

Purdue University Weed Science

COMPARISON OF TWO-PASS PROGRAMS IN RR SOYBEAN

Trial ID: 13S-SEP-CTS-02 Location: SEPAC Trial Year: 2013
 Protocol ID: 13S-SEP-CTS-02 Investigator: Dr. Bill Johnson
 Project ID: USHES0Y005-2013 Study Director: JOE IKLEY
 Sponsor Contact: STEVE MROCZKIEWICZ / FIKRU HAILE

General Trial Information

Study Director: JOE IKLEY **Title:** RESEARCH ASSOCIATE
Investigator: DR. BILL JOHNSON **Title:** PROFESSOR

Discipline: H HERBICIDE
Trial Status: F one-year/final
Initiation Date: 5/30/2013 **Planned Completion Date:** 8/16/2013
Completion Date: 10/4/2013

Trial Location

City: BUTLERVILLE **Country:** USA UNITED STATES
State/Prov.: INDIANA
Postal Code: 47223

Contacts

Study Director: JOE IKLEY **Title:** RESEARCH ASSOCIATE
Organization: PURDUE UNIVERSITY
Address: 915 WEST STATE STREET **Phone No.:** 765-494-0891
City+State/Prov.: WEST LAFAYETTE **Mobile No.:** 410-596-9091
Postal Code: 47907 **E-mail:** JIKLEY@PURDUE.EDU

Investigator: DR. BILL JOHNSON **Title:** PROFESSOR
Organization: PURDUE UNIVERSITY
Address: 915 WEST STATE STREET **Phone No.:** 765-494-4656
City+State/Prov.: WEST LAFAYETTE **Mobile No.:** 765-404-9801
Postal Code: 47907 **E-mail:** WGJ@PURDUE.EDU

Cooperator/Landowner

Cooperator: DON BIEHLE **Role:** SUPERINTENDENT
Organization: SOUTHEAST PURDUE AGRICULTURE CENTER
Address 1: 4425 EAST COUNTY ROAD 350 NORTH
City: BUTLERVILLE **Phone No.:** 812-458-6977
State/Prov.: INDIANA **Fax No.:** 812-458-6979
Postal Code: 47223-0216 **Mobile No.:** 812-592-8426
Country: USA UNITED STATES **E-mail:** BIEHLED@PURDUE.EDU

Crop Description

Crop 1: GLXMA GLYCINE MAX
Variety: S28-U7
Description: RR

Planting Rate, Unit: 140000 S/A
Depth, Unit: 1 IN
Row Spacing, Unit: 30 IN
Spacing Within Row, Unit: 2 IN

Soil Temperature, Unit: 81 F
Soil Moisture: SLIWET SLIGHTLY WET, MOIST

Planting Date: 6/6/2013
Planting Method: DIRDRI DIRECT DRILLED
Planting Equipment: JD7000
Emergence Date: 6/11/2013
Harvest Date: 10/4/2013
Harvested Width, Unit: 10 FT
Harvested Length, Unit: 25 FT
Harvest Equipment: Gleaner F3
% Standard Moisture: 13.0
Moisture Meter: Harvest Master
Weighing Equipment: Harvest Master

Pest Description

Pest 1 Type: W **Code:** SETPU SETARIA PUMILA
Common Name: YELLOW FOXTAIL

Pest 2 Type: W **Code:** AMBEL AMBROSIA ARTEMISIIFOLIA
Common Name: COMMON RAGWEED

Pest 3 Type: W **Code:** XANST XANTHIUM STRUMARIUM
Common Name: HEART-LEAF COCKLEBUR

Site and Design

Treated Plot Width: 10 FT
Treated Plot Length: 30 FT
Treated Plot Area: 300 FT² **Treatments:** 15
Replications: 4

Site Type: FIELD FIELD
Experimental Unit: 1 PLOT PLOT
Tillage Type: CONTIL CONVENTIONAL-TILL
Study Design: RACOB� Randomized Complete Block (RCB)

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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:	6/7/2013	7/12/2013
Appl. Start Time:	8:45	09:00
Appl. Stop Time:	10:00 AM	11:30 AM
Application Method:	SPRAY	SPRAY
Application Timing:	PREPRE	POSPOS
Application Placement:	SOIL	BROADC
Applied By:	IKLEY	DEVKOTA
Air Temperature, Unit:	65 F	75 F
% Relative Humidity:	79	51
Wind Velocity, Unit:	2 MPH	3 MPH
Wind Direction:	NE	NE
Dew Presence (Y/N):	N NO	Y YES
Soil Temperature, Unit:	72 F	76 F
Soil Moisture:	SLIWET	SLIWET
% Cloud Cover:	100	30

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	17
Stage Minimum, Percent:		16
Stage Maximum, Percent:		18
Height, Unit:		14.5 IN
Height Minimum, Maximum:		12 17

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Pest Stage At Each Application		
	A	B
Pest 1 Code, Type, Scale:	SETPU W	SETPU W
Stage Majority, Percent:		25G
Stage Minimum, Percent:		21G
Stage Maximum, Percent:		28G
Height, Unit:		5 IN
Height Minimum, Maximum:		0.5 10
Density, Unit:		100 YD2
Pest 2 Code, Type, Scale:	AMBEL W	AMBEL W
Stage Majority, Percent:		33G
Stage Minimum, Percent:		32G
Stage Maximum, Percent:		34G
Height, Unit:		5 IN
Height Minimum, Maximum:		2 8
Density, Unit:		7 YD2
Pest 3 Code, Type, Scale:	XANST W	XANST W
Stage Majority, Percent:		35G
Stage Minimum, Percent:		31G
Stage Maximum, Percent:		38G
Height, Unit:		4 IN
Height Minimum, Maximum:		0.5 8
Density, Unit:		15 YD2

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	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

4 FLEXSTAR APPLIED INSTEAD OF FLEXSTAR GT 3.5

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Trial ID: 13S-SEP-CTS-02
Protocol ID: 13S-SEP-CTS-02
Project ID: USHES0Y005-2013

Location: SEPAC
Investigator: Dr. Bill Johnson
Study Director: JOE IKLEY
Sponsor Contact: STEVE MROCZKIEWICZ / FIKRU HAILE

Trial Year: 2013

Trial Comments

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COMPARISON OF TWO-PASS PROGRAMS IN RR SOYBEAN

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Trial Year: 2013

Reps: 4 Plots: 10 by 30 feet
 Spray vol: 15 gal/ac Mix size: 1.8 liters (min 1.5642)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Appl Code	Amt to Measure	Product to Measure	Rep 1	2	3	4
1	UNTREATED CHECK											101	506	702	1002
2	PREFIX	5.3 LB/GAL	L	L	1490 g ai/ha		2 pt/a		A	30.05 ml/mx		102	503	803	906
	TOUCHDOWN TOTAL	4.17 LBAE/GAL	L	L	880 g ae/ha		24 fl oz/a		B	22.56 ml/mx					
	N-PAK AMS	3.4 LBA/GAL	SL	SL	2.5 % v/v		8.5 lb ai/100 gal		B	45.0 ml/mx					
3	BOUNDARY	6.5 LBA/GAL	EC	EC	1600 g ai/ha		1.75 pt/a		A	26.32 ml/mx		103	401	601	1004
	TOUCHDOWN TOTAL	4.17 LBAE/GAL	L	L	880 g ae/ha		24 fl oz/a		B	22.56 ml/mx					
	N-PAK AMS	3.4 LBA/GAL	SL	SL	2.5 % v/v		8.5 lb ai/100 gal		B	45.0 ml/mx					
4	BOUNDARY	6.5 LBA/GAL	EC	EC	1370 g ai/ha		1.5 pt/a		A	22.53 ml/mx		104	304	603	1003
	FLEXSTAR GT 3.5	2.82 LBAE/GAL	L	L	1380 g ae/ha		3.5 pt/a		B	52.32 ml/mx					
	N-PAK AMS	3.4 LBA/GAL	SL	SL	2.5 % v/v		8.5 lb ai/100 gal		B	45.0 ml/mx					
	MSO	100 %	L	L	1 % v/v		8.36 lb ai/100 gal		B	18.0 ml/mx					
5	PREFIX	5.3 LB/GAL	L	L	1480 g ai/ha		2 pt/a		A	29.85 ml/mx		105	504	802	902
	SHARPEN	2.85 LB/GAL	L	L	25 g ai/ha		1 oz/a		A	0.9378 ml/mx					
	TOUCHDOWN TOTAL	4.17 LBAE/GAL	L	L	880 g ae/ha		24 fl oz/a		B	22.56 ml/mx					
	N-PAK AMS	3.4 LBA/GAL	SL	SL	2.5 % v/v		8.5 lb ai/100 gal		B	45.0 ml/mx					
6	PREFIX	5.3 LB/GAL	L	L	1480 g ai/ha		2 pt/a		A	29.85 ml/mx		106	501	706	904
	TOUCHDOWN TOTAL	4.17 LBAE/GAL	L	L	880 g ae/ha		24 fl oz/a		B	22.56 ml/mx					
	DUAL II MAGNUM	7.64 LBA/GAL	L	L	1070 g ai/ha		1 pt/a		B	14.97 ml/mx					
	N-PAK AMS	3.4 LBA/GAL	SL	SL	2.5 % v/v		8.5 lb ai/100 gal		B	45.0 ml/mx					
7	FIERCE	76 %	WG	WG	160 g ai/ha		3 oz/a		A	2.701 g/mx		201	306	605	903
	TOUCHDOWN TOTAL	4.17 LBAE/GAL	L	L	880 g ae/ha		24 fl oz/a		B	22.56 ml/mx					
	N-PAK AMS	3.4 LBA/GAL	SL	SL	2.5 % v/v		8.5 lb ai/100 gal		B	45.0 ml/mx					
8	ANTHEM	258 G/L	SE	SE	94 g ai/ha		5 fl oz/a		A	4.674 ml/mx		202	405	701	805
	TOUCHDOWN TOTAL	4.17 LBAE/GAL	L	L	880 g ae/ha		24 fl oz/a		B	22.56 ml/mx					
	N-PAK AMS	3.4 LBA/GAL	SL	SL	2.5 % v/v		8.5 lb ai/100 gal		B	45.0 ml/mx					
9	OPTILL	68 %	WG	WG	95 g ai/ha		2 oz/a		A	1.792 g/mx		203	502	801	901
	OUTLOOK	719 G/L	EC	EC	525 g ai/ha		10 fl oz/a		A	9.367 ml/mx					
	TOUCHDOWN TOTAL	4.17 LBAE/GAL	L	L	880 g ae/ha		24 fl oz/a		B	22.56 ml/mx					
	N-PAK AMS	3.4 LBA/GAL	SL	SL	2.5 % v/v		8.5 lb ai/100 gal		B	45.0 ml/mx					
10	DURANGO DMA	480 GAE/L	SL	SL	840 g ae/ha		24 fl oz/a		B	22.45 ml/mx		204	402	704	1005
	N-PAK AMS	3.4 LBA/GAL	SL	SL	2.5 % v/v		8.5 lb ai/100 gal		B	45.0 ml/mx					
11	SONIC	70 %	WG	WG	147 g ai/ha		3 oz/a		A	2.694 g/mx		205	406	703	804
	DURANGO DMA	480 GAE/L	SL	SL	840 g ae/ha		24 fl oz/a		B	22.45 ml/mx					
	N-PAK AMS	3.4 LBA/GAL	SL	SL	2.5 % v/v		8.5 lb ai/100 gal		B	45.0 ml/mx					
12	SONIC	70 %	WG	WG	220 g ai/ha		4.5 oz/a		A	4.032 g/mx		206	505	604	1006
	DURANGO DMA	480 GAE/L	SL	SL	840 g ae/ha		24 fl oz/a		B	22.45 ml/mx					
	N-PAK AMS	3.4 LBA/GAL	SL	SL	2.5 % v/v		8.5 lb ai/100 gal		B	45.0 ml/mx					
13	SONIC	70 %	WG	WG	294 g ai/ha		6 oz/a		A	5.388 g/mx		301	305	705	1001
	DURANGO DMA	480 GAE/L	SL	SL	840 g ae/ha		24 fl oz/a		B	22.45 ml/mx					
	N-PAK AMS	3.4 LBA/GAL	SL	SL	2.5 % v/v		8.5 lb ai/100 gal		B	45.0 ml/mx					
14	SONIC	70 %	WG	WG	147 g ai/ha		3 oz/a		A	2.694 g/mx		302	403	606	806
	DURANGO DMA	480 GAE/L	SL	SL	840 g ae/ha		24 fl oz/a		B	22.45 ml/mx					
	FIRSTRATE	84 %	DF	DF	17.7 g ai/ha		0.3 oz/a		B	0.2703 g/mx					
	N-PAK AMS	3.4 LBA/GAL	SL	SL	2.5 % v/v		8.5 lb ai/100 gal		B	45.0 ml/mx					
15	UNTREATED CHECK											303	404	602	905

Sort Order: Replicate 1

Product quantities required for listed treatments and applications of trials included in this table:

Amount*	Unit	Treatment Name	Form Conc	Form Type	Lot Code
89.761	ml	PREFIX	5.3	L	
157.923	ml	TOUCHDOWN TOTAL	4.17	L	

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Product quantities required for listed treatments and applications of trials included in this table:

Amount*	Unit	Treatment Name	Form Conc	Form Type	Lot Code
585.000	ml	N-PAK AMS	3.4	SL	
48.848	ml	BOUNDARY	6.5	EC	
52.316	ml	FLEXSTAR GT 3.5	2.82	L	
18.000	ml	MSO	100	L	
0.938	ml	SHARPEN	2.85	L	
14.972	ml	DUAL II MAGNUM	7.64	L	
2.701	g	FIERCE	76	WG	
4.674	ml	ANTHEM	258	SE	
1.792	g	OPTILL	68	WG	
9.367	ml	OUTLOOK	719	EC	
112.251	ml	DURANGO DMA	480	SL	
14.808	g	SONIC	70	WG	
0.270	g	FIRSTRATE	84	DF	

* 'Per area' calculations based on spray volume= 15 gal/ac, mix size= 1.8 liters (mix size basis).

* 'Per volume' calculations use spray volume= 15 gal/ac, mix size= 1.8 liters.

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 Project ID: USHES0Y005-2013

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 Investigator: Dr. Bill Johnson
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Trial Year: 2013

				W WEED SETPU SETARIA PUMILA YELLOW FOXTAIL	W WEED AMBEL AMBROSIA ARTEM> COMMON RAGWEED	W WEED XANST XANTHIUM STRUM> HEART-LEAF COC>
Pest Type						
Pest Code						
Pest Scientific Name						
Pest Name						
Crop Code	GLXMA					
BBCH Scale	BSOY					
Crop Scientific Name	GLYCINE MAX					
Crop Name	SOYBEAN					
Part Rated	PLOT C		PLOT P	PLOT P	PLOT P	
Rating Date	7/12/2013		7/12/2013	7/12/2013	7/12/2013	
Rating Type	PHYGEN		CONTRO	CONTRO	CONTRO	
Rating Unit	%		%	%	%	
Sample Size, Unit	1 PLOT		1 PLOT	1 PLOT	1 PLOT	
Days After First/Last Applic.	35 35		35 35	35 35	35 35	
Trt-Eval Interval	0 DA-B		0 DA-B	0 DA-B	0 DA-B	
ARM Action Codes	P		P	P	P	
Number of Decimals	0		0	0	0	
Trt Treatment	Rate	Appl				
No. Name	Rate Unit	Code Plot	1	2	3	4
1 UNTREATED CHECK		101	0	0	0	0
		506	0	0	0	0
		702	0	0	0	0
		1002	0	0	0	0
		Mean =	0	0	0	0
2 PREFIX	1490 g ai/ha	A 102	0	80	95	70
TOUCHDOWN TOTAL	880 g ae/ha	B 503	0	80	100	70
N-PAK AMS	2.5 % v/v	B 803	5	60	100	80
		906	0	80	100	70
		Mean =	1	75	99	73
3 BOUNDARY	1600 g ai/ha	A 103	0	80	95	90
TOUCHDOWN TOTAL	880 g ae/ha	B 401	0	80	100	95
N-PAK AMS	2.5 % v/v	B 601	0	50	95	90
		1004	5	80	90	60
		Mean =	1	73	95	84
4 BOUNDARY	1370 g ai/ha	A 104	0	80	85	85
FLEXSTAR GT 3.5	1380 g ae/ha	B 304	0	95	85	53*
N-PAK AMS	2.5 % v/v	B 603	0	69*	90	75
MSO	1 % v/v	B 1003	5	70	100	30
		Mean =	1	79	90	61
5 PREFIX	1480 g ai/ha	A 105	0	95	95	90
SHARPEN	25 g ai/ha	A 504	0	50	100	50
TOUCHDOWN TOTAL	880 g ae/ha	B 802	0	70	95	95
N-PAK AMS	2.5 % v/v	B 902	0	60	100	95
		Mean =	0	69	98	83
6 PREFIX	1480 g ai/ha	A 106	0	95	100	50
TOUCHDOWN TOTAL	880 g ae/ha	B 501	3	75	100	80
DUAL II MAGNUM	1070 g ai/ha	B 706	0	50	90	60
N-PAK AMS	2.5 % v/v	B 904	0	70	100	50
		Mean =	1	73	98	60
7 FIERCE	160 g ai/ha	A 201	5	85	100	85
TOUCHDOWN TOTAL	880 g ae/ha	B 306	0	95	100	70
N-PAK AMS	2.5 % v/v	B 605	3	90	100	60
		903	0	70	100	75
		Mean =	2	85	100	73
8 ANTHEM	94 g ai/ha	A 202	0	80	70	30
TOUCHDOWN TOTAL	880 g ae/ha	B 405	0	90	100	30
N-PAK AMS	2.5 % v/v	B 701	0	20	50	80
		805	0	50	60	70
		Mean =	0	60	70	53

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Pest Type						
Pest Code						
Pest Scientific Name						
Pest Name						
Crop Code	GLXMA					
BBCH Scale	BSOY					
Crop Scientific Name	GLYCINE MAX					
Crop Name	SOYBEAN					
Part Rated	PLOT C		PLOT P		PLOT P	
Rating Date	7/26/2013		7/26/2013		7/26/2013	
Rating Type	PHYGEN		CONTRO		CONTRO	
Rating Unit	%		%		%	
Sample Size, Unit	1 PLOT		1 PLOT		1 PLOT	
Days After First/Last Applic.	49 14		49 14		49 14	
Trt-Eval Interval	14 DA-B		14 DA-B		14 DA-B	
ARM Action Codes	P		P		P	
Number of Decimals	0		0		0	
Trt Treatment	Rate	Appl				
No. Name	Rate Unit	Code Plot	5	6	7	8
1 UNTREATED CHECK		101	0	0	0	0
		506	0	0	0	0
		702	0	0	0	0
		1002	0	0	0	0
		Mean =	0	0	0	0
2 PREFIX	1490 g ai/ha A	102	0	100	100	100
TOUCHDOWN TOTAL	880 g ae/ha B	503	0	100	100	100
N-PAK AMS	2.5 % v/v B	803	0	100	100	100
		906	0	100	100	100
		Mean =	0	100	100	100
3 BOUNDARY	1600 g ai/ha A	103	0	100	100	100
TOUCHDOWN TOTAL	880 g ae/ha B	401	0	100	100	100
N-PAK AMS	2.5 % v/v B	601	0	100	100	100
		1004	0	100	100	100
		Mean =	0	100	100	100
4 BOUNDARY	1370 g ai/ha A	104	5	100	100	100
FLEXSTAR GT 3.5	1380 g ae/ha B	304	5	100	100	100
N-PAK AMS	2.5 % v/v B	603	5	0	100	100
MSO	1 % v/v B	1003	10	0	100	100
		Mean =	6	50	100	100
5 PREFIX	1480 g ai/ha A	105	0	100	100	100
SHARPEN	25 g ai/ha A	504	0	100	100	100
TOUCHDOWN TOTAL	880 g ae/ha B	802	0	100	100	100
N-PAK AMS	2.5 % v/v B	902	0	100	100	100
		Mean =	0	100	100	100
6 PREFIX	1480 g ai/ha A	106	5	100	100	100
TOUCHDOWN TOTAL	880 g ae/ha B	501	5	100	100	100
DUAL II MAGNUM	1070 g ai/ha B	706	0	100	100	100
N-PAK AMS	2.5 % v/v B	904	0	100	100	100
		Mean =	3	100	100	100
7 FIERCE	160 g ai/ha A	201	0	100	100	100
TOUCHDOWN TOTAL	880 g ae/ha B	306	0	100	100	100
N-PAK AMS	2.5 % v/v B	605	0	100	100	100
		903	0	100	100	100
		Mean =	0	100	100	100
8 ANTHEM	94 g ai/ha A	202	0	100	100	100
TOUCHDOWN TOTAL	880 g ae/ha B	405	0	100	100	100
N-PAK AMS	2.5 % v/v B	701	0	100	100	100
		805	0	100	100	100
		Mean =	0	100	100	100

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Pest Type		W WEED SETPU SETARIA PUMILA YELLOW FOXTAIL	W WEED AMBEL AMBROSIA ARTEM> COMMON RAGWEED	W WEED XANST XANTHIUM STRUM> HEART-LEAF COC>
Pest Code				
Pest Scientific Name				
Pest Name				
Crop Code	GLXMA			
BBCH Scale	BSOY			
Crop Scientific Name	GLYCINE MAX			
Crop Name	SOYBEAN			
Part Rated	PLOT C	PLOT P	PLOT P	PLOT P
Rating Date	7/26/2013	7/26/2013	7/26/2013	7/26/2013
Rating Type	PHYGEN	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%
Sample Size, Unit	1 PLOT	1 PLOT	1 PLOT	1 PLOT
Days After First/Last Applic.	49 14	49 14	49 14	49 14
Trt-Eval Interval	14 DA-B	14 DA-B	14 DA-B	14 DA-B
ARM Action Codes	P	P	P	P
Number of Decimals	0	0	0	0

Trt Treatment	Rate	Appl	5	6	7	8
No. Name	Rate Unit	Code Plot				
9 OPTILL	95 g ai/ha	A 203	0	100	100	100
OUTLOOK	525 g ai/ha	A 502	0	100	100	100
TOUCHDOWN TOTAL	880 g ae/ha	B 801	0	100	100	100
N-PAK AMS	2.5 % v/v	B 901	0	100	100	100
		Mean =	0	100	100	100
10 DURANGO DMA	840 g ae/ha	B 204	0	100	100	100
N-PAK AMS	2.5 % v/v	B 402	0	100	100	100
		704	0	100	100	100
		1005	0	100	100	100
		Mean =	0	100	100	100
11 SONIC	147 g ai/ha	A 205	0	100	100	100
DURANGO DMA	840 g ae/ha	B 406	0	100	100	100
N-PAK AMS	2.5 % v/v	B 703	0	100	100	100
		804	0	100	100	100
		Mean =	0	100	100	100
12 SONIC	220 g ai/ha	A 206	0	100	100	100
DURANGO DMA	840 g ae/ha	B 505	0	100	100	100
N-PAK AMS	2.5 % v/v	B 604	0	100	100	100
		1006	0	100	100	100
		Mean =	0	100	100	100
13 SONIC	294 g ai/ha	A 301	0	100	100	100
DURANGO DMA	840 g ae/ha	B 305	0	100	100	100
N-PAK AMS	2.5 % v/v	B 705	0	100	100	100
		1001	0	100	100	100
		Mean =	0	100	100	100
14 SONIC	147 g ai/ha	A 302	0	100	100	100
DURANGO DMA	840 g ae/ha	B 403	0	100	100	100
FIRSTRATE	17.7 g ai/ha	B 606	0	100	100	100
N-PAK AMS	2.5 % v/v	B 806	0	100	100	100
		Mean =	0	100	100	100
15 UNTREATED CHECK		303	0	0	0	0
		404	0	0	0	0
		602	0	0	0	0
		905	0	0	0	0
		Mean =	0	0	0	0

Purdue University Weed Science

				W WEED SETPU SETARIA PUMILA YELLOW FOXTAIL	W WEED AMBEL AMBROSIA ARTEM> COMMON RAGWEED		
Pest Type				GLXMA		GLXMA	GLXMA
Pest Code				BSOY		BSOY	BSOY
Pest Scientific Name				GLYCINE MAX		Glycine max	Glycine max
Pest Name				SOYBEAN		Soybean	Soybean
Crop Code				PLOT C	PLOT P	PLOT P	YIELD C
BBCH Scale				8/9/2013	8/9/2013	8/9/2013	10/4/2013
Crop Scientific Name				PHYGEN	CONTRO	CONTRO	YIELD
Crop Name				%	%	%	bu/ac
Part Rated				1 PLOT	1 PLOT	1 PLOT	1 PLOT
Rating Date				63 28	63 28	63 28	119 84
Rating Type				28 DA-B	28 DA-B	28 DA-B	
Rating Unit				P	P	P	TY1
Sample Size, Unit				0	0	0	1
Days After First/Last Applic.							
Trt-Eval Interval							
ARM Action Codes							
Number of Decimals							
Trt Treatment	Rate	Appl					
No. Name	Rate Unit	Code Plot	9	10	11	12	13
1 UNTREATED CHECK		101	0	0	0	2.3405737*	6.5*
		506	0	0	0	2.1434332	5.9
		702	0	0	0	0.9608921	2.7
		1002	0	0	0	0.6383821	1.8
		Mean =	0	0	0	1.5208203	4.2
2 PREFIX	1490 g ai/ha A	102	0	100	100	12.4100122	34.4
TOUCHDOWN TOTAL	880 g ae/ha B	503	0	100	100	13.5925464	37.7
N-PAK AMS	2.5 % v/v B	803	0	100	100	12.8937693	35.7
		906	0	100	100	13.9150484	38.6
		Mean =	0	100	100	13.2028441	36.6
3 BOUNDARY	1600 g ai/ha A	103	0	100	100	13.8075504	38.3
TOUCHDOWN TOTAL	880 g ae/ha B	401	0	100	100	14.1300674	39.1
N-PAK AMS	2.5 % v/v B	601	0	100	100	13.3775343	37.1
		1004	0	100	100	12.7325143	35.3
		Mean =	0	100	100	13.5119166	37.4
4 BOUNDARY	1370 g ai/ha A	104	0	95	100	13.2700363	36.8
FLEXSTAR GT 3.5	1380 g ae/ha B	304	0	100	100	17.6776748	49.0
N-PAK AMS	2.5 % v/v B	603	0	20	100	12.4616248*	34.5*
MSO	1 % v/v B	1003	0	60	100	9.7761700	27.1
		Mean =	0	69	100	13.2963765	36.8
5 PREFIX	1480 g ai/ha A	105	0	100	100	15.3663495	42.6
SHARPEN	25 g ai/ha A	504	0	100	100	13.4850323	37.4
TOUCHDOWN TOTAL	880 g ae/ha B	802	0	100	100	11.7649852	32.6
N-PAK AMS	2.5 % v/v B	902	0	100	100	11.6574792	32.3
		Mean =	0	100	100	13.0684616	36.2
6 PREFIX	1480 g ai/ha A	106	0	100	100	17.1401617	47.5
TOUCHDOWN TOTAL	880 g ae/ha B	501	0	100	100	13.0012673	36.0
DUAL II MAGNUM	1070 g ai/ha B	706	0	100	100	14.0763104	39.0
N-PAK AMS	2.5 % v/v B	904	0	100	100	14.7750715	40.9
		Mean =	0	100	100	14.7482027	40.9
7 FIERCE	160 g ai/ha A	201	0	100	100	15.0438405	41.7
TOUCHDOWN TOTAL	880 g ae/ha B	306	0	100	100	17.8389228	49.4
N-PAK AMS	2.5 % v/v B	605	0	100	100	13.5387894	37.5
		903	0	100	100	13.0012673	36.0
		Mean =	0	100	100	14.8557050	41.2
8 ANTHEM	94 g ai/ha A	202	0	100	100	16.3338796	45.3
TOUCHDOWN TOTAL	880 g ae/ha B	405	0	100	100	16.8176437	46.6
N-PAK AMS	2.5 % v/v B	701	0	100	100	11.8187422	32.7
		805	0	100	100	15.3663495	42.6
		Mean =	0	100	100	15.0841538	41.8

Purdue University Weed Science

Pest Type			W WEED			W WEED			
Pest Code			SETPU			AMBEL			
Pest Scientific Name			SETARIA PUMILA			AMBROSIA ARTEM>			
Pest Name			YELLOW FOXTAIL			COMMON RAGWEED			
Crop Code	GLXMA					GLXMA	GLXMA		
BBCH Scale	BSOY					BSOY	BSOY		
Crop Scientific Name	GLYCINE MAX					Glycine max	Glycine max		
Crop Name	SOYBEAN					Soybean	Soybean		
Part Rated	PLOT C	PLOT P		PLOT P		YIELD C	YIELD C		
Rating Date	8/9/2013	8/9/2013		8/9/2013		10/4/2013	10/4/2013		
Rating Type	PHYGEN	CONTRO		CONTRO		YIELD	YIELD		
Rating Unit	%	%		%		lb/plot	bu/ac		
Sample Size, Unit	1 PLOT	1 PLOT		1 PLOT		1 PLOT	1 PLOT		
Days After First/Last Applic.	63 28	63 28		63 28		119 84	119 84		
Trt-Eval Interval	28 DA-B	28 DA-B		28 DA-B					
ARM Action Codes	P	P		P		P	P	TY1	
Number of Decimals	0	0		0		0	0	1	
Trt Treatment	Rate	Appl							
No. Name	Rate Unit	Code Plot	9	10	11	12	13		
9 OPTILL	95 g ai/ha	A 203	0	100	100	15.1513385	42.0		
OUTLOOK	525 g ai/ha	A 502	0	100	100	11.5499742	32.0		
TOUCHDOWN TOTAL	880 g ae/ha	B 801	0	100	100	11.6574792	32.3		
N-PAK AMS	2.5 % v/v	B 901	0	100	100	14.0763104	39.0		
		Mean =	0	100	100	13.1087756	36.3		
10 DURANGO DMA	840 g ae/ha	B 204	0	100	100	16.6563887	46.1		
N-PAK AMS	2.5 % v/v	B 402	0	100	100	14.5063185	40.2		
		704	0	100	100	14.9900905	41.5		
		1005	0	100	100	10.6899421	29.6		
		Mean =	0	100	100	14.2106849	39.4		
11 SONIC	147 g ai/ha	A 205	0	100	100	15.9576206	44.2		
DURANGO DMA	840 g ae/ha	B 406	0	100	100	16.5488837	45.8		
N-PAK AMS	2.5 % v/v	B 703	0	100	100	13.1087813	36.3		
		804	0	100	100	15.3125935	42.4		
		Mean =	0	100	100	15.2319698	42.2		
12 SONIC	220 g ai/ha	A 206	0	100	100	17.4626637	48.4		
DURANGO DMA	840 g ae/ha	B 505	0	100	100	15.2050875	42.1		
N-PAK AMS	2.5 % v/v	B 604	0	100	100	13.4312833	37.2		
		1006	0	100	100	10.9049621	30.2		
		Mean =	0	100	100	14.2509992	39.5		
13 SONIC	294 g ai/ha	A 301	0	100	100	12.6787653	35.1		
DURANGO DMA	840 g ae/ha	B 305	0	100	100	17.0864047	47.3		
N-PAK AMS	2.5 % v/v	B 705	0	100	100	15.5276046	43.0		
		1001	0	100	100	13.2162873	36.6		
		Mean =	0	100	100	14.6272655	40.5		
14 SONIC	147 g ai/ha	A 302	0	100	100	13.6462954	37.8		
DURANGO DMA	840 g ae/ha	B 403	0	100	100	15.2588435	42.3		
FIRSTRATE	17.7 g ai/ha	B 606	0	100	100	14.8288285	41.1		
N-PAK AMS	2.5 % v/v	B 806	0	100	100	14.9900905	41.5		
		Mean =	0	100	100	14.6810145	40.7		
15 UNTREATED CHECK		303	0	0	0	2.2509382	6.2		
		404	0	0	0	2.8959583	8.0		
		602	0	0	0	0.2621230	0.7		
		905	0	0	0	1.8746722	5.2		
		Mean =	0	0	0	1.8209229	5.0		

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Pest Type				
Pest Code				
Pest Scientific Name				
Pest Name				
Crop Code			GLXMA	
BBCH Scale			BSOY	
Crop Scientific Name			Glycine max	
Crop Name			Soybean	
Part Rated			YIELD C	
Rating Date			10/4/2013	
Rating Type			YIELD	
Rating Unit			kg/ha	
Sample Size, Unit			1 PLOT	
Days After First/Last Applic.			119 84	
Trt-Eval Interval				
ARM Action Codes			TY2	
Number of Decimals			1	
Trt Treatment	Rate	Appl		
No. Name	Rate Unit	Code Plot		14
1 UNTREATED CHECK		101		436.1*
		506		399.4
		702		179.0
		1002		118.9
		Mean =		283.4
2 PREFIX	1490 g ai/ha	A 102		2312.2
TOUCHDOWN TOTAL	880 g ae/ha	B 503		2532.6
N-PAK AMS	2.5 % v/v	B 803		2402.4
		906		2592.6
		Mean =		2459.9
3 BOUNDARY	1600 g ai/ha	A 103		2572.6
TOUCHDOWN TOTAL	880 g ae/ha	B 401		2632.7
N-PAK AMS	2.5 % v/v	B 601		2492.5
		1004		2372.3
		Mean =		2517.5
4 BOUNDARY	1370 g ai/ha	A 104		2472.5
FLEXSTAR GT 3.5	1380 g ae/ha	B 304		3293.7
N-PAK AMS	2.5 % v/v	B 603		2321.8*
MSO	1 % v/v	B 1003		1821.5
		Mean =		2477.4
5 PREFIX	1480 g ai/ha	A 105		2863.0
SHARPEN	25 g ai/ha	A 504		2512.5
TOUCHDOWN TOTAL	880 g ae/ha	B 802		2192.0
N-PAK AMS	2.5 % v/v	B 902		2172.0
		Mean =		2434.9
6 PREFIX	1480 g ai/ha	A 106		3193.5
TOUCHDOWN TOTAL	880 g ae/ha	B 501		2422.4
DUAL II MAGNUM	1070 g ai/ha	B 706		2622.7
N-PAK AMS	2.5 % v/v	B 904		2752.9
		Mean =		2747.9
7 FIERCE	160 g ai/ha	A 201		2803.0
TOUCHDOWN TOTAL	880 g ae/ha	B 306		3323.7
N-PAK AMS	2.5 % v/v	B 605		2522.5
		903		2422.4
		Mean =		2767.9
8 ANTHEM	94 g ai/ha	A 202		3043.3
TOUCHDOWN TOTAL	880 g ae/ha	B 405		3133.4
N-PAK AMS	2.5 % v/v	B 701		2202.1
		805		2863.0
		Mean =		2810.5

Purdue University Weed Science

Pest Type				
Pest Code				
Pest Scientific Name				
Pest Name				
Crop Code				GLXMA
BBCH Scale				BSOY
Crop Scientific Name				Glycine max
Crop Name				Soybean
Part Rated				YIELD C
Rating Date				10/4/2013
Rating Type				YIELD
Rating Unit				kg/ha
Sample Size, Unit	1	PLOT		
Days After First/Last Applic.	119	84		
Trt-Eval Interval				
ARM Action Codes				TY2
Number of Decimals				1
Trt Treatment	Rate	Appl		
No. Name	Rate Unit	Code Plot	14	
9 OPTILL	95 g ai/ha	A 203	2823.0	
OUTLOOK	525 g ai/ha	A 502	2152.0	
TOUCHDOWN TOTAL	880 g ae/ha	B 801	2172.0	
N-PAK AMS	2.5 % v/v	B 901	2622.7	
		Mean =	2442.4	
10 DURANGO DMA	840 g ae/ha	B 204	3103.4	
N-PAK AMS	2.5 % v/v	B 402	2702.8	
		704	2792.9	
		1005	1991.7	
		Mean =	2647.7	
11 SONIC	147 g ai/ha	A 205	2973.2	
DURANGO DMA	840 g ae/ha	B 406	3083.4	
N-PAK AMS	2.5 % v/v	B 703	2442.4	
		804	2853.0	
		Mean =	2838.0	
12 SONIC	220 g ai/ha	A 206	3253.6	
DURANGO DMA	840 g ae/ha	B 505	2833.0	
N-PAK AMS	2.5 % v/v	B 604	2502.5	
		1006	2031.8	
		Mean =	2655.2	
13 SONIC	294 g ai/ha	A 301	2362.3	
DURANGO DMA	840 g ae/ha	B 305	3183.5	
N-PAK AMS	2.5 % v/v	B 705	2893.1	
		1001	2462.4	
		Mean =	2725.3	
14 SONIC	147 g ai/ha	A 302	2542.6	
DURANGO DMA	840 g ae/ha	B 403	2843.0	
FIRSTRATE	17.7 g ai/ha	B 606	2762.9	
N-PAK AMS	2.5 % v/v	B 806	2792.9	
		Mean =	2735.4	
15 UNTREATED CHECK		303	419.4	
		404	539.6	
		602	48.8	
		905	349.3	
		Mean =	339.3	

Purdue University Weed Science

COMPARISON OF TWO-PASS PROGRAMS IN RR SOYBEAN

Trial ID: 13S-SEP-CTS-02 Location: SEPAC Trial Year: 2013
 Protocol ID: 13S-SEP-CTS-02 Investigator: Dr. Bill Johnson
 Project ID: USHES0Y005-2013 Study Director: JOE IKLEY
 Sponsor Contact: STEVE MROCZKIEWICZ / FIKRU HAILE

Pest Type

W, WEED, G-BYRW7, G-WEDSTG = Weed or volunteer crop

Pest Code

SETPU, SETARIA PUMILA, = US
 AMBEL, AMBROSIA ARTEMISIIFOLIA, = US
 XANST, XANTHIUM STRUMARIUM, = US

Crop Code

GLXMA, BSOY, GLYCINE MAX, = US

Part Rated

PLOT = plot
 YIELD = yield
 C = Crop is Part Rated
 P = Pest is Part Rated

Rating Type

PHYGEN = phytotoxicity - general / injury
 CONTRO = control / burndown or knockdown
 YIELD = yield

Rating Unit

% = percent
 lb/plot = pounds per plot
 bu/ac = bushels per acre
 kg/ha = kilograms per hectare

PLOT = total plot

ARM Action Codes

P = Rating scale of 0 to 100 (e.g. % control or injury)
 TY1 = 2.770483*[12]
 TY2 = 186.3191*[12]

Purdue University Weed Science

COMPARISON OF TWO-PASS PROGRAMS IN RR SOYBEAN

Trial ID: 13S-SEP-CTS-02
 Protocol ID: 13S-SEP-CTS-02
 Project ID: USHES0Y005-2013

Location: SEPAC
 Investigator: Dr. Bill Johnson
 Study Director: JOE IKLEY
 Sponsor Contact: STEVE MROCZKIEWICZ / FIKRU HAILE

Pest Type		W WEED SETPU SETARIA PUMILA	W WEED AMBEL AMBROSIA ARTEM>	W WEED XANST XANTHIUM STRUM>
Pest Code				
Pest Scientific Name		YELLOW FOXTAIL	COMMON RAGWEED	HEART-LEAF COC>
Pest Name				
Crop Code	GLXMA			
BBCH Scale	BSOY			
Crop Scientific Name	GLYCINE MAX			
Crop Name	SOYBEAN			
Part Rated	PLOT C	PLOT P	PLOT P	PLOT P
Rating Date	7/12/2013	7/12/2013	7/12/2013	7/12/2013
Rating Type	PHYGEN	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%
Sample Size, Unit	1 PLOT	1 PLOT	1 PLOT	1 PLOT
Days After First/Last Applic.	35 35	35 35	35 35	35 35
Trt-Eval Interval	0 DA-B	0 DA-B	0 DA-B	0 DA-B
ARM Action Codes	P	P	P	P
Number of Decimals	0	0	0	0
Trt No.	Treatment Name	Rate	Appl Code	
		Rate Unit		
1	UNTREATED CHECK			0 a
2	PREFIX	1490 g ai/ha A		1 a
	TOUCHDOWN TOTAL	880 g ae/ha B		
	N-PAK AMS	2.5 % v/v B		
3	BOUNDARY	1600 g ai/ha A		1 a
	TOUCHDOWN TOTAL	880 g ae/ha B		
	N-PAK AMS	2.5 % v/v B		
4	BOUNDARY	1370 g ai/ha A		1 a
	FLEXSTAR GT 3.5	1380 g ae/ha B		
	N-PAK AMS	2.5 % v/v B		
	MSO	1 % v/v B		
5	PREFIX	1480 g ai/ha A		0 a
	SHARPEN	25 g ai/ha A		
	TOUCHDOWN TOTAL	880 g ae/ha B		
	N-PAK AMS	2.5 % v/v B		
6	PREFIX	1480 g ai/ha A		1 a
	TOUCHDOWN TOTAL	880 g ae/ha B		
	DUAL II MAGNUM	1070 g ai/ha B		
	N-PAK AMS	2.5 % v/v B		
7	FIERCE	160 g ai/ha A		2 a
	TOUCHDOWN TOTAL	880 g ae/ha B		
	N-PAK AMS	2.5 % v/v B		
8	ANTHEM	94 g ai/ha A		0 a
	TOUCHDOWN TOTAL	880 g ae/ha B		
	N-PAK AMS	2.5 % v/v B		
9	OPTILL	95 g ai/ha A		0 a
	OUTLOOK	525 g ai/ha A		
	TOUCHDOWN TOTAL	880 g ae/ha B		
	N-PAK AMS	2.5 % v/v B		
10	DURANGO DMA	840 g ae/ha B		0 a
	N-PAK AMS	2.5 % v/v B		
11	SONIC	147 g ai/ha A		0 a
	DURANGO DMA	840 g ae/ha B		
	N-PAK AMS	2.5 % v/v B		
12	SONIC	220 g ai/ha A		0 a
	DURANGO DMA	840 g ae/ha B		
	N-PAK AMS	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.
 Missing data estimates are included in columns: Yates=2,4,12,13,14

Purdue University Weed Science

Pest Type		W WEED	W WEED	W WEED
Pest Code		SETPU	AMBEL	XANST
Pest Scientific Name		SETARIA PUMILA	AMBROSIA ARTEM>	XANTHIUM STRUM>
Pest Name		YELLOW FOXTAIL	COMMON RAGWEED	HEART-LEAF COC>
Crop Code	GLXMA			
BBCH Scale	BSOY			
Crop Scientific Name	GLYCINE MAX			
Crop Name	SOYBEAN			
Part Rated	PLOT C	PLOT P	PLOT P	PLOT P
Rating Date	7/12/2013	7/12/2013	7/12/2013	7/12/2013
Rating Type	PHYGEN	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%
Sample Size, Unit	1 PLOT	1 PLOT	1 PLOT	1 PLOT
Days After First/Last Applic.	35 35	35 35	35 35	35 35
Trt-Eval Interval	0 DA-B	0 DA-B	0 DA-B	0 DA-B
ARM Action Codes	P	P	P	P
Number of Decimals	0	0	0	0
Trt Treatment	Rate	Appl		
No. Name	Rate Unit	Code	1	2
			3	4
13 SONIC	294 g ai/ha A		0 a	44 b
DURANGO DMA	840 g ae/ha B			91 a
N-PAK AMS	2.5 % v/v B			98 a
14 SONIC	147 g ai/ha A		0 a	10 c
DURANGO DMA	840 g ae/ha B			88 a
FIRSTRATE	17.7 g ai/ha B			91 ab
N-PAK AMS	2.5 % v/v B			
15 UNTREATED CHECK			0 a	0 c
LSD (P=.05)	2.0	18.9	10.9	20.1
Standard Deviation	1.4	13.2	7.6	14.1
CV	316.63	26.99	10.52	22.6
Bartlett's X2	0.961	11.673	20.708	19.305
P(Bartlett's X2)	0.916	0.389	0.023*	0.056
Skewness	2.9571*	-0.2578	-1.3146*	-0.8091*
Kurtosis	7.3242*	-1.5713*	-0.0191	-0.8385

Purdue University Weed Science

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	5	6	7	8
1	UNTREATED CHECK				0 b	0 c	0 b	0 b
2	PREFIX TOUCHDOWN TOTAL N-PAK AMS	1490 g ai/ha 880 g ae/ha 2.5 % v/v	A B B		0 b	100 a	100 a	100 a
3	BOUNDARY TOUCHDOWN TOTAL N-PAK AMS	1600 g ai/ha 880 g ae/ha 2.5 % v/v	A B B		0 b	100 a	100 a	100 a
4	BOUNDARY FLEXSTAR GT 3.5 N-PAK AMS MSO	1370 g ai/ha 1380 g ae/ha 2.5 % v/v 1 % v/v	A B B B		6 a	50 b	100 a	100 a
5	PREFIX SHARPEN TOUCHDOWN TOTAL N-PAK AMS	1480 g ai/ha 25 g ai/ha 880 g ae/ha 2.5 % v/v	A A B B		0 b	100 a	100 a	100 a
6	PREFIX TOUCHDOWN TOTAL DUAL II MAGNUM N-PAK AMS	1480 g ai/ha 880 g ae/ha 1070 g ai/ha 2.5 % v/v	A B B B		3 b	100 a	100 a	100 a
7	FIERCE TOUCHDOWN TOTAL N-PAK AMS	160 g ai/ha 880 g ae/ha 2.5 % v/v	A B B		0 b	100 a	100 a	100 a
8	ANTHEM TOUCHDOWN TOTAL N-PAK AMS	94 g ai/ha 880 g ae/ha 2.5 % v/v	A B B		0 b	100 a	100 a	100 a
9	OPTILL OUTLOOK TOUCHDOWN TOTAL N-PAK AMS	95 g ai/ha 525 g ai/ha 880 g ae/ha 2.5 % v/v	A A B B		0 b	100 a	100 a	100 a
10	DURANGO DMA N-PAK AMS	840 g ae/ha 2.5 % v/v	B B		0 b	100 a	100 a	100 a
11	SONIC DURANGO DMA N-PAK AMS	147 g ai/ha 840 g ae/ha 2.5 % v/v	A B B		0 b	100 a	100 a	100 a
12	SONIC DURANGO DMA N-PAK AMS	220 g ai/ha 840 g ae/ha 2.5 % v/v	A B B		0 b	100 a	100 a	100 a

Purdue University Weed Science

Pest Type		W WEED	W WEED	W WEED
Pest Code		SETPU	AMBEL	XANST
Pest Scientific Name		SETARIA PUMILA	AMBROSIA ARTEM>	XANTHIUM STRUM>
Pest Name		YELLOW FOXTAIL	COMMON RAGWEED	HEART-LEAF COC>
Crop Code	GLXMA			
BBCH Scale	BSOY			
Crop Scientific Name	GLYCINE MAX			
Crop Name	SOYBEAN			
Part Rated	PLOT C	PLOT P	PLOT P	PLOT P
Rating Date	7/26/2013	7/26/2013	7/26/2013	7/26/2013
Rating Type	PHYGEN	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%
Sample Size, Unit	1 PLOT	1 PLOT	1 PLOT	1 PLOT
Days After First/Last Applic.	49 14	49 14	49 14	49 14
Trt-Eval Interval	14 DA-B	14 DA-B	14 DA-B	14 DA-B
ARM Action Codes	P	P	P	P
Number of Decimals	0	0	0	0
Trt Treatment	Rate	Appl		
No. Name	Rate Unit	Code	5	6
13 SONIC	294 g ai/ha A		0 b	100 a
DURANGO DMA	840 g ae/ha B			100 a
N-PAK AMS	2.5 % v/v B			100 a
14 SONIC	147 g ai/ha A		0 b	100 a
DURANGO DMA	840 g ae/ha B			100 a
FIRSTRATE	17.7 g ai/ha B			
N-PAK AMS	2.5 % v/v B			
15 UNTREATED CHECK			0 b	0 c
LSD (P=.05)	1.4		1.4	21.3
Standard Deviation	1.0		1.0	14.9
CV	172.45		172.45	17.89
Bartlett's X2	0.061		0.061	0.0
P(Bartlett's X2)	0.805		0.805	0.0
Skewness	3.4081*		-1.8351*	-2.213*
Kurtosis	12.0911*		1.4134*	2.9961*

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Trt No.	Treatment Name	Rate	Appl Code	9	10	11	12	13
1	UNTREATED CHECK			0 a	0 c	0 b	1.5208203 b	4.2 b
2	PREFIX TOUCHDOWN TOTAL N-PAK AMS	1490 g ai/ha A 880 g ae/ha B 2.5 % v/v B		0 a	100 a	100 a	13.2028441 a	36.6 a
3	BOUNDARY TOUCHDOWN TOTAL N-PAK AMS	1600 g ai/ha A 880 g ae/ha B 2.5 % v/v B		0 a	100 a	100 a	13.5119166 a	37.4 a
4	BOUNDARY FLEXSTAR GT 3.5 N-PAK AMS MSO	1370 g ai/ha A 1380 g ae/ha B 2.5 % v/v B 1 % v/v B		0 a	69 b	100 a	13.2963765 a	36.8 a
5	PREFIX SHARPEN TOUCHDOWN TOTAL N-PAK AMS	1480 g ai/ha A 25 g ai/ha A 880 g ae/ha B 2.5 % v/v B		0 a	100 a	100 a	13.0684616 a	36.2 a
6	PREFIX TOUCHDOWN TOTAL DUAL II MAGNUM N-PAK AMS	1480 g ai/ha A 880 g ae/ha B 1070 g ai/ha B 2.5 % v/v B		0 a	100 a	100 a	14.7482027 a	40.9 a
7	FIERCE TOUCHDOWN TOTAL N-PAK AMS	160 g ai/ha A 880 g ae/ha B 2.5 % v/v B		0 a	100 a	100 a	14.8557050 a	41.2 a
8	ANTHEM TOUCHDOWN TOTAL N-PAK AMS	94 g ai/ha A 880 g ae/ha B 2.5 % v/v B		0 a	100 a	100 a	15.0841538 a	41.8 a
9	OPTILL OUTLOOK TOUCHDOWN TOTAL N-PAK AMS	95 g ai/ha A 525 g ai/ha A 880 g ae/ha B 2.5 % v/v B		0 a	100 a	100 a	13.1087756 a	36.3 a
10	DURANGO DMA N-PAK AMS	840 g ae/ha B 2.5 % v/v B		0 a	100 a	100 a	14.2106849 a	39.4 a
11	SONIC DURANGO DMA N-PAK AMS	147 g ai/ha A 840 g ae/ha B 2.5 % v/v B		0 a	100 a	100 a	15.2319698 a	42.2 a
12	SONIC DURANGO DMA N-PAK AMS	220 g ai/ha A 840 g ae/ha B 2.5 % v/v B		0 a	100 a	100 a	14.2509992 a	39.5 a

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Pest Type	GLXMA	W WEED SETPU SETARIA PUMILA YELLOW FOXTAIL	W WEED AMBEL AMBROSIA ARTEM> COMMON RAGWEED	GLXMA	GLXMA
Pest Code	BSOY			BSOY	BSOY
Pest Scientific Name	GLYCINE MAX			Glycine max	Glycine max
Pest Name	SOYBEAN			Soybean	Soybean
Crop Code	PLOT C	PLOT P	PLOT P	YIELD C	YIELD C
BBCH Scale	8/9/2013	8/9/2013	8/9/2013	10/4/2013	10/4/2013
Crop Scientific Name	PHYGEN	CONTRO	CONTRO	YIELD	YIELD
Crop Name	%	%	%	lb/plot	bu/ac
Part Rated	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT
Rating Date	63 28	63 28	63 28	119 84	119 84
Rating Type	28 DA-B	28 DA-B	28 DA-B		
Rating Unit	P	P	P		TY1
Sample Size, Unit	0	0	0		1
Days After First/Last Applic.					
Trt-Eval Interval					
ARM Action Codes					
Number of Decimals					
Trt Treatment	Rate	Appl			
No. Name	Rate Unit	Code	9	10	11
			12	13	
13 SONIC	294 g ai/ha A		0 a	100 a	100 a
DURANGO DMA	840 g ae/ha B				14.6272655 a
N-PAK AMS	2.5 % v/v B				40.5 a
14 SONIC	147 g ai/ha A		0 a	100 a	100 a
DURANGO DMA	840 g ae/ha B				14.6810145 a
FIRSTRATE	17.7 g ai/ha B				
N-PAK AMS	2.5 % v/v B				40.7 a
15 UNTREATED CHECK			0 a	0 c	0 b
					1.8209229 b
					5.0 b
LSD (P=.05)	0.0	13.7	0.0	2.40219090	6.66
Standard Deviation	0.0	9.6	0.0	1.68095552	4.66
CV	0.0	11.31	0.0	13.47	13.47
Bartlett's X2	0.0	0.0	0.0	18.137	18.137
P(Bartlett's X2)	.	.	.	0.201	0.201
Skewness	.	-1.9612*	-2.213*	-1.7087*	-1.7087*
Kurtosis	.	2.0032*	2.9961*	2.146*	2.146*

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Pest Type			
Pest Code			
Pest Scientific Name			
Pest Name			
Crop Code		GLXMA	
BBCH Scale		BSOY	
Crop Scientific Name		Glycine max	
Crop Name		Soybean	
Part Rated		YIELD C	
Rating Date		10/4/2013	
Rating Type		YIELD	
Rating Unit		kg/ha	
Sample Size, Unit		1 PLOT	
Days After First/Last Applic.		119 84	
Trt-Eval Interval			
ARM Action Codes		TY2	
Number of Decimals		1	
Trt No.	Treatment Name	Rate Rate Unit	Appl Code
			14
1	UNTREATED CHECK		283.4 b
2	PREFIX	1490 g ai/ha A	2459.9 a
	TOUCHDOWN TOTAL	880 g ae/ha B	
	N-PAK AMS	2.5 % v/v B	
3	BOUNDARY	1600 g ai/ha A	2517.5 a
	TOUCHDOWN TOTAL	880 g ae/ha B	
	N-PAK AMS	2.5 % v/v B	
4	BOUNDARY	1370 g ai/ha A	2477.4 a
	FLEXSTAR GT 3.5	1380 g ae/ha B	
	N-PAK AMS	2.5 % v/v B	
	MSO	1 % v/v B	
5	PREFIX	1480 g ai/ha A	2434.9 a
	SHARPEN	25 g ai/ha A	
	TOUCHDOWN TOTAL	880 g ae/ha B	
	N-PAK AMS	2.5 % v/v B	
6	PREFIX	1480 g ai/ha A	2747.9 a
	TOUCHDOWN TOTAL	880 g ae/ha B	
	DUAL II MAGNUM	1070 g ai/ha B	
	N-PAK AMS	2.5 % v/v B	
7	FIERCE	160 g ai/ha A	2767.9 a
	TOUCHDOWN TOTAL	880 g ae/ha B	
	N-PAK AMS	2.5 % v/v B	
8	ANTHEM	94 g ai/ha A	2810.5 a
	TOUCHDOWN TOTAL	880 g ae/ha B	
	N-PAK AMS	2.5 % v/v B	
9	OPTILL	95 g ai/ha A	2442.4 a
	OUTLOOK	525 g ai/ha A	
	TOUCHDOWN TOTAL	880 g ae/ha B	
	N-PAK AMS	2.5 % v/v B	
10	DURANGO DMA	840 g ae/ha B	2647.7 a
	N-PAK AMS	2.5 % v/v B	
11	SONIC	147 g ai/ha A	2838.0 a
	DURANGO DMA	840 g ae/ha B	
	N-PAK AMS	2.5 % v/v B	
12	SONIC	220 g ai/ha A	2655.2 a
	DURANGO DMA	840 g ae/ha B	
	N-PAK AMS	2.5 % v/v B	

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Pest Type				
Pest Code				
Pest Scientific Name				
Pest Name				
Crop Code			GLXMA	
BBCH Scale			BSOY	
Crop Scientific Name			Glycine max	
Crop Name			Soybean	
Part Rated			YIELD C	
Rating Date			10/4/2013	
Rating Type			YIELD	
Rating Unit			kg/ha	
Sample Size, Unit			1 PLOT	
Days After First/Last Applic.			119 84	
Trt-Eval Interval				
ARM Action Codes			TY2	
Number of Decimals			1	
Trt No.	Treatment Name	Rate	Appl	
		Rate Unit	Code	14
13	SONIC	294 g ai/ha	A	2725.3 a
	DURANGO DMA	840 g ae/ha	B	
	N-PAK AMS	2.5 % v/v	B	
14	SONIC	147 g ai/ha	A	2735.4 a
	DURANGO DMA	840 g ae/ha	B	
	FIRSTRATE	17.7 g ai/ha	B	
	N-PAK AMS	2.5 % v/v	B	
15	UNTREATED CHECK			339.3 b
LSD (P=.05)				447.57
Standard Deviation				313.19
CV				13.47
Bartlett's X2				18.137
P(Bartlett's X2)				0.201
Skewness				-1.7087*
Kurtosis				2.146*

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COMPARISON OF TWO-PASS PROGRAMS IN RR SOYBEAN

Trial ID: 13S-SEP-CTS-02
 Protocol ID: 13S-SEP-CTS-02
 Project ID: USHES0Y005-2013

Location: SEPAC
 Investigator: Dr. Bill Johnson
 Study Director: JOE IKLEY
 Sponsor Contact: STEVE MROCZKIEWICZ / FIKRU HAILE

Trial Year: 2013

Randomized Complete Block (RCB) AOV For GLXMA BSOY GLYCINE MAX SOYBEAN PLOT C 7/12/2013 PHYGEN % 1 PLOT 35 35 0 DA-B P 0 (Data Column 1)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	59	106.733333			
Replicate	3	1.933333	0.644444	0.342	0.7948
Treatment	14	25.733333	1.838095	0.976	0.4924
Error	42	79.066667	1.882540		

Randomized Complete Block (RCB) AOV For W WEED SETPU SETARIA PUMILA YELLOW FOXTAIL PLOT P 7/12/2013 CONTRO % 1 PLOT 35 35 0 DA-B P 0 (Data Column 2)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	57	74063.932129			
Replicate	3	3179.830034	1059.943345	6.086	0.0016
Treatment	14	63917.371325	4565.526523	26.213	0.0001
Error	40	6966.730769	174.168269		

Randomized Complete Block (RCB) AOV For W WEED AMBEL AMBROSIA ARTEMISIIFOLIA COMMON RAGWEED PLOT P 7/12/2013 CONTRO % 1 PLOT 35 35 0 DA-B P 0 (Data Column 3)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	59	84675.000000			
Replicate	3	381.666667	127.222222	2.187	0.1038
Treatment	14	81850.000000	5846.428571	100.498	0.0001
Error	42	2443.333333	58.174603		

Randomized Complete Block (RCB) AOV For W WEED XANST XANTHIUM STRUMARIUM HEART-LEAF COCKLEBUR PLOT P 7/12/2013 CONTRO % 1 PLOT 35 35 0 DA-B P 0 (Data Column 4)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	58	77302.037037			
Replicate	3	1692.777778	564.259259	2.839	0.0496
Treatment	14	67460.370370	4818.597884	24.244	0.0001
Error	41	8148.888889	198.753388		

Randomized Complete Block (RCB) AOV For GLXMA BSOY GLYCINE MAX SOYBEAN PLOT C 7/26/2013 PHYGEN % 1 PLOT 49 14 14 DA-B P 0 (Data Column 5)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	59	204.583333			
Replicate	3	1.250000	0.416667	0.412	0.7454
Treatment	14	160.833333	11.488095	11.353	0.0001
Error	42	42.500000	1.011905		

Randomized Complete Block (RCB) AOV For W WEED SETPU SETARIA PUMILA YELLOW FOXTAIL PLOT P 7/26/2013 CONTRO % 1 PLOT 49 14 14 DA-B P 0 (Data Column 6)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	59	83333.333333			
Replicate	3	666.666667	222.222222	1.000	0.4023
Treatment	14	73333.333333	5238.095238	23.571	0.0001
Error	42	9333.333333	222.222222		

Randomized Complete Block (RCB) AOV For W WEED AMBEL AMBROSIA ARTEMISIIFOLIA COMMON RAGWEED PLOT P 7/26/2013 CONTRO % 1 PLOT 49 14 14 DA-B P 0 (Data Column 7)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	59	69333.333333			
Replicate	3	0.000000	0.000000	0.000	1.0000
Treatment	14	69333.333333	4952.380952	0.000	1.0000
Error	42	0.000000	0.000000		

Randomized Complete Block (RCB) AOV For W WEED XANST XANTHIUM STRUMARIUM HEART-LEAF COCKLEBUR PLOT P 7/26/2013 CONTRO % 1 PLOT 49 14 14 DA-B P 0 (Data Column 8)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	59	69333.333333			
Replicate	3	0.000000	0.000000	0.000	1.0000
Treatment	14	69333.333333	4952.380952	0.000	1.0000
Error	42	0.000000	0.000000		

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Randomized Complete Block (RCB) AOV For GLXMA BSOY GLYCINE MAX SOYBEAN PLOT C 8/9/2013 PHYGEN % 1 PLOT 63 28 28 DA-B P 0 (Data Column 9)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	59	0.000000000000			
Replicate	3	0.000000000000	0.000000000000	0.000	1.0000
Treatment	14	0.000000000000	0.000000000000	0.000	1.0000
Error	42	0.000000000000	0.000000000000		

Randomized Complete Block (RCB) AOV For W WEED SETPU SETARIA PUMILA YELLOW FOXTAIL PLOT P 8/9/2013 CONTRO % 1 PLOT 63 28 28 DA-B P 0 (Data Column 10)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	59	73764.583333			
Replicate	3	274.583333	91.527778	1.000	0.4023
Treatment	14	69645.833333	4974.702381	54.352	0.0001
Error	42	3844.166667	91.527778		

Randomized Complete Block (RCB) AOV For W WEED AMBEL AMBROSIA ARTEMISIIFOLIA COMMON RAGWEED PLOT P 8/9/2013 CONTRO % 1 PLOT 63 28 28 DA-B P 0 (Data Column 11)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	59	69333.333333			
Replicate	3	0.000000	0.000000	0.000	1.0000
Treatment	14	69333.333333	4952.380952	0.000	1.0000
Error	42	0.000000	0.000000		

Randomized Complete Block (RCB) AOV For GLXMA BSOY Glycine max Soybean YIELD C 10/4/2013 YIELD lb/plot 1 PLOT 119 84 (Data Column 12)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	57	1271.009281			
Replicate	3	48.202734	16.067578	5.686	0.0024
Treatment	14	1109.782111	79.270151	28.054	0.0001
Error	40	113.024436	2.825611		

Randomized Complete Block (RCB) AOV For GLXMA BSOY Glycine max Soybean YIELD C 10/4/2013 YIELD bu/ac 1 PLOT 119 84 TY1 1 (Data Column 13)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	57	9755.728399			
Replicate	3	369.983752	123.327917	5.686	0.0024
Treatment	14	8518.216994	608.444071	28.054	0.0001
Error	40	867.527654	21.688191		

Randomized Complete Block (RCB) AOV For GLXMA BSOY Glycine max Soybean YIELD C 10/4/2013 YIELD kg/ha 1 PLOT 119 84 TY2 1 (Data Column 14)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	57	44122841.909588			
Replicate	3	1673348.612539	557782.870846	5.686	0.0024
Treatment	14	38525871.813787	2751847.986699	28.054	0.0001
Error	40	3923621.483262	98090.537082		

Pest Type
W, WEED, G-BYRW7, G-WEDSTG = Weed or volunteer crop

Pest Code
SETPU, SETARIA PUMILA, = US
AMBEL, AMBROSIA ARTEMISIIFOLIA, = US
XANST, XANTHIUM STRUMARIUM, = US

Crop Code
GLXMA, BSOY, GLYCINE MAX, = US

Part Rated
PLOT = plot
YIELD = yield
C = Crop is Part Rated
P = Pest is Part Rated

Rating Type
PHYGEN = phytotoxicity - general / injury
CONTRO = control / burndown or knockdown
YIELD = yield

Rating Unit
% = percent
lb/plot = pounds per plot
bu/ac = bushels per acre
kg/ha = kilograms per hectare

PLOT = total plot

ARM Action Codes
P = Rating scale of 0 to 100 (e.g. % control or injury)
TY1 = 2.770483*[12]
TY2 = 186.3191*[12]