

# Purdue University

## Comparison GAT vs RR vs LL soybean systems.

Trial ID: 10S-THP-NTS-72      Protocol ID: 10S-THP-NTS-72  
 Location: Throckmorton      Study Director: White/Marquardt  
 Project ID:      Investigator: Dr. Bill Johnson  
 Sponsor Contact: DuPont - Helen Flanigan

### 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:** 3-22-2010

### 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:** wj@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  
**Description:** GAT - RR2 - LL  
**BBCH Scale:** BSOY      **Planting Date:** 5-6-2010  
**Emergence Date:** 5-17-2010

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### Pest Description

**Pest 1 Type:** W **Code:** TAROF *Taraxacum officinale*  
**Common Name:** Common dandelion

**Pest 2 Type:** W **Code:** AMBTR *Ambrosia trifida*  
**Common Name:** Giant ragweed

**Pest 3 Type:** W **Code:** LACSE *Lactuca serriola*  
**Common Name:** Prickly lettuce

**Pest 4 Type:** W **Code:** ERICA *Conyza canadensis*  
**Common Name:** Canada horseweed

**Pest 5 Type:** W **Code:** STEME *Stellaria media*  
**Common Name:** Common chickweed

**Pest 6 Type:** W **Code:** THLSS *Thlaspi* sp.  
**Common Name:** Pennycress

**Pest 7 Type:** W **Code:** CAPBP *Capsella bursa-pastoris*  
**Common Name:** Shepherd's purse

**Pest 8 Type:** W **Code:** COIMA *Conium maculatum*  
**Common Name:** Poison hemlock

**Pest 9 Type:** W **Code:** SETFA *Setaria faberi*  
**Common Name:** Giant foxtail

**Pest10 Type:** W **Code:** AMATA *Amaranthus tamariscinus*  
**Common Name:** Common waterhemp

### 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

#### Trial Initiation Comments:

Special randomization.  
Special staking.  
Special planting.  
Extra borders.

### Soil Description

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

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Application Description				
	A	B	C	D
<b>Application Date:</b>	4-20-2010	5-20-2010	6-1-2010	6-17-2010
<b>Time of Day:</b>		8:40 AM	10:40 AM	9 AM
<b>Application Method:</b>	SPRAY	SPRAY	SPRAY	SPRAY
<b>Application Timing:</b>	PREPLAN	EAPOWE	POSPOS	LAPOWE
<b>Application Placement:</b>	FOLIAR	FOLIAR	FOLIAR	FOLIAR
<b>Applied By:</b>	RT	MH	MH	MH
<b>Air Temperature, Unit:</b>	55 F	57 F	69 F	82 F
<b>% Relative Humidity:</b>	57	78.7	86	71
<b>Wind Velocity, Unit:</b>	2 MPH	0 MPH	1 MPH	1 MPH
<b>Wind Direction:</b>	SE		NE	N
<b>Dew Presence (Y/N):</b>	Y yes	Y yes	Y yes	Y yes
<b>Soil Temperature, Unit:</b>	50 F	57 F	70 F	75 F
<b>Soil Moisture:</b>	DRY	WET	MOIST	WET
<b>% Cloud Cover:</b>	80	5	100	50

Crop Stage At Each Application				
	A	B	C	D
<b>Crop 1 Code, BBCH Scale:</b>	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY
<b>Stage Scale Used:</b>		BBCH	BBCH	BBCH
<b>Stage Majority, Percent:</b>		VE 100	V2	V5
<b>Height, Unit:</b>		0.5 IN	5 IN	8 IN
<b>Height Minimum, Maximum:</b>				8 10

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Pest Stage At Each Application				
	A	B	C	D
<b>Pest 1 Code, Type, Scale:</b>	TAROF W	TAROF W	TAROF W	TAROF W
<b>Height, Unit:</b>		3.5 IN	5 IN	
<b>Height Minimum, Maximum:</b>		1 6	4 6	
<b>Density, Unit:</b>		6.5 YD2	25 YD2	
<b>Pest 2 Code, Type, Scale:</b>	AMBTR W	AMBTR W	AMBTR W	AMBTR W
<b>Height, Unit:</b>		2 IN	9.5 IN	
<b>Height Minimum, Maximum:</b>		1 3	7 12	
<b>Density, Unit:</b>		3 YD2	4 YD2	
<b>Pest 3 Code, Type, Scale:</b>	LACSE W	LACSE W	LACSE W	LACSE W
<b>Height, Unit:</b>		10 IN	12 IN	24.5 IN
<b>Height Minimum, Maximum:</b>				23 26
<b>Density, Unit:</b>		6 YD2	60 YD2	15 YD2
<b>Pest 4 Code, Type, Scale:</b>	ERICA W	ERICA W	ERICA W	ERICA W
<b>Height, Unit:</b>		6 IN		
<b>Height Minimum, Maximum:</b>		4 8		
<b>Density, Unit:</b>		4 YD2		
<b>Pest 5 Code, Type, Scale:</b>	STEME W	STEME W	STEME W	STEME W
<b>Height, Unit:</b>		4 IN		
<b>Density, Unit:</b>		25 YD2		
<b>Pest 6 Code, Type, Scale:</b>	THLSS W	THLSS W	THLSS W	THLSS W
<b>Height, Unit:</b>		10 IN		11 IN
<b>Height Minimum, Maximum:</b>				10 12
<b>Density, Unit:</b>		8 YD2		3 YD2
<b>Pest 7 Code, Type, Scale:</b>	CAPBP W	CAPBP W	CAPBP W	CAPBP W
<b>Height, Unit:</b>		8 IN		
<b>Density, Unit:</b>		3 YD2		
<b>Pest 8 Code, Type, Scale:</b>	COIMA W	COIMA W	COIMA W	COIMA W
<b>Height, Unit:</b>			48 IN	
<b>Density, Unit:</b>			3 YD2	
<b>Pest 9 Code, Type, Scale:</b>	SETFA W	SETFA W	SETFA W	SETFA W
<b>Height, Unit:</b>			3 IN	9 IN
<b>Height Minimum, Maximum:</b>			1 5	8 10
<b>Density, Unit:</b>			50 YD2	13 YD2
<b>Pest10 Code, Type, Scale:</b>	AMATA W	AMATA W	AMATA W	AMATA W
<b>Height, Unit:</b>				23 IN
<b>Height Minimum, Maximum:</b>				22 24
<b>Density, Unit:</b>				10 YD2

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Application Equipment				
	A	B	C	D
<b>Appl. Equipment:</b>	CO2 BKPK	CO2 BKPK	CO2 BKPK	CO2 BKPK
<b>Equipment Type:</b>	SPRBAC	SPRBAC	SPRBAC	SPRBAC
<b>Operating Pressure, Unit:</b>	17 PSI	17 PSI	17 PSI	17 PSI
<b>Nozzle Type:</b>	FLAT FAN	FLAT FAN	FLAT FAN	FLAT FAN
<b>Nozzle Size:</b>	XR 110 02	XR 110 02	XR 110 02	XR 110 02
<b>Nozzle Spacing, Unit:</b>	15 IN	15 IN	15 IN	15 IN
<b>Nozzles/Row:</b>	8	8	8	8
<b>Boom Length, Unit:</b>	10 FT	10 FT	10 FT	10 FT
<b>Boom Height, Unit:</b>	18 IN	18 IN	18 IN	18 IN
<b>Ground Speed, Unit:</b>	3 MPH	3 MPH	3 MPH	3 MPH
<b>Carrier:</b>	MEIGS	MEIGS	MEIGS	H20
<b>Water Hardness (ppm CaCO3):</b>	150	150	150	150
<b>Spray Volume, Unit:</b>	15 gal/ac	15 gal/ac	15 gal/ac	15 gal/ac
<b>Mix Size, Unit:</b>	1.8 liters	1.8 liters	1.8 liters	1.8 liters
<b>Propellant:</b>	CO2	CO2	CO2	CO2
<b>Tank Mix (Y/N):</b>	N no	N no	N no	N no

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed			
Pest Code	THLSS	LACSE	STEME	ERICA	LAMAM	TAROF			
Pest Scientific Name	Thlaspi sp.	Lactuca serrio>	Stellaria media	Conyza canadens>	Lamium amplexi>	Taraxacum offi>			
Pest Name	Pennycress	Prickly lettuce	Common chickwe>	Canada horsewe>	Henbit	Common dandel>			
Crop Code									
BBCH Scale									
Crop Scientific Name									
Crop Name									
Crop Variety									
Description									
Rating Date	5-6-2010	5-6-2010	5-6-2010	5-6-2010	5-6-2010	5-6-2010			
Rating Type	EFF	EFF	EFF	EFF	EFF	EFF			
Rating Unit	%	%	%	%	%	%			
Number of Subsamples	1	1	1	1	1	1			
Crop Stage Majority									
Pest Stage Majority	12"	6"	6"	5"		5"			
Pest Density, Unit	12 YD2	50 YD2	75 YD2	18 YD2		6 YD2			
Assessed By	MW	MW	MW	MW	MW	MW			
Trt Treatment	Rate	Appl	1	2	3	4	5	6	
No. Name	Rate	Unit	Code						
1 Untreated Check				0.0 b	0.0 d	0.0 b	0.0 b	0.0 c	0.0 d
2 Classic	0.25 oz ai/a	A		99.0 a	99.0 a	99.0 a	99.0 a	99.0 a	98.0 a
Resolve (25 SG)	0.25 oz ai/a	A							
Valor SX (51 WG)	1 oz ai/a	A							
Abundit (3 SL)	0.75 lb ae/a	A							
2,4-D Ester	0.5 lb ai/a	A							
AMS - Liquid	2 lb ai/a	A							
Roundup PowerMax 4.5 SL	0.77 lb ae/a	D							
AMS - Liquid	2 lb ai/a	D							
3 Abundit (3 SL)	0.75 lb ae/a	A		99.0 a	96.8 a	99.0 a	98.0 a	99.0 a	80.0 bc
2,4-D Ester	0.5 lb ai/a	A							
AMS - Liquid	2 lb ai/a	A							
Roundup PowerMax 4.5 SL	0.77 lb ae/a	C							
Classic	0.083 oz ai/a	C							
Harmony SG (50 SG)	0.125 oz ai/a	C							
Express (50 WG)	0.125 oz ai/a	C							
AMS - Liquid	2 lb ai/a	C							
4 Roundup PowerMax 4.5 SL	0.77 lb ae/a	B		22.5 b	2.5 d	15.0 b	0.0 b	49.5 b	0.0 d
AMS - Liquid	2 lb ai/a	B							
Roundup PowerMax 4.5 SL	0.77 lb ae/a	D							
Classic	0.083 oz ai/a	D							
Harmony SG (50 SG)	0.125 oz ai/a	D							
Express (50 WG)	0.125 oz ai/a	D							
AMS - Liquid	2 lb ai/a	D							
5 Untreated Check				0.0 b	0.0 d	0.0 b	0.0 b	0.0 c	0.0 d
6 Intro (4 EC)	2 lb ai/a	A		99.0 a	82.3 c	99.0 a	99.0 a	94.3 a	73.8 bc
Roundup PowerMax 4.5 SL	0.77 lb ae/a	A							
2,4-D Ester	0.5 lb ai/a	A							
AMS - Liquid	17 lb ai/100 gal	A							
Roundup PowerMax 4.5 SL	0.77 lb ae/a	D							
AMS - Liquid	17 lb ai/100 gal	D							

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed		
Pest Code	THLSS	LACSE	STEME	ERICA	LAMAM	TAROF		
Pest Scientific Name	Thlaspi sp.	Lactuca serrio>	Stellaria media	Conyza canadens>	Lamium amplexi>	Taraxacum offi>		
Pest Name	Pennycress	Prickly lettuce	Common chickwe>	Canada horsewe>	Henbit	Common dandel>		
Crop Code								
BBCH Scale								
Crop Scientific Name								
Crop Name								
Crop Variety								
Description								
Rating Date	5-6-2010	5-6-2010	5-6-2010	5-6-2010	5-6-2010	5-6-2010		
Rating Type	EFF	EFF	EFF	EFF	EFF	EFF		
Rating Unit	%	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1	1		
Crop Stage Majority								
Pest Stage Majority	12"	6"	6"	5"		5"		
Pest Density, Unit	12 YD2	50 YD2	75 YD2	18 YD2		6 YD2		
Assessed By	MW	MW	MW	MW	MW	MW		
Trt Treatment	Rate	Appl	1	2	3	4	5	6
No. Name	Rate	Unit	Code					
7 Roundup PowerMax 4.5 SL	0.77 lb ae/a	A	99.0 a	84.8 bc	99.0 a	99.0 a	99.0 a	70.0 c
2,4-D Ester	0.5 lb ai/a	A						
AMS - Liquid	17 lb ai/100 gal	A						
Roundup PowerMax 4.5 SL	0.77 lb ae/a	C						
AMS - Liquid	17 lb ai/100 gal	C						
8 Roundup PowerMax 4.5 SL	0.77 lb ae/a	B	0.0 b	0.0 d	0.0 b	0.0 b	99.0 a	0.0 d
AMS - Liquid	17 lb ai/100 gal	B						
Roundup PowerMax 4.5 SL	0.77 lb ae/a	D						
AMS - Liquid	17 lb ai/100 gal	D						
9 Untreated Check			0.0 b	0.0 d	0.0 b	0.0 b	0.0 c	0.0 d
10 Sharpen 2.85 SC	0.0223 lb ai/a	A	99.0 a	91.8 abc	78.5 a	95.5 a	99.0 a	84.8 b
Ignite 280 (2.34 SL)	0.402 lb ai/a	A						
MSO	1 % v/v	A						
AMS - Liquid	8.5 lb ai/100 gal	A						
Ignite 280 (2.34 SL)	0.402 lb ai/a	D						
AMS - Liquid	8.5 lb ai/100 gal	D						
11 Ignite 280 (2.34 SL)	0.402 lb ai/a	A	99.0 a	95.5 ab	87.3 a	94.3 a	99.0 a	87.3 b
2,4-D Ester	0.5 lb ai/a	A						
AMS - Liquid	8.5 lb ai/100 gal	A						
Ignite 280 (2.34 SL)	0.402 lb ai/a	C						
AMS - Liquid	8.5 lb ai/100 gal	C						
12 Ignite 280 (2.34 SL)	0.402 lb ai/a	B	0.0 b	0.0 d	0.0 b	0.0 b	99.0 a	0.0 d
AMS - Liquid	8.5 lb ai/100 gal	B						
Ignite 280 (2.34 SL)	0.402 lb ai/a	D						
AMS - Liquid	8.5 lb ai/100 gal	D						
LSD (P=.05)	18.76	9.00	16.48	4.81	24.36	10.63		
Standard Deviation	12.99	6.24	11.41	3.33	16.87	7.36		
CV	25.29	13.54	23.74	6.84	24.19	17.89		
Bartlett's X2	0.0	5.857	3.092	5.32	6.679	8.186		
P(Bartlett's X2)	.	0.32	0.213	0.07	0.01*	0.146		
Replicate F	1.000	2.928	1.996	1.909	0.800	1.627		
Replicate Prob(F)	0.4051	0.0481	0.1338	0.1473	0.5030	0.2019		
Treatment F	59.560	235.768	71.150	934.470	27.599	139.759		
Treatment Prob(F)	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001		

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)  
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Column 1: Weed or volunteer crop; US; EFF; percent; 12"; per square yard; MW  
 Column 2: Weed or volunteer crop; US; EFF; percent; 6"; per square yard; MW  
 Column 3: Weed or volunteer crop; US; EFF; percent; 6"; per square yard; MW  
 Column 4: Weed or volunteer crop; US; EFF; percent; 5"; per square yard; MW

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed			
Pest Code	BROTE	THLSS	LACSE	STEME	ERICA	LAMAM			
Pest Scientific Name	Bromus tectorum	Thlaspi sp.	Lactuca serrio>	Stellaria media	Conyza canadens>	Lamium amplexi>			
Pest Name	Downy brome	Pennycress	Prickly lettuce	Common chickwe>	Canada horsewe>	Henbit			
Crop Code									
BBCH Scale									
Crop Scientific Name									
Crop Name		SOYBEANS							
Crop Variety									
Description									
Rating Date	5-6-2010	5-19-2010	5-19-2010	5-19-2010	5-19-2010	5-19-2010			
Rating Type	EFF	EFF	EFF	EFF	EFF	EFF			
Rating Unit	%	%	%	%	%	%			
Number of Subsamples	1	1	1	1	1	1			
Crop Stage Majority		VE							
Pest Stage Majority		14"	8"	6"	6"	6"			
Pest Density, Unit		7 YD2	6 YD2	20 YD2	6 YD2	8 YD2			
Assessed By	MW	MW	MW	MW	MW	MW			
Trt Treatment	Rate	Appl	7	8	9	10	11	12	
No. Name	Rate	Unit	Code						
1 Untreated Check				0.0 b	0.0 b	0.0 b	0.0 c	0.0 d	0.0 b
2 Classic	0.25 oz ai/a	A		99.0 a	99.0 a	99.0 a	99.0 a	99.0 a	99.0 a
Resolve (25 SG)	0.25 oz ai/a	A							
Valor SX (51 WG)	1 oz ai/a	A							
Abundit (3 SL)	0.75 lb ae/a	A							
2,4-D Ester	0.5 lb ai/a	A							
AMS - Liquid	2 lb ai/a	A							
Roundup PowerMax 4.5 SL	0.77 lb ae/a	D							
AMS - Liquid	2 lb ai/a	D							
3 Abundit (3 SL)	0.75 lb ae/a	A		98.0 a	99.0 a	94.3 a	89.5 a	67.3 bc	99.0 a
2,4-D Ester	0.5 lb ai/a	A							
AMS - Liquid	2 lb ai/a	A							
Roundup PowerMax 4.5 SL	0.77 lb ae/a	C							
Classic	0.083 oz ai/a	C							
Harmony SG (50 SG)	0.125 oz ai/a	C							
Express (50 WG)	0.125 oz ai/a	C							
AMS - Liquid	2 lb ai/a	C							
4 Roundup PowerMax 4.5 SL	0.77 lb ae/a	B		74.3 a	0.0 b	0.0 b	7.5 c	0.0 d	74.3 a
AMS - Liquid	2 lb ai/a	B							
Roundup PowerMax 4.5 SL	0.77 lb ae/a	D							
Classic	0.083 oz ai/a	D							
Harmony SG (50 SG)	0.125 oz ai/a	D							
Express (50 WG)	0.125 oz ai/a	D							
AMS - Liquid	2 lb ai/a	D							
5 Untreated Check				0.0 b	0.0 b	0.0 b	0.0 c	0.0 d	0.0 b
6 Intro (4 EC)	2 lb ai/a	A		99.0 a	99.0 a	91.8 a	99.0 a	82.3 abc	99.0 a
Roundup PowerMax 4.5 SL	0.77 lb ae/a	A							
2,4-D Ester	0.5 lb ai/a	A							
AMS - Liquid	17 lb ai/100 gal	A							
Roundup PowerMax 4.5 SL	0.77 lb ae/a	D							
AMS - Liquid	17 lb ai/100 gal	D							



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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed		
Pest Code	BROTE	THLSS	LACSE	STEME	ERICA	LAMAM		
Pest Scientific Name	Bromus tectorum	Thlaspi sp.	Lactuca serrio>	Stellaria media	Conyza canadens>	Lamium amplexi>		
Pest Name	Downy brome	Pennycress	Prickly lettuce	Common chickwe>	Canada horsewe>	Henbit		
Crop Code								
BBCH Scale								
Crop Scientific Name								
Crop Name		SOYBEANS						
Crop Variety								
Description								
Rating Date	5-6-2010	5-19-2010	5-19-2010	5-19-2010	5-19-2010	5-19-2010		
Rating Type	EFF	EFF	EFF	EFF	EFF	EFF		
Rating Unit	%	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1	1		
Crop Stage Majority		VE						
Pest Stage Majority		14"	8"	6"	6"	6"		
Pest Density, Unit		7 YD2	6 YD2	20 YD2	6 YD2	8 YD2		
Assessed By	MW	MW	MW	MW	MW	MW		
Trt Treatment	Rate	Appl						
No. Name	Rate Unit	Code	7	8	9	10	11	12
7 Roundup PowerMax 4.5 SL	0.77 lb ae/a	A	98.5 a	99.0 a	95.5 a	99.0 a	89.5 ab	99.0 a
2,4-D Ester	0.5 lb ai/a	A						
AMS - Liquid	17 lb ai/100 gal	A						
Roundup PowerMax 4.5 SL	0.77 lb ae/a	C						
AMS - Liquid	17 lb ai/100 gal	C						
8 Roundup PowerMax 4.5 SL	0.77 lb ae/a	B	74.3 a	0.0 b	2.5 b	0.0 c	0.0 d	99.0 a
AMS - Liquid	17 lb ai/100 gal	B						
Roundup PowerMax 4.5 SL	0.77 lb ae/a	D						
AMS - Liquid	17 lb ai/100 gal	D						
9 Untreated Check			0.0 b	0.0 b	0.0 b	0.0 c	0.0 d	0.0 b
10 Sharpen 2.85 SC	0.0223 lb ai/a	A	91.8 a	99.0 a	84.5 a	42.5 b	69.5 bc	74.3 a
Ignite 280 (2.34 SL)	0.402 lb ai/a	A						
MSO	1 % v/v	A						
AMS - Liquid	8.5 lb ai/100 gal	A						
Ignite 280 (2.34 SL)	0.402 lb ai/a	D						
AMS - Liquid	8.5 lb ai/100 gal	D						
11 Ignite 280 (2.34 SL)	0.402 lb ai/a	A	93.8 a	99.0 a	86.8 a	42.5 b	57.5 c	99.0 a
2,4-D Ester	0.5 lb ai/a	A						
AMS - Liquid	8.5 lb ai/100 gal	A						
Ignite 280 (2.34 SL)	0.402 lb ai/a	C						
AMS - Liquid	8.5 lb ai/100 gal	C						
12 Ignite 280 (2.34 SL)	0.402 lb ai/a	B	49.5 a	0.0 b	24.8 b	0.0 c	0.0 d	99.0 a
AMS - Liquid	8.5 lb ai/100 gal	B						
Ignite 280 (2.34 SL)	0.402 lb ai/a	D						
AMS - Liquid	8.5 lb ai/100 gal	D						
LSD (P=.05)			34.22	0.00	25.21	18.05	19.99	29.62
Standard Deviation			23.70	0.00	17.46	12.50	13.85	20.51
CV			36.55	0.0	36.18	31.32	35.73	29.25
Bartlett's X2			41.103	0.0	19.786	3.355	3.889	0.0
P(Bartlett's X2)			0.001*	.	0.003*	0.34	0.421	.
Replicate F			4.121	0.000	1.376	0.484	3.552	0.647
Replicate Prob(F)			0.0138	1.0000	0.2672	0.6954	0.0248	0.5904
Treatment F			12.399	0.000	28.122	51.086	36.455	17.824
Treatment Prob(F)			0.0001	1.0000	0.0001	0.0001	0.0001	0.0001

# Purdue University

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed			
Pest Code	TAROF	BROTE	LACSE	ERICA	SETFA	COIMA			
Pest Scientific Name	Taraxacum offi>	Bromus tectorum	Lactuca serrio>	Conyza canad>	Setaria faberi	Conium maculat>			
Pest Name	Common dandel>	Downy brome	Prickly lettuce	Canada horsewe>	Giant foxtail	Poison hemlock			
Crop Code									
BBCH Scale									
Crop Scientific Name									
Crop Name			CORN						
Crop Variety									
Description									
Rating Date	5-19-2010	5-19-2010	6-3-2010	6-3-2010	6-3-2010	6-3-2010			
Rating Type	EFF	EFF	EFF	EFF	EFF	EFF			
Rating Unit	%	%	%	%	%	%			
Number of Subsamples	1	1	1	1	1	1			
Crop Stage Majority			V2-4"						
Pest Stage Majority	7"	12"	15"	3-14"	2"	13"			
Pest Density, Unit	2 YD2	90 YD2	14 YD2	8 YD2	200 YD2	1 YD2			
Assessed By	MW	MW	MW	MW	MW	MW			
Trt Treatment	Rate	Appl	13	14	15	16	17	18	
No. Name	Rate	Unit	Code						
1 Untreated Check				0.0 d	0.0 c	0.0 b	0.0 b	0.0 c	0.0 b
2 Classic	0.25 oz ai/a	A		96.8 a	99.0 a	99.0 a	70.0 a	57.5 b	95.5 a
Resolve (25 SG)	0.25 oz ai/a	A							
Valor SX (51 WG)	1 oz ai/a	A							
Abundit (3 SL)	0.75 lb ae/a	A							
2,4-D Ester	0.5 lb ai/a	A							
AMS - Liquid	2 lb ai/a	A							
Roundup PowerMax 4.5 SL	0.77 lb ae/a	D							
AMS - Liquid	2 lb ai/a	D							
3 Abundit (3 SL)	0.75 lb ae/a	A		72.5 b	99.0 a	99.0 a	47.5 a	0.0 c	84.3 a
2,4-D Ester	0.5 lb ai/a	A							
AMS - Liquid	2 lb ai/a	A							
Roundup PowerMax 4.5 SL	0.77 lb ae/a	C							
Classic	0.083 oz ai/a	C							
Harmony SG (50 SG)	0.125 oz ai/a	C							
Express (50 WG)	0.125 oz ai/a	C							
AMS - Liquid	2 lb ai/a	C							
4 Roundup PowerMax 4.5 SL	0.77 lb ae/a	B		0.0 d	49.5 abc	63.8 a	52.5 a	75.0 ab	98.0 a
AMS - Liquid	2 lb ai/a	B							
Roundup PowerMax 4.5 SL	0.77 lb ae/a	D							
Classic	0.083 oz ai/a	D							
Harmony SG (50 SG)	0.125 oz ai/a	D							
Express (50 WG)	0.125 oz ai/a	D							
AMS - Liquid	2 lb ai/a	D							
5 Untreated Check				0.0 d	0.0 c	0.0 b	0.0 b	0.0 c	0.0 b
6 Intro (4 EC)	2 lb ai/a	A		70.0 b	99.0 a	99.0 a	65.0 a	0.0 c	95.5 a
Roundup PowerMax 4.5 SL	0.77 lb ae/a	A							
2,4-D Ester	0.5 lb ai/a	A							
AMS - Liquid	17 lb ai/100 gal	A							
Roundup PowerMax 4.5 SL	0.77 lb ae/a	D							
AMS - Liquid	17 lb ai/100 gal	D							





## Purdue University

Pest Type	W Weed	W Weed			W Weed	W Weed	W Weed				
Pest Code	TAROF	AMBTR			LACSE	SETFA	CRUNU				
Pest Scientific Name	Taraxacum offi>	Ambrosia trifi>			Lactuca serrio>	Setaria faberi	Carduus nutans				
Pest Name	Common dandel>	Giant ragweed			Prickly lettuce	Giant foxtail	Musk thistle				
Crop Code											
BBCH Scale											
Crop Scientific Name											
Crop Name				CORN							
Crop Variety											
Description											
Rating Date	6-3-2010	6-3-2010	6-8-2010	6-8-2010	6-16-2010	6-16-2010	6-16-2010				
Rating Type	EFF	EFF	PHYCHL	PHYLMA	EFF	EFF	EFF				
Rating Unit	%	%			%	%	%				
Number of Subsamples	1	1	1	1	1	1	1				
Crop Stage Majority			V3-9"								
Pest Stage Majority	6"	10"			22"	8"	18"				
Pest Density, Unit	2 YD2	3 YD2			7 YD2	150 YD2	6 YD2				
Assessed By	MW	MW	MW	MW	MW	MW	MW				
Trt No.	Treatment Name	Rate	Unit	Appl Code	19	20	21	22	23	24	25
7	Roundup PowerMax 4.5 SL	0.77 lb ae/a	A		64.8 ab	73.5 a	0.8 c	0.0 b	99.0 a	87.5 a	88.8 a
	2,4-D Ester	0.5 lb ai/a	A								
	AMS - Liquid	17 lb ai/100 gal	A								
	Roundup PowerMax 4.5 SL	0.77 lb ae/a	C								
	AMS - Liquid	17 lb ai/100 gal	C								
8	Roundup PowerMax 4.5 SL	0.77 lb ae/a	B		40.0 bc	84.3 a	0.0 c	0.0 b	92.0 a	47.5 b	50.0 b
	AMS - Liquid	17 lb ai/100 gal	B								
	Roundup PowerMax 4.5 SL	0.77 lb ae/a	D								
	AMS - Liquid	17 lb ai/100 gal	D								
9	Untreated Check				0.0 d	0.0 b	0.0 c	0.0 b	0.0 b	0.0 d	0.0 c
10	Sharpen 2.85 SC	0.0223 lb ai/a	A		17.5 cd	77.0 a	0.0 c	0.0 b	81.8 a	5.0 d	45.0 b
	Ignite 280 (2.34 SL)	0.402 lb ai/a	A								
	MSO	1 % v/v	A								
	AMS - Liquid	8.5 lb ai/100 gal	A								
	Ignite 280 (2.34 SL)	0.402 lb ai/a	D								
	AMS - Liquid	8.5 lb ai/100 gal	D								
11	Ignite 280 (2.34 SL)	0.402 lb ai/a	A		40.0 bc	87.0 a	6.8 ab	3.5 a	99.0 a	82.5 a	92.0 a
	2,4-D Ester	0.5 lb ai/a	A								
	AMS - Liquid	8.5 lb ai/100 gal	A								
	Ignite 280 (2.34 SL)	0.402 lb ai/a	C								
	AMS - Liquid	8.5 lb ai/100 gal	C								
12	Ignite 280 (2.34 SL)	0.402 lb ai/a	B		62.5 ab	98.0 a	0.0 c	0.0 b	61.3 a	32.5 c	71.3 ab
	AMS - Liquid	8.5 lb ai/100 gal	B								
	Ignite 280 (2.34 SL)	0.402 lb ai/a	D								
	AMS - Liquid	8.5 lb ai/100 gal	D								
LSD (P=.05)		26.83			22.62	2.10	1.80		28.45	11.23	20.00
Standard Deviation		18.58			15.66	1.46	1.25		19.71	7.78	13.85
CV		42.49			23.82	69.23	124.72		30.03	25.57	27.98
Bartlett's X2		9.105			12.793	7.275	2.897		8.361	8.004	17.295
P(Bartlett's X2)		0.333			0.046*	0.122	0.575		0.079	0.238	0.027*
Replicate F		1.070			1.776	2.550	1.857		1.557	0.299	0.200
Replicate Prob(F)		0.3752			0.1709	0.0725	0.1561		0.2184	0.8262	0.8958
Treatment F		12.597			26.776	17.747	5.610		17.514	95.286	25.146
Treatment Prob(F)		0.0001			0.0001	0.0001	0.0001		0.0001	0.0001	0.0001



# Purdue University

Pest Type	W Weed	W Weed				W Weed	W Weed		
Pest Code	TAROF	AMBTR				LACSE	CRUNU		
Pest Scientific Name	Taraxacum offi>	Ambrosia trifi>				Lactuca serrio>	Carduus nutans		
Pest Name	Common dandel>	Giant ragweed				Prickly lettuce	Musk thistle		
Crop Code									
BBCH Scale									
Crop Scientific Name									
Crop Name									
Crop Variety									
Description									
Rating Date	6-16-2010	6-16-2010	6-16-2010	6-16-2010	6-16-2010	6-28-2010	6-28-2010		
Rating Type	EFF	EFF	PHYLMA	STAND	PHYCHL	EFF	EFF		
Rating Unit	%	%	%	%	%	%	%		
Number of Subsamples	1	1	1	1	1	1	1		
Crop Stage Majority									
Pest Stage Majority	10"	20"							
Pest Density, Unit	3 YD2	5 YD2							
Assessed By	MW	MW	MW	MW	MW				
Trt Treatment	Rate	Appl							
No. Name	Rate Unit	Code	26	27	28	29	30	31	32
7 Roundup PowerMax 4.5 SL	0.77 lb ae/a	A	88.5 a	87.3 a	0.8 a	93.3 a	0.8 a	99.0 a	91.0 ab
2,4-D Ester	0.5 lb ai/a	A							
AMS - Liquid	17 lb ai/100 gal	A							
Roundup PowerMax 4.5 SL	0.77 lb ae/a	C							
AMS - Liquid	17 lb ai/100 gal	C							
8 Roundup PowerMax 4.5 SL	0.77 lb ae/a	B	47.5 b	91.8 a	1.3 a	70.0 b	0.0 a	95.5 a	75.0 c
AMS - Liquid	17 lb ai/100 gal	B							
Roundup PowerMax 4.5 SL	0.77 lb ae/a	D							
AMS - Liquid	17 lb ai/100 gal	D							
9 Untreated Check			0.0 c	0.0 c	0.0 a	0.0 c	0.0 a	0.0 c	0.0 d
10 Sharpen 2.85 SC	0.0223 lb ai/a	A	15.0 c	47.3 b	0.0 a	96.8 a	0.0 a	99.0 a	96.8 a
Ignite 280 (2.34 SL)	0.402 lb ai/a	A							
MSO	1 % v/v	A							
AMS - Liquid	8.5 lb ai/100 gal	A							
Ignite 280 (2.34 SL)	0.402 lb ai/a	D							
AMS - Liquid	8.5 lb ai/100 gal	D							
11 Ignite 280 (2.34 SL)	0.402 lb ai/a	A	99.0 a	86.0 a	0.8 a	96.8 a	4.0 a	99.0 a	93.3 a
2,4-D Ester	0.5 lb ai/a	A							
AMS - Liquid	8.5 lb ai/100 gal	A							
Ignite 280 (2.34 SL)	0.402 lb ai/a	C							
AMS - Liquid	8.5 lb ai/100 gal	C							
12 Ignite 280 (2.34 SL)	0.402 lb ai/a	B	27.5 bc	94.3 a	0.0 a	95.3 a	0.0 a	96.8 a	96.8 a
AMS - Liquid	8.5 lb ai/100 gal	B							
Ignite 280 (2.34 SL)	0.402 lb ai/a	D							
AMS - Liquid	8.5 lb ai/100 gal	D							
LSD (P=.05)	21.20	26.06	1.50	12.78	20.64	5.43	10.47		
Standard Deviation	14.68	18.05	1.04	8.85	14.29	3.76	7.25		
CV	29.39	29.01	293.63	12.59	581.49	5.18	11.09		
Bartlett's X2	5.771	15.784	1.119	13.4	32.843	1.893	17.97		
P(Bartlett's X2)	0.449	0.046*	0.773	0.02*	0.001*	0.388	0.021*		
Replicate F	0.744	3.489	1.715	0.188	1.008	1.440	1.782		
Replicate Prob(F)	0.5335	0.0265	0.1831	0.9036	0.4014	0.2489	0.1698		
Treatment F	30.655	19.210	1.154	94.845	0.990	545.631	123.697		
Treatment Prob(F)	0.0001	0.0001	0.3544	0.0001	0.4747	0.0001	0.0001		

# Purdue University

Pest Type				W Weed	W Weed				
Pest Code				SETFA	TAROF				
Pest Scientific Name				Setaria faberi	Taraxacum offi>				
Pest Name				Giant foxtail	Common dandel>				
Crop Code								GLXMA	
BBCH Scale								BSOY	
Crop Scientific Name								Glycine max	
Crop Name								Soybean	
Crop Variety									
Description									
Rating Date				6-28-2010	6-28-2010	6-28-2010	6-28-2010	10-12-2010	
Rating Type				EFF	EFF	PHYCHL	PHYBLE	YIELD	
Rating Unit				%	%	%	%	BU60LB	
Number of Subsamples				1	1	1	1	1	
Crop Stage Majority									
Pest Stage Majority									
Pest Density, Unit									
Assessed By									
Trt	Treatment	Rate	Appl						
No.	Name	Rate	Unit	Code					
					33	34	35	36	37
1	Untreated Check				0.0 b	0.0 d	0.0 c	0.0 c	25.50 cd
2	Classic	0.25 oz ai/a	A		99.0 a	98.0 a	0.0 c	0.0 c	70.65 a
	Resolve (25 SG)	0.25 oz ai/a	A						
	Valor SX (51 WG)	1 oz ai/a	A						
	Abundit (3 SL)	0.75 lb ae/a	A						
	2,4-D Ester	0.5 lb ai/a	A						
	AMS - Liquid	2 lb ai/a	A						
	Roundup PowerMax 4.5 SL	0.77 lb ae/a	D						
	AMS - Liquid	2 lb ai/a	D						
3	Abundit (3 SL)	0.75 lb ae/a	A		75.0 a	94.3 ab	0.0 c	0.0 c	59.75 a
	2,4-D Ester	0.5 lb ai/a	A						
	AMS - Liquid	2 lb ai/a	A						
	Roundup PowerMax 4.5 SL	0.77 lb ae/a	C						
	Classic	0.083 oz ai/a	C						
	Harmony SG (50 SG)	0.125 oz ai/a	C						
	Express (50 WG)	0.125 oz ai/a	C						
	AMS - Liquid	2 lb ai/a	C						
4	Roundup PowerMax 4.5 SL	0.77 lb ae/a	B		17.5 b	66.0 b	0.0 c	0.0 c	48.55 abc
	AMS - Liquid	2 lb ai/a	B						
	Roundup PowerMax 4.5 SL	0.77 lb ae/a	D						
	Classic	0.083 oz ai/a	D						
	Harmony SG (50 SG)	0.125 oz ai/a	D						
	Express (50 WG)	0.125 oz ai/a	D						
	AMS - Liquid	2 lb ai/a	D						
5	Untreated Check				0.0 b	0.0 d	0.0 c	0.0 c	21.70 d
6	Intro (4 EC)	2 lb ai/a	A		98.0 a	72.0 ab	0.0 c	0.0 c	69.25 a
	Roundup PowerMax 4.5 SL	0.77 lb ae/a	A						
	2,4-D Ester	0.5 lb ai/a	A						
	AMS - Liquid	17 lb ai/100 gal	A						
	Roundup PowerMax 4.5 SL	0.77 lb ae/a	D						
	AMS - Liquid	17 lb ai/100 gal	D						



## Purdue University

Pest Type	W Weed	W Weed					
Pest Code	SETFA	TAROF					
Pest Scientific Name	Setaria faberi	Taraxacum offi>					
Pest Name	Giant foxtail	Common dandel>					
Crop Code					GLXMA		
BBCH Scale					BSOY		
Crop Scientific Name					Glycine max		
Crop Name					Soybean		
Crop Variety							
Description							
Rating Date	6-28-2010	6-28-2010	6-28-2010	6-28-2010	10-12-2010		
Rating Type	EFF	EFF	PHYCHL	PHYBLE	YIELD		
Rating Unit	%	%	%	%	BU60LB		
Number of Subsamples	1	1	1	1	1		
Crop Stage Majority							
Pest Stage Majority							
Pest Density, Unit							
Assessed By							
Trt Treatment	Rate	Appl					
No. Name	Rate Unit	Code	33	34	35	36	37
7 Roundup PowerMax 4.5 SL	0.77 lb ae/a	A	15.0 b	99.0 a	0.0 c	0.0 c	32.73 bcd
2,4-D Ester	0.5 lb ai/a	A					
AMS - Liquid	17 lb ai/100 gal	A					
Roundup PowerMax 4.5 SL	0.77 lb ae/a	C					
AMS - Liquid	17 lb ai/100 gal	C					
8 Roundup PowerMax 4.5 SL	0.77 lb ae/a	B	99.0 a	40.0 c	0.0 c	0.0 c	57.28 a
AMS - Liquid	17 lb ai/100 gal	B					
Roundup PowerMax 4.5 SL	0.77 lb ae/a	D					
AMS - Liquid	17 lb ai/100 gal	D					
9 Untreated Check			0.0 b	0.0 d	0.0 c	0.0 c	19.55 d
10 Sharpen 2.85 SC	0.0223 lb ai/a	A	83.8 a	86.0 ab	8.8 a	5.0 a	47.90 abc
Ignite 280 (2.34 SL)	0.402 lb ai/a	A					
MSO	1 % v/v	A					
AMS - Liquid	8.5 lb ai/100 gal	A					
Ignite 280 (2.34 SL)	0.402 lb ai/a	D					
AMS - Liquid	8.5 lb ai/100 gal	D					
11 Ignite 280 (2.34 SL)	0.402 lb ai/a	A	12.5 b	99.0 a	0.0 c	0.0 c	25.95 cd
2,4-D Ester	0.5 lb ai/a	A					
AMS - Liquid	8.5 lb ai/100 gal	A					
Ignite 280 (2.34 SL)	0.402 lb ai/a	C					
AMS - Liquid	8.5 lb ai/100 gal	C					
12 Ignite 280 (2.34 SL)	0.402 lb ai/a	B	83.8 a	93.3 ab	5.5 b	3.3 b	50.90 ab
AMS - Liquid	8.5 lb ai/100 gal	B					
Ignite 280 (2.34 SL)	0.402 lb ai/a	D					
AMS - Liquid	8.5 lb ai/100 gal	D					
LSD (P=.05)	17.58	20.10	1.30	1.20	16.658		
Standard Deviation	12.18	13.92	0.90	0.83	11.537		
CV	25.04	22.35	75.97	120.6	26.14		
Bartlett's X2	24.455	23.133	0.208	0.0	27.721		
P(Bartlett's X2)	0.001*	0.001*	0.648	.	0.004*		
Replicate F	0.464	0.414	1.186	1.000	1.362		
Replicate Prob(F)	0.7093	0.7441	0.3300	0.4051	0.2714		
Treatment F	51.928	35.188	40.168	15.810	10.233		
Treatment Prob(F)	0.0001	0.0001	0.0001	0.0001	0.0001		

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Column 5: Weed or volunteer crop; US; EFF; percent; MW  
 Column 6: Weed or volunteer crop; US; EFF; percent; 5"; per square yard; MW  
 Column 7: Weed or volunteer crop; US; EFF; percent; MW  
 Column 8: Weed or volunteer crop; US; EFF; percent; VE; 14"; per square yard; MW  
 Column 9: Weed or volunteer crop; US; EFF; percent; 8"; per square yard; MW  
 Column 10: Weed or volunteer crop; US; EFF; percent; 6"; per square yard; MW  
 Column 11: Weed or volunteer crop; US; EFF; percent; 6"; per square yard; MW  
 Column 12: Weed or volunteer crop; US; EFF; percent; 6"; per square yard; MW  
 Column 13: Weed or volunteer crop; US; EFF; percent; 7"; per square yard; MW  
 Column 14: Weed or volunteer crop; US; EFF; percent; 12"; per square yard; MW  
 Column 15: Weed or volunteer crop; US; EFF; percent; V2-4"; 15"; per square yard; MW  
 Column 16: Weed or volunteer crop; US; EFF; percent; 3-14"; per square yard; MW  
 Column 17: Weed or volunteer crop; US; EFF; percent; 2"; per square yard; MW  
 Column 18: Weed or volunteer crop; US; EFF; percent; 13"; per square yard; MW  
 Column 19: Weed or volunteer crop; US; EFF; percent; 6"; per square yard; MW  
 Column 20: Weed or volunteer crop; US; EFF; percent; 10"; per square yard; MW  
 Column 21: phytotoxicity - chlorosis; V3-9"; MW  
 Column 22: phytotoxicity - leaf malformation; MW  
 Column 23: Weed or volunteer crop; US; EFF; percent; 22"; per square yard; MW  
 Column 24: Weed or volunteer crop; US; EFF; percent; 8"; per square yard; MW  
 Column 25: Weed or volunteer crop; US; EFF; percent; 18"; per square yard; MW  
 Column 26: Weed or volunteer crop; US; EFF; percent; 10"; per square yard; MW  
 Column 27: Weed or volunteer crop; US; EFF; percent; 20"; per square yard; MW  
 Column 28: phytotoxicity - leaf malformation; percent; MW  
 Column 29: STAND; percent; MW  
 Column 30: phytotoxicity - chlorosis; percent; MW  
 Column 31: Weed or volunteer crop; US; EFF; percent  
 Column 32: Weed or volunteer crop; US; EFF; percent  
 Column 33: Weed or volunteer crop; US; EFF; percent  
 Column 34: Weed or volunteer crop; US; EFF; percent  
 Column 35: phytotoxicity - chlorosis; percent  
 Column 36: phytotoxicity - bleaching; percent  
 Column 37: US; yield; bushel 60 lb