

# Purdue University

## 2011/AUTHORITYXL/AUTHORITY MTZ/FALL/SPRING

Trial ID: 11F-THP-NTS-74      Protocol ID: 11F-THP-NTS-74  
 Location: Throckmorton      Study Director: White/Marquardt  
 Project ID: SULF.SOY.11.JPR.11      Investigator: Dr. Bill Johnson  
 Sponsor Contact: FMC - Joe Reed

### General Trial Information

**Study Director:** White/Marquardt      **Title:** Research Associate  
**Investigator:** Dr. Bill Johnson      **Title:** Professor

**Discipline:** H herbicide  
**Trial Status:** E established  
**Initiation Date:** 11-1-2011

### Trial Location

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

### Personnel

**Study Director:** White/Marquardt      **Title:** Research Associate  
**Affiliation:** Purdue University  
**Address:** 915 W State Street  
**Location:** West Lafayette, IN, USA  
**Postal Code:** 47907      **E-mail:** mdwhite@purdue.edu  
**Phone No.:** 765-494-0891  
**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 AG2931      **Description:** RR2  
**BBCH Scale:** BSOY      **Planting Date:** 4-25-2012  
**Planting Method:** SEEDED seeded      **Rate, Unit:** 124000 S/A  
**Row Spacing, Unit:** 30 IN  
**Soil Moisture:** DRY dry      **Emergence Date:** 5-7-2012

# Purdue University

## Pest Description

**Pest 1 Type:** W **Code:** STEME *Stellaria media*  
**Common Name:** Common chickweed

**Pest 2 Type:** W **Code:** ERICA *Conyza canadensis*  
**Common Name:** Canada horseweed

**Pest 3 Type:** W **Code:** COIMA *Conium maculatum*  
**Common Name:** Poison hemlock

**Pest 4 Type:** W **Code:** THLSS *Thlaspi sp.*  
**Common Name:** Pennycress

**Pest 5 Type:** W **Code:** LAMAM *Lamium amplexicaule*  
**Common Name:** Henbit

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

## 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:** RACOB1 Randomized Complete Block (RCB)  
**Untreated Arrangement:** INCLUDED single control randomized in each block

## Soil Description

**Description Name:** TPAC - Field 5  
**% OM:** 2.3 **Texture:** SIL silt loam  
**pH:** 6.6 **Soil Name:** Longlois  
**CEC:** 9.9

## Application Description

	A	B	C
<b>Application Date:</b>	11-21-2011	4-17-2012	5-22-2012
<b>Application Method:</b>	SPRAY	SPRAY	SPRAY
<b>Application Timing:</b>	FALPRE	EARPRE	BULKRUP
<b>Application Placement:</b>	SOIL	SOIL	FOLIAR
<b>Applied By:</b>	MW	MW	MW
<b>Air Temperature, Unit:</b>	48 F	62 F	63 F
<b>% Relative Humidity:</b>	70	51	54
<b>Wind Velocity, Unit:</b>	6 MPH	2 MPH	7 MPH
<b>Wind Direction:</b>	SE	SW	E
<b>Dew Presence (Y/N):</b>	N no	N no	N no
<b>Soil Temperature, Unit:</b>	47 F	56 F	69 F
<b>Soil Moisture:</b>	SLIWET	DRY	DRY
<b>% Cloud Cover:</b>	100	0	5

## Crop Stage At Each Application

	A	B	C
<b>Crop 1 Code, BBCH Scale:</b>	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY

# Purdue University

## Pest Stage At Each Application

	A	B	C
<b>Pest 1 Code, Type, Scale:</b>	STEME W	STEME W	STEME W
<b>Height, Unit:</b>	1 IN		
<b>Density, Unit:</b>	20 FT2		
<b>Pest 2 Code, Type, Scale:</b>	ERICA W	ERICA W	ERICA W
<b>Height, Unit:</b>	0.75 IN		
<b>Density, Unit:</b>	4 FT2		
<b>Pest 3 Code, Type, Scale:</b>	COIMA W	COIMA W	COIMA W
<b>Height, Unit:</b>	2 IN		
<b>Density, Unit:</b>	3 FT2		
<b>Pest 4 Code, Type, Scale:</b>	THLSS W	THLSS W	THLSS W
<b>Height, Unit:</b>	1 IN		
<b>Density, Unit:</b>	5 FT2		
<b>Pest 5 Code, Type, Scale:</b>	LAMAM W	LAMAM W	LAMAM W
<b>Height, Unit:</b>	0.5 IN		
<b>Density, Unit:</b>	2 FT2		
<b>Pest 6 Code, Type, Scale:</b>	TAROF W	TAROF W	TAROF W
<b>Height, Unit:</b>	4 IN		
<b>Density, Unit:</b>	1 YD2		

## Application Equipment

	A	B	C
<b>Appl. Equipment:</b>	CUB	CO2 FORD	CUB
<b>Equipment Type:</b>	SPTRMO	SPTRMO	SPTRMO
<b>Nozzle Type:</b>	FLAT FAN	FLAT FAN	FLAT FAN
<b>Nozzle Size:</b>	XR 110 02	XR 100 02	XR 110 02
<b>Nozzle Spacing, Unit:</b>	20 IN	20 IN	20 IN
<b>Nozzles/Row:</b>	6	6	6
<b>Boom Length, Unit:</b>	10 FT	10 FT	10 FT
<b>Boom Height, Unit:</b>	19 IN	20 IN	19 IN
<b>Ground Speed, Unit:</b>	2.1 MPH	2.1 MPH	2.1 MPH
<b>Carrier:</b>	MEIGS	MEIGS	MEIGS
<b>Spray Volume, Unit:</b>	20 GAL/AC	20 gal/ac	20 gal/ac
<b>Mix Size, Unit:</b>		2.5 liters	
<b>Propellant:</b>		CO2	

# Purdue University

## 2011/AUTHORITYXL/AUTHORITY MTZ/FALL/SPRING

Trial ID: 11F-THP-NTS-74      Protocol ID: 11F-THP-NTS-74  
 Location: Throckmorton      Study Director: White/Marquardt  
 Project ID: SULF.SOY.11.JPR.11      Investigator: Dr. Bill Johnson  
 Sponsor Contact: FMC - Joe Reed

Pest Type	W Weed STEME	W Weed THLSS	W Weed LACSE	W Weed LAMAM	W Weed THLSS	W Weed ERICA	W Weed STEME		
Pest Code	Stellaria media	Thlaspi sp.	Lactuca serrio>	Lamium amplexi>	Thlaspi sp.	Conyza canadens>	Stellaria media		
Pest Scientific Name	Common chickwe>	Pennycress	Prickly lettuce	Henbit	Pennycress see>	Canada horsewe>	Common chickwe>		
Pest Name	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA		
Crop Code	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY		
BBCH Scale	Glycine max	Glycine max							
Crop Scientific Name	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean		
Crop Name	4-13-2012	4-13-2012	4-13-2012	4-13-2012	4-13-2012	4-13-2012	4-27-2012		
Rating Date	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO		
Rating Type	%	%	%	%	%	%	%		
Rating Unit	1	1	1	1	1	1	1		
Number of Subsamples	4 IN	12 IN	6 IN	5 IN	6 IN	2 IN	4 IN		
Crop Stage Majority	20 YD2	5 FT2	14 YD2	3 YD2	10 FT2	3 YD2	10 YD2		
Pest Stage Majority	MW	MW	MW	MW	MW	MW	MW		
Pest Density, Unit	144 144	144 144	144 144	144 144	144 144	144 144	158 10		
Assessed By	-12 DP-1	2 DP-1							
Days After First/Last Applic.	-24 DE-1	-10 DE-1							
Plant-Eval Interval									
Days After Emergence									
Trt Treatment	Rate	Appl							
No. Name	Rate Unit	Code	1	2	3	4	5	6	7
1 UNTREATED			0.0 b	0.0 c	0.0 b	0.0 b	0.0 c	0.0 b	0.0 c
2 AUTHORITY XL	4 oz/a A		51.3 a	99.0 a	99.0 a	88.3 a	99.0 a	99.0 a	95.8 a
WEEDMASTER	1.5 pt/a A								
COC	1 % v/v A								
AUTHORITY MTZ	12 oz/a B								
GRAMOXONE INTEON	2.5 pt/a B								
COC	1 % v/v B								
Ammonium Sulfate	2.5 lb/a B								
3 AUTHORITY XL	4 oz/a A		72.5 a	99.0 a	94.3 a	99.0 a	99.0 a	99.0 a	97.5 a
WEEDMASTER	1.5 pt/a A								
COC	1 % v/v A								
AUTHORITY MTZ	12 oz/a B								
GRAMOXONE INTEON	2.5 pt/a B								
BUTYRAC 200	12 oz/a B								
COC	1 % v/v B								
Ammonium Sulfate	2.5 lb/a B								
4 AUTHORITY XL	4 oz/a A		53.8 a	99.0 a	99.0 a	84.5 a	99.0 a	94.3 a	90.5 a
WEEDMASTER	1.5 pt/a A								
COC	1 % v/v A								
AUTHORITY MTZ	12 oz/a B								
SHARPEN	1 oz/a B								
COC	1 % v/v B								
Ammonium Sulfate	2.5 lb/a B								
5 AUTHORITY XL	4 oz/a A		51.8 a	99.0 a	99.0 a	82.0 a	94.3 a	84.3 a	92.3 a
WEEDMASTER	1.5 pt/a A								
COC	1 % v/v A								
AUTHORITY MTZ	12 oz/a B								
IGNITE 280 SL	32 oz/a B								
COC	1 % v/v B								
Ammonium Sulfate	2.5 lb/a 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

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed			
Pest Code	STEME	THLSS	LACSE	LAMAM	THLSS	ERICA	STEME			
Pest Scientific Name	Stellaria media	Thlaspi sp.	Lactuca serrio>	Lamium amplexi>	Thlaspi sp.	Conyza canadens>	Stellaria media			
Pest Name	Common chickwe>	Pennycress	Prickly lettuce	Henbit	Pennycress see>	Canada horsewe>	Common chickwe>			
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	4-13-2012	4-13-2012	4-13-2012	4-13-2012	4-13-2012	4-13-2012	4-27-2012			
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO			
Rating Unit	%	%	%	%	%	%	%			
Number of Subsamples	1	1	1	1	1	1	1			
Crop Stage Majority										
Pest Stage Majority	4 IN	12 IN	6 IN	5 IN	6 IN	2 IN	4 IN			
Pest Density, Unit	20 YD2	5 FT2	14 YD2	3 YD2	10 FT2	3 YD2	10 YD2			
Assessed By	MW	MW	MW	MW	MW	MW	MW			
Days After First/Last Applic.	144 144	144 144	144 144	144 144	144 144	144 144	158 10			
Plant-Eval Interval	-12 DP-1	-12 DP-1	-12 DP-1	-12 DP-1	-12 DP-1	-12 DP-1	2 DP-1			
Days After Emergence	-24 DE-1	-24 DE-1	-24 DE-1	-24 DE-1	-24 DE-1	-24 DE-1	-10 DE-1			
Trt No.	Treatment Name	Rate	Appl Code	1	2	3	4	5	6	7
6	AUTHORITY XL	4 oz/a	A	68.8 a	99.0 a	99.0 a	96.8 a	99.0 a	99.0 a	96.0 a
	WEEDMASTER	1.5 pt/a	A							
	COC	1 % v/v	A							
	AUTHORITY MTZ	12 oz/a	B							
	ROUNDUP POWERMAX	32 oz/a	B							
	COC	1 % v/v	B							
	Ammonium Sulfate	2.5 lb/a	B							
7	AUTHORITY MTZ	12 oz/a	A	43.8 ab	84.3 a	99.0 a	35.0 ab	62.3 ab	99.0 a	78.8 b
	WEEDMASTER	1.5 pt/a	A							
	COC	1 % v/v	A							
	Ammonium Sulfate	2.5 lb/a	A							
	AUTHORITY XL	4 oz/a	B							
	SHARPEN	1 oz/a	B							
	COC	1 % v/v	B							
	Ammonium Sulfate	2.5 lb/a	B							
8	AUTHORITY MTZ	12 oz/a	A	55.0 a	91.8 a	99.0 a	67.0 a	40.0 b	99.0 a	93.8 a
	WEEDMASTER	1.5 pt/a	A							
	COC	1 % v/v	A							
	Ammonium Sulfate	2.5 lb/a	A							
	AUTHORITY XL	4 oz/a	B							
	ROUNDUP POWERMAX	32 oz/a	B							
	COC	1 % v/v	B							
	Ammonium Sulfate	2.5 lb/a	B							
9	AUTHORITY MTZ	12 oz/a	A	32.5 ab	94.3 a	99.0 a	74.8 a	72.3 ab	94.3 a	94.3 a
	WEEDMASTER	1.5 pt/a	A							
	COC	1 % v/v	A							
	Ammonium Sulfate	2.5 lb/a	A							
	AUTHORITY XL	4 oz/a	B							
	IGNITE 280 SL	32 oz/a	B							
	COC	1 % v/v	B							
	Ammonium Sulfate	2.5 lb/a	B							

# Purdue University

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed		
Pest Code	STEME	THLSS	LACSE	LAMAM	THLSS	ERICA	STEME		
Pest Scientific Name	Stellaria media	Thlaspi sp.	Lactuca serrio>	Lamium amplexi>	Thlaspi sp.	Conyza canadens>	Stellaria media		
Pest Name	Common chickwe>	Pennycress	Prickly lettuce	Henbit	Pennycress see>	Canada horsewe>	Common chickwe>		
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	4-13-2012	4-13-2012	4-13-2012	4-13-2012	4-13-2012	4-13-2012	4-27-2012		
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO		
Rating Unit	%	%	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1	1	1		
Crop Stage Majority									
Pest Stage Majority	4 IN	12 IN	6 IN	5 IN	6 IN	2 IN	4 IN		
Pest Density, Unit	20 YD2	5 FT2	14 YD2	3 YD2	10 FT2	3 YD2	10 YD2		
Assessed By	MW	MW	MW	MW	MW	MW	MW		
Days After First/Last Applic.	144 144	144 144	144 144	144 144	144 144	144 144	158 10		
Plant-Eval Interval	-12 DP-1	-12 DP-1	-12 DP-1	-12 DP-1	-12 DP-1	-12 DP-1	2 DP-1		
Days After Emergence	-24 DE-1	-24 DE-1	-24 DE-1	-24 DE-1	-24 DE-1	-24 DE-1	-10 DE-1		
Trt Treatment	Rate	Appl							
No. Name	Rate Unit	Code	1	2	3	4	5	6	7
10 AUTHORITY MTZ	12 oz/a	A	32.5 ab	29.8 b	99.0 a	46.0 ab	42.3 b	99.0 a	95.3 a
WEEDMASTER	1.5 pt/a	A							
COC	1 % v/v	A							
Ammonium Sulfate	2.5 lb/a	A							
AUTHORITY XL	4 oz/a	B							
GRAMOXONE INTEON	2.5 pt/a	B							
BUTYRAC 200	12 oz/a	B							
COC	1 % v/v	B							
Ammonium Sulfate	2.5 lb/a	B							
LSD (P=.05)	32.95		25.51	4.36	40.66	27.68	14.62	5.61	
Standard Deviation	22.71		17.58	3.00	28.02	19.08	10.08	3.86	
CV	49.18		22.12	3.39	41.62	26.98	11.63	4.63	
Bartlett's X2	6.394		7.618	0.0	15.27	5.147	5.25	15.278	
P(Bartlett's X2)	0.603		0.055	.	0.033*	0.273	0.072	0.054	
Replicate F	2.766		1.970	1.000	0.654	0.942	1.343	1.733	
Replicate Prob(F)	0.0611		0.1422	0.4079	0.5874	0.4340	0.2813	0.1838	
Treatment F	3.366		15.941	430.762	5.040	12.926	37.381	237.715	
Treatment Prob(F)	0.0069		0.0001	0.0001	0.0005	0.0001	0.0001	0.0001	



## Purdue University

Pest Type	W Weed COIMA	W Weed THLSS	W Weed LACSE	W Weed TAROF	W Weed BROTE	W Weed ERICA	W Weed THLSS		
Pest Code	Conium maculat>	Thlaspi sp.	Lactuca serri>	Taraxacum offi>	Bromus tectorum	Conyza canaden>	Thlaspi sp.		
Pest Scientific Name	Poison hemlock	Pennycress	Prickly lettuce	Common dandel>	Downy brome	Canada horsewe>	Pennycress		
Pest Name	GLXMA BSOY								
Crop Code	Glycine max								
BBCH Scale	Soybean								
Crop Scientific Name	4-27-2012	4-27-2012	4-27-2012	4-27-2012	4-27-2012	4-27-2012	5-3-2012		
Crop Name	CONTRO								
Rating Date	%	%	%	%	%	%	%		
Rating Type	1	1	1	1	1	1	1		
Rating Unit	10 IN	10 IN		6 IN		3 IN	12 IN		
Number of Subsamples	5 YD2	3 YD2		1 YD2		2 YD2	5 YD2		
Crop Stage Majority							MW		
Pest Stage Majority	158 10	158 10	158 10	158 10	158 10	158 10	164 16		
Pest Density, Unit	2 DP-1	8 DP-1							
Assessed By	-10 DE-1	-4 DE-1							
Days After First/Last Applic.									
Plant-Eval Interval									
Days After Emergence									
Trt Treatment	Rate	Appl							
No. Name	Rate Unit	Code	8	9	10	11	12	13	14
6 AUTHORITY XL	4 oz/a	A	99.0 a	99.0 a	99.0 a	99.0 a	88.5 a	94.3 a	99.0 a
WEEDMASTER	1.5 pt/a	A							
COC	1 % v/v	A							
AUTHORITY MTZ	12 oz/a	B							
ROUNDUP POWERMAX	32 oz/a	B							
COC	1 % v/v	B							
Ammonium Sulfate	2.5 lb/a	B							
7 AUTHORITY MTZ	12 oz/a	A	69.8 b	67.0 a	99.0 a	99.0 a	33.8 b	99.0 a	84.8 b
WEEDMASTER	1.5 pt/a	A							
COC	1 % v/v	A							
Ammonium Sulfate	2.5 lb/a	A							
AUTHORITY XL	4 oz/a	B							
SHARPEN	1 oz/a	B							
COC	1 % v/v	B							
Ammonium Sulfate	2.5 lb/a	B							
8 AUTHORITY MTZ	12 oz/a	A	91.8 a	80.5 a	99.0 a	91.8 a	82.3 a	86.8 a	95.5 a
WEEDMASTER	1.5 pt/a	A							
COC	1 % v/v	A							
Ammonium Sulfate	2.5 lb/a	A							
AUTHORITY XL	4 oz/a	B							
ROUNDUP POWERMAX	32 oz/a	B							
COC	1 % v/v	B							
Ammonium Sulfate	2.5 lb/a	B							
9 AUTHORITY MTZ	12 oz/a	A	99.0 a	93.5 a	99.0 a	99.0 a	86.3 a	99.0 a	98.0 a
WEEDMASTER	1.5 pt/a	A							
COC	1 % v/v	A							
Ammonium Sulfate	2.5 lb/a	A							
AUTHORITY XL	4 oz/a	B							
IGNITE 280 SL	32 oz/a	B							
COC	1 % v/v	B							
Ammonium Sulfate	2.5 lb/a	B							

# Purdue University

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed		
Pest Code	COIMA	THLSS	LACSE	TAROF	BROTE	ERICA	THLSS		
Pest Scientific Name	Conium maculat>	Thlaspi sp.	Lactuca serriol>	Taraxacum offi>	Bromus tectorum	Conyza canad>	Thlaspi sp.		
Pest Name	Poison hemlock	Pennycress	Prickly lettuce	Common dandel>	Downy brome	Canada horsewe>	Pennycress		
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	4-27-2012	4-27-2012	4-27-2012	4-27-2012	4-27-2012	4-27-2012	5-3-2012		
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO		
Rating Unit	%	%	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1	1	1		
Crop Stage Majority									
Pest Stage Majority	10 IN	10 IN		6 IN		3 IN	12 IN		
Pest Density, Unit	5 YD2	3 YD2		1 YD2		2 YD2	5 YD2		
Assessed By							MW		
Days After First/Last Applic.	158 10	158 10	158 10	158 10	158 10	158 10	164 16		
Plant-Eval Interval	2 DP-1	2 DP-1	2 DP-1	2 DP-1	2 DP-1	2 DP-1	8 DP-1		
Days After Emergence	-10 DE-1	-10 DE-1	-10 DE-1	-10 DE-1	-10 DE-1	-10 DE-1	-4 DE-1		
Trt Treatment	Rate	Appl							
No. Name	Rate Unit	Code	8	9	10	11	12	13	14
10 AUTHORITY MTZ	12 oz/a	A	98.5 a	97.5 a	99.0 a	95.5 a	78.5 a	99.0 a	98.0 a
WEEDMASTER	1.5 pt/a	A							
COC	1 % v/v	A							
Ammonium Sulfate	2.5 lb/a	A							
AUTHORITY XL	4 oz/a	B							
GRAMOXONE INTEON	2.5 pt/a	B							
BUTYRAC 200	12 oz/a	B							
COC	1 % v/v	B							
Ammonium Sulfate	2.5 lb/a	B							
LSD (P=.05)			17.11	22.11	0.00	7.49	27.78	12.21	6.86
Standard Deviation			11.79	15.24	0.00	5.16	19.15	8.41	4.73
CV			14.01	18.28	0.0	5.87	28.41	9.63	5.42
Bartlett's X2			15.487	18.594	0.0	1.443	16.736	2.327	12.087
P(Bartlett's X2)			0.001*	0.001*	.	0.23	0.033*	0.127	0.007*
Replicate F			1.493	0.302	0.000	0.718	3.042	0.756	0.577
Replicate Prob(F)			0.2387	0.8239	1.0000	0.5498	0.0460	0.5283	0.6350
Treatment F			27.698	16.756	0.000	144.300	10.585	54.182	171.285
Treatment Prob(F)			0.0001	0.0001	1.0000	0.0001	0.0001	0.0001	0.0001



# Purdue University

Pest Type	W Weed COIMA	W Weed LACSE	W Weed STEME	W Weed ERICA	W Weed SETFA	W Weed ERICA			
Pest Code	Conium maculat>	Lactuca serrio>	Stellaria media	Conyza canadens>	Setaria faberi	Conyza canadens>			
Pest Scientific Name	Poison hemlock	Prickly lettuce	Common chickwe>	Canada horsewe>	Giant foxtail	Canada horsewe>			
Pest Name	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA			
Crop Code	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY			
BBCH Scale	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max			
Crop Scientific Name	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean			
Crop Name	5-3-2012	5-3-2012	5-3-2012	5-3-2012	5-16-2012	5-16-2012			
Rating Date	CONTRO	CONTRO	CONTRO	CONTRO	PHYGEN	CONTRO			
Rating Type	%	%	%	%	%	%			
Rating Unit	1	1	1	1	1	1			
Number of Subsamples	10 IN	7 IN	4 IN	4 IN	VC	VC			
Crop Stage Majority	2 YD2	2 YD2	10 FT2	3 FT2	18 YD2	8 YD2			
Pest Stage Majority	MW	MW	MW	MW	JR/JS	JR/JS			
Pest Density, Unit	164 16	164 16	164 16	164 16	177 29	177 29			
Assessed By	8 DP-1	8 DP-1	8 DP-1	8 DP-1	21 DP-1	21 DP-1			
Days After First/Last Applic.	-4 DE-1	-4 DE-1	-4 DE-1	-4 DE-1	9 DE-1	9 DE-1			
Plant-Eval Interval									
Days After Emergence									
Trt Treatment	Rate	Appl							
No. Name	Rate Unit	Code	15	16	17	18	19	20	21
6 AUTHORITY XL	4 oz/a	A	99.0 a	99.0 a	99.0 a	96.8 a	0.25 a	87.5 a	81.3 a
WEEDMASTER	1.5 pt/a	A							
COC	1 % v/v	A							
AUTHORITY MTZ	12 oz/a	B							
ROUNDUP POWERMAX	32 oz/a	B							
COC	1 % v/v	B							
Ammonium Sulfate	2.5 lb/a	B							
7 AUTHORITY MTZ	12 oz/a	A	93.3 a	99.0 a	83.8 bc	96.8 a	0.00 a	66.3 ab	33.8 b
WEEDMASTER	1.5 pt/a	A							
COC	1 % v/v	A							
Ammonium Sulfate	2.5 lb/a	A							
AUTHORITY XL	4 oz/a	B							
SHARPEN	1 oz/a	B							
COC	1 % v/v	B							
Ammonium Sulfate	2.5 lb/a	B							
8 AUTHORITY MTZ	12 oz/a	A	99.0 a	95.5 a	99.0 a	94.3 a	0.13 a	81.5 a	78.0 a
WEEDMASTER	1.5 pt/a	A							
COC	1 % v/v	A							
Ammonium Sulfate	2.5 lb/a	A							
AUTHORITY XL	4 oz/a	B							
ROUNDUP POWERMAX	32 oz/a	B							
COC	1 % v/v	B							
Ammonium Sulfate	2.5 lb/a	B							
9 AUTHORITY MTZ	12 oz/a	A	99.0 a	99.0 a	93.5 a	96.8 a	0.38 a	93.3 a	87.5 a
WEEDMASTER	1.5 pt/a	A							
COC	1 % v/v	A							
Ammonium Sulfate	2.5 lb/a	A							
AUTHORITY XL	4 oz/a	B							
IGNITE 280 SL	32 oz/a	B							
COC	1 % v/v	B							
Ammonium Sulfate	2.5 lb/a	B							

# Purdue University

Pest Type	W Weed COIMA	W Weed LACSE	W Weed STEME	W Weed ERICA	W Weed SETFA	W Weed ERICA
Pest Code	Conium maculat>	Lactuca serrio>	Stellaria media	Conyza canadens>	Setaria faberi	Conyza canadens>
Pest Scientific Name	Poison hemlock	Prickly lettuce	Common chickwe>	Canada horsewe>	Giant foxtail	Canada horsewe>
Pest Name	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA
Crop Code	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY
BBCH Scale	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max
Crop Scientific Name	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean
Crop Name	5-3-2012	5-3-2012	5-3-2012	5-3-2012	5-16-2012	5-16-2012
Rating Date	CONTRO	CONTRO	CONTRO	CONTRO	PHYGEN	CONTRO
Rating Type	%	%	%	%	%	%
Rating Unit	1	1	1	1	1	1
Number of Subsamples	10 IN	7 IN	4 IN	4 IN	VC	VC
Crop Stage Majority	2 YD2	2 YD2	10 FT2	3 FT2	18 YD2	8 YD2
Pest Stage Majority	MW	MW	MW	MW	JR/JS	JR/JS
Pest Density, Unit	164 16	164 16	164 16	164 16	177 29	177 29
Assessed By	8 DP-1	8 DP-1	8 DP-1	8 DP-1	21 DP-1	21 DP-1
Days After First/Last Applic.	-4 DE-1	-4 DE-1	-4 DE-1	-4 DE-1	9 DE-1	9 DE-1
Plant-Eval Interval						
Days After Emergence						
Trt Treatment	Rate	Rate	Rate	Rate	Rate	Rate
No. Name	15	16	17	18	19	20
10 AUTHORITY MTZ	12 oz/a A	99.0 a	94.5 a	90.0 ab	98.0 a	0.13 a
WEEDMASTER	1.5 pt/a A					93.0 a
COC	1 % v/v A					93.8 a
Ammonium Sulfate	2.5 lb/a A					
AUTHORITY XL	4 oz/a B					
GRAMOXONE INTEON	2.5 pt/a B					
BUTYRAC 200	12 oz/a B					
COC	1 % v/v B					
Ammonium Sulfate	2.5 lb/a B					
LSD (P=.05)	7.12	4.53	6.95	6.41	0.421	27.57
Standard Deviation	4.91	3.12	4.79	4.42	0.290	19.00
CV	5.59	3.54	5.73	5.08	210.82	27.1
Bartlett's X2	1.472	7.736	9.936	6.82	3.494	15.695
P(Bartlett's X2)	0.225	0.021*	0.127	0.338	0.624	0.047*
Replicate F	1.736	0.612	0.478	2.438	1.661	0.481
Replicate Prob(F)	0.1833	0.6129	0.7003	0.0863	0.1988	0.6982
Treatment F	159.340	395.810	156.824	192.188	1.066	9.654
Treatment Prob(F)	0.0001	0.0001	0.0001	0.0001	0.4176	0.0001

# Purdue University

Pest Type	W Weed	W Weed	W Weed	
Pest Code	LACSE	ERICA	LACSE	
Pest Scientific Name	Lactuca serrio>	Conyza canadens>	Lactuca serrio>	
Pest Name	Prickly lettuce	Canada horsewe>	Prickly lettuce	
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	5-16-2012	6-18-2012	6-18-2012	10-19-2012
Rating Type	CONTRO	CONTRO	CONTRO	YIELD
Rating Unit	%	%	%	bu/ac
Number of Subsamples	1	1	1	1
Crop Stage Majority	VC	R1	R1	
Pest Stage Majority	1 IN	1-24 IN	3-48 IN	
Pest Density, Unit	8 YD2	25 M2	10 M2	
Assessed By	JR/JS	PM	PM	
Days After First/Last Applic.	177 29	210 27	210 27	333 150
Plant-Eval Interval	21 DP-1	54 DP-1	54 DP-1	177 DP-1
Days After Emergence	9 DE-1	42 DE-1	42 DE-1	165 DE-1
Trt No.	Treatment	Rate	Appl	
1	UNTREATED	0.0 b		
2	AUTHORITY XL WEEDMASTER COC AUTHORITY MTZ GRAMOXONE INTEON COC Ammonium Sulfate	4 oz/a A 1.5 pt/a A 1 % v/v A 12 oz/a B 2.5 pt/a B 1 % v/v B 2.5 lb/a B	A A A B B B B	22 23 24 25
3	AUTHORITY XL WEEDMASTER COC AUTHORITY MTZ GRAMOXONE INTEON BUTYRAC 200 COC Ammonium Sulfate	4 oz/a A 1.5 pt/a A 1 % v/v A 12 oz/a B 2.5 pt/a B 12 oz/a B 1 % v/v B 2.5 lb/a B	A A A B B B B B	77.5 a 99.0 a 100.0 a 21.80 a
4	AUTHORITY XL WEEDMASTER COC AUTHORITY MTZ SHARPEN COC Ammonium Sulfate	4 oz/a A 1.5 pt/a A 1 % v/v A 12 oz/a B 1 oz/a B 1 % v/v B 2.5 lb/a B	A A A B B B B	97.5 a 93.8 a 100.0 a 16.60 a
5	AUTHORITY XL WEEDMASTER COC AUTHORITY MTZ IGNITE 280 SL COC Ammonium Sulfate	4 oz/a A 1.5 pt/a A 1 % v/v A 12 oz/a B 32 oz/a B 1 % v/v B 2.5 lb/a B	A A A B B B B	76.3 a 100.0 a 100.0 a 27.45 a

## Purdue University

Pest Type	W Weed	W Weed	W Weed				
Pest Code	LACSE	ERICA	LACSE				
Pest Scientific Name	Lactuca serrio>	Conyza canadens>	Lactuca serrio>				
Pest Name	Prickly lettuce	Canada horsewe>	Prickly lettuce				
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	5-16-2012	6-18-2012	6-18-2012	10-19-2012			
Rating Type	CONTRO	CONTRO	CONTRO	YIELD			
Rating Unit	%	%	%	bu/ac			
Number of Subsamples	1	1	1	1			
Crop Stage Majority	VC	R1	R1				
Pest Stage Majority	1 IN	1-24 IN	3-48 IN				
Pest Density, Unit	8 YD2	25 M2	10 M2				
Assessed By	JR/JS	PM	PM				
Days After First/Last Applic.	177 29	210 27	210 27	333 150			
Plant-Eval Interval	21 DP-1	54 DP-1	54 DP-1	177 DP-1			
Days After Emergence	9 DE-1	42 DE-1	42 DE-1	165 DE-1			
Trt No.	Treatment Name	Rate Unit	Appl Code	22	23	24	25
6	AUTHORITY XL	4 oz/a	A	97.0 a	95.8 a	100.0 a	23.80 a
	WEEDMASTER	1.5 pt/a	A				
	COC	1 % v/v	A				
	AUTHORITY MTZ	12 oz/a	B				
	ROUNDUP POWERMAX	32 oz/a	B				
	COC	1 % v/v	B				
	Ammonium Sulfate	2.5 lb/a	B				
7	AUTHORITY MTZ	12 oz/a	A	83.8 a	98.3 a	100.0 a	22.60 a
	WEEDMASTER	1.5 pt/a	A				
	COC	1 % v/v	A				
	Ammonium Sulfate	2.5 lb/a	A				
	AUTHORITY XL	4 oz/a	B				
	SHARPEN	1 oz/a	B				
	COC	1 % v/v	B				
	Ammonium Sulfate	2.5 lb/a	B				
8	AUTHORITY MTZ	12 oz/a	A	96.3 a	90.8 a	100.0 a	18.28 a
	WEEDMASTER	1.5 pt/a	A				
	COC	1 % v/v	A				
	Ammonium Sulfate	2.5 lb/a	A				
	AUTHORITY XL	4 oz/a	B				
	ROUNDUP POWERMAX	32 oz/a	B				
	COC	1 % v/v	B				
	Ammonium Sulfate	2.5 lb/a	B				
9	AUTHORITY MTZ	12 oz/a	A	95.8 a	97.8 a	100.0 a	25.73 a
	WEEDMASTER	1.5 pt/a	A				
	COC	1 % v/v	A				
	Ammonium Sulfate	2.5 lb/a	A				
	AUTHORITY XL	4 oz/a	B				
	IGNITE 280 SL	32 oz/a	B				
	COC	1 % v/v	B				
	Ammonium Sulfate	2.5 lb/a	B				

## Purdue University

Pest Type	W Weed	W Weed	W Weed		
Pest Code	LACSE	ERICA	LACSE		
Pest Scientific Name	Lactuca serrio>	Conyza canadens>	Lactuca serrio>		
Pest Name	Prickly lettuce	Canada horsewe>	Prickly lettuce		
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	5-16-2012	6-18-2012	6-18-2012	10-19-2012	
Rating Type	CONTRO	CONTRO	CONTRO	YIELD	
Rating Unit	%	%	%	bu/ac	
Number of Subsamples	1	1	1	1	
Crop Stage Majority	VC	R1	R1		
Pest Stage Majority	1 IN	1-24 IN	3-48 IN		
Pest Density, Unit	8 YD2	25 M2	10 M2		
Assessed By	JR/JS	PM	PM		
Days After First/Last Applic.	177 29	210 27	210 27	333 150	
Plant-Eval Interval	21 DP-1	54 DP-1	54 DP-1	177 DP-1	
Days After Emergence	9 DE-1	42 DE-1	42 DE-1	165 DE-1	
Trt Treatment	Rate Appl				
No. Name	Rate Unit Code	22	23	24	25
10 AUTHORITY MTZ	12 oz/a A	83.8 a	99.0 a	100.0 a	25.30 a
WEEDMASTER	1.5 pt/a A				
COC	1 % v/v A				
Ammonium Sulfate	2.5 lb/a A				
AUTHORITY XL	4 oz/a B				
GRAMOXONE INTEON	2.5 pt/a B				
BUTYRAC 200	12 oz/a B				
COC	1 % v/v B				
Ammonium Sulfate	2.5 lb/a B				
LSD (P=.05)		24.18	7.01	0.00	16.187
Standard Deviation		16.66	4.83	0.00	11.064
CV		20.76	5.53	0.0	48.52
Bartlett's X2		22.684	30.669	0.0	4.804
P(Bartlett's X2)		0.004*	0.001*	.	0.778
Replicate F		1.263	1.038	0.000	3.488
Replicate Prob(F)		0.3069	0.3915	1.0000	0.0320
Treatment F		12.452	163.012	0.000	0.401
Treatment Prob(F)		0.0001	0.0001	1.0000	0.9085

# Purdue University

## 2011/AUTHORITYXL/AUTHORITY MTZ/FALL/SPRING

Trial ID: 11F-THP-NTS-74      Protocol ID: 11F-THP-NTS-74  
 Location: Throckmorton      Study Director: White/Marquardt  
 Project ID: SULF.SOY.11.JPR.11      Investigator: Dr. Bill Johnson  
 Sponsor Contact: FMC - Joe Reed

### Pest Type

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

### Pest Code

STEME, *Stellaria media*, = US  
 THLSS, *Thlaspi* sp., = US  
 LACSE, *Lactuca serriola*, = US  
 LAMAM, *Lamium amplexicaule*, = US  
 ERICA, *Conyza canadensis*, = US  
 COIMA, *Conium maculatum*, = US  
 TAROF, *Taraxacum officinale*, = US  
 BROTE, *Bromus tectorum*, = US  
 SETFA, *Setaria faberi*, = US

### Crop Code

GLXMA, BSOY, *Glycine max*, = US

### Rating Type

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

### Rating Unit

% = percent  
 bu/ac = bushels per acre

YD2 = per square yard  
 FT2 = per square foot  
 M2 = per square meter

### Plant-Eval Interval

-12 DP-1 = 1 GLXMA 4-25-2012  
 2 DP-1 = 1 GLXMA 4-25-2012  
 8 DP-1 = 1 GLXMA 4-25-2012  
 21 DP-1 = 1 GLXMA 4-25-2012  
 54 DP-1 = 1 GLXMA 4-25-2012  
 177 DP-1 = 1 GLXMA 4-25-2012