

Purdue University

Residual corn herbicides and winter weed emergence

Trial ID: 04-SEPA-CORN-WNT
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

Unit: feet

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, mousear	Cerastium vulgatum
3.	SENGL	Groundsel, cressleaf	Packera glabellus
4.	CARPA	Bittercress, smallflowered	Cardamine parviflora
5.	RANAB	Buttercup, smallflower	Ranunculus abortivus
6.	STEME	Chickweed, common	Stellaria media
7.	LAMPU	Purple deadnettle	Lamium purpureum
8.	VARAR	corn speedwell	Veronica arvensis
9.	ERPVE	Spring draba	Erophila verna

Crop 1: GLXMA SOYBEAN

Variety: Harvest Residue

Crop 2: ZEAMX CORN, FIELD

Variety: DKC 60-09 RR/YG CB

Planting Date: 4/Jun/2004

Planting Method: No-Till (replanted)

Rate: 29000 S/A

Depth: 1 IN

Row Spacing: 30 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.	soybean	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:	0800-0830	0800-0815
Application Method:	SPRAY	SPRAY
Application Timing:	PREPRE	POSPOS
Applic. Placement:	BROSOI	BROFOL
Air Temp., Unit:	80 F	74 F
% Relative Humidity:	80	80
Wind Velocity, Unit:	6 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:	GLXMA residue	GLXMA residue
Stage Scale:	90% resid	25% resid
Crop 2 Code, Stage:	ZEAMX	ZEAMX
Stage Scale:		V3-V4
Height, Unit:		7 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 IN	20 IN
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

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Trial ID: 04-SEPA-CORN-WNT
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Weed Code		ERICA	CERVU	SENGL	CARPA	RANAB	STEME			
Part Rated		PLAEME P	PLAEME P	PLAEME P	PLAEME P	PLAEME P	PLAEME P			
Rating Data Type		COUPLA	COUPLA	COUPLA	COUPLA	COUPLA	COUPLA			
Rating Unit		/sq. m	/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	28/Jan/2005			
Weed Stage		emerge	emerge	emerge	emerge	emerge	emerge			
Assessed By		group	group	group	group	group	group			
Trt-Eval Interval		221 DA-B	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	2 0			
Trt No.	Treatment Name	Rate	Grow Unit	Stg	1	2	3	4	5	6
1	Atrazine	1.5 lb ai/a	PRE		1 a	89 b	3 a	3 a	90 a	18 a
	Degree	1.9 lb ai/a	PRE							
	Roundup Weathermax	0.77 lb ae/a	12" corn							
	AMS		12" corn							
2	Atrazine	2 lb ai/a	PRE		3 a	89 b	3 a	21 a	66 a	25 a
	Degree	1.9 lb ai/a	PRE							
	Roundup Weathermax	0.77 lb ae/a	12" corn							
	AMS		12" corn							
3	Atrazine	1.5 lb ai/a	PRE		0 a	170 ab	3 a	16 a	94 a	4 a
	Degree	1.9 lb ai/a	PRE							
	Atrazine	1 lb ai/a	12" corn							
	Roundup Weathermax	0.77 lb ae/a	12" corn							
	AMS		12" corn							
4	Degree	1.9 lb ai/a	PRE		3 a	110 ab	4 a	5 a	36 a	49 a
	Atrazine	1 lb ai/a	12" corn							
	Roundup Weathermax	0.77 lb ae/a	12" corn							
	AMS		12" corn							
5	Degree	1.9 lb ai/a	PRE		0 a	161 ab	3 a	11 a	75 a	25 a
	Princep	1 lb ai/a	PRE							
	Roundup Weathermax	0.77 lb ae/a	12" corn							
	AMS		12" corn							
6	Degree	1.9 lb ai/a	PRE		6 a	98 ab	6 a	11 a	80 a	30 a
	Princep	2 lb ai/a	PRE							
	Roundup Weathermax	0.77 lb ae/a	12" corn							
	AMS		12" corn							
7	Hornet	0.147 lb ai/a	PRE		3 a	141 ab	8 a	6 a	66 a	26 a
	Degree	1.9 lb ai/a	PRE							
	Roundup Weathermax	0.77 lb ae/a	12" corn							
	AMS		12" corn							
8	Degree	1.9 lb ai/a	PRE		1 a	98 ab	9 a	4 a	61 a	46 a
	Hornet	0.147 lb ai/a	12" corn							
	Roundup Weathermax	0.77 lb ae/a	12" corn							
	AMS		12" corn							
9	Callisto	0.187 lb ai/a	PRE		5 a	76 b	9 a	9 a	35 a	81 a
	Degree	1.9 lb ai/a	PRE							
	Roundup Weathermax	0.77 lb ae/a	12" corn							
	AMS		12" corn							
10	Degree	1.9 lb ai/a	PRE		0 a	198 a	10 a	6 a	63 a	26 a
	Callisto	0.094 lb ai/a	12" corn							
	Roundup Weathermax	0.77 lb ae/a	12" corn							
	AMS		12" corn							
11	Untreated				0 a	119 ab	10 a	11 a	45 a	18 a
	Degree	1.9 lb ai/a	PRE							
	Roundup Weathermax	0.77 lb ae/a	12" corn							
	AMS		12" corn							
LSD (P=.05)					4.4	64.9	9.8	16.1	41.7	52.7
Standard Deviation					3.1	44.9	6.8	11.1	28.9	36.5
CV					159.29	36.68	114.66	118.12	44.68	115.62
Grand Mean					1.93	122.5	5.91	9.43	64.66	31.59
Bartlett's X2					3.761	12.043	14.618	12.113	5.263	19.364
P(Bartlett's X2)					0.709	0.282	0.147	0.278	0.873	0.036*

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Weed Code	ERICA	CERVU	SENGL	CARPA	RANAB	STEME
Part Rated	PLAEME P					
Rating Data Type	COUPLA	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	28/Jan/2005
Weed Stage	emerge	emerge	emerge	emerge	emerge	emerge
Assessed By	group	group	group	group	group	group
Trt-Eval Interval	221 DA-B					
# Subsamples, Dec.	2 0	2 0	2 0	2 0	2 0	2 0
Replicate F	1.660	1.091	0.528	1.799	1.292	0.247
Replicate Prob(F)	0.1966	0.3682	0.6664	0.1687	0.2953	0.8628
Treatment F	1.896	3.085	0.901	1.021	1.881	1.287
Treatment Prob(F)	0.0858	0.0082	0.5440	0.4498	0.0883	0.2813

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				LAMPU	LAMAM	VERAR	ERPVE	
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				28/Jan/2005	28/Jan/2005	28/Jan/2005	28/Jan/2005	
Weed Stage				emerge	emerge	emerge	emerge	
Assessed By				group	group	group	group	
Trt-Eval Interval				221 DA-B	221 DA-B	221 DA-B	221 DA-B	
# Subsamples, Dec.				2 0	2 0	2 0	2 0	
Trt No.	Treatment Name	Rate	Unit	Grow Stg	7	8	9	10
1	Atrazine	1.5	lb ai/a	PRE	90 a	0 a	53 a	33 a
	Degree	1.9	lb ai/a	PRE				
	Roundup Weathermax	0.77	lb ae/a	12" corn				
	AMS			12" corn				
2	Atrazine	2	lb ai/a	PRE	170 a	1 a	35 a	25 a
	Degree	1.9	lb ai/a	PRE				
	Roundup Weathermax	0.77	lb ae/a	12" corn				
	AMS			12" corn				
3	Atrazine	1.5	lb ai/a	PRE	145 a	1 a	24 a	6 a
	Degree	1.9	lb ai/a	PRE				
	Atrazine	1	lb ai/a	12" corn				
	Roundup Weathermax	0.77	lb ae/a	12" corn				
	AMS			12" corn				
4	Degree	1.9	lb ai/a	PRE	104 a	3 a	31 a	8 a
	Atrazine	1	lb ai/a	12" corn				
	Roundup Weathermax	0.77	lb ae/a	12" corn				
	AMS			12" corn				
5	Degree	1.9	lb ai/a	PRE	126 a	0 a	36 a	24 a
	Princep	1	lb ai/a	PRE				
	Roundup Weathermax	0.77	lb ae/a	12" corn				
	AMS			12" corn				
6	Degree	1.9	lb ai/a	PRE	160 a	0 a	40 a	49 a
	Princep	2	lb ai/a	PRE				
	Roundup Weathermax	0.77	lb ae/a	12" corn				
	AMS			12" corn				
7	Hornet	0.147	lb ai/a	PRE	55 a	0 a	28 a	23 a
	Degree	1.9	lb ai/a	PRE				
	Roundup Weathermax	0.77	lb ae/a	12" corn				
	AMS			12" corn				
8	Degree	1.9	lb ai/a	PRE	168 a	4 a	29 a	13 a
	Hornet	0.147	lb ai/a	12" corn				
	Roundup Weathermax	0.77	lb ae/a	12" corn				
	AMS			12" corn				
9	Callisto	0.187	lb ai/a	PRE	56 a	1 a	21 a	0 a
	Degree	1.9	lb ai/a	PRE				
	Roundup Weathermax	0.77	lb ae/a	12" corn				
	AMS			12" corn				
10	Degree	1.9	lb ai/a	PRE	109 a	0 a	44 a	11 a
	Callisto	0.094	lb ai/a	12" corn				
	Roundup Weathermax	0.77	lb ae/a	12" corn				
	AMS			12" corn				
11	Untreated				58 a	1 a	49 a	3 a
	Degree	1.9	lb ai/a	PRE				
	Roundup Weathermax	0.77	lb ae/a	12" corn				
	AMS			12" corn				
LSD (P=.05)				141.6	2.7	29.1	45.2	
Standard Deviation				98.1	1.9	20.2	31.3	
CV				86.99	185.48	57.1	179.02	
Grand Mean				112.73	1.02	35.34	17.5	
Bartlett's X2				13.692	0.104	2.608	28.087	
P(Bartlett's X2)				0.187	1.00	0.989	0.001*	

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Weed Code	LAMPU	LAMAM	VERAR	ERPVE
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	28/Jan/2005	28/Jan/2005	28/Jan/2005	28/Jan/2005
Weed Stage	emerge	emerge	emerge	emerge
Assessed By	group	group	group	group
Trt-Eval Interval	221 DA-B	221 DA-B	221 DA-B	221 DA-B
# Subsamples, Dec.	2 0	2 0	2 0	2 0
Replicate F	1.802	1.000	1.813	1.480
Replicate Prob(F)	0.1681	0.4064	0.1660	0.2399
Treatment F	0.829	1.674	1.004	0.874
Treatment Prob(F)	0.6048	0.1337	0.4623	0.5667

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.