

# Purdue University

## BASF herbicide portfolio in notill soybean

Trial ID: 12S-SEP-NTS-12      Protocol ID: 12S-SEP-NTS-12  
 Location: SEPAC      Study Director: Paul Marquardt  
 Project ID: 12S-SEP-NTS-12      Investigator: Dr. Bill Johnson  
 Sponsor Contact: Gery Welker

### 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:** 3-12-2012

### 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:** 10-25-2012  
**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:** AMBEL *Ambrosia artemisiifolia*  
**Common Name:** Common ragweed
- Pest 2 Type:** W **Code:** TAROF *Taraxacum officinale*  
**Common Name:** Common dandelion
- Pest 3 Type:** W **Code:** ERICA *Conyza canadensis*  
**Common Name:** Canada horseweed
- Pest 4 Type:** W **Code:** ALLVI *Allium vineale*  
**Common Name:** Wild garlic
- Pest 5 Type:** W **Code:** XANST *Xanthium strumarium*  
**Common Name:** Heart-leaf cocklebur
- Pest 6 Type:** W **Code:** SIDSP *Sida spinosa*  
**Common Name:** Prickly sida
- Pest 7 Type:** W **Code:** GGGAN Annual grasses  
**Common Name:** Annual grasses

## Site and Design

**Plot Width, Unit:** 10 FT  
**Plot Length, Unit:** 30 FT  
**Plot Area, Unit:** 300 FT<sup>2</sup>  
**Replications:** 4

**Site Type:** FIELD field  
**Experimental Unit:** 1 PLOT plot  
**Tillage Type:** NOTILL no-till  
**Study Design:** RACOB� Randomized Complete Block (RCB)  
**Untreated Arrangement:** INCLUDED single control randomized in each block

## 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
<b>Application Date:</b>	4-26-2012	6-20-2012
<b>Time of Day:</b>	9:30 AM	11:30 AM
<b>Application Method:</b>	SPRAY	SPRAY
<b>Application Timing:</b>	7 DPP	POSPOS
<b>Application Placement:</b>	FOLIAR	FOLIAR
<b>Applied By:</b>	JR	PM
<b>Air Temperature, Unit:</b>	70 F	95 F
<b>% Relative Humidity:</b>	68	39
<b>Wind Velocity, Unit:</b>	2.3 MPH	1.9 MPH
<b>Wind Direction:</b>	NW	SW
<b>Dew Presence (Y/N):</b>	Y yes	N no
<b>Soil Temperature, Unit:</b>	68 F	
<b>Soil Moisture:</b>	DRY	DRY
<b>% Cloud Cover:</b>	80	5

## Crop Stage At Each Application

	A	B
<b>Crop 1 Code, BBCH Scale:</b>	GLXMA BSOY	GLXMA BSOY
<b>Stage Scale Used:</b>		BBCH
<b>Stage Majority, Percent:</b>		61 100
<b>Height, Unit:</b>		12 IN

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## Pest Stage At Each Application

	A	B
<b>Pest 1 Code, Type, Scale:</b>	AMBEL W	AMBEL W
<b>Stage Majority, Percent:</b>	11 100	18 100
<b>Height, Unit:</b>	1 IN	11 IN
<b>Height Minimum, Maximum:</b>	1 1	4 18
<b>Density, Unit:</b>	2.5 M2	5 M2
<b>Pest 2 Code, Type, Scale:</b>	TAROF W	TAROF W
<b>Stage Majority, Percent:</b>	30 100	
<b>Height, Unit:</b>	2.5 IN	
<b>Height Minimum, Maximum:</b>	2 3	
<b>Density, Unit:</b>	2.5 M2	
<b>Pest 3 Code, Type, Scale:</b>	ERICA W	ERICA W
<b>Stage Majority, Percent:</b>	12 100	30 100
<b>Height, Unit:</b>	2 IN	7.5 IN
<b>Height Minimum, Maximum:</b>	1 3	3 12
<b>Density, Unit:</b>	1 M2	5 M2
<b>Pest 4 Code, Type, Scale:</b>	ALLVI W	ALLVI W
<b>Stage Majority, Percent:</b>	40 100	
<b>Height, Unit:</b>	13 IN	
<b>Height Minimum, Maximum:</b>	8 18	
<b>Density, Unit:</b>	5 M2	
<b>Pest 5 Code, Type, Scale:</b>	XANST W	XANST W
<b>Stage Majority, Percent:</b>	09 100	18 100
<b>Height, Unit:</b>	1 IN	11 IN
<b>Height Minimum, Maximum:</b>	1 1	4 18
<b>Density, Unit:</b>	1 M2	7.5 M2
<b>Pest 6 Code, Type, Scale:</b>	SIDSP W	SIDSP W
<b>Stage Majority, Percent:</b>		15 100
<b>Height, Unit:</b>		5 IN
<b>Height Minimum, Maximum:</b>		2 8
<b>Density, Unit:</b>		10 M2
<b>Pest 7 Code, Type, Scale:</b>	GGGAN W	GGGAN W
<b>Stage Majority, Percent:</b>		22 100
<b>Height, Unit:</b>		13 IN
<b>Height Minimum, Maximum:</b>		2 24
<b>Density, Unit:</b>		40 M2

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## Application Equipment

	A	B
<b>Appl. Equipment:</b>	CO2 Backpack	CO2 Backpack
<b>Equipment Type:</b>	SPRBAC	SPRBAC
<b>Operation Pressure, Unit:</b>	17 PSI	17 PSI
<b>Nozzle Type:</b>	Flat Fan	Flat Fan
<b>Nozzle Size:</b>	XR11002	XR11002
<b>Nozzle Spacing, Unit:</b>	15 IN	15 IN
<b>Nozzles/Row:</b>	8	
<b>Boom Length, Unit:</b>	10 FT	10 FT
<b>Boom Height, Unit:</b>	18 IN	18 IN
<b>Ground Speed, Unit:</b>	3 MPH	3 MPH
<b>Carrier:</b>	H2O	H2O
<b>Water Hardness (ppm CaCO3):</b>	150	150
<b>Spray Volume, Unit:</b>	15 GAL/AC	15 gal/ac
<b>Mix Size, Unit:</b>	1.8 Liters	1.8 liters
<b>Propellant:</b>	CO2	CO2
<b>Tank Mix (Y/N):</b>	N no	N no

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 Project ID: 12S-SEP-NTS-12      Investigator: Dr. Bill Johnson  
 Sponsor Contact: Gery Welker

		W Weed ERICA	W Weed AMBEL	W Weed XANST	W Weed IPOLA	W Weed SIDSP	W Weed SETFA					
Pest Type		Conyza canadens>	Ambrosia artem>	Xanthium strum>	Ipomoea lacuno>	Sida spinosa	Setaria faberi					
Pest Code												
Pest Scientific Name		Conyza canadens>	Ambrosia artem>	Xanthium strum>	Ipomoea lacuno>	Sida spinosa	Setaria faberi					
Pest Name		Canada horsewee>	Common ragweed	Heart-leaf coc>	Pitted morning>	Prickly sida	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		AG2931	AG2931	AG2931	AG2931	AG2931	AG2931					
Description		1-2 IN	4 IN	4 IN	4 IN	4 IN	4 IN					
Part Rated		PLOT C	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P					
Rating Date		5-17-2012	5-31-2012	5-31-2012	5-31-2012	5-31-2012	5-31-2012					
Rating Type		PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO					
Rating Unit		%	%	%	%	%	%					
Number of Subsamples		1	1	1	1	1	1					
Crop Stage Majority		10	13	13	13	13	13					
Pest Stage Majority			<1-8 IN	2-4 IN	1-8 IN	1-10 IN	1-12 IN					
Pest Density, Unit			4.5 M2	2 M2	8 M2	4.5 M2	22.5M2					
Assessed By		PM	JR/GC	JR/GC	JR/GC	JR/GC	JR/GC					
Days After First/Last Applic.		21 21	35 35	35 35	35 35	35 35	35 35					
Trt-Eval Interval		21 DA-A	35 DA-A	35 DA-A	35 DA-A	35 DA-A	35 DA-A					
Plant-Eval Interval		14 DP-1	28 DP-1	28 DP-1	28 DP-1	28 DP-1	28 DP-1					
Days After Emergence		9 DE-1	23 DE-1	23 DE-1	23 DE-1	23 DE-1	23 DE-1					
ARM Action Codes												
Number of Decimals												
Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	1	2	3	4	5	6	7	
1	UNTREATED	0.0	a		0.0	c	0.0	c	0.0	b	0.0	c
2	Zidua	149	g ai/ha	A	0.0	a	92.5	a	98.0	a	35.0	b
	Sharpen	25	g ai/ha	A								
	Roundup PowerMAX	870	g ae/ha	A								
	MSO	1	% v/v	A								
	N-Pak AMS	2.5	% v/v	A								
	Roundup PowerMAX	870	g ae/ha	B								
	N-Pak AMS	2.5	% v/v	B								
3	Optill	95	g ai/ha	A	0.0	a	100.0	a	98.8	a	96.3	a
	Roundup PowerMAX	870	g ae/ha	A								
	MSO	1	% v/v	A								
	N-Pak AMS	2.5	% v/v	A								
	Roundup PowerMAX	870	g ae/ha	B								
	N-Pak AMS	2.5	% v/v	B								
4	Optill PRO	0.0	a		0.0	a	100.0	a	100.0	a	98.3	a
	Optill	95	g ai/ha	A								
	Outlook	526	g ai/ha	A								
	Roundup PowerMAX	870	g ae/ha	A								
	MSO	1	% v/v	A								
	N-Pak AMS	2.5	% v/v	A								
	Roundup PowerMAX	870	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.

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Pest Type		W Weed ERICA	W Weed AMBEL	W Weed XANST	W Weed IPOLA	W Weed SIDSP	W Weed SETFA		
Pest Code		Conyza canadensis	Ambrosia artem	Xanthium strum	Ipomoea lacuno	Sida spinosa	Setaria faberi		
Pest Scientific Name		Canada horsewee	Common ragweed	Heart-leaf coc	Pitted morning	Prickly sida	Giant foxtail		
Pest Name		GLXMA BSOY	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY		
Crop Code		Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max		
BBCH Scale		Soybean	Soybean	Soybean	Soybean	Soybean	Soybean		
Crop Scientific Name		AG2931	AG2931	AG2931	AG2931	AG2931	AG2931		
Crop Name		1-2 IN	4 IN	4 IN	4 IN	4 IN	4 IN		
Crop Variety		PLOT C	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P		
Description		5-17-2012	5-31-2012	5-31-2012	5-31-2012	5-31-2012	5-31-2012		
Part Rated		PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO		
Rating Date		%	%	%	%	%	%		
Rating Type		1	1	1	1	1	1		
Rating Unit		10	13	13	13	13	13		
Number of Subsamples		<1-8 IN	2-4 IN	1-8 IN	1-4 IN	1-10 IN	1-12 IN		
Crop Stage Majority		4.5 M2	2 M2	8 M2	2.5 M2	4.5 M2	22.5M2		
Pest Stage Majority		PM	JR/GC	JR/GC	JR/GC	JR/GC	JR/GC		
Pest Density, Unit		21 21	35 35	35 35	35 35	35 35	35 35		
Assessed By		21 DA-A	35 DA-A	35 DA-A	35 DA-A	35 DA-A	35 DA-A		
Days After First/Last Applic.		14 DP-1	28 DP-1	28 DP-1	28 DP-1	28 DP-1	28 DP-1		
Trt-Eval Interval		9 DE-1	23 DE-1	23 DE-1	23 DE-1	23 DE-1	23 DE-1		
Plant-Eval Interval									
Days After Emergence									
ARM Action Codes									
Number of Decimals									
Trt Treatment	Rate	Appl							
No. Name	Rate Unit	Code	1	2	3	4	5	6	7
5 Verdict	244 g ai/ha A	A	0.0 a	100.0 a	97.5 a	74.3 a	80.8 a	100.0 a	95.0 a
Zidua	149 g ai/ha A	A							
Roundup PowerMAX	870 g ae/ha A	A							
M50	1 % v/v A	A							
N-Pak AMS	2.5 % v/v A	A							
Roundup PowerMAX	870 g ae/ha B	B							
N-Pak AMS	2.5 % v/v B	B							
6 2,4-D Ester	560 g ai/ha A	A	0.0 a	100.0 a	100.0 a	95.8 a	99.5 a	97.5 a	97.3 a
Valor XLT	85 g ai/ha A	A							
Roundup PowerMAX	870 g ae/ha A	A							
N-Pak AMS	2.5 % v/v A	A							
Roundup PowerMAX	870 g ae/ha B	B							
N-Pak AMS	2.5 % v/v B	B							
7 2,4-D Ester	560 g ai/ha A	A	0.0 a	53.8 b	50.0 b	0.0 c	52.5 a	5.0 c	35.0 b
Roundup PowerMAX	870 g ae/ha A	A							
N-Pak AMS	2.5 % v/v A	A							
Roundup PowerMAX	870 g ae/ha B	B							
N-Pak AMS	2.5 % v/v B	B							
8 2,4-D Ester	560 g ai/ha A	A	0.0 a	100.0 a	98.0 a	27.5 bc	88.8 a	100.0 a	92.5 a
Fierce	160 g ai/ha A	A							
Roundup PowerMAX	870 g ae/ha A	A							
N-Pak AMS	2.5 % v/v A	A							
Roundup PowerMAX	870 g ae/ha B	B							
N-Pak AMS	2.5 % v/v B	B							

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Pest Type		W Weed	W Weed	W Weed	W Weed	W Weed	W Weed				
Pest Code		ERICA	AMBEL	XANST	IPOLA	SIDSP	SETFA				
Pest Scientific Name		Conyza canadensis>	Ambrosia artem>	Xanthium strum>	Ipomoea lacuno>	Sida spinosa	Setaria faberi				
Pest Name		Canada horseweed>	Common ragweed	Heart-leaf coc>	Pitted morning>	Prickly sida	Giant foxtail				
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				
Crop Variety		AG2931	AG2931	AG2931	AG2931	AG2931	AG2931				
Description	1-2 IN	4 IN	4 IN	4 IN	4 IN	4 IN	4 IN				
Part Rated	PLOT C	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P				
Rating Date	5-17-2012	5-31-2012	5-31-2012	5-31-2012	5-31-2012	5-31-2012	5-31-2012				
Rating Type	PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO				
Rating Unit	%	%	%	%	%	%	%				
Number of Subsamples	1	1	1	1	1	1	1				
Crop Stage Majority	10	13	13	13	13	13	13				
Pest Stage Majority		<1-8 IN	2-4 IN	1-8 IN	1-4 IN	1-10 IN	1-12 IN				
Pest Density, Unit		4.5 M2	2 M2	8 M2	2.5 M2	4.5 M2	22.5M2				
Assessed By	PM	JR/GC	JR/GC	JR/GC	JR/GC	JR/GC	JR/GC				
Days After First/Last Applic.	21 21	35 35	35 35	35 35	35 35	35 35	35 35				
Trt-Eval Interval	21 DA-A	35 DA-A	35 DA-A	35 DA-A	35 DA-A	35 DA-A	35 DA-A				
Plant-Eval Interval	14 DP-1	28 DP-1	28 DP-1	28 DP-1	28 DP-1	28 DP-1	28 DP-1				
Days After Emergence	9 DE-1	23 DE-1	23 DE-1	23 DE-1	23 DE-1	23 DE-1	23 DE-1				
ARM Action Codes											
Number of Decimals											
Trt No.	Treatment Name	Rate	Unit	Appl Code	1	2	3	4	5	6	7
9	2,4-D Ester	560 g ai/ha	A		0.0 a	100.0 a	100.0 a	36.3 b	57.5 a	64.5 b	91.8 a
	Prefix	1490 g ai/ha	A								
	Roundup PowerMAX	870 g ae/ha	A								
	N-Pak AMS	2.5 % v/v	A								
	Roundup PowerMAX	870 g ae/ha	B								
	N-Pak AMS	2.5 % v/v	B								
	LSD (P=.05)	0.00			0.00	19.34	28.46	25.13	38.75	20.82	17.99
	Standard Deviation	0.00			0.00	13.25	19.45	17.22	26.55	14.27	12.33
	CV	0.0			0.0	15.98	23.58	33.45	35.44	19.96	16.11
	Bartlett's X2	0.0			0.0	4.362	35.978	30.748	58.907	17.789	50.554
	P(Bartlett's X2)	.			.	0.037*	0.001*	0.001*	0.001*	0.001*	0.001*
	Replicate F	0.000			0.000	0.626	1.312	4.170	0.296	0.607	0.880
	Replicate Prob(F)	1.0000			1.0000	0.6051	0.2945	0.0164	0.8278	0.6169	0.4651
	Treatment F	0.000			0.000	27.249	12.888	22.010	6.322	33.232	31.645
	Treatment Prob(F)	1.0000			1.0000	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001





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Pest Type		W Weed ERICA	W Weed AMBEL	W Weed XANST	W Weed IPOLA	W Weed SIDSP	W Weed SETFA		
Pest Code		Conyza canadensis	Ambrosia artem	Xanthium strum	Ipomoea lacuno	Sida spinosa	Setaria faberi		
Pest Scientific Name		Canada horsewee	Common ragweed	Heart-leaf coc	Pitted morning	Prickly sida	Giant foxtail		
Pest Name		GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA		
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		
Crop Variety	AG2931	AG2931	AG2931	AG2931	AG2931	AG2931	AG2931		
Description	12 IN	12 IN	12 IN	12 IN	12 IN	12 IN	12 IN		
Part Rated	PLOT C	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P		
Rating Date	6-20-2012	6-20-2012	6-20-2012	6-20-2012	6-20-2012	6-20-2012	6-20-2012		
Rating Type	PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO		
Rating Unit	%	%	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1	1	1		
Crop Stage Majority	61	61	61	61	61	61	61		
Pest Stage Majority		3-12 IN	2-10 IN	4-18 IN	1-10 IN	4-8 IN	2-24 IN		
Pest Density, Unit		5 M2	2.5 M2	7.5 M2	2.5 M2	10 M2	40 M2		
Assessed By	PM	PM	PM	PM	PM	PM	PM		
Days After First/Last Applic.	55 55	55 55	55 55	55 55	55 55	55 55	55 55		
Trt-Eval Interval									
Plant-Eval Interval	48 DP-1	48 DP-1	48 DP-1	48 DP-1	48 DP-1	48 DP-1	48 DP-1		
Days After Emergence	43 DE-1	43 DE-1	43 DE-1	43 DE-1	43 DE-1	43 DE-1	43 DE-1		
ARM Action Codes									
Number of Decimals									
Trt Treatment No. Name	Rate Rate Unit	Appl Code	8	9	10	11	12	13	14
5 Verdict	244 g ai/ha A	A	0.0 a	100.0 a	93.8 a	66.3 a	70.0 a	94.5 a	93.8 a
Zidua	149 g ai/ha A	A							
Roundup PowerMAX	870 g ae/ha A	A							
MISO	1 % v/v A	A							
N-Pak AMS	2.5 % v/v A	A							
Roundup PowerMAX	870 g ae/ha B	B							
N-Pak AMS	2.5 % v/v B	B							
6 2,4-D Ester	560 g ai/ha A	A	0.0 a	97.0 a	100.0 a	97.8 a	95.0 a	93.8 a	93.8 a
Valor XLT	85 g ai/ha A	A							
Roundup PowerMAX	870 g ae/ha A	A							
N-Pak AMS	2.5 % v/v A	A							
Roundup PowerMAX	870 g ae/ha B	B							
N-Pak AMS	2.5 % v/v B	B							
7 2,4-D Ester	560 g ai/ha A	A	0.0 a	22.5 b	47.5 a	12.5 b	0.0 b	0.0 c	18.8 b
Roundup PowerMAX	870 g ae/ha A	A							
N-Pak AMS	2.5 % v/v A	A							
Roundup PowerMAX	870 g ae/ha B	B							
N-Pak AMS	2.5 % v/v B	B							
8 2,4-D Ester	560 g ai/ha A	A	0.0 a	90.0 a	90.0 a	25.0 b	81.3 a	73.3 ab	88.3 a
Fierce	160 g ai/ha A	A							
Roundup PowerMAX	870 g ae/ha A	A							
N-Pak AMS	2.5 % v/v A	A							
Roundup PowerMAX	870 g ae/ha B	B							
N-Pak AMS	2.5 % v/v B	B							







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Pest Type		W Weed	W Weed	W Weed						
Pest Code		IPOHE	SIDSP	SETFA						
Pest Scientific Name		Ipomoea heder>	Sida spinosa	Setaria faberi						
Pest Name		Ivyleaf mornin>	Prickly sida	Giant foxtail						
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	
Crop Variety	AG2931	AG2931	AG2931	AG2931	AG2931	AG2931	AG2931	AG2931	AG2931	
Description	12 IN	12 IN	12 IN	12 IN						
Part Rated	PLOT C	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P	
Rating Date	7-12-2012	7-12-2012	7-12-2012	7-12-2012	10-25-2012	10-25-2012	10-25-2012	10-25-2012	10-25-2012	
Rating Type	PHYGEN	CONTRO	CONTRO	CONTRO	YIELD	MOISTURE	YIELD	YIELD	YIELD	
Rating Unit	%	%	%	%	LB	%	BU	KG		
Number of Subsamples	1	1	1	1	1	1	1	1	1	
Crop Stage Majority	61	61	61	61						
Pest Stage Majority		1-3 IN	1-3 IN	2-24 IN						
Pest Density, Unit		13 M2	13 M2	42.5M2						
Assessed By	PM	PM	PM	PM	PM	PM	PM	PM	PM	
Days After First/Last Applic.	77 22	77 22	77 22	77 22	182 127	182 127	182 127	182 127	182 127	
Trt-Eval Interval										
Plant-Eval Interval	70 DP-1	70 DP-1	70 DP-1	70 DP-1	175 DP-1	175 DP-1	175 DP-1	175 DP-1	175 DP-1	
Days After Emergence	65 DE-1	65 DE-1	65 DE-1	65 DE-1	170 DE-1	170 DE-1	170 DE-1	170 DE-1	170 DE-1	
ARM Action Codes							TY1	TY2		
Number of Decimals							1	1		
Trt Treatment	Rate	Appl								
No. Name	Rate Unit	Code	15	16	17	18	19	20	21	22
9 2,4-D Ester	560 g ai/ha	A	0.0 a	12.5 bc	91.5 a	98.8 a	10.5405913 a	10.1606227 a	31.6 a	2127.2 a
Prefix	1490 g ai/ha	A								
Roundup PowerMAX	870 g ae/ha	A								
N-Pak AMS	2.5 % v/v	A								
Roundup PowerMAX	870 g ae/ha	B								
N-Pak AMS	2.5 % v/v	B								
LSD (P=.05)	0.00		24.98	22.67	11.58	3.08043606	1.34864976	9.32	626.69	
Standard Deviation	0.00		17.12	15.53	7.94	2.11065623	0.92406920	6.38	429.40	
CV	0.0		54.06	19.03	10.03	17.39	8.74	17.61	17.61	
Bartlett's X2	0.0		8.073	28.791	32.727	6.231	16.014	6.628	6.628	
P(Bartlett's X2)	.		0.326	0.001*	0.001*	0.621	0.042*	0.577	0.577	
Replicate F	0.000		2.749	1.936	1.132	3.311	1.257	3.229	3.230	
Replicate Prob(F)	1.0000		0.0649	0.1507	0.3561	0.0371	0.3115	0.0402	0.0402	
Treatment F	0.000		6.462	18.185	105.652	1.618	0.594	1.595	1.596	
Treatment Prob(F)	1.0000		0.0002	0.0001	0.0001	0.1719	0.7729	0.1785	0.1785	

## Purdue University

### BASF herbicide portfolio in notill soybean

Trial ID: 12S-SEP-NTS-12      Protocol ID: 12S-SEP-NTS-12  
 Location: SEPAC                Study Director: Paul Marquardt  
 Project ID: 12S-SEP-NTS-12    Investigator: Dr. Bill Johnson  
    Sponsor Contact: Gery Welker

#### Pest Type

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

#### Pest Code

ERICA, Conyza canadensis, = US  
 AMBEL, Ambrosia artemisiifolia, = US  
 XANST, Xanthium strumarium, = US  
 IPOLA, Ipomoea lacunosa, = US  
 SIDSP, Sida spinosa, = US  
 SETFA, Setaria faberii, = US  
 IPOHE, Ipomoea hederacea, = 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  
 YIELD = yield

#### Rating Unit

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

#### Crop Stage Majority

10 = Cotyledons completely unfolded  
 13 = Trifoliolate leaf on the 3rd node unfolded  
 61 = Beginning of flowering: about 10% of flowers open

M2 = per square meter

#### Plant-Eval Interval

14 DP-1 = 1 GLXMA 5-3-2012  
 28 DP-1 = 1 GLXMA 5-3-2012  
 48 DP-1 = 1 GLXMA 5-3-2012  
 70 DP-1 = 1 GLXMA 5-3-2012  
 175 DP-1 = 1 GLXMA 5-3-2012

#### ARM Action Codes

TY1 =  $2.904 * [19] * (100 - [20]) / 87$   
 TY2 =  $195.2984 * [19] * (100 - [20]) / 87$