	Anthem Authority XL Select COC	151 g ai/ha 320 g ai/ha 140 g ai/ha 1 % v/v	A A B B		81.3 a	75.0 ab	0.0 a	0.0 a	73.8 a	71.3 ab	100.0 a	14.4415965 a
14	UNTREATED				0.0 b	0.0 c	0.0 a	0.0 a	0.0 b	0.0 c	0.0 c	12.8159307 a
	LSD (P=.05)				23.72	18.09	0.00	0.00	30.06	28.74	2.42	5.31480938
	Standard Deviation				16.60	12.66	0.00	0.00	21.04	20.11	1.69	3.71908750
	CV				24.3	17.76	0.0	0.0	34.32	32.4	1.99	28.02
	Bartlett's X2				21.198	12.114	0.0	0.0	23.012	14.539	8.332	23.791
	P(Bartlett's X2)				0.031*	0.355	.	.	0.018*	0.069	0.139	0.033*
	Replicate F				4.275	4.609	0.000	0.000	5.109	4.812	0.615	4.697
	Replicate Prob(F)				0.0106	0.0075	1.0000	1.0000	0.0045	0.0060	0.6094	0.0068
	Treatment F				13.595	24.794	0.000	0.000	7.720	13.266	1807.500	0.918
	Treatment Prob(F)				0.0001	0.0001	1.0000	1.0000	0.0001	0.0001	0.0001	0.5435

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Pest Type			
Pest Code			
Pest Scientific Name			
Pest Name			
Crop Code	GLXMA	GLXMA	GLXMA
BBCH Scale	BSOY	BSOY	BSOY
Crop Scientific Name	Glycine max	Glycine max	Glycine max
Crop Name	Soybean	Soybean	Soybean
Crop Variety			
Description			
Part Rated	PLOT -	PLOT -	PLOT -
Rating Date	10-11-2012	10-11-2012	10-11-2012
Rating Type	MOISTURE	YIELD	YIELD
Rating Unit	%	BU	KG
Number of Subsamples	1	1	1
Crop Stage Majority			
Pest Stage Majority			
Pest Density, Unit			
Assessed By	PM	PM	PM
Days After First/Last Applic.	146 128	146 128	146 128
Plant-Eval Interval	146 DP-1	146 DP-1	146 DP-1
Days After Emergence	140 DE-1	140 DE-1	140 DE-1
ARM Action Codes		TY2	TY3
Number of Decimals		1	1
Trt No.	Treatment Name	Rate	Appl Code
		Unit	
9			
10			
11			
1	UNTREATED		
		11.79274868 a	32.3 a
			2169.2 a
2	Authority First	314 g ai/ha A	
	Select	140 g ai/ha B	
	COC	1 % v/v B	
		11.85744690 a	43.1 a
			2896.0 a
3	Authority Assist	420 g ai/ha A	
	Select	140 g ai/ha B	
	COC	1 % v/v B	
		7.88735516 a	45.6 a
			3068.1 a
4	Authority XL	320 g ai/ha A	
	Select	140 g ai/ha B	
	COC	1 % v/v B	
		11.04044929 a	37.1 a
			2496.8 a
5	Authority MTZ	570 g ai/ha A	
	Select	140 g ai/ha B	
	COC	1 % v/v B	
		11.08884732 a	40.5 a
			2727.0 a
6	Valor	107 g ai/ha A	
	Select	140 g ai/ha B	
	COC	1 % v/v B	
		13.36249676 a	26.7 a
			1796.9 a
7	Valor XLT	141 g ai/ha A	
	Select	140 g ai/ha B	
	COC	1 % v/v B	
		8.78815834 a	41.7 a
			2802.1 a
8	Fierce	160 g ai/ha A	
	Select	140 g ai/ha B	
	COC	1 % v/v B	
		8.91405767 a	40.3 a
			2709.7 a
9	Prefix	1490 g ai/ha A	
	Select	140 g ai/ha B	
	COC	1 % v/v B	
		11.94163633 a	41.2 a
			2774.1 a

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Pest Type				
Pest Code				
Pest Scientific Name				
Pest Name				
Crop Code	GLXMA	GLXMA	GLXMA	
BBCH Scale	BSOY	BSOY	BSOY	
Crop Scientific Name	Glycine max	Glycine max	Glycine max	
Crop Name	Soybean	Soybean	Soybean	
Crop Variety				
Description				
Part Rated	PLOT -	PLOT -	PLOT -	
Rating Date	10-11-2012	10-11-2012	10-11-2012	
Rating Type	MOISTURE	YIELD	YIELD	
Rating Unit	%	BU	KG	
Number of Subsamples	1	1	1	
Crop Stage Majority				
Pest Stage Majority				
Pest Density, Unit				
Assessed By	PM	PM	PM	
Days After First/Last Applic.	146 128	146 128	146 128	
Plant-Eval Interval	146 DP-1	146 DP-1	146 DP-1	
Days After Emergence	140 DE-1	140 DE-1	140 DE-1	
ARM Action Codes		TY2	TY3	
Number of Decimals		1	1	
Trt No.	Treatment	Rate	Appl	
	Name	Rate Unit	Code	
				9 10 11
10	Optill	95 g ai/ha A		12.14654662 a
	Select	140 g ai/ha B		35.2 a
	COC	1 % v/v B		2365.7 a
11	Authority XL	196 g ai/ha A		11.17748944 a
	Anthem	151 g ai/ha B		48.6 a
	Roundup PowerMAX	870 g ae/ha B		3268.9 a
	N-Pak AMS	2.5 % v/v B		
12	Authority MTZ	504 g ai/ha A		11.39878959 a
	Anthem	151 g ai/ha B		40.9 a
	Classic	13.1 g ai/ha B		2747.8 a
13	Anthem	151 g ai/ha A		8.57753649 a
	Authority XL	320 g ai/ha A		44.4 a
	Select	140 g ai/ha B		2987.0 a
	COC	1 % v/v B		
14	UNTREATED			10.49113474 a
LSD (P=.05)				4.955529709
Standard Deviation				3.467678178
CV				32.27
Bartlett's X2				37.498
P(Bartlett's X2)				0.001*
Replicate F				0.659
Replicate Prob(F)				0.5823
Treatment F				0.858
Treatment Prob(F)				0.6008
				4.675
				0.0070
				0.931
				0.5313

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Trial ID: 12S-PIP-CTS-03 Protocol ID: 12S-PIP-CTS-03
 Location: PPAC Study Director: Paul Marquardt
 Project ID: 12S-PIP-CTS-03 Investigator: Dr. Bill Johnson
 Sponsor Contact: Joe Reed

Pest Type

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

Pest Code

AMBTR, Ambrosia trifida, = US

ABUTH, Abutilon theophrasti, = US

GGGAN, Annual grasses, = US

Crop Code

GLXMA, BSOY, Glycine max, = US

Part Rated

PLOT = plot

P = Pest is Part Rated

C = Crop is Part Rated

Rating Type

CONTRO = control / burndown or knockdown

PHYGEN = phytotoxicity - general / injury

YIELD = yield

Rating Unit

% = percent

LB = pound

BU = bushel

KG = kilogram

Crop Stage Majority

11 = First pair of true leaves unfolded (unifoliolate leaves on the first node)

14 = Trifoliolate leaf on the 4th node unfolded

61 = Beginning of flowering: about 10% of flowers open

M2 = per square meter

Plant-Eval Interval

18 DP-1 = 1 GLXMA 5-18-2012

32 DP-1 = 1 GLXMA 5-18-2012

49 DP-1 = 1 GLXMA 5-18-2012

146 DP-1 = 1 GLXMA 5-18-2012

ARM Action Codes

TY2 = $2.904 \cdot [8] \cdot (100 - [9]) / 87$

TY3 = $195.2984 \cdot [8] \cdot (100 - [9]) / 87$