

# Purdue University

## Residual soybean herbicides and winter weed emergence

Trial ID: 04-SEPAC-SOY-WINT  
Location: SEPAC

Study Dir.:  
Investigator: Dr. Bill Johnson

### GENERAL TRIAL INFORMATION

**Investigator:** Dr. Bill Johnson

### TRIAL LOCATION

**City:** Butlerville  
**State/Prov.:** IN  
**Postal Code:** 47223  
**Country:** USA  
**Directions:** Field U7

### COOPERATOR/LANDOWNER

**Cooperator:** Southeast Purdue Ag Center  
**Country:** USA  
**Phone No:** 812-458-6977  
**Fax No:** 812-458-6979  
**Address 1:** 4425 E Co Rd 350 N  
**Address 2:** PO Box 216  
**City:** Butlerville  
**State/Prov:** IN  
**Postal Code:** 47223

**Conducted Under GLP (Y/N):** N

**Conducted Under GEP (Y/N):** N

### CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	ERICA	Horseweed (marestail)	Conyza canadensis
2.	CERVU	Chickweed, mouseear	Cerastium vulgatum
3.	SENGL	Groundsel, cressleaf	Packera glabellus
4.	CARPA	Bittercress, smallflowered	Cardamine parviflora
5.	RANAB	Buttercup, smallflower	Ranunculus abortivus
6.	STEME	Stellaria media	Common chickweed
7.	LAMPU	Purple deadnettle	Lamium purpureum
8.	LAMAM	Henbit	Lamium amplexicaule
9.	VARAR	Corn speedweed	Veronica arvensis
10.	ERPVE	Spring draba	Erophila verna

**Crop 1:** ZEAMX CORN, FIELD

**Variety:** Harvest Residue

**Crop 2:** GLXMA SOYBEAN

**Variety:** Pioneer 93M80-N203

**Planting Date:** 14/May/2004

**Planting Method:** DRILLED

**Rate:** 204500 S/A

**Depth:** 1 IN

**Row Spacing:** 7.5 IN

### SITE AND DESIGN

**Plot Width, Unit:** 10 FT

**Plot Length, Unit:** 30 FT

**Reps:** 4

**Tillage Type:** No-Till

**Study Design:** RANDOMIZED COMPLETE BLOCK

	Previous Crops	Previous Pesticides	Year
1.	corn	glyphosate	2003

### SOIL DESCRIPTION

**% OM:** 1.7      **Texture:** Silt Loam  
**pH:** 6.3      **Soil Name:** Avonburg  
**CEC:** 5.6      **Fert. Level:** P-17 ppm, K - 51 ppm

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## APPLICATION DESCRIPTION

	A	B
Application Date:	18/May/2004	21/Jun/2004
Time of Day:	0830-0845	0820-0830
Application Method:	SPRAY	SPRAY
Air Temp., Unit:	80 F	74 F
% Relative Humidity:	80	80
Wind Velocity, Unit:	5.5 mph	4 MPH
Soil Temp., Unit:	70 F	70 F
Soil Moisture:	very wet	moist
% Cloud Cover:	10	5

## CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	ZEAMX	ZEAMX
Stage Scale:	90% resid	50% resid
Crop 2 Code, Stage:	GLXMA	GLXMA V3-V4
Stage Scale:		6-9"
Height, Unit:		7.5 IN

## APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	CO2 Backp	CO2 Backp
Operating Pressure:	25 psi	25 psi
Nozzle Type:	VS	VS
Nozzle Size:	8002	8002
Nozzle Spacing, Unit:	20	20
Boom Length, Unit:	10 FT	10 FT
Ground Speed, Unit:	3 MPH	3 MPH
Carrier:	water	water
Spray Volume, Unit:	15 gpa	15 gpa
Propellant:	CO2	CO2

Trt No	Treatment Application Comment
1	Due to nozzle problems, plot 403 was sprayed on 5/21 (new spray sol'n)

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Weed Code	ERICA	CERVU	SENGL	CARPA	RANAB				
Part Rated	PLAEME P	PLAEME P	PLAEME P	PLAEME P	PLAEME P				
Rating Data Type	COUPLA	COUPLA	COUPLA	COUPLA	COUPLA				
Rating Unit	/sq. m	/sq. m	/sq. m	/sq. m	/sq. m				
Rating Date	28/Jan/2005	28/Jan/2005	28/Jan/2005	28/Jan/2005	28/Jan/2005				
Weed Stage	emerge	emerge	emerge	emerge	emerge				
Assessed By	group	group	group	group	group				
Trt-Eval Interval	221 DA-B	221 DA-B	221 DA-B	221 DA-B	221 DA-B				
# Subsamples, Dec.	2 0	2 0	2 0	2 0	2 0				
Trt No.	Treatment Name	Rate	Grow Unit	Stg	1	2	3	4	5
1	Canopy XL		PRE		0 a	81 a	3 a	6 a	61 a
	Authority	0.187 lb ai/a	PRE						
	Classic	0.0375 lb ai/a	PRE						
	Roundup Weathermax	0.77 lb ae/a	POST						
	AMS		POST						
	Roundup Weathermax	0.77 lb ae/a	POST+3W						
	AMS		POST+3W						
2	Gauntlet		PRE		4 a	85 a	6 a	19 a	69 a
	Authority	0.25 lb ai/a	PRE						
	FirstRate	0.0315 lb ai/a	PRE						
	Roundup Weathermax	0.77 lb ae/a	POST						
	AMS		POST						
	Roundup Weathermax	0.77 lb ae/a	POST+3W						
	AMS		POST+3W						
3	Gangster		PRE		0 a	51 a	3 a	28 a	76 a
	Valor	0.096 lb ai/a	PRE						
	FirstRate	0.0315 lb ai/a	PRE						
	Roundup Weathermax	0.77 lb ae/a	POST						
	AMS		POST						
	Roundup Weathermax	0.77 lb ae/a	POST+3W						
	AMS		POST+3W						
4	FirstRate	0.0315 lb ai/a	PRE		0 a	83 a	4 a	14 a	53 a
	Roundup Weathermax	0.77 lb ae/a	POST						
	AMS		POST						
	Roundup Weathermax	0.77 lb ae/a	POST+3W						
	AMS		POST+3W						
5	FirstRate	0.0157 lb ai/a	POST		0 a	113 a	1 a	39 a	44 a
	Roundup Weathermax	0.77 lb ae/a	POST						
	AMS		POST						
	Roundup Weathermax	0.77 lb ae/a	POST+3W						
	AMS		POST+3W						
6	Scepter	0.122 lb ai/a	PRE		1 a	99 a	0 a	34 a	49 a
	Roundup Weathermax	0.77 lb ae/a	POST						
	AMS		POST						
	Roundup Weathermax	0.77 lb ae/a	POST+3W						
	AMS		POST+3W						
7	Scepter	0.061 lb ai/a	POST		0 a	144 a	4 a	10 a	83 a
	Roundup Weathermax	0.77 lb ae/a	POST						
	AMS		POST						
	Roundup Weathermax	0.77 lb ae/a	POST+3W						
	AMS		POST+3W						
8	Sencor 75DF	0.375 lb ai/a	PRE		0 a	38 a	3 a	40 a	80 a
	Python	0.05 lb ai/a	PRE						
	Roundup Weathermax	0.77 lb ae/a	POST						
	AMS		POST						
	Roundup Weathermax	0.77 lb ae/a	POST+3W						
	AMS		POST+3W						

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Weed Code	ERICA	CERVU	SENGL	CARPA	RANAB			
Part Rated	PLAEME P	PLAEME P	PLAEME P	PLAEME P	PLAEME P			
Rating Data Type	COUPLA	COUPLA	COUPLA	COUPLA	COUPLA			
Rating Unit	/sq. m	/sq. m	/sq. m	/sq. m	/sq. m			
Rating Date	28/Jan/2005	28/Jan/2005	28/Jan/2005	28/Jan/2005	28/Jan/2005			
Weed Stage	emerge	emerge	emerge	emerge	emerge			
Assessed By	group	group	group	group	group			
Trt-Eval Interval	221 DA-B	221 DA-B	221 DA-B	221 DA-B	221 DA-B			
# Subsamples, Dec.	2 0	2 0	2 0	2 0	2 0			
Trt Treatment	Rate	Rate	Grow					
No. Name	Rate	Unit	Stg	1	2	3	4	5
9 Untreated				1 a	76 a	4 a	10 a	84 a
Roundup Weathermax AMS	0.77	lb ae/a	POST POST					
Roundup Weathermax AMS	0.77	lb ae/a	POST+3W POST+3W					
LSD (P=.05)	4.1			99.4	5.3	32.7	49.8	
Standard Deviation	2.8			68.1	3.7	22.4	34.1	
CV	402.49			79.73	125.63	101.61	51.38	
Grand Mean	0.69			85.42	2.92	22.08	66.39	
Bartlett's X2	4.939			18.415	4.404	22.774	2.169	
P(Bartlett's X2)	0.085			0.018*	0.732	0.004*	0.975	
Replicate F	0.800			1.115	3.638	3.863	2.949	
Replicate Prob(F)	0.5061			0.3624	0.0271	0.0219	0.0531	
Treatment F	0.822			0.850	0.931	1.378	0.813	
Treatment Prob(F)	0.5911			0.5694	0.5094	0.2557	0.5982	

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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Weed Code				STEME	LAMPU	LAMAM	VERAR	ERPVE	
Part Rated				PLAEME P					
Rating Data Type				COUPLA	COUPLA	COUPLA	COUPLA	COUPLA	
Rating Unit				/sq. m					
Rating Date				28/Jan/2005	28/Jan/2005	28/Jan/2005	28/Jan/2005	28/Jan/2005	
Weed Stage				emerge	emerge	emerge	emerge	emerge	
Assessed By				group	group	group	group	group	
Trt-Eval Interval				221 DA-B					
# Subsamples, Dec.				2 0	2 0	2 0	2 0	2 0	
Trt No.	Treatment Name	Rate	Rate Unit	Grow Stg	6	7	8	9	10
1	Canopy XL			PRE	5 a	189 a	1 a	26 a	35 a
	Authority	0.187	lb ai/a	PRE					
	Classic	0.0375	lb ai/a	PRE					
	Roundup Weathermax	0.77	lb ae/a	POST					
	AMS			POST					
	Roundup Weathermax	0.77	lb ae/a	POST+3W					
	AMS			POST+3W					
2	Gauntlet			PRE	6 a	224 a	1 a	16 a	44 a
	Authority	0.25	lb ai/a	PRE					
	FirstRate	0.0315	lb ai/a	PRE					
	Roundup Weathermax	0.77	lb ae/a	POST					
	AMS			POST					
	Roundup Weathermax	0.77	lb ae/a	POST+3W					
	AMS			POST+3W					
3	Gangster			PRE	19 a	256 a	1 a	24 a	5 a
	Valor	0.096	lb ai/a	PRE					
	FirstRate	0.0315	lb ai/a	PRE					
	Roundup Weathermax	0.77	lb ae/a	POST					
	AMS			POST					
	Roundup Weathermax	0.77	lb ae/a	POST+3W					
	AMS			POST+3W					
4	FirstRate	0.0315	lb ai/a	PRE	13 a	310 a	0 a	29 a	36 a
	Roundup Weathermax	0.77	lb ae/a	POST					
	AMS			POST					
	Roundup Weathermax	0.77	lb ae/a	POST+3W					
	AMS			POST+3W					
5	FirstRate	0.0157	lb ai/a	POST	24 a	243 a	9 a	18 a	1 a
	Roundup Weathermax	0.77	lb ae/a	POST					
	AMS			POST					
	Roundup Weathermax	0.77	lb ae/a	POST+3W					
	AMS			POST+3W					
6	Scepter	0.122	lb ai/a	PRE	5 a	205 a	0 a	29 a	9 a
	Roundup Weathermax	0.77	lb ae/a	POST					
	AMS			POST					
	Roundup Weathermax	0.77	lb ae/a	POST+3W					
	AMS			POST+3W					
7	Scepter	0.061	lb ai/a	POST	9 a	249 a	0 a	10 a	41 a
	Roundup Weathermax	0.77	lb ae/a	POST					
	AMS			POST					
	Roundup Weathermax	0.77	lb ae/a	POST+3W					
	AMS			POST+3W					
8	Sencor 75DF	0.375	lb ai/a	PRE	14 a	241 a	3 a	16 a	4 a
	Python	0.05	lb ai/a	PRE					
	Roundup Weathermax	0.77	lb ae/a	POST					
	AMS			POST					
	Roundup Weathermax	0.77	lb ae/a	POST+3W					
	AMS			POST+3W					

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Weed Code		STEME	LAMPU	LAMAM	VERAR	ERPVE
Part Rated		PLAEME P				
Rating Data Type		COUPLA	COUPLA	COUPLA	COUPLA	COUPLA
Rating Unit		/sq. m				
Rating Date		28/Jan/2005	28/Jan/2005	28/Jan/2005	28/Jan/2005	28/Jan/2005
Weed Stage		emerge	emerge	emerge	emerge	emerge
Assessed By		group	group	group	group	group
Trt-Eval Interval		221 DA-B				
# Subsamples, Dec.		2 0	2 0	2 0	2 0	2 0
Trt Treatment						
No. Name	Rate	Unit	Grow Stg			
9 Untreated			6	7	8	9
Roundup Weathermax	0.77	lb ae/a	15 a	270 a	0 a	59 a
AMS						111 a
Roundup Weathermax	0.77	lb ae/a				
AMS						
LSD (P=.05)			23.2	239.3	7.3	38.0
Standard Deviation			15.9	164.0	5.0	26.1
CV			131.4	67.5	300.0	103.65
Grand Mean			12.08	242.92	1.67	25.14
Bartlett's X2			5.461	3.182	15.618	14.773
P(Bartlett's X2)			0.604	0.922	0.004*	0.064
Replicate F			0.355	0.150	2.000	1.185
Replicate Prob(F)			0.7857	0.9289	0.1409	0.3364
Treatment F			0.669	0.189	1.250	1.182
Treatment Prob(F)			0.7130	0.9900	0.3143	0.3501

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.