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Control of Marestalk in Liberty Link soybean

Trial ID: 12S-SEP-NTS-16 Protocol ID: 12S-SEP-NTS-16
 Location: SEPAC Study Director: Paul Marquardt
 Project ID: BLZR 15 US IN 12 02PWR 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 **E-mail:** biehled@purdue.edu
 United States

Crop Description

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

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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� 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	9:15 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
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
Nozzles/Row:	8	
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
3	POSPOS B: Plots 701 and 802 not sprayed.

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 Location: SEPAC Study Director: Paul Marquardt
 Project ID: BLZR 15 US IN 12 02PWR Investigator: Dr. Bill Johnson
 Sponsor Contact: Phil Robinson

Pest Type	W Weed TAROF	W Weed AMBEL	W Weed AMBTR	W Weed TAROF	W Weed AMBEL	W Weed AMBTR	W Weed TAROF			
Pest Scientific Name	Taraxacum offi>	Ambrosia artem>	Ambrosia trifi>	Taraxacum offi>	Ambrosia artem>	Ambrosia trifi>	Taraxacum offi>			
Pest Name	Common dandel>	Common ragweed	Giant ragweed	Common dandel>	Common ragweed	Giant ragweed	Common dandel>			
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			
Part Rated	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P			
Rating Date	5-1-2012	5-1-2012	5-1-2012	5-17-2012	5-17-2012	5-17-2012	6-14-2012			
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO			
Rating Unit	%	%	%	%	%	%	%			
Number of Subsamples	1	1	1	1	1	1	1			
Pest Stage Majority	2-12 IN	1-2 IN	1-3 IN	2-12 IN	1-2 IN	1-3 IN	2-12 IN			
Pest Density, Unit	1.5 M2	5 M2	12.5M2	1.5 M2	5 M2	12.5M2	1.5 M2			
Assessed By	PM	PM	PM	PM	PM	PM	PM/JR			
Days After First/Last Applic.	12 12	12 12	12 12	28 28	28 28	28 28	56 14			
Trt-Eval Interval	12 DA-A	12 DA-A	12 DA-A	12 DA-A	12 DA-A	12 DA-A				
Plant-Eval Interval	-2 DP-1	-2 DP-1	-2 DP-1	14 DP-1	14 DP-1	14 DP-1	42 DP-1			
Days After Emergence	-7 DE-1	-7 DE-1	-7 DE-1	9 DE-1	9 DE-1	9 DE-1	37 DE-1			
ARM Action Codes										
Number of Decimals										
Trt No.	Treatment Name	Rate	Appl	1	2	3	4	5	6	7
Rate Unit	Code									
1	UNTREATED	0.0 b		0.0 b	0.0 b	0.0 b	0.0 b	0.0 b	0.0 b	0.0 c
2	TriCor Ignite Ammonium Sulfate Ultra Blazer Ignite Ammonium Sulfate	4 oz/a A 30 fl oz/a A 2.5 % v/v A 12 fl oz/a B 30 fl oz/a B 2.5 % v/v B	A	100.0 a	100.0 a	95.8 a	100.0 a	100.0 a	95.8 a	100.0 a
3	TriCor Ignite Ammonium Sulfate Ultra Blazer Ignite Ammonium Sulfate	4 oz/a A 30 fl oz/a A 2.5 % v/v A 24 fl oz/a B 30 fl oz/a B 2.5 % v/v B	A	95.0 a	93.8 a	81.3 a	95.0 a	93.8 a	81.3 a	46.3 b
4	TriCor Ignite Ammonium Sulfate Storm Ignite Ammonium Sulfate	4 oz/a A 30 fl oz/a A 2.5 % v/v A 12 fl oz/a B 30 fl oz/a B 2.5 % v/v B	A	100.0 a	98.8 a	95.0 a	100.0 a	98.8 a	95.0 a	85.8 a

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 AMBEL	W Weed AMBTR	W Weed TAROF	W Weed AMBEL	W Weed AMBTR					
Pest Scientific Name	Ambrosia artem>	Ambrosia trifi>	Taraxacum offi>	Ambrosia artem>	Ambrosia trifi>					
Pest Name	Common ragweed	Giant ragweed	Common dandel>	Common ragweed	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			
Part Rated	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P			
Rating Date	6-14-2012	6-14-2012	6-29-2012	6-29-2012	6-29-2012	11-1-2012	11-1-2012			
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	YIELD	MOISTURE			
Rating Unit	%	%	%	%	%	LB	%			
Number of Subsamples	1	1	1	1	1	1	1			
Pest Stage Majority	3-10 IN	1-18 IN	2-12 IN	3-10 IN	1-18 IN					
Pest Density, Unit	5 M2	12.5M2	1.5 M2	5 M2	12.5M2					
Assessed By	PM/JR	PM/JR	PM	PM	PM	PM	PM			
Days After First/Last Applic.	56 14	56 14	71 29	71 29	71 29	196 154	196 154			
Trt-Eval Interval										
Plant-Eval Interval	42 DP-1	42 DP-1	57 DP-1	57 DP-1	57 DP-1	182 DP-1	182 DP-1			
Days After Emergence	37 DE-1	37 DE-1	52 DE-1	52 DE-1	52 DE-1	177 DE-1	177 DE-1			
ARM Action Codes										
Number of Decimals										
Trt No.	Treatment Name	Rate	Appl Code	8	9	10	11	12	13	14
1	UNTREATED			0.0 c	0.0 c	0.0 c	0.0 c	0.0 c	4.4304089 b	14.0290618 a
2	TriCor Ignite Ammonium Sulfate Ultra Blazer Ignite Ammonium Sulfate	4 oz/a A 30 fl oz/a A 2.5 % v/v A 12 fl oz/a B 30 fl oz/a B 2.5 % v/v B	A	100.0 a	88.8 a	100.0 a	100.0 a	88.8 a	10.8771507 a	18.6732635 a
3	TriCor Ignite Ammonium Sulfate Ultra Blazer Ignite Ammonium Sulfate	4 oz/a A 30 fl oz/a A 2.5 % v/v A 24 fl oz/a B 30 fl oz/a B 2.5 % v/v B	A	45.0 b	35.0 b	46.3 b	45.0 b	35.0 b	9.0871343 ab	16.0898587 a
4	TriCor Ignite Ammonium Sulfate Storm Ignite Ammonium Sulfate	4 oz/a A 30 fl oz/a A 2.5 % v/v A 12 fl oz/a B 30 fl oz/a B 2.5 % v/v B	A	100.0 a	96.3 a	85.8 a	100.0 a	96.3 a	11.3616630 a	18.4636783 a

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed				
Pest Code	AMBEL	AMBTR	TAROF	AMBEL	AMBTR				
Pest Scientific Name	Ambrosia artem>	Ambrosia trifi>	Taraxacum offi>	Ambrosia artem>	Ambrosia trifi>				
Pest Name	Common ragweed	Giant ragweed	Common dandel>	Common ragweed	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		
Part Rated	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P		
Rating Date	6-14-2012	6-14-2012	6-29-2012	6-29-2012	6-29-2012	11-1-2012	11-1-2012		
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	YIELD	MOISTURE		
Rating Unit	%	%	%	%	%	LB	%		
Number of Subsamples	1	1	1	1	1	1	1		
Pest Stage Majority	3-10 IN	1-18 IN	2-12 IN	3-10 IN	1-18 IN				
Pest Density, Unit	5 M2	12.5M2	1.5 M2	5 M2	12.5M2				
Assessed By	PM/JR	PM/JR	PM	PM	PM	PM	PM		
Days After First/Last Applic.	56 14	56 14	71 29	71 29	71 29	196 154	196 154		
Trt-Eval Interval									
Plant-Eval Interval	42 DP-1	42 DP-1	57 DP-1	57 DP-1	57 DP-1	182 DP-1	182 DP-1		
Days After Emergence	37 DE-1	37 DE-1	52 DE-1	52 DE-1	52 DE-1	177 DE-1	177 DE-1		
ARM Action Codes									
Number of Decimals									
Trt Treatment	Rate	Appl							
No. Name	Rate Unit	Code	8	9	10	11	12	13	14
5 TriCor	4 oz/a	A	100.0 a	100.0 a	70.0 ab	100.0 a	100.0 a	8.3603600 ab	17.1427038 a
Ignite	30 fl oz/a	A							
Ammonium Sulfate	2.5 % v/v	A							
Storm	24 fl oz/a	B							
Ignite	30 fl oz/a	B							
Ammonium Sulfate	2.5 % v/v	B							
LSD (P=.05)			28.41	21.37	31.75	28.41	21.37	4.17939705	5.22327666
Standard Deviation			18.44	13.87	20.60	18.44	13.87	2.71251038	3.39000879
CV			26.72	21.67	34.11	26.72	21.67	30.74	20.08
Bartlett's X2			0.0	5.389	3.875	0.0	5.389	4.853	16.164
P(Bartlett's X2)			.	0.068	0.144	.	0.068	0.303	0.003*
Replicate F			1.000	0.485	1.360	1.000	0.485	1.448	3.587
Replicate Prob(F)			0.4262	0.6987	0.3019	0.4262	0.6987	0.2779	0.0465
Treatment F			24.176	41.009	14.491	24.176	41.009	4.110	1.266
Treatment Prob(F)			0.0001	0.0001	0.0002	0.0001	0.0001	0.0252	0.3364

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Pest Type			
Pest Code			
Pest Scientific Name			
Pest Name			
Crop Code	GLXMA	GLXMA	
BBCH Scale	BSOY	BSOY	
Crop Scientific Name	Glycine max	Glycine max	
Crop Name	Soybean	Soybean	
Part Rated	PLOT P	PLOT P	
Rating Date	11-1-2012	11-1-2012	
Rating Type	YIELD	YIELD	
Rating Unit	BU	KG	
Number of Subsamples	1	1	
Pest Stage Majority			
Pest Density, Unit			
Assessed By	PM	PM	
Days After First/Last Applic.	196 154	196 154	
Trt-Eval Interval			
Plant-Eval Interval	182 DP-1	182 DP-1	
Days After Emergence	177 DE-1	177 DE-1	
ARM Action Codes	TY1	TY2	
Number of Decimals	1	1	
Trt No.	Treatment Name	Rate	Appl Code
		Rate Unit	
1	UNTREATED	12.7 b	854.9 b
2	TriCor	4 oz/a A	29.5 a 1985.5 a
	Ignite	30 fl oz/a A	
	Ammonium Sulfate	2.5 % v/v A	
	Ultra Blazer	12 fl oz/a B	
	Ignite	30 fl oz/a B	
	Ammonium Sulfate	2.5 % v/v B	
3	TriCor	4 oz/a A	25.2 ab 1692.7 ab
	Ignite	30 fl oz/a A	
	Ammonium Sulfate	2.5 % v/v A	
	Ultra Blazer	24 fl oz/a B	
	Ignite	30 fl oz/a B	
	Ammonium Sulfate	2.5 % v/v B	
4	TriCor	4 oz/a A	30.9 a 2079.1 a
	Ignite	30 fl oz/a A	
	Ammonium Sulfate	2.5 % v/v A	
	Storm	12 fl oz/a B	
	Ignite	30 fl oz/a B	
	Ammonium Sulfate	2.5 % v/v B	

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Pest Type			
Pest Code			
Pest Scientific Name			
Pest Name			
Crop Code	GLXMA	GLXMA	
BBCH Scale	BSOY	BSOY	
Crop Scientific Name	Glycine max	Glycine max	
Crop Name	Soybean	Soybean	
Part Rated	PLOT P	PLOT P	
Rating Date	11-1-2012	11-1-2012	
Rating Type	YIELD	YIELD	
Rating Unit	BU	KG	
Number of Subsamples	1	1	
Pest Stage Majority			
Pest Density, Unit			
Assessed By	PM	PM	
Days After First/Last Applic.	196 154	196 154	
Trt-Eval Interval			
Plant-Eval Interval	182 DP-1	182 DP-1	
Days After Emergence	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	
			15 16
5 TriCor	4 oz/a A		23.3 ab 1568.6 ab
Ignite	30 fl oz/a A		
Ammonium Sulfate	2.5 % v/v A		
Storm	24 fl oz/a B		
Ignite	30 fl oz/a B		
Ammonium Sulfate	2.5 % v/v B		
LSD (P=.05)	10.96	736.89	
Standard Deviation	7.11	478.26	
CV	29.23	29.23	
Bartlett's X2	4.072	4.072	
P(Bartlett's X2)	0.396	0.396	
Replicate F	1.992	1.992	
Replicate Prob(F)	0.1691	0.1690	
Treatment F	4.094	4.094	
Treatment Prob(F)	0.0255	0.0255	

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Trial ID: 12S-SEP-NTS-16 Protocol ID: 12S-SEP-NTS-16
 Location: SEPAC Study Director: Paul Marquardt
 Project ID: BLZR 15 US IN 12 02PWR 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
 AMBTR, Ambrosia trifida, = 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

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 = $2.904 * [13] * (100 - [14]) / 87$
 TY2 = $195.2984 * [13] * (100 - [14]) / 87$