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LIBERTY LINK SOYBEAN PRES WITH IGNITE

Trial ID: 09S-PIP-CTS-06 Protocol ID: 09S-PIP-CTS-06
 Location: PINNEY PAC Study Director: PAUL MARQUARDT/MELISSA KRUGER
 Project ID: Investigator: Dr. Bill Johnson
 Sponsor Contact: DAVID LAMORE

General Trial Information

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

Discipline: H herbicide
Trial Status: F one-year/final
Initiation Date: 5/7/09 **Planned Completion Date:** 8/5/09

Trial Location

City: WANATAH
State/Prov.: IN
Country: USA United States

Objectives:

Test efficacy of preemergence herbicides followed by Ignite herbicide in Liberty Link soybean

Personnel

Study Director: Paul Marquardt/Melissa Kruger **Title:** Research Associate
Affiliation: Purdue University
Address: 915 W. State Street, Department of Botany & Plant Path.
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:** Associate 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: Pinney Purdue Agriculture Center **Role:** Superintendent
Organization: Purdue University
Address 1: 11402 S. County Line Rd. **Phone No.:** 219-733-2379
City: Wanatah
State/Prov: IN
Postal Code: 46390 **E-mail:** leukj@purdue.edu
Country: USA United States

Crop Description

Crop 1: GLXMA GLYCINE MAX Soybean
Variety: S080103 **Description:** Liberty Link
BBCH Scale: BSOY **Planting Date:** 5/7/09
Planting Method: SEEDED seeded **Rate, Unit:** 57 LB/A
Depth, Unit: 1 IN
Row Spacing, Unit: 30 IN **Spacing Within Row, Unit:** 0.5 IN
Seed Bed: SMOOTH smooth **Soil Temperature, Unit:** 70 F
Soil Moisture: EXCELL excellent

Pest Description

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

Pest 2 Type: W **Code:** ABUTH Abutilon theophrasti
Common Name: Velvetleaf

Pest 3 Type: W **Code:** PANDI Panicum dichotomiflorum
Common Name: Fall panicum

Pest 4 Type: W **Code:** CHEAL Chenopodium album
Common Name: Common lambsquarters

Pest 5 Type: W **Code:** AMBTR Ambrosia trifida
Common Name: Giant ragweed

Pest 6 Type: W **Code:** TAROF Taraxacum officinale
Common Name: Common dandelion

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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: RACOB� Randomized Complete Block (RCB) Untreated Arrangement: INCLUDED single control randomized in each block
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Field Prep./Maintenance:

Field cultivation and disc 1 week prior to planting

Soil Description

% OM: 2 **Texture:** SL sandy loam
pH: 6.5
CEC: 6.3

Analyzed By:

A&L GREAT LAKES LABORATORIES, INC. REPORT #: F04048-0006

Application Description

	A	B	C	D
Application Date:	5/7/09	6/15/09	7/3/09	7/16/09
Time of Day:	3:20 PM	9:58 AM	8:00 AM	11 AM
Application Method:	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing:	PREPRE	EAPOWE	MIPOCR	LAPOCR
Application Placement:	BANT	BANT	BANT	BANT
Applied By:	GK	RH	RH	JM
Air Temperature, Unit:	82 F	74.6 F	65 F	77 F
% Relative Humidity:	35	58.9	60	51
Wind Velocity, Unit:	9 MPH	1.8 MPH	1 MPH	3 MPH
Wind Direction:	W	E	W	SW
Dew Presence (Y/N):	N no	N no	N no	N no
Soil Temperature, Unit:	70 F	70 F	70 F	80 F
Soil Moisture:	EXCELL	DRY	DRY	DRY
% Cloud Cover:	70	30	80	0

Crop Stage At Each Application

	A	B	C	D
Crop 1 Code, BBCH Scale:	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY
Stage Scale Used:	BBCH	BBCH	BBCH	BBCH
Stage Majority, Percent:	00	12 60	61 50	77 80
Stage Minimum, Percent:		11 20	62 50	79 20
Stage Maximum, Percent:		13 20	62 50	79 20
Height, Unit:		6 IN	11 IN	21 IN
Height Minimum, Maximum:		4 8	8 14	18 24

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Pest Stage At Each Application				
	A	B	C	D
Pest 1 Code, Type, Scale:	SETFA W	SETFA W	SETFA W	SETFA W
Stage Minimum, Percent:			12	23
Stage Maximum, Percent:			18	25
Height, Unit:		4.5 IN	10 IN	13.5 IN
Height Minimum, Maximum:		3 6	2 18	3 24
Density, Unit:		0.25 YD2	5 YD2	5 YD2
Pest 2 Code, Type, Scale:	ABUTH W	ABUTH W	ABUTH W	ABUTH W
Stage Minimum, Percent:			31	31
Stage Maximum, Percent:			35	36
Height, Unit:		3 IN	7 IN	16 IN
Height Minimum, Maximum:		2 4	2 12	2 30
Density, Unit:		0.75 YD2	2.5 YD2	3 YD2
Pest 3 Code, Type, Scale:	PANDI W	PANDI W	PANDI W	PANDI W
Stage Minimum, Percent:			16	23
Stage Maximum, Percent:			19	25
Height, Unit:			7 IN	15 IN
Height Minimum, Maximum:			6 8	6 24
Density, Unit:			2 YD2	5 YD2
Pest 4 Code, Type, Scale:	CHEAL W	CHEAL W	CHEAL W	CHEAL W
Stage Minimum, Percent:			34	33
Stage Maximum, Percent:			36	39
Height, Unit:			7 IN	15 IN
Height Minimum, Maximum:			2 12	6 24
Density, Unit:			2 YD2	2 YD2
Pest 5 Code, Type, Scale:	AMBTR W	AMBTR W	AMBTR W	AMBTR W
Stage Minimum, Percent:			32	
Stage Maximum, Percent:			34	
Height, Unit:			7.5 IN	
Height Minimum, Maximum:			5 10	
Density, Unit:			2 YD2	
Pest 6 Code, Type, Scale:	TAROF W	TAROF W	TAROF W	TAROF W
Stage Minimum, Percent:			12	
Stage Maximum, Percent:			18	
Height, Unit:			4 IN	
Height Minimum, Maximum:			2 6	
Density, Unit:			3 YD2	

Application Equipment				
	A	B	C	D
Appl. Equipment:	CO2 BACKPACK	CO2 BACKPACK	CO2 BACKPACK	CO2 BACKPACK
Equipment Type:	SPRBAC	SPRBAC	SPRBAC	SPRBAC
Operating Pressure, Unit:	17 psi	17 psi	17 psi	17 psi
Nozzle Type:	FLAT FAN	FLAT FAN	FLAT FAN	FLAT FAN
Nozzle Size:	XR11002	XR11002	XR11002	XR11002
Nozzle Spacing, Unit:	15 IN	15 IN	15 IN	15 IN
Nozzles/Row:	6	6	6	6
Boom Length, Unit:	7.5 FT	7.5 FT	7.5 FT	7.5 FT
Boom Height, Unit:	18 IN	18 IN	18 IN	18 IN
Ground Speed, Unit:	3 MPH	3 MPH	3 MPH	3 MPH
Carrier:	H2O	H2O	H2O	H2O
Water Hardness (ppm CaCO3):	150	150	150	150
Spray Volume, Unit:	15 gal/ac	15 gal/ac	15 gal/ac	15 gal/ac
Mix Size, Unit:	1.8 liters	1.8 liters	1.8 liters	1.8 liters
Propellant:	CO2	CO2	CO2	CO2
Tank Mix (Y/N):	N no	N no	N no	N no

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Trt No	Treatment Application Comment
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	HIGH WIND GUSTS UP TO 15 MPH WHILE SPRAYING PREEMERGENCE TREATMENTS.
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 Location: PINNEY PAC Study Director: PAUL MARQUARDT/MELISSA KRUGER
 Project ID: Investigator: Dr. Bill Johnson
 Sponsor Contact: DAVID LAMORE

Trt No.	Treatment Name	Rate	Unit	Appl Code	1	2	3	4	5	6
1	UNTREATED CHECK				0.0 b	0.0 c	0.0 b	0.0 a	0.0 c	0.0 b
2	VALOR SX	0.064	lb ai/a	A	2.5 a	83.8 a	97.5 a	0.0 a	93.8 a	95.0 a
	IGNITE	0.4	lb ai/a	C						
	AMMONIUM SULFATE	8.5	lb ai/100 gal	C						
	IGNITE	0.4	lb ai/a	D						
	AMMONIUM SULFATE	8.5	lb ai/100 gal	D						
3	VALOR SX	0.064	lb ai/a	A	3.0 a	68.8 a	82.5 a	0.0 a	71.3 a	83.8 a
	IGNITE	0.656	lb ai/a	C						
	AMMONIUM SULFATE	8.5	lb ai/100 gal	C						
4	AUTHORITY FIRST	0.175	lb ai/a	A	0.0 b	92.5 a	96.3 a	0.0 a	96.3 a	92.5 a
	IGNITE	0.4	lb ai/a	C						
	AMMONIUM SULFATE	8.5	lb ai/100 gal	C						
	IGNITE	0.4	lb ai/a	D						
	AMMONIUM SULFATE	8.5	lb ai/100 gal	D						
5	AUTHORITY FIRST	0.175	lb ai/a	A	0.0 b	97.5 a	97.5 a	0.0 a	99.5 a	92.0 a
	IGNITE	0.656	lb ai/a	C						
	AMMONIUM SULFATE	8.5	lb ai/100 gal	C						
6	IGNITE	0.656	lb ai/a	C				0.0 a	0.0 c	0.0 b
	AMMONIUM SULFATE	8.5	lb ai/100 gal	C						
7	IGNITE	0.4	lb ai/a	B				0.0 a	95.5 a	90.8 a
	AMMONIUM SULFATE	8.5	lb ai/100 gal	B						
	IGNITE	0.4	lb ai/a	D						
	AMMONIUM SULFATE	8.5	lb ai/100 gal	D						
8	CANOPY DF	0.164	lb ai/a	A	0.5 b	95.0 a	95.0 a	0.0 a	99.0 a	95.0 a
	IGNITE	0.4	lb ai/a	C						
	AMMONIUM SULFATE	8.5	lb ai/100 gal	C						
	IGNITE	0.4	lb ai/a	D						
	AMMONIUM SULFATE	8.5	lb ai/100 gal	D						
9	PREFIX	1.33	lb ai/a	A	0.3 b	32.5 b	97.5 a	0.0 a	47.0 b	99.5 a
	IGNITE	0.4	lb ai/a	C						
	AMMONIUM SULFATE	8.5	lb ai/100 gal	C						
	IGNITE	0.4	lb ai/a	D						
	AMMONIUM SULFATE	8.5	lb ai/100 gal	D						

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Pest Type		W Weed	W Weed		W Weed	W Weed
Pest Code		ABUTH	SETFA		ABUTH	SETFA
Pest Scientific Name		Abutilon theop>	Setaria faberi		Abutilon theop>	Setaria faberi
Pest Name		Velvetleaf	Giant foxtail		Velvetleaf	Giant foxtail
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	S080103	S080103	S080103	S080103	S080103	S080103
Description				8-12"	8-12"	8-12"
Part Rated	PLOT C	PLOT P	PLOT P	PLOT C	PLOT P	PLOT P
Rating Date	6/15/09	6/15/09	6/15/09	7/3/09	7/3/09	7/3/09
Rating Type	PHYGEN	CONTRO	CONTRO	PHYGEN	CONTRO	CONTRO
Rating Unit	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1
Crop Stage Majority	V2	V2	V2	R2	R2	R2
Pest Stage Majority		2-4"	3-6"		1-4 node	2-12"
Pest Density, Unit		0.75YD2	0.37YD2		3 YD2	5.5 YD2
Assessed By	GK/RH	GK/RH	GK/RH	PM	PM	PM
Days After First/Last Applic.	39 39	39 39	39 39	57 18	57 18	57 18
Trt-Eval Interval	39 DA-A	39 DA-A	39 DA-A	57 DA-A	57 DA-A	57 DA-A
Plant-Eval Interval	39 DP-1	39 DP-1	39 DP-1	57 DP-1	57 DP-1	57 DP-1
Trt Treatment	Rate	Rate	Rate	Rate	Rate	Rate
No. Name	Unit	Unit	Unit	Unit	Unit	Unit
	Code					
	1	2	3	4	5	6
10 VALOR XLT						
VALOR SX	0.056 lb ai/a					
CLASSIC	0.0194 lb ai/a					
IGNITE	0.4 lb ai/a					
AMMONIUM SULFATE	8.5 lb ai/100 gal					
IGNITE	0.4 lb ai/a					
AMMONIUM SULFATE	8.5 lb ai/100 gal					
LSD (P=.05)	1.41	28.56	16.48	0.00	23.16	14.15
Standard Deviation	0.96	19.42	11.20	0.00	15.90	9.72
CV	109.42	27.25	13.45	0.0	22.64	13.08
Bartlett's X2	7.568	20.258	18.941	0.0	43.637	17.233
P(Bartlett's X2)	0.109	0.001*	0.002*	.	0.001*	0.016*
Replicate F	1.545	0.967	1.152	0.000	0.748	1.026
Replicate Prob(F)	0.2322	0.4269	0.3515	1.0000	0.5339	0.3979
Treatment F	6.234	14.051	37.013	0.000	26.109	65.659
Treatment Prob(F)	0.0005	0.0001	0.0001	1.0000	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.

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Trt No.	Treatment Name	Rate	Unit	Appl Code	7	8	9	10	11
1	UNTREATED CHECK				0.0 a	0.0 b	0.0 c	0.0 b	0.0 b
2	VALOR SX	0.064	lb ai/a	A	0.0 a	95.0 a	98.8 a	100.0 a	99.5 a
	IGNITE	0.4	lb ai/a	C					
	AMMONIUM SULFATE	8.5	lb ai/100 gal	C					
	IGNITE	0.4	lb ai/a	D					
	AMMONIUM SULFATE	8.5	lb ai/100 gal	D					
3	VALOR SX	0.064	lb ai/a	A	0.0 a	98.0 a	100.0 a	100.0 a	100.0 a
	IGNITE	0.656	lb ai/a	C					
	AMMONIUM SULFATE	8.5	lb ai/100 gal	C					
4	AUTHORITY FIRST	0.175	lb ai/a	A	0.0 a	97.5 a	100.0 a	100.0 a	100.0 a
	IGNITE	0.4	lb ai/a	C					
	AMMONIUM SULFATE	8.5	lb ai/100 gal	C					
	IGNITE	0.4	lb ai/a	D					
	AMMONIUM SULFATE	8.5	lb ai/100 gal	D					
5	AUTHORITY FIRST	0.175	lb ai/a	A	0.0 a	100.0 a	99.5 a	100.0 a	100.0 a
	IGNITE	0.656	lb ai/a	C					
	AMMONIUM SULFATE	8.5	lb ai/100 gal	C					
6	IGNITE	0.656	lb ai/a	C	0.0 a	100.0 a	100.0 a	93.8 a	100.0 a
	AMMONIUM SULFATE	8.5	lb ai/100 gal	C					
7	IGNITE	0.4	lb ai/a	B	0.0 a	83.8 a	85.0 b	100.0 a	100.0 a
	AMMONIUM SULFATE	8.5	lb ai/100 gal	B					
	IGNITE	0.4	lb ai/a	D					
	AMMONIUM SULFATE	8.5	lb ai/100 gal	D					
8	CANOPY DF	0.164	lb ai/a	A	0.0 a	95.3 a	100.0 a	100.0 a	100.0 a
	IGNITE	0.4	lb ai/a	C					
	AMMONIUM SULFATE	8.5	lb ai/100 gal	C					
	IGNITE	0.4	lb ai/a	D					
	AMMONIUM SULFATE	8.5	lb ai/100 gal	D					
9	PREFIX	1.33	lb ai/a	A	0.0 a	97.5 a	100.0 a	100.0 a	100.0 a
	IGNITE	0.4	lb ai/a	C					
	AMMONIUM SULFATE	8.5	lb ai/100 gal	C					
	IGNITE	0.4	lb ai/a	D					
	AMMONIUM SULFATE	8.5	lb ai/100 gal	D					

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Pest Type		W Weed	W Weed	W Weed	W Weed
Pest Code		ABUTH	SETFA	ABUTH	SETFA
Pest Scientific Name		Abutilon theop>	Setaria faberi	Abutilon theop>	Setaria faberi
Pest Name		Velvetleaf	Giant foxtail	Velvetleaf	Giant foxtail
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA
BBCH Scale	BSOY	BSOY	BSOY	BSOY	BSOY
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean
Crop Variety	S080103	S080103	S080103	S080103	S080103
Description	18-30"	18-30"	18-30"	36"	36"
Part Rated	PLOT C	PLOT P	PLOT P		
Rating Date	7/16/09	7/16/09	7/16/09	8/5/09	8/5/09
Rating Type	PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Crop Stage Majority	R4	R4	R4	R4	R4
Pest Stage Majority		2-36"	2-18"	2-4.5'	2-4.5'
Pest Density, Unit		3 YD2	5 YD2	4 YD2	3 YD2
Assessed By	PM/RH	PM/RH	PM/RH	AR/MH	AR/MH
Days After First/Last Applic.	70 13	70 13	70 13	90 20	90 20
Trt-Eval Interval					
Plant-Eval Interval	70 DP-1	70 DP-1	70 DP-1	90 DP-1	90 DP-1
Trt Treatment	Rate	Rate	Rate	Rate	Rate
No. Name	Unit	Unit	Unit	Unit	Unit
	Code				
	7	8	9	10	11
10 VALOR XLT					
VALOR SX	0.056 lb ai/a				
CLASSIC	0.0194 lb ai/a				
IGNITE	0.4 lb ai/a				
AMMONIUM SULFATE	8.5 lb ai/100 gal				
IGNITE	0.4 lb ai/a				
AMMONIUM SULFATE	8.5 lb ai/100 gal				
LSD (P=.05)	0.00	10.75	8.79	5.74	0.46
Standard Deviation	0.00	7.41	6.06	3.95	0.32
CV	0.0	8.55	6.86	4.42	0.35
Bartlett's X2	0.0	11.325	19.636	0.0	0.0
P(Bartlett's X2)	.	0.045*	0.001*	.	.
Replicate F	0.000	1.982	1.187	1.000	1.000
Replicate Prob(F)	1.0000	0.1404	0.3334	0.4079	0.4079
Treatment F	0.000	69.263	107.323	253.444	39956.559
Treatment Prob(F)	1.0000	0.0001	0.0001	0.0001	0.0001

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Project ID: Investigator: Dr. Bill Johnson
Sponsor Contact: DAVID LAMORE

Pest Type

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

Pest Code

ABUTH, Abutilon theophrasti, = US

SETFA, Setaria faberi, = US

Crop Code

GLXMA, BSOY, Glycine max, = US

Part Rated

PLOT = plot

C = Crop is Part Rated

P = Pest is Part Rated

Rating Type

PHYGEN = phytotoxicity - general / injury

CONTRO = control / burndown or knockdown

Rating Unit

% = percent

YD2 = per square yard

Plant-Eval Interval

39 DP-1 = 1 5/7/09

57 DP-1 = 1 5/7/09

70 DP-1 = 1 5/7/09

90 DP-1 = 1 5/7/09