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Control of Marestalk in Roundup Ready soybean

Trial ID: 12S-SEP-NTS-15 Protocol ID: 12S-SEP-NTS-15
 Location: SEPAC Study Director: Paul Marquardt
 Project ID: BLZR 15 US IN 12 01PWR Investigator: Dr. Bill Johnson
 Sponsor Contact: Phil Robinson

General Trial Information

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

Discipline: H herbicide
Trial Status: E established
Initiation Date: 3-20-2012

Trial Location

City: Butleville
State/Prov.: IN
Postal Code: 47223
Country: USA

Personnel

Study Director: Paul Marquardt **Title:** Research Associate
Affiliation: Purdue University
Address: 915 W. State Street
Location: West Lafayette, IN
Postal Code: 47907 **E-mail:** pmarquar@purdue.edu
Phone No.: 765-494-0891 **Mobile No.:** 765-409-6369
Investigator: Dr. Bill Johnson **Title:** Professor
Affiliation: Purdue University
Address: 915 W. State Street
Location: West Lafayette, IN
Postal Code: 47907 **E-mail:** wgj@purdue.edu
Phone No.: 765-494-4656 **Mobile No.:** 765-404-9801

Cooperator/Landowner

Cooperator: Don Biehle **Role:** Director
Organization: Southeast Purdue Agricultural Center **Org. Type:** University
Address 1: 4425 E. CR 350 N
City: Butleville **Phone No.:** 812-458-6977
State/Prov.: IN **Fax No.:** 812-458-6979
Postal Code: 47223 **Mobile No.:** 812-592-8426
Country: USA United States **E-mail:** biehled@purdue.edu

Crop Description

Crop 1: GLXMA Glycine max Soybean
Variety: AG2931 **Description:** Roundup Ready
BBCH Scale: BSOY **Planting Date:** 5-3-2012
Planting Method: DIRDRI direct drilled **Rate, Unit:** 140000 S/A
Depth, Unit: 1 IN
Row Spacing, Unit: 30 IN **Spacing Within Row, Unit:** 2 IN
Seed Bed: MEDIUM medium **Soil Temperature, Unit:** 70 F
Soil Moisture: MOIST **Emergence Date:** 5-8-2012
Harvest Date: 11-1-2012 **Harvest Equipment:** Gleaner F3
Harvested Width, Unit: 10 FT **Harvested Length, Unit:** 25 FT
% Standard Moisture: 13.0 **Moisture Meter:** Carter 3" Blade
Weighing Equipment: HM400 Double Bucket

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Pest Description

- Pest 1 Type:** W **Code:** ERICA *Conyza canadensis*
Common Name: Canada horseweed
- Pest 2 Type:** W **Code:** TAROF *Taraxacum officinale*
Common Name: Common dandelion
- Pest 3 Type:** W **Code:** ALLVI *Allium vineale*
Common Name: Wild garlic
- Pest 4 Type:** W **Code:** DAUCA *Daucus carota*
Common Name: Wild carrot
- Pest 5 Type:** W **Code:** SOOCA *Solidago canadensis*
Common Name: Canadian goldenrod

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:** NOTILL no-till
Replications: 4 **Study Design:** RACOB L Randomized Complete Block (RCB)
Untreated Arrangement: INCLUDED single control randomized in each block

Maintenance

No.	Date	Maintenance Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit	Tank Mix
1.	6-7-2012	Select Max	1	LB/GAL	L	9	OZ/A	no

Soil Description

Description Name: SEPAC-Field U4
% Sand: 20 **% OM:** 1.8 **Texture:** SIL silt loam
% Silt: 65 **pH:** 5.6 **Soil Name:** Avonburg
% Clay: 15 **CEC:** 6.7 **Fert. Level:** G good
Soil Drainage: P poor

Application Description

	A	B
Application Date:	4-19-2012	5-31-2012
Time of Day:	9:45 AM	10 AM
Application Method:	SPRAY	SPRAY
Application Timing:	0-30 DPP	POSPOS
Application Placement:	FOLIAR	FOLIAR
Applied By:	JR	JR
Air Temperature, Unit:	64 F	75 F
% Relative Humidity:	38	51
Wind Velocity, Unit:	1.5 MPH	3 MPH
Wind Direction:	SW	S
Dew Presence (Y/N):	Y yes	Y yes
Soil Temperature, Unit:	58 F	
Soil Moisture:	MOIST	DRY
% Cloud Cover:	15	30

Crop Stage At Each Application

	A	B	C
Crop 1 Code, BBCH Scale:	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY
Stage Scale Used:		BBCH	
Stage Majority, Percent:		13 100	

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Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale:	ERICA W	ERICA W
Stage Majority, Percent:		30 100
Height, Unit:		4 IN
Height Minimum, Maximum:		3 5
Density, Unit:		2.5 M2
Pest 2 Code, Type, Scale:	TAROF W	TAROF W
Stage Majority, Percent:	40 100	40 100
Height, Unit:	6 IN	6 IN
Height Minimum, Maximum:	2 10	2 10
Density, Unit:	5 M2	5 M2
Pest 3 Code, Type, Scale:	ALLVI W	ALLVI W
Stage Majority, Percent:	40 100	
Height, Unit:	9 IN	
Height Minimum, Maximum:	6 12	
Density, Unit:	2.5 M2	
Pest 4 Code, Type, Scale:	DAUCA W	DAUCA W
Stage Majority, Percent:	14 100	19 100
Height, Unit:	8 IN	12 IN
Height Minimum, Maximum:	4 12	4 20
Density, Unit:	1.5 M2	1.5 M2
Pest 5 Code, Type, Scale:	SOOCA W	SOOCA W
Stage Majority, Percent:	30 100	36 100
Height, Unit:	3 IN	6 IN
Height Minimum, Maximum:	2 4	2 10
Density, Unit:	5 M2	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

Trt No	Treatment Application Comment
4	POSPOS B: Plots 501, 701, and 802 mispray

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 Location: SEPAC Study Director: Paul Marquardt
 Project ID: BLZR 15 US IN 12 01PWR Investigator: Dr. Bill Johnson
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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed				
Pest Code	TAROF	AMBEL	TAROF	AMBEL	TAROF	AMBEL				
Pest Scientific Name	Taraxacum offi>	Ambrosia artem>	Taraxacum offi>	Ambrosia artem>	Taraxacum offi>	Ambrosia artem>				
Pest Name	Common dandel>	Common ragweed	Common dandel>	Common ragweed	Common dandel>	Common 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	AG2931	AG2931	AG2931	AG2931	AG2931	AG2931				
Part Rated	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P				
Rating Date	5-1-2012	5-1-2012	5-17-2012	5-17-2012	6-14-2012	6-14-2012				
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO				
Rating Unit	%	%	%	%	%	%				
Number of Subsamples	1	1	1	1	1	1				
Crop Stage Majority			10	10	14	14				
Pest Stage Majority	1-12 IN	1-2 IN	1-12 IN	1-2 IN	1-12 IN	3-18 IN				
Pest Density, Unit	2.5 M2	5 M2	2.5 M2	5 M2	2.5 M2	10 M2				
Assessed By	PM	PM	PM	PM	PM	PM				
Days After First/Last Applic.	12 12	12 12	28 28	28 28	56 14	56 14				
Trt-Eval Interval	12 DA-A	12 DA-A	12 DA-A	12 DA-A						
Plant-Eval Interval	-2 DP-1	-2 DP-1	14 DP-1	14 DP-1	42 DP-1	42 DP-1				
Days After Emergence	-7 DE-1	-7 DE-1	9 DE-1	9 DE-1	37 DE-1	37 DE-1				
ARM Action Codes										
Number of Decimals										
Trt No.	Treatment Name	Rate	Appl Unit	Code	1	2	3	4	5	6
1		0.0	b		0.0	c	0.0	b	0.0	c
2	TriCor	4 oz/a	A		99.5	a	100.0	a	97.0	a
	Ignite	30 fl oz/a	A						58.8	b
	Ammonium Sulfate	2.5 % v/v	A						96.3	a
	Ultra Blazer	12 fl oz/a	B							
	Roundup	40 fl oz/a	B							
	MSO	1 % v/v	B							
	Ammonium Sulfate	2.5 % v/v	B							
3	TriCor	4 oz/a	A		100.0	a	93.8	ab	100.0	a
	Ignite	30 fl oz/a	A						90.0	ab
	Ammonium Sulfate	2.5 % v/v	A						100.0	a
	Storm	12 fl oz/a	B							
	Roundup	40 fl oz/a	B							
	MSO	1 % v/v	B							
	Ammonium Sulfate	2.5 % v/v	B							
4	TriCor	4 oz/a	A		96.5	a	80.0	b	99.5	a
	Ignite	30 fl oz/a	A						67.5	ab
	Ammonium Sulfate	2.5 % v/v	A						98.8	a
	Ultra Blazer	24 fl oz/a	B							
	Roundup	40 fl oz/a	B							
	MSO	1 % v/v	B							
	Ammonium Sulfate	2.5 % 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 Code	TAROF	AMBEL						
Pest Scientific Name	Taraxacum offi>	Ambrosia artem>						
Pest Name	Common dandel>	Common 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	AG2931	AG2931	AG2931	AG2931	AG2931	AG2931		
Part Rated	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P		
Rating Date	6-29-2012	6-29-2012	11-1-2012	11-1-2012	11-1-2012	11-1-2012		
Rating Type	CONTRO	CONTRO	YIELD	MOISTURE	YIELD	YIELD		
Rating Unit	%	%	LB	%	BU	KG		
Number of Subsamples	1	1	1	1	1	1		
Crop Stage Majority	62	62						
Pest Stage Majority	1-12 IN	3-18 IN						
Pest Density, Unit	2.5 M2	10 M2						
Assessed By	PM	PM	PM	PM	PM	PM		
Days After First/Last Applic.	71 29	71 29	196 154	196 154	196 154	196 154		
Trt-Eval Interval								
Plant-Eval Interval	57 DP-1	57 DP-1	182 DP-1	182 DP-1	182 DP-1	182 DP-1		
Days After Emergence	52 DE-1	52 DE-1	177 DE-1	177 DE-1	177 DE-1	177 DE-1		
ARM Action Codes					TY1	TY2		
Number of Decimals					1	1		
Trt Treatment	Rate	Appl						
No. Name	Rate Unit	Code	7	8	9	10	11	12
1			0.0 b	0.0 c	7.4451683 a	19.1841641 a	19.7 a	1325.0 a
2 TriCor	4 oz/a A		96.3 a	100.0 a	10.1100016 a	21.0377886 a	26.8 a	1804.3 a
Ignite	30 fl oz/a A							
Ammonium Sulfate	2.5 % v/v A							
Ultra Blazer	12 fl oz/a B							
Roundup	40 fl oz/a B							
MSO	1 % v/v B							
Ammonium Sulfate	2.5 % v/v B							
3 TriCor	4 oz/a A		100.0 a	100.0 a	10.9040672 a	19.7010213 a	29.2 a	1964.0 a
Ignite	30 fl oz/a A							
Ammonium Sulfate	2.5 % v/v A							
Storm	12 fl oz/a B							
Roundup	40 fl oz/a B							
MSO	1 % v/v B							
Ammonium Sulfate	2.5 % v/v B							
4 TriCor	4 oz/a A		98.8 a	97.0 b	9.6524058 a	19.9133359 a	25.8 a	1734.4 a
Ignite	30 fl oz/a A							
Ammonium Sulfate	2.5 % v/v A							
Ultra Blazer	24 fl oz/a B							
Roundup	40 fl oz/a B							
MSO	1 % v/v B							
Ammonium Sulfate	2.5 % v/v B							

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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	AG2931	AG2931	AG2931	AG2931	AG2931	AG2931
Part Rated	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P
Rating Date	6-29-2012	6-29-2012	11-1-2012	11-1-2012	11-1-2012	11-1-2012
Rating Type	CONTRO	CONTRO	YIELD	MOISTURE	YIELD	YIELD
Rating Unit	%	%	LB	%	BU	KG
Number of Subsamples	1	1	1	1	1	1
Crop Stage Majority	62	62				
Pest Stage Majority	1-12 IN	3-18 IN				
Pest Density, Unit	2.5 M2	10 M2				
Assessed By	PM	PM	PM	PM	PM	PM
Days After First/Last Applic.	71 29	71 29	196 154	196 154	196 154	196 154
Trt-Eval Interval						
Plant-Eval Interval	57 DP-1	57 DP-1	182 DP-1	182 DP-1	182 DP-1	182 DP-1
Days After Emergence	52 DE-1	52 DE-1	177 DE-1	177 DE-1	177 DE-1	177 DE-1
ARM Action Codes					TY1	TY2
Number of Decimals					1	1
Trt Treatment No. Name	Rate Unit Code					
		7	8	9	10	11
5 TriCor	4 oz/a A	98.3 a	99.5 a	12.3845323 a	20.5693304 a	32.8 a
Ignite	30 fl oz/a A					
Ammonium Sulfate	2.5 % v/v A					
Storm	24 fl oz/a B					
Roundup	40 fl oz/a B					
MSO	1 % v/v B					
Ammonium Sulfate	2.5 % v/v B					
LSD (P=.05)		3.80	1.73	8.26662146	3.88224927	22.09
Standard Deviation		2.46	1.13	5.36519915	2.51965572	14.34
CV		3.13	1.42	53.12	12.55	53.37
Bartlett's X2		1.882	2.072	3.779	9.034	4.073
P(Bartlett's X2)		0.39	0.15	0.437	0.06	0.396
Replicate F		1.720	1.526	0.719	0.625	0.709
Replicate Prob(F)		0.2159	0.2582	0.5595	0.6125	0.5651
Treatment F		1274.004	6210.632	0.456	0.336	0.454
Treatment Prob(F)		0.0001	0.0001	0.7668	0.8487	0.7682

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Trial ID: 12S-SEP-NTS-15 Protocol ID: 12S-SEP-NTS-15
 Location: SEPAC Study Director: Paul Marquardt
 Project ID: BLZR 15 US IN 12 01PWR Investigator: Dr. Bill Johnson
 Sponsor Contact: Phil Robinson

Pest Type

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

Pest Code

TAROF, Taraxacum officinale, = US
 AMBEL, Ambrosia artemisiifolia, = US

Crop Code

GLXMA, BSOY, Glycine max, = US

Part Rated

PLOT = plot
 P = Pest is Part Rated

Rating Type

CONTRO = control / burndown or knockdown
 YIELD = yield

Rating Unit

% = percent
 LB = pound
 BU = bushel
 KG = kilogram

Crop Stage Majority

10 = Cotyledons completely unfolded
 14 = Trifoliolate leaf on the 4th node unfolded
 62 = About 20% of flowers open

M2 = per square meter

Plant-Eval Interval

-2 DP-1 = 1 GLXMA 5-3-2012
 14 DP-1 = 1 GLXMA 5-3-2012
 42 DP-1 = 1 GLXMA 5-3-2012
 57 DP-1 = 1 GLXMA 5-3-2012
 182 DP-1 = 1 GLXMA 5-3-2012

ARM Action Codes

TY1 = $2.904 * [9] * (100 - [10]) / 87$
 TY2 = $195.2984 * [9] * (100 - [10]) / 87$