

# Purdue University

## Residual soybean herbicides and winter weed emergence

Trial ID: 03-ACRE-SOY-WINT  
Location: ACRE

Study Dir.:  
Investigator: Dr. Bill Johnson

### GENERAL TRIAL INFORMATION

**Investigator:** Dr. Bill Johnson

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

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

### CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	CAPBP	Shepherd's purse	Capsella bursa-pastoris
2.	LAMAM	Henbit	Lamium amplexicaule
3.	LAMPU	Deadnettle, purple	Lamium purpureum
4.	STEME	Chickweed, common	Stellaria media
5.	TAROF	Common dandelion	Taraxacum officinale
6.	ERICA	Horseweed (marestail)	Conyza canadensis
7.	VERAR	Wall speedwell	Veronica arvensis

**Crop 1:** GLXMA SOYBEAN  
**Planting Date:** 26/May/2003  
**Row Spacing:** 30 IN

**Variety:** DK 31-51

### SITE AND DESIGN

**Plot Width, Unit:** 10 FT      **Plot Length, Unit:** 50 FT      **Reps:** 4  
**Study Design:** RANDOMIZED COMPLETE BLOCK

### APPLICATION DESCRIPTION

	A	B
<b>Application Date:</b>	27/May/2003	25/Jun/2003
<b>Time of Day:</b>	4:00 pm	11:15 am
<b>Application Method:</b>	spray	SPRAY
<b>Air Temp., Unit:</b>	75 F	88 F
<b>% Relative Humidity:</b>	30	53
<b>Wind Velocity, Unit:</b>	6 mph	6 MPH
<b>Soil Temp., Unit:</b>	23 C	31 C
<b>% Cloud Cover:</b>		0

### CROP STAGE AT EACH APPLICATION

	A	B
<b>Crop 1 Code, Stage:</b>	GLXMA	GLXMA V1
<b>Stage Scale:</b>		DESC
<b>Height, Unit:</b>		4 IN

### WEED STAGE AT EACH APPLICATION

	A	B
<b>Weed 1 Code, Stage:</b>	CAPBP	CAPBP
<b>Weed 2 Code, Stage:</b>	LAMAM	LAMAM
<b>Weed 3 Code, Stage:</b>	LAMPU	LAMPU
<b>Weed 4 Code, Stage:</b>	STEME	STEME
<b>Weed 5 Code, Stage:</b>	TAROF	TAROF
<b>Weed 6 Code, Stage:</b>	ERICA	ERICA
<b>Weed 7 Code, Stage:</b>	VERAR	VERAR

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## Residual soybean herbicides and winter weed emergence

Trial ID: 03-ACRE-SOY-WINT  
 Location: ACRE

Study Dir.:  
 Investigator: Dr. Bill Johnson

Weed Code		CAPBP PLAEME P	LAMAM PLAEME P	LAMPU PLAEME P	STEME PLAEME P	TAROF PLAEME P			
Part Rated		COUPLA	COUPLA	COUPLA	COUPLA	COUPLA			
Rating Data Type		/sq. m							
Rating Unit		31/Dec/2003	31/Dec/2003	31/Dec/2003	31/Dec/2003	31/Dec/2003			
Rating Date		emerge	emerge	emerge	emerge	emerge			
Weed Stage		group	group	group	group	group			
Assessed By		189 DA-B							
Trt-Eval Interval		2 0	2 0	2 0	2 0	2 0			
# Subsamples, Dec.									
Trt No.	Treatment Name	Rate	Grow Unit	Stg	1	2	3	4	5
1	Canopy XL		PRE		4 b	0 a	0 a	2 a	2 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		3 b	1 a	0 a	2 a	1 a
	Authority	0.187 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		8 ab	0 a	0 a	3 a	3 a
	Valor	0.064 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		7 ab	1 a	0 a	3 a	2 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		8 ab	1 a	0 a	3 a	2 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 (Backdraft)	0.675 lb ai/a	PRE		8 ab	1 a	1 a	3 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						
7	Scepter (Backdraft)	0.55 lb ai/a	POST		11 a	1 a	1 a	3 a	2 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		9 ab	1 a	1 a	2 a	1 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						

# Purdue University

Weed Code	CAPBP	LAMAM	LAMPU	STEME	TAROF		
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	31/Dec/2003	31/Dec/2003	31/Dec/2003	31/Dec/2003	31/Dec/2003		
Weed Stage	emerge	emerge	emerge	emerge	emerge		
Assessed By	group	group	group	group	group		
Trt-Eval Interval	189 DA-B	189 DA-B	189 DA-B	189 DA-B	189 DA-B		
# Subsamples, Dec.	2 0	2 0	2 0	2 0	2 0		
Trt No.	Treatment Name	Rate	Rate Unit	Grow Stg			
					1 2 3 4 5		
9	Untreated				9 ab 1 a 1 a 2 a 1 a		
	Roundup Weathermax AMS	0.77	lb ae/a	POST			
	Roundup Weathermax AMS	0.77	lb ae/a	POST+3W			
LSD (P=.05)		4.0		0.8	1.1	2.1	1.6
Standard Deviation		2.7		0.5	0.8	1.4	1.1
CV		36.5		80.14	170.56	55.97	76.91
Grand Mean		7.46		0.68	0.46	2.54	1.46
Bartlett's X2		9.465		12.967	12.125	9.791	7.432
P(Bartlett's X2)		0.305		0.113	0.033*	0.28	0.491
Replicate F		3.814		13.222	1.375	1.605	6.423
Replicate Prob(F)		0.0229		0.0001	0.2743	0.2144	0.0024
Treatment F		3.373		1.739	1.227	0.394	1.565
Treatment Prob(F)		0.0098		0.1403	0.3258	0.9131	0.1879

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

Weed Code				ERICA	ERICA ??	CAPBP	LAMAM	LAMPU	
Part Rated				PLAEME P					
Rating Data Type				COUPLA	COUPLA	COUPLA	COUPLA	COUPLA	
Rating Unit				/sq. m					
Rating Date				31/Dec/2003	31/Dec/2003	19/Apr/2004	19/Apr/2004	19/Apr/2004	
Weed Stage				emerge	emerge	emerge	emerge	emerge	
Assessed By				group	group	group	group	group	
Trt-Eval Interval				189 DA-B	189 DA-B	299 DA-B	299 DA-B	299 DA-B	
# Subsamples, Dec.				2 0	2 0	2 0	2 0	2 0	
Trt No.	Treatment Name	Rate	Unit	Grow Stg	6	7	8	9	10
1	Canopy XL			PRE	1 a	0 a	3 a	0 a	0 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	0 a	0 a	4 a	0 a	0 a
	Authority	0.187	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	1 a	0 a	6 a	0 a	0 a
	Valor	0.064	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	1 a	1 a	5 a	0 a	0 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	2 a	0 a	6 a	0 a	0 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 (Backdraft)	0.675	lb ai/a	PRE	3 a	0 a	4 a	0 a	0 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 (Backdraft)	0.55	lb ai/a	POST	2 a	0 a	6 a	0 a	0 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	3 a	0 a	8 a	0 a	0 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					

# Purdue University

Weed Code	ERICA	ERICA ??	CAPBP	LAMAM	LAMPU			
Part Rated	PLAEME P							
Rating Data Type	COUPLA	COUPLA	COUPLA	COUPLA	COUPLA			
Rating Unit	/sq. m							
Rating Date	31/Dec/2003	31/Dec/2003	19/Apr/2004	19/Apr/2004	19/Apr/2004			
Weed Stage	emerge	emerge	emerge	emerge	emerge			
Assessed By	group	group	group	group	group			
Trt-Eval Interval	189 DA-B	189 DA-B	299 DA-B	299 DA-B	299 DA-B			
# Subsamples, Dec.	2 0	2 0	2 0	2 0	2 0			
Trt Treatment	Rate	Grow						
No. Name	Rate	Unit	Stg					
9 Untreated			6	7	8	9	10	
Roundup Weathermax	0.77	lb ae/a	POST	2 a	1 a	8 a	1 a	0 a
AMS			POST					
Roundup Weathermax	0.77	lb ae/a	POST+3W					
AMS			POST+3W					
LSD (P=.05)	2.6	0.9	4.2	0.8	0.2			
Standard Deviation	1.8	0.6	2.8	0.5	0.1			
CV	109.75	330.82	51.21	172.49	396.86			
Grand Mean	1.61	0.19	5.56	0.31	0.03			
Bartlett's X2	24.06	6.91	18.991	9.58	0.0			
P(Bartlett's X2)	0.002*	0.075	0.015*	0.214	0.001*			
Replicate F	1.901	1.365	0.609	0.700	2.286			
Replicate Prob(F)	0.1564	0.2773	0.6159	0.5613	0.1044			
Treatment F	1.406	0.759	1.257	0.850	1.000			
Treatment Prob(F)	0.2441	0.6406	0.3107	0.5697	0.4613			

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

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# Purdue University

Weed Code				STEME	TAROF	ERICA	VERAR	
Part Rated				PLAEME P	PLAEME P	PLAEME P	PLAEME P	
Rating Data Type				COUPLA	COUPLA	COUPLA	COUPLA	
Rating Unit				/sq. m	/sq. m	/sq. m	/sq. m	
Rating Date				19/Apr/2004	19/Apr/2004	19/Apr/2004	19/Apr/2004	
Weed Stage				emerge	emerge	emerge	emerge	
Assessed By				group	group	group	group	
Trt-Eval Interval				299 DA-B	299 DA-B	299 DA-B	299 DA-B	
# Subsamples, Dec.				2 0	2 0	2 0	2 0	
Trt No.	Treatment Name	Rate	Unit	Grow Stg	11	12	13	14
1	Canopy XL			PRE	0 a	0 a	1 a	2 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	0 a	0 a	0 a	7 a
	Authority	0.187	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	1 a	0 a	1 a	3 a
	Valor	0.064	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	1 a	0 a	1 a	7 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	0 a	1 a	7 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 (Backdraft)	0.675	lb ai/a	PRE	0 a	0 a	1 a	6 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 (Backdraft)	0.55	lb ai/a	POST	0 a	0 a	0 a	6 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	0 a	0 a	7 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				

# Purdue University

Weed Code	STEME	TAROF	ERICA	VERAR				
Part Rated	PLAEME P	PLAEME P	PLAEME P	PLAEME P				
Rating Data Type	COUPLA	COUPLA	COUPLA	COUPLA				
Rating Unit	/sq. m	/sq. m	/sq. m	/sq. m				
Rating Date	19/Apr/2004	19/Apr/2004	19/Apr/2004	19/Apr/2004				
Weed Stage	emerge	emerge	emerge	emerge				
Assessed By	group	group	group	group				
Trt-Eval Interval	299 DA-B	299 DA-B	299 DA-B	299 DA-B				
# Subsamples, Dec.	2 0	2 0	2 0	2 0				
Trt No.	Treatment Name	Rate	Unit	Grow Stg	11	12	13	14
9	Untreated				0 a	0 a	1 a	8 a
	Roundup Weathermax AMS	0.77	lb ae/a	POST				
	Roundup Weathermax AMS	0.77	lb ae/a	POST+3W				
LSD (P=.05)		1.1			0.2		0.7	4.6
Standard Deviation		0.7			0.1		0.5	3.1
CV		243.43			341.57		88.97	54.84
Grand Mean		0.31			0.04		0.53	5.72
Bartlett's X2		23.092			0.0		5.246	8.583
P(Bartlett's X2)		0.001*			0.001*		0.731	0.379
Replicate F		1.791			1.257		2.394	10.066
Replicate Prob(F)		0.1758			0.3113		0.0934	0.0002
Treatment F		1.218			0.771		0.339	1.618
Treatment Prob(F)		0.3309			0.6311		0.9420	0.1720

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.