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Panther + NUP-14013 Soybean Tolerance - No-till

Trial ID: 14S-THP-CTS-48 Protocol ID: 14S-THP-CTS-48
 Location: Throckmorton Study Director:
 Project ID: H 2014 105 IN Investigator: Dr. Bill Johnson
 Sponsor Contact: Nufarm - Bob Bruss

General Trial Information

Investigator: Dr. Bill Johnson **Title:** Professor

Discipline: H herbicide
Trial Status: E established

Trial Location

City: Lafayette
State/Prov.: IN
Postal Code: 47909
Country: USA

Personnel

Investigator: Dr. Bill Johnson **Title:** Professor
Affiliation: Purdue University
Address: 915 W State Street
Location: West Lafayette, IN, USA
Postal Code: 47907 **E-mail:** wgj@purdue.edu
Phone No.: 765-494-4656 **Mobile No.:** 765-404-9801

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
State/Prov.: IN **Fax No.:** 765-538-3423
Postal Code: 47909 **E-mail:** jayyoung@purdue.edu
Country: USA United States

Crop Description

Crop 1: GLXMA Glycine max Soybean
Variety: Asgrow 2933 **Description:** RR2
BBCH Scale: BSOY **Planting Date:** May-21-2014
Planting Method: SEEDED seeded **Rate, Unit:** 130000 S/A
Depth, Unit: 1 IN
Row Spacing, Unit: 30 IN
Seed Bed: FINE fine
Soil Moisture: WET wet **Emergence Date:** May-27-2014

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:** CHEAL Chenopodium album
Common Name: Common lambsquarters

Pest 4 Type: W **Code:** ABUTH Abutilon theophrasti
Common Name: Velvetleaf

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 4B
% OM: 2.9 **Texture:** SIL silt loam
pH: 6.2 **Soil Name:** Toronto-Millbrook
CEC: 13.3

Application Description

	A	B	C	D
Application Date:	May-8-2014	May-24-2014	Jun-13-2014	Jul-11-2014
Time of Day:	AM			
Application Method:	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing:	EARPRE	PREMCR	POSPOS	POSPOS
Application Placement:	BROADC	BROADC	FOLIAR	FOLIAR
Air Temperature, Unit:	74 F	53 F	65 F	75 F
% Relative Humidity:	62	46	66	66
Wind Velocity, Unit:	10 mph	1.6 MPH	4.5 MPH	2 MPH
Wind Direction:	SW	NW	NW	E
Dew Presence (Y/N):	N no	Y yes	N no	Y yes
Soil Temperature, Unit:	64 F	61 F	70 F	70 F
Soil Moisture:	Dry	WET	DRY	MOIST
% Cloud Cover:	15	10	5	5

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
Stage Majority, Percent:		00	13	51

Pest Stage At Each Application

	A	B	C	D
Pest 1 Code, Type, Scale:	AMBTR W	AMBTR W	AMBTR W	AMBTR W
Height Minimum, Maximum:			1 6	2 15
Density, Unit:			3 FT2	2 YD2
Pest 2 Code, Type, Scale:	SETFA W	SETFA W	SETFA W	SETFA W
Height Minimum, Maximum:			1 4	2 10
Density, Unit:			2 YD2	3 YD2
Pest 3 Code, Type, Scale:	CHEAL W	CHEAL W	CHEAL W	CHEAL W
Height Minimum, Maximum:			1 3	
Density, Unit:			2 YD2	
Pest 4 Code, Type, Scale:	ABUTH W	ABUTH W	ABUTH W	ABUTH W
Height Minimum, Maximum:			2 5	
Density, Unit:			2 YD2	

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Application Equipment

	A	B	C	D
Appl. Equipment:	CO2 FORD	CO2 FORD	CO2 FORD	CO2 FORD
Equipment Type:	SPTRMO	SPTRMO	SPTRMO	SPTRMO
Operation Pressure, Unit:	25 PSI	25 PSI	25 PSI	25 PSI
Nozzle Type:	FLAT FAN	FLAT FAN	FLAT FAN	FLAT FAN
Nozzle Size:	XR 100 02	XR 100 02	XR 100 02	XR 100 02
Nozzle Spacing, Unit:	20 IN	20 IN	20 IN	20 IN
Nozzles/Row:	6	6	6	6
Boom Length, Unit:	10 FT	10 FT	10 FT	10 FT
Ground Speed, Unit:	2.1 MPH	2.1 MPH	2.1 MPH	2.1 MPH
Carrier:	MEIGS	MEIGS	MEIGS	MEIGS
Spray Volume, Unit:	20 gal/ac	20 gal/ac	20 gal/ac	20 gal/ac
Mix Size, Unit:	2.5 liters	2.5 liters	2.5 liters	2.5 liters
Propellant:	CO2	CO2	CO2	CO2

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Panther + NUP-14013 Soybean Tolerance - No-till

Trial ID: 14S-THP-CTS-48 Protocol ID: 14S-THP-CTS-48
 Location: Throckmorton Study Director:
 Project ID: H 2014 105 IN Investigator: Dr. Bill Johnson
 Sponsor Contact: Nufarm - Bob Bruss

Reps: 4

Plots: 10 by 30 feet

Spray vol: 20 gal/ac

Mix size: 2.5 liters (min 2.0856)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code	Appl Description	Amt to Measure	Product	Rep 1	2	3	4
1	Untreated Check												101	405	702	805
2	Panther (51 WDG)	51 %		WG	1.53 oz ai/a	3 oz/a		EARPRE	A	EPP14	2.808 g/mx		102	404	602	804
	Roundup PowerMax 4.5 SL	4.5 LBAE/GAL	SL		18 oz ae/a	32 oz/a		PREMCR	B	3 DAP	31.25 ml/mx					
	AMS - Liquid	3.4 LB/GAL	SL		8.5 lb ai/100 gal	10 qt/100 gal		PREMCR	B	3 DAP	62.49 ml/mx					
3	NUP-14013 (7.62 EC)	7.62 LBA/GAL	EC		30.5 oz ai/a	2 pt/a		EARPRE	A	EPP14	31.27 ml/mx		301	502	704	901
	Roundup PowerMax 4.5 SL	4.5 LBAE/GAL	SL		18 oz ae/a	32 oz/a		PREMCR	B	3 DAP	31.25 ml/mx					
	AMS - Liquid	3.4 LB/GAL	SL		8.5 lb ai/100 gal	10 qt/100 gal		PREMCR	B	3 DAP	62.49 ml/mx					
4	Fierce (76 WG)	76 %		WG	2.85 oz ai/a	3.75 oz/a		EARPRE	A	EPP14	3.511 g/mx		105	402	605	904
	Roundup PowerMax 4.5 SL	4.5 LBAE/GAL	SL		18 oz ae/a	32 oz/a		PREMCR	B	3 DAP	31.25 ml/mx					
	AMS - Liquid	3.4 LB/GAL	SL		8.5 lb ai/100 gal	10 qt/100 gal		PREMCR	B	3 DAP	62.49 ml/mx					
5	Panther (51 WDG)	51 %		WG	1.02 oz ai/a	2 oz/a		EARPRE	A	EPP14	1.872 g/mx		201	505	705	905
	NUP-14013 (7.62 EC)	7.62 LBA/GAL	EC		20.3 oz ai/a	1.33 pt/a		EARPRE	A	EPP14	20.81 ml/mx					
	Roundup PowerMax 4.5 SL	4.5 LBAE/GAL	SL		18 oz ae/a	32 oz/a		PREMCR	B	3 DAP	31.25 ml/mx					
	AMS - Liquid	3.4 LB/GAL	SL		8.5 lb ai/100 gal	10 qt/100 gal		PREMCR	B	3 DAP	62.49 ml/mx					
6	Panther (51 WDG)	51 %		WG	2.04 oz ai/a	4 oz/a		EARPRE	A	EPP14	3.745 g/mx		202	501	802	1005
	NUP-14013 (7.62 EC)	7.62 LBA/GAL	EC		40.5 oz ai/a	2.66 pt/a		EARPRE	A	EPP14	41.52 ml/mx					
	Roundup PowerMax 4.5 SL	4.5 LBAE/GAL	SL		18 oz ae/a	32 oz/a		PREMCR	B	3 DAP	31.25 ml/mx					
	AMS - Liquid	3.4 LB/GAL	SL		8.5 lb ai/100 gal	10 qt/100 gal		PREMCR	B	3 DAP	62.49 ml/mx					
7	Panther (51 WDG)	51 %		WG	1.53 oz ai/a	3 oz/a		PREMCR	B	3 DAP	2.808 g/mx		204	401	601	902
	Roundup PowerMax 4.5 SL	4.5 LBAE/GAL	SL		18 oz ae/a	32 oz/a		PREMCR	B	3 DAP	31.25 ml/mx					
	AMS - Liquid	3.4 LB/GAL	SL		8.5 lb ai/100 gal	10 qt/100 gal		PREMCR	B	3 DAP	62.49 ml/mx					
8	NUP-14013 (7.62 EC)	7.62 LBA/GAL	EC		30.5 oz ai/a	2 pt/a		PREMCR	B	3 DAP	31.27 ml/mx		205	305	604	1004
	Roundup PowerMax 4.5 SL	4.5 LBAE/GAL	SL		18 oz ae/a	32 oz/a		PREMCR	B	3 DAP	31.25 ml/mx					
	AMS - Liquid	3.4 LB/GAL	SL		8.5 lb ai/100 gal	10 qt/100 gal		PREMCR	B	3 DAP	62.49 ml/mx					
9	Fierce (76 WG)	76 %		WG	2.85 oz ai/a	3.75 oz/a		PREMCR	B	3 DAP	3.511 g/mx		104	304	701	1001
	Roundup PowerMax 4.5 SL	4.5 LBAE/GAL	SL		18 oz ae/a	32 oz/a		PREMCR	B	3 DAP	31.25 ml/mx					
	AMS - Liquid	3.4 LB/GAL	SL		8.5 lb ai/100 gal	10 qt/100 gal		PREMCR	B	3 DAP	62.49 ml/mx					
10	Panther (51 WDG)	51 %		WG	1.02 oz ai/a	2 oz/a		PREMCR	B	3 DAP	1.872 g/mx		302	504	801	1002
	NUP-14013 (7.62 EC)	7.62 LBA/GAL	EC		20.3 oz ai/a	1.33 pt/a		PREMCR	B	3 DAP	20.81 ml/mx					
	Roundup PowerMax 4.5 SL	4.5 LBAE/GAL	SL		18 oz ae/a	32 oz/a		PREMCR	B	3 DAP	31.25 ml/mx					
	AMS - Liquid	3.4 LB/GAL	SL		8.5 lb ai/100 gal	10 qt/100 gal		PREMCR	B	3 DAP	62.49 ml/mx					
11	Panther (51 WDG)	51 %		WG	2.04 oz ai/a	4 oz/a		PREMCR	B	3 DAP	3.745 g/mx		103	303	603	803
	NUP-14013 (7.62 EC)	7.62 LBA/GAL	EC		40.5 oz ai/a	2.66 pt/a		PREMCR	B	3 DAP	41.52 ml/mx					
	Roundup PowerMax 4.5 SL	4.5 LBAE/GAL	SL		18 oz ae/a	32 oz/a		PREMCR	B	3 DAP	31.25 ml/mx					
	AMS - Liquid	3.4 LB/GAL	SL		8.5 lb ai/100 gal	10 qt/100 gal		PREMCR	B	3 DAP	62.49 ml/mx					
12	Roundup PowerMax 4.5 SL	4.5 LBAE/GAL	SL		18 oz ae/a	32 oz/a		PREMCR	B	3 DAP	31.25 ml/mx		203	403	703	903
	AMS - Liquid	3.4 LB/GAL	SL		8.5 lb ai/100 gal	10 qt/100 gal		PREMCR	B	3 DAP	62.49 ml/mx					

Sort Order: Treatment

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Panther + NUP-14013 Soybean Tolerance - No-till

Trial ID: 14S-THP-CTS-48 Protocol ID: 14S-THP-CTS-48
 Location: Throckmorton Study Director:
 Project ID: H 2014 105 IN Investigator: Dr. Bill Johnson
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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	
Rating Date	Jun-5-2014	Jun-5-2014	Jun-5-2014	Jun-23-2014	Jun-23-2014	Jun-23-2014	Jun-23-2014	Jul-7-2014	
Rating Type	HEIGHT	STASUB	PHYNEC	STASUB	PHYSTU	PHYLMA	FLOWERING		
Rating Unit	CM	%	%	%	%	%	%	%	
Sample Size, Unit	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT	
Number of Subsamples	4	1	1	1	1	1	1	1	
Crop Stage Majority	VC	VC	VC	V4	V4	V4	V4		
Days After First/Last Applic.	28 12	28 12	28 12	46 10	46 10	46 10	46 10	60 24	
Plant-Eval Interval	15 DP-1	15 DP-1	15 DP-1	33 DP-1	33 DP-1	33 DP-1	33 DP-1	47 DP-1	
Days After Emergence	9 DE-1	9 DE-1	9 DE-1	27 DE-1	27 DE-1	27 DE-1	27 DE-1	41 DE-1	
Trt Treatment	Rate	Appl							
No. Name	Rate Unit	Code Plot	1	2	3	4	5	6	7
1 Untreated Check		101	4.0000	95.0	0.0	93.0	0.0	0.0	100.0
		405	3.2500	20.0	0.0	87.2*	0.0*	0.5*	100.0*
		702	3.0000	70.0	0.0	84.0	0.0	0.0	100.0
		805	3.5000	70.0	0.0	85.0	0.0	0.0	100.0
		Mean =	3.4375	63.8	0.0	87.3	0.0	0.1	100.0
2 Panther (51 WDG)	1.53 oz ai/a	A 102	3.2500	90.0	0.0	85.0	3.0	0.0	100.0
Roundup PowerMax 4.5 SL	18 oz ae/a	B 404	3.7500	30.0	0.0	85.5*	4.8*	1.5*	100.0*
AMS - Liquid	8.5 lb ai/100 gal	B 602	2.7500	90.0	0.0	85.0	3.0	3.0	100.0
		804	3.0000	80.0	0.0	87.0	10.0	0.0	100.0
		Mean =	3.1875	72.5	0.0	85.6	5.2	1.1	100.0
3 NUP-14013 (7.62 EC)	30.5 oz ai/a	A 301	4.1250	97.0	0.0	95.0	0.0	0.0	100.0
Roundup PowerMax 4.5 SL	18 oz ae/a	B 502	4.0000	95.0	0.0	90.0	0.0	0.0	100.0
AMS - Liquid	8.5 lb ai/100 gal	B 704	3.5000	90.0	0.0	90.0	3.0	5.0	100.0
		901	4.2500	95.0	0.0	95.0	0.0	0.0	100.0
		Mean =	3.9688	94.3	0.0	92.5	0.8	1.3	100.0
4 Fierce (76 WG)	2.85 oz ai/a	A 105	4.1250	97.0	0.0	95.0	0.0	5.0	100.0
Roundup PowerMax 4.5 SL	18 oz ae/a	B 402	2.8750	30.0	0.0	93.2*	1.1*	3.8*	100.0*
AMS - Liquid	8.5 lb ai/100 gal	B 605	4.2500	93.0	0.0	90.0	5.0	5.0	100.0
		904	3.2500	95.0	0.0	95.0	0.0	0.0	100.0
		Mean =	3.6250	78.8	0.0	93.3	1.5	3.4	100.0
5 Panther (51 WDG)	1.02 oz ai/a	A 201	4.5000	95.0	0.0	95.0	0.0	0.0	100.0
NUP-14013 (7.62 EC)	20.3 oz ai/a	A 505	4.7500	96.0	0.0	95.0	0.0	5.0	100.0
Roundup PowerMax 4.5 SL	18 oz ae/a	B 705	2.3750	60.0	0.0	85.0	5.0	0.0	100.0
AMS - Liquid	8.5 lb ai/100 gal	B 905	3.7500	95.0	0.0	93.0	0.0	3.0	100.0
		Mean =	3.8438	86.5	0.0	92.0	1.3	2.0	100.0
6 Panther (51 WDG)	2.04 oz ai/a	A 202	4.2500	90.0	0.0	93.0	0.0	5.0	100.0
NUP-14013 (7.62 EC)	40.5 oz ai/a	A 501	4.5000	97.0	0.0	95.0	0.0	0.0	100.0
Roundup PowerMax 4.5 SL	18 oz ae/a	B 802	3.5000	80.0	0.0	90.0	5.0	7.0	100.0
AMS - Liquid	8.5 lb ai/100 gal	B 1005	3.5000	90.0	0.0	92.0	5.0	0.0	100.0
		Mean =	3.9375	89.3	0.0	92.5	2.5	3.0	100.0

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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			
Rating Date	Jun-5-2014	Jun-5-2014	Jun-5-2014	Jun-23-2014	Jun-23-2014	Jun-23-2014	Jul-7-2014			
Rating Type	HEIGHT	STASUB	PHYNEC	STASUB	PHYSTU	PHYLMA	FLOWERING			
Rating Unit	CM	%	%	%	%	%	%			
Sample Size, Unit	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT			
Number of Subsamples	4	1	1	1	1	1	1			
Crop Stage Majority	VC	VC	VC	V4	V4	V4	V4			
Days After First/Last Applic.	28 12	28 12	28 12	46 10	46 10	46 10	60 24			
Plant-Eval Interval	15 DP-1	15 DP-1	15 DP-1	33 DP-1	33 DP-1	33 DP-1	47 DP-1			
Days After Emergence	9 DE-1	9 DE-1	9 DE-1	27 DE-1	27 DE-1	27 DE-1	41 DE-1			
Trt Treatment	Rate	Appl								
No. Name	Rate Unit	Code	Plot	1	2	3	4	5	6	7
7 Panther (51 WDG)	1.53 oz ai/a	B	204	3.7500	90.0	0.0	93.0	0.0	5.0	100.0
Roundup PowerMax 4.5 SL	18 oz ae/a	B	401	3.5000	10.0	0.0	90.9*	1.8*	5.5*	100.0*
AMS - Liquid	8.5 lb ai/100 gal	B	601	3.2500	70.0	0.0	85.0	7.0	10.0	100.0
			902	3.7500	95.0	0.0	95.0	0.0	0.0	100.0
			Mean =	3.5625	66.3	0.0	91.0	2.2	5.1	100.0
8 NUP-14013 (7.62 EC)	30.5 oz ai/a	B	205	4.0000	93.0	0.0	95.0	3.0	7.0	100.0
Roundup PowerMax 4.5 SL	18 oz ae/a	B	305	3.2500	20.0	0.0	88.0	5.0	0.0	100.0
AMS - Liquid	8.5 lb ai/100 gal	B	604	4.2500	95.0	0.0	90.0	0.0	0.0	100.0
			1004	3.2500	95.0	0.0	95.0	0.0	0.0	100.0
			Mean =	3.6875	75.8	0.0	92.0	2.0	1.8	100.0
9 Fierce (76 WG)	2.85 oz ai/a	B	104	2.6250	20.0	0.0	85.0	20.0	5.0	100.0
Roundup PowerMax 4.5 SL	18 oz ae/a	B	304	3.2500	60.0	0.0	88.0	5.0	10.0	100.0
AMS - Liquid	8.5 lb ai/100 gal	B	701	2.1250	40.0	0.0	80.0	15.0	7.0	100.0
			1001	3.7500	90.0	0.0	90.0	5.0	7.0	100.0
			Mean =	2.9375	52.5	0.0	85.8	11.3	7.3	100.0
10 Panther (51 WDG)	1.02 oz ai/a	B	302	3.5000	40.0	0.0	86.0	10.0	0.0	100.0
NUP-14013 (7.62 EC)	20.3 oz ai/a	B	504	3.7500	95.0	0.0	90.0	0.0	0.0	100.0
Roundup PowerMax 4.5 SL	18 oz ae/a	B	801	3.2500	87.0	0.0	87.0	3.0	5.0	100.0
AMS - Liquid	8.5 lb ai/100 gal	B	1002	4.0000	90.0	0.0	89.0	5.0	0.0	100.0
			Mean =	3.6250	78.0	0.0	88.0	4.5	1.3	100.0
11 Panther (51 WDG)	2.04 oz ai/a	B	103	3.7500	90.0	2.0	89.0	7.0	9.0	100.0
NUP-14013 (7.62 EC)	40.5 oz ai/a	B	303	3.2500	20.0	0.0	85.0	15.0	12.0	100.0
Roundup PowerMax 4.5 SL	18 oz ae/a	B	603	3.5000	85.0	0.0	90.0	5.0	5.0	100.0
AMS - Liquid	8.5 lb ai/100 gal	B	803	2.8750	65.0	0.0	80.0	3.0	5.0	100.0
			Mean =	3.3438	65.0	0.5	86.0	7.5	7.8	100.0
12 Roundup PowerMax 4.5 SL	18 oz ae/a	B	203	4.0000	95.0	0.0	94.0	0.0	0.0	100.0
AMS - Liquid	8.5 lb ai/100 gal	B	403	3.2500	70.0	0.0	88.0	3.0	0.0	100.0
			703	2.8750	80.0	0.0	89.0	3.0	0.0	100.0
			903	3.7500	95.0	0.0	93.0	0.0	0.0	100.0
			Mean =	3.4688	85.0	0.0	91.0	1.5	0.0	100.0

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Crop Code				GLXMA	GLXMA	GLXMA	GLXMA
BBCH Scale				BSOY	BSOY	BSOY	BSOY
Crop Scientific Name				Glycine max	Glycine max	Glycine max	Glycine max
Crop Name				Soybean	Soybean	Soybean	Soybean
Rating Date				Jul-7-2014	Jul-17-2014	Jul-17-2014	Sep-29-2014
Rating Type				HEIGHT	FLOWERING	HEIGHT	YIELD
Rating Unit				CM	%	CM	bu/ac
Sample Size, Unit				1 PLOT	1 PLOT	1 PLOT	
Number of Subsamples				6	1	6	1
Crop Stage Majority					V8	V8	
Days After First/Last Applic.				60 24	70 6	70 6	144 80
Plant-Eval Interval				47 DP-1	57 DP-1	57 DP-1	131 DP-1
Days After Emergence				41 DE-1	51 DE-1	51 DE-1	125 DE-1
Trt Treatment	Rate	Appl					
No. Name	Rate Unit	Code	Plot	8	9	10	11
1 Untreated Check			101	44.8333365	100.0	56.8333377	78.70
			405	29.1666689	100.0	38.8333359	49.50
			702	32.8333353	100.0	43.5000044	51.30
			805	34.8333355	100.0	42.6666722	56.90
			Mean =	35.4166677	100.0	45.4583366	59.10
2 Panther (51 WDG)	1.53 oz ai/a	A	102	45.3333366	100.0	55.5000056	67.00
Roundup PowerMax 4.5 SL	18 oz ae/a	B	404	36.3333357	100.0	50.3333371	61.00
AMS - Liquid	8.5 lb ai/100 gal	B	602	43.6666723	100.0	56.3333377	92.30
			804	42.6666722	100.0	53.8333374	64.60
			Mean =	42.0000042	100.0	54.0000054	71.23
3 NUP-14013 (7.62 EC)	30.5 oz ai/a	A	301	32.0000032	100.0	41.5000042	65.80
Roundup PowerMax 4.5 SL	18 oz ae/a	B	502	48.5000049	100.0	64.0000064	55.10
AMS - Liquid	8.5 lb ai/100 gal	B	704	45.5000046	100.0	57.8333378	59.10
			901	57.3333378	100.0	66.1666707	78.60
			Mean =	45.8333366	100.0	57.3750057	64.65
4 Fierce (76 WG)	2.85 oz ai/a	A	105	45.8333366	100.0	59.5000060	77.90
Roundup PowerMax 4.5 SL	18 oz ae/a	B	402	34.0000034	100.0	46.3333367	41.60
AMS - Liquid	8.5 lb ai/100 gal	B	605	39.6666719	100.0	60.3333381	66.50
			904	47.3333368	100.0	64.8333424	61.80
			Mean =	41.7083362	100.0	57.7500058	61.95
5 Panther (51 WDG)	1.02 oz ai/a	A	201	50.6666730	100.0	65.5000066	76.70
NUP-14013 (7.62 EC)	20.3 oz ai/a	A	505	44.6666724	100.0	59.3333380	67.50
Roundup PowerMax 4.5 SL	18 oz ae/a	B	705	38.5000039	100.0	51.6666731	58.50
AMS - Liquid	8.5 lb ai/100 gal	B	905	49.3333370	100.0	59.1666739	68.50
			Mean =	45.7916725	100.0	58.9166738	67.80
6 Panther (51 WDG)	2.04 oz ai/a	A	202	50.5000051	100.0	64.3333423	71.90
NUP-14013 (7.62 EC)	40.5 oz ai/a	A	501	44.3333365	100.0	63.1666743	58.90
Roundup PowerMax 4.5 SL	18 oz ae/a	B	802	40.5000041	100.0	53.6666733	67.20
AMS - Liquid	8.5 lb ai/100 gal	B	1005	45.6666725	100.0	57.1666737	65.40
			Mean =	45.2500045	100.0	59.5833418	65.85

Purdue University

Crop Code	GLXMA	GLXMA	GLXMA	GLXMA
BBCH Scale	BSOY	BSOY	BSOY	BSOY
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max
Crop Name	Soybean	Soybean	Soybean	Soybean
Rating Date	Jul-7-2014	Jul-17-2014	Jul-17-2014	Sep-29-2014
Rating Type	HEIGHT	FLOWERING	HEIGHT	YIELD
Rating Unit	CM	%	CM	bu/ac
Sample Size, Unit	1 PLOT	1 PLOT	1 PLOT	
Number of Subsamples	6	1	6	1
Crop Stage Majority		V8	V8	
Days After First/Last Applic.	60 24	70 6	70 6	144 80
Plant-Eval Interval	47 DP-1	57 DP-1	57 DP-1	131 DP-1
Days After Emergence	41 DE-1	51 DE-1	51 DE-1	125 DE-1
Trt Treatment	Rate	Appl		
No. Name	Rate Unit	Code Plot	8	9
7 Panther (51 WDG)	1.53 oz ai/a	B 204	49.6666729	100.0
Roundup PowerMax 4.5 SL	18 oz ae/a	B 401	36.6666716	100.0
AMS - Liquid	8.5 lb ai/100 gal	B 601	36.1666716	100.0
		902	53.8333374	100.0
		Mean =	44.0833403	100.0
8 NUP-14013 (7.62 EC)	30.5 oz ai/a	B 205	45.5000046	100.0
Roundup PowerMax 4.5 SL	18 oz ae/a	B 305	33.3333354	100.0
AMS - Liquid	8.5 lb ai/100 gal	B 604	50.1666730	100.0
		1004	53.0000053	100.0
		Mean =	45.5000046	100.0
9 Fierce (76 WG)	2.85 oz ai/a	B 104	52.5000053	100.0
Roundup PowerMax 4.5 SL	18 oz ae/a	B 304	41.6666721	100.0
AMS - Liquid	8.5 lb ai/100 gal	B 701	26.1666686	100.0
		1001	44.6666724	100.0
		Mean =	41.2500041	100.0
10 Panther (51 WDG)	1.02 oz ai/a	B 302	39.1666719	100.0
NUP-14013 (7.62 EC)	20.3 oz ai/a	B 504	50.5000051	100.0
Roundup PowerMax 4.5 SL	18 oz ae/a	B 801	42.6666722	100.0
AMS - Liquid	8.5 lb ai/100 gal	B 1002	45.1666725	100.0
		Mean =	44.3750044	100.0
11 Panther (51 WDG)	2.04 oz ai/a	B 103	44.3333365	100.0
NUP-14013 (7.62 EC)	40.5 oz ai/a	B 303	35.8333356	100.0
Roundup PowerMax 4.5 SL	18 oz ae/a	B 603	47.3333368	100.0
AMS - Liquid	8.5 lb ai/100 gal	B 803	38.0000038	100.0
		Mean =	41.3750041	100.0
12 Roundup PowerMax 4.5 SL	18 oz ae/a	B 203	52.3333373	100.0
AMS - Liquid	8.5 lb ai/100 gal	B 403	39.5000040	100.0
		703	41.0000041	100.0
		903	50.3333371	100.0
		Mean =	45.7916687	100.0
				58.7083379
				60.33

Purdue University

Panther + NUP-14013 Soybean Tolerance - No-till

Trial ID: 14S-THP-CTS-48 Protocol ID: 14S-THP-CTS-48
Location: Throckmorton Study Director:
Project ID: H 2014 105 IN Investigator: Dr. Bill Johnson
Sponsor Contact: Nufarm - Bob Bruss

Crop Code

GLXMA, BSOY, Glycine max, = US

Rating Type

HEIGHT = height

STASUB = stand - subjective / emergence

PHYNEC = phytotoxicity - necrosis /burn

PHYSTU = phytotoxicity - stunting

PHYLMA = phytotoxicity - leaf malformation

YIELD = yield

Rating Unit

CM = centimeter

% = percent

bu/ac = bushels per acre

PLOT = total plot

Plant-Eval Interval

15 DP-1 = 1 GLXMA May-21-2014

33 DP-1 = 1 GLXMA May-21-2014

47 DP-1 = 1 GLXMA May-21-2014

57 DP-1 = 1 GLXMA May-21-2014

131 DP-1 = 1 GLXMA May-21-2014

Purdue University

Panther + NUP-14013 Soybean Tolerance - No-till

Trial ID: 14S-THP-CTS-48 Protocol ID: 14S-THP-CTS-48
 Location: Throckmorton Study Director:
 Project ID: H 2014 105 IN Investigator: Dr. Bill Johnson
 Sponsor Contact: Nufarm - Bob Bruss

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		
Rating Date	Jun-5-2014	Jun-5-2014	Jun-5-2014	Jun-23-2014	Jun-23-2014	Jun-23-2014	Jul-7-2014	Jul-7-2014		
Rating Type	HEIGHT	STASUB	PHYNEC	STASUB	PHYSTU	PHYLMA	FLOWERING	HEIGHT		
Rating Unit	CM	%	%	%	%	%	%	CM		
Sample Size, Unit	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT		
Number of Subsamples	4	1	1	1	1	1	1	6		
Crop Stage Majority	VC	VC	VC	V4	V4	V4				
Days After First/Last Applic.	28 12	28 12	28 12	46 10	46 10	46 10	60 24	60 24		
Plant-Eval Interval	15 DP-1	15 DP-1	15 DP-1	33 DP-1	33 DP-1	33 DP-1	47 DP-1	47 DP-1		
Days After Emergence	9 DE-1	9 DE-1	9 DE-1	27 DE-1	27 DE-1	27 DE-1	41 DE-1	41 DE-1		
Trt Treatment	Rate	Appl								
No. Name	Rate Unit	Code	1	2	3	4	5	6	7	8
1 Untreated Check			3.4375 a	63.8 a	0.0 a	87.3 a	0.0 b	0.1 c	100.0 e	35.4166677 a
2 Panther (51 WDG)	1.53 oz ai/a	A	3.1875 a	72.5 a	0.0 a	85.6 a	5.2 ab	1.1 bc	100.0 d	42.0000042 a
Roundup PowerMax 4.5 SL	18 oz ae/a	B								
AMS - Liquid	8.5 lb ai/100 gal	B								
3 NUP-14013 (7.62 EC)	30.5 oz ai/a	A	3.9688 a	94.3 a	0.0 a	92.5 a	0.8 b	1.3 bc	100.0 a	45.8333366 a
Roundup PowerMax 4.5 SL	18 oz ae/a	B								
AMS - Liquid	8.5 lb ai/100 gal	B								
4 Fierce (76 WG)	2.85 oz ai/a	A	3.6250 a	78.8 a	0.0 a	93.3 a	1.5 b	3.4 abc	100.0 c	41.7083362 a
Roundup PowerMax 4.5 SL	18 oz ae/a	B								
AMS - Liquid	8.5 lb ai/100 gal	B								
5 Panther (51 WDG)	1.02 oz ai/a	A	3.8438 a	86.5 a	0.0 a	92.0 a	1.3 b	2.0 bc	100.0 a	45.7916725 a
NUP-14013 (7.62 EC)	20.3 oz ai/a	A								
Roundup PowerMax 4.5 SL	18 oz ae/a	B								
AMS - Liquid	8.5 lb ai/100 gal	B								
6 Panther (51 WDG)	2.04 oz ai/a	A	3.9375 a	89.3 a	0.0 a	92.5 a	2.5 b	3.0 abc	100.0 a	45.2500045 a
NUP-14013 (7.62 EC)	40.5 oz ai/a	A								
Roundup PowerMax 4.5 SL	18 oz ae/a	B								
AMS - Liquid	8.5 lb ai/100 gal	B								
7 Panther (51 WDG)	1.53 oz ai/a	B	3.5625 a	66.3 a	0.0 a	91.0 a	2.2 b	5.1 abc	100.0 b	44.0833403 a
Roundup PowerMax 4.5 SL	18 oz ae/a	B								
AMS - Liquid	8.5 lb ai/100 gal	B								
8 NUP-14013 (7.62 EC)	30.5 oz ai/a	B	3.6875 a	75.8 a	0.0 a	92.0 a	2.0 b	1.8 bc	100.0 a	45.5000046 a
Roundup PowerMax 4.5 SL	18 oz ae/a	B								
AMS - Liquid	8.5 lb ai/100 gal	B								
9 Fierce (76 WG)	2.85 oz ai/a	B	2.9375 a	52.5 a	0.0 a	85.8 a	11.3 a	7.3 ab	100.0 a	41.2500041 a
Roundup PowerMax 4.5 SL	18 oz ae/a	B								
AMS - Liquid	8.5 lb ai/100 gal	B								
10 Panther (51 WDG)	1.02 oz ai/a	B	3.6250 a	78.0 a	0.0 a	88.0 a	4.5 ab	1.3 bc	100.0 a	44.3750044 a
NUP-14013 (7.62 EC)	20.3 oz ai/a	B								
Roundup PowerMax 4.5 SL	18 oz ae/a	B								
AMS - Liquid	8.5 lb ai/100 gal	B								
11 Panther (51 WDG)	2.04 oz ai/a	B	3.3438 a	65.0 a	0.5 a	86.0 a	7.5 ab	7.8 a	100.0 a	41.3750041 a
NUP-14013 (7.62 EC)	40.5 oz ai/a	B								
Roundup PowerMax 4.5 SL	18 oz ae/a	B								
AMS - Liquid	8.5 lb ai/100 gal	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.

Purdue University

Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	
BBCH Scale	BSOY	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	Glycine max	
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean	
Rating Date	Jun-5-2014	Jun-5-2014	Jun-5-2014	Jun-23-2014	Jun-23-2014	Jun-23-2014	Jun-23-2014	Jul-7-2014	Jul-7-2014	
Rating Type	HEIGHT	STASUB	PHYNEC	STASUB	PHYSTU	PHYLMA	FLOWERING	HEIGHT		
Rating Unit	CM	%	%	%	%	%	%	CM		
Sample Size, Unit	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT	
Number of Subsamples	4	1	1	1	1	1	1	1	6	
Crop Stage Majority	VC	VC	VC	V4	V4	V4	V4			
Days After First/Last Applic.	28 12	28 12	28 12	46 10	46 10	46 10	46 10	60 24	60 24	
Plant-Eval Interval	15 DP-1	15 DP-1	15 DP-1	33 DP-1	33 DP-1	33 DP-1	33 DP-1	47 DP-1	47 DP-1	
Days After Emergence	9 DE-1	9 DE-1	9 DE-1	27 DE-1	27 DE-1	27 DE-1	27 DE-1	41 DE-1	41 DE-1	
Trt Treatment	Rate	Appl								
No. Name	Rate Unit	Code	1	2	3	4	5	6	7	8
12 Roundup PowerMax 4.5 SL AMS - Liquid	18 oz ae/a 8.5 lb ai/100 gal B	B	3.4688 a	85.0 a	0.0 a	91.0 a	1.5 b	0.0 c	100.0 a	45.7916687 a
LSD (P=.05)	0.74107	33.96	0.42	4.56	5.60	3.85	0.00	9.29254625		
Standard Deviation	0.51324	23.52	0.29	3.15	3.87	2.66	0.00	6.43567293		
CV	14.45	31.1	692.82	3.51	115.58	93.75	0.0	14.9		
Bartlett's X2	10.322	19.14	0.0	7.968	11.783	3.68	0.0	7.085		
P(Bartlett's X2)	0.502	0.059	.	0.716	0.30	0.931	.	0.792		
Replicate F	2.860	5.018	1.000	4.497	0.681	2.165	0.000	4.151		
Replicate Prob(F)	0.0517	0.0056	0.4051	0.0104	0.5707	0.1136	1.0000	0.0133		
Treatment F	1.395	1.078	1.000	3.546	2.850	3.833	0.000	0.908		
Treatment Prob(F)	0.2214	0.4071	0.4671	0.0031	0.0117	0.0018	1.0000	0.5436		

Purdue University

Crop Code		GLXMA	GLXMA	GLXMA
BBCH Scale		BSOY	BSOY	BSOY
Crop Scientific Name		Glycine max	Glycine max	Glycine max
Crop Name		Soybean	Soybean	Soybean
Rating Date		Jul-17-2014	Jul-17-2014	Sep-29-2014
Rating Type		FLOWERING	HEIGHT	YIELD
Rating Unit		%	CM	bu/ac
Sample Size, Unit		1 PLOT	1 PLOT	
Number of Subsamples		1	6	1
Crop Stage Majority		V8	V8	
Days After First/Last Applic.		70 6	70 6	144 80
Plant-Eval Interval		57 DP-1	57 DP-1	131 DP-1
Days After Emergence		51 DE-1	51 DE-1	125 DE-1
Trt Treatment	Rate	Appl		
No. Name	Rate Unit	Code	9	10
1 Untreated Check			100.0 a	45.4583366 a
2 Panther (51 WDG)	1.53 oz ai/a	A	100.0 a	54.0000054 a
Roundup PowerMax 4.5 SL	18 oz ae/a	B		
AMS - Liquid	8.5 lb ai/100 gal	B		
3 NUP-14013 (7.62 EC)	30.5 oz ai/a	A	100.0 a	57.3750057 a
Roundup PowerMax 4.5 SL	18 oz ae/a	B		
AMS - Liquid	8.5 lb ai/100 gal	B		
4 Fierce (76 WG)	2.85 oz ai/a	A	100.0 a	57.7500058 a
Roundup PowerMax 4.5 SL	18 oz ae/a	B		
AMS - Liquid	8.5 lb ai/100 gal	B		
5 Panther (51 WDG)	1.02 oz ai/a	A	100.0 a	58.9166738 a
NUP-14013 (7.62 EC)	20.3 oz ai/a	A		
Roundup PowerMax 4.5 SL	18 oz ae/a	B		
AMS - Liquid	8.5 lb ai/100 gal	B		
6 Panther (51 WDG)	2.04 oz ai/a	A	100.0 a	59.5833418 a
NUP-14013 (7.62 EC)	40.5 oz ai/a	A		
Roundup PowerMax 4.5 SL	18 oz ae/a	B		
AMS - Liquid	8.5 lb ai/100 gal	B		
7 Panther (51 WDG)	1.53 oz ai/a	B	100.0 a	57.1666737 a
Roundup PowerMax 4.5 SL	18 oz ae/a	B		
AMS - Liquid	8.5 lb ai/100 gal	B		
8 NUP-14013 (7.62 EC)	30.5 oz ai/a	B	100.0 a	58.8750059 a
Roundup PowerMax 4.5 SL	18 oz ae/a	B		
AMS - Liquid	8.5 lb ai/100 gal	B		
9 Fierce (76 WG)	2.85 oz ai/a	B	100.0 a	55.5000056 a
Roundup PowerMax 4.5 SL	18 oz ae/a	B		
AMS - Liquid	8.5 lb ai/100 gal	B		
10 Panther (51 WDG)	1.02 oz ai/a	B	100.0 a	56.1666736 a
NUP-14013 (7.62 EC)	20.3 oz ai/a	B		
Roundup PowerMax 4.5 SL	18 oz ae/a	B		
AMS - Liquid	8.5 lb ai/100 gal	B		
11 Panther (51 WDG)	2.04 oz ai/a	B	100.0 a	54.4166734 a
NUP-14013 (7.62 EC)	40.5 oz ai/a	B		
Roundup PowerMax 4.5 SL	18 oz ae/a	B		
AMS - Liquid	8.5 lb ai/100 gal	B		

Purdue University

Crop Code	GLXMA	GLXMA	GLXMA
BBCH Scale	BSOY	BSOY	BSOY
Crop Scientific Name	Glycine max	Glycine max	Glycine max
Crop Name	Soybean	Soybean	Soybean
Rating Date	Jul-17-2014	Jul-17-2014	Sep-29-2014
Rating Type	FLOWERING	HEIGHT	YIELD
Rating Unit	%	CM	bu/ac
Sample Size, Unit	1 PLOT	1 PLOT	
Number of Subsamples	1	6	1
Crop Stage Majority	V8	V8	
Days After First/Last Applic.	70 6	70 6	144 80
Plant-Eval Interval	57 DP-1	57 DP-1	131 DP-1
Days After Emergence	51 DE-1	51 DE-1	125 DE-1
Trt Treatment	Rate	Appl	
No. Name	Rate Unit	Code	
			9 10 11
12 Roundup PowerMax 4.5 SL AMS - Liquid	18 oz ae/a 8.5 lb ai/100 gal B	B B	100.0 a 58.7083379 a 60.33 a
LSD (P=.05)	0.00	11.56999799	14.707
Standard Deviation	0.00	8.01295170	10.185
CV	0.0	14.27	15.84
Bartlett's X2	0.0	8.015	6.957
P(Bartlett's X2)	.	0.712	0.803
Replicate F	0.000	2.299	5.012
Replicate Prob(F)	1.0000	0.0955	0.0058
Treatment F	0.000	0.911	0.427
Treatment Prob(F)	1.0000	0.5409	0.9327

Purdue University

Panther + NUP-14013 Soybean Tolerance - No-till

Trial ID: 14S-THP-CTS-48 Protocol ID: 14S-THP-CTS-48
Location: Throckmorton Study Director:
Project ID: H 2014 105 IN Investigator: Dr. Bill Johnson
Sponsor Contact: Nufarm - Bob Bruss

Crop Code

GLXMA, BSOY, Glycine max, = US

Rating Type

HEIGHT = height

STASUB = stand - subjective / emergence

PHYNEC = phytotoxicity - necrosis /burn

PHYSTU = phytotoxicity - stunting

PHYLMA = phytotoxicity - leaf malformation

YIELD = yield

Rating Unit

CM = centimeter

% = percent

bu/ac = bushels per acre

PLOT = total plot

Plant-Eval Interval

15 DP-1 = 1 GLXMA May-21-2014

33 DP-1 = 1 GLXMA May-21-2014

47 DP-1 = 1 GLXMA May-21-2014

57 DP-1 = 1 GLXMA May-21-2014

131 DP-1 = 1 GLXMA May-21-2014