

Fierce Plus Dicamba Burndown EPP17 - Valent.

Trial ID: 16-DSO-Valent-6406-North Location: De Soto, IL Trial Year: 2016
Investigator: Karla L. Gage, Ph.D.

<p>Trial Status: F one-year/final Initiation Date: 5-7-16 Completion Date: 10-9-16</p> <p>City: De Soto Country: USA State/Prov.: Illinois IL Postal Code: 62924</p> <p>Latitude of LL Corner °: 37.795231 N Longitude of LL Corner °: 89.262641 W Altitude of LL Corner, Unit: 380.00 FT Angle y-axis to North °: 90.00</p>	<p>Trial Location</p>
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<p>Objectives: To evaluate the inclusion of Valor, Fierce, and/or Warrant to an Xtend soybean herbicide program for control of glyphosate-resistant waterhemp.</p>

<p>Contacts</p>
<p>Study Director: Karla Gage, Ph.D. Title: Assistant Professor of Weed Science Organization: Southern Illinois University Carbondale Address: 1205 Lincoln Drive MC 4415 Phone No.: 618-453-7679 City+State/Prov: Carbondale, IL Postal Code: 62901 E-mail: kgage@siu.edu Country: USA</p>

<p>Crop Description</p>
<p>Crop 1: GLXMA Glycine max Soybean Variety: AG40X6 BBCH Scale: BSOY Description: RR2X</p> <p>Planting Rate, Unit: 140000 S/A Planting Date: 5-24-16 Depth, Unit: 1 IN Planting Method: SEEDED Row Spacing, Unit: 30 IN Soil Temperature, Unit: 70 F Soil Moisture: N Seed Bed: SMOTRA</p>

<p>Pest Description</p>
<p>Pest 1 Type: W Code: AMATA <i>Amaranthus rudis</i> Sauer Common Name: waterhemp, common Description: glyphosate-resistant waterhemp</p>

<p>Site and Design</p>						
<p>Treated Plot Width: 6.67 FT Total Plot Width: 10 FT Site Type: FIELD Treated Plot Length: 30 FT Total Plot Length: 30 FT Experimental Unit: 1 PLOT Tillage Type: NOTILL no-till Study Design: RACOB� Randomized Complete Block (RCB)</p> <p>Replications: 3 Untreated Arrangement: INCLUDED single control randomized in each block</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th style="width: 5%;">No.</th> <th style="width: 45%;">Previous Crop</th> <th style="width: 50%;">Year</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1.</td> <td>GLXMA</td> <td>2015</td> </tr> </tbody> </table>	No.	Previous Crop	Year	1.	GLXMA	2015
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<p>Maintenance</p>				
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<p>Soil Description</p>									
<p>Description Name: DSO_west_2016 % Sand: 15.4 % OM: 1.96 Texture: SIL silt loam % Silt: 64.7 pH: 7.1 Soil Name: Okaw % Clay: 19.9 CEC: 7.91</p> <p style="text-align: center;">Additional Measured Elements</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th style="width: 15%;">Element</th> <th style="width: 35%;">Quantity</th> <th style="width: 50%;">Unit</th> </tr> </thead> <tbody> <tr> <td>P1</td> <td style="text-align: center;">52</td> <td>lb/A</td> </tr> <tr> <td>K</td> <td style="text-align: center;">278</td> <td>lb/A</td> </tr> </tbody> </table>	Element	Quantity	Unit	P1	52	lb/A	K	278	lb/A
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P1	52	lb/A							
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Trial ID: 16-DSO-Valent-6406-North Location: De Soto, IL Trial Year: 2016
Investigator: Karla L. Gage, Ph.D.**Moisture and Weather Conditions****Overall Moisture Conditions: NORMAL****Closest Weather Station: SOUTHERN IL AIRPORT (93810)****Distance, Unit: 1.5 MI**

No.	Date	Amount	Unit	Type	Type Description	Interval	Unit	Min Temp	Max Temp	Temp Unit
1.	4-1-16					7	DAY	31	67	F
2.	4-6-16	0.27	IN	RAIN	rain	2	DAY			
3.	4-8-16					7	DAY	30	73	F
4.	4-10-16	0.99	IN	RAIN	rain	2	DAY			
5.	4-15-16					7	DAY	47	80	F
6.	4-20-16	1.76	IN	RAIN	rain	2	DAY			
7.	4-22-16					7	DAY	47	81	F
8.	4-26-16	1.59	IN	RAIN	rain	6	DAY			
9.	4-29-16					7	DAY	45	78	F
10.	5-4-16	0.03	IN	RAIN	rain	1	DAY			
11.	5-6-16					7	DAY	44	86	F
12.	5-9-16	2.92	IN	RAIN	rain	4	DAY			
13.	5-13-16					7	DAY	39	74	F
14.	5-16-16	1.27	IN	RAIN	rain	2	DAY			
15.	5-20-16					7	DAY	49	82	F
16.	5-20-16	0.1	IN	RAIN	rain	1	DAY			
17.	5-25-16	2.12	IN	RAIN	rain	3	DAY			
18.	5-27-16					7	DAY	61	86	F
19.	6-1-16	0.11	IN	RAIN	rain	1	DAY			
20.	6-3-16					7	DAY	55	87	F
21.	6-3-16	0.83	IN	RAIN	rain	2	DAY			
22.	6-6-16	0.36	IN	RAIN	rain	1	DAY			
23.	6-10-16					7	DAY	62	97	F
24.	6-15-16	0.21	IN	RAIN	rain	1	DAY			
25.	6-17-16					7	DAY	66	94	F
26.	6-24-16					7	DAY	59	93	F
27.	6-25-16	0.36	IN	RAIN	rain	3	DAY			
28.	6-30-16	0.02	IN	RAIN	rain	1	DAY			
29.	7-1-16					7	DAY	60	90	F
30.	7-2-16	2.98	IN	RAIN	rain	3	DAY			
31.	7-6-16	4.48	IN	RAIN	rain	3	DAY			
32.	7-8-16					7	DAY	68	92	F
33.	7-12-16	0.82	IN	RAIN	rain	2	DAY			
34.	7-15-16					7	DAY	69	93	F
35.	7-22-16					7	DAY	72	92	F
36.	7-22-16	0.47	IN	RAIN	rain	1	DAY			
37.	7-26-16	0.09	IN	RAIN	rain	1	DAY			
38.	7-28-16	1.79	IN	RAIN	rain	6	DAY			
39.	7-29-16					7	DAY	69	91	F

Comment:

Rainfall and air temperature were recorded at SOUTHERN ILLINOIS AIRPORT (93810) 1.5 miles SSE and provided by NOAA's National Centers for Environmental Information. Air temperatures given are summarized as weekly high and low, detailed weather data is available on request.

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Application Description

	A	B
Application Date:	5-7-16	6-8-16
Appl. Start Time:	9:30	9:15
Appl. Stop Time:	9:45	9:30
Application Method:	Spray	Spray
Application Timing:	7-14EPP	2"W
Application Placement:	BROFOL	BROFOL
Applied By:	MEJ	RLS
Air Temperature, Unit:	74 F	79 F
% Relative Humidity:	50	53
Wind Velocity, Unit:	5 MPH	2 MPH
Wind Direction:	NW	NW
Dew Presence (Y/N):	N	N
Soil Temperature, Unit:	60 F	69 F
Soil Moisture:	NORMAL	NORMAL
% Cloud Cover:	5	0
Next Moisture Occurred On:	5-9-16	6-15-16
Time to Next Moisture, Unit:	60 HR	7 DAY

Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale:	GLXMA	GLXMA
Stage Scale Used:	DESC	DESC
Stage Majority, Percent:	NA	V2
Stage Minimum, Percent:		V1
Stage Maximum, Percent:		V2
Height, Unit:		4 IN
Height Minimum, Maximum:		3 4

Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale:	AMATA W	AMATA W
Stage Majority, Percent:	4	4
Stage Minimum, Percent:	4	2
Stage Maximum, Percent:	6	8
Height, Unit:	1 IN	1 IN
Height Minimum, Maximum:	0.5 2	1 2
Density, Unit:	50 FT2	35 FT2

Application Equipment

	A	B
Appl. Equipment:	CO2 sprayer	CO2 sprayer
Equipment Type:	BACSPR	BACSPR
Operation Pressure, Unit:	30 PSI	30 PSI
Nozzle Type:	TTI	TTI
Nozzle Size:	11002	11002
Boom Length, Unit:	6.67 FT	6.67 FT
Spray Volume, Unit:	15 GPA	15 GPA

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Pest Code									GLXMA	GLXMA	GLXMA	GLXMA	
Crop Code									10-9-16	6-7-16	6-21-16	7-5-16	
Rating Date									Yield	Injury	Injury	Injury	
Rating Type									bu/A	Percent	Percent	Percent	
Rating Unit										14 DAP	28 DAP	42 DAP	
Rating Timing										31 DA-A	13 DA-B	27 DA-B	
Trt-Eval Interval													
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code				
1	NONTREATED									0	0	0	
2	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a	7-14EPP A		29 a	0 a	0 b	0 a
	CLARITY	4	SL	0.5	lb ae/a	1	pt/a	7-14EPP A					
	NIS (ACTIVATOR 90)	100	SL	0.25	% v/v	0.25	% v/v	7-14EPP A					
	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a	2" W B					
	CLARITY	4	SL	0.5	lb ae/a	1	pt/a	2" W B					
	NIS (ACTIVATOR 90)	100	SL	0.25	% v/v	0.25	% v/v	2" W B					
3	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a	7-14EPP A		31 a	0 a	0 b	0 a
	CLARITY	4	SL	0.5	lb ae/a	1	pt/a	7-14EPP A					
	VALOR SX	51	WG	0.08	lb ai/a	2.5	oz/a	7-14EPP A					
	NIS (ACTIVATOR 90)	100	SL	0.25	% v/v	0.25	% v/v	7-14EPP A					
	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a	2" W B					
	CLARITY	4	SL	0.5	lb ae/a	1	pt/a	2" W B					
	NIS (ACTIVATOR 90)	100	SL	0.25	% v/v	0.25	% v/v	2" W B					
4	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a	7-14EPP A		30 a	0 a	0 b	0 a
	CLARITY	4	SL	0.5	lb ae/a	1	pt/a	7-14EPP A					
	FIERCE	76	WG	0.143	lb ai/a	3	oz/a	7-14EPP A					
	NIS (ACTIVATOR 90)	100	SL	0.25	% v/v	0.25	% v/v	7-14EPP A					
	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a	2" W B					
	CLARITY	4	SL	0.5	lb ae/a	1	pt/a	2" W B					
	NIS (ACTIVATOR 90)	100	SL	0.25	% v/v	0.25	% v/v	2" W B					
5	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a	7-14EPP A		28 a	0 a	5 a	0 a
	CLARITY	4	SL	0.5	lb ae/a	1	pt/a	7-14EPP A					
	FIERCE	76	WG	0.143	lb ai/a	3	oz/a	7-14EPP A					
	NIS (ACTIVATOR 90)	100	SL	0.25	% v/v	0.25	% v/v	7-14EPP A					
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	CLARITY	4	SL	0.5	lb ae/a	1	pt/a	2" W B					
	WARRANT	3	CS	1.13	lb ai/a	3	pt/a	2" W B					
	COC (PRIME OIL)	100	SL	0.83	% v/v	1	pt/a	2" W B					
6	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a	7-14EPP A		25 a	0 a	0 b	0 a
	V-10404	2.17	SC	0.81	lb ai/a	48	fl oz/a	7-14EPP A					
	NIS (ACTIVATOR 90)	100	SL	0.25	% v/v	0.25	% v/v	7-14EPP A					
	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a	2" W B					
	CLARITY	4	SL	0.5	lb ae/a	1	pt/a	2" W B					
	NIS (ACTIVATOR 90)	100	SL	0.25	% v/v	0.25	% v/v	2" W B					
LSD P=.05										9.6	.	.	.
Standard Deviation										5.0	0.0	0.0	0.0
CV										17.41	0.0	0.0	0.0
Replicate F										5.548	0.000	0.000	0.000
Replicate Prob(F)										0.0360	1.0000	1.0000	1.0000
Treatment F										0.743	0.000	0.000	0.000
Treatment Prob(F)										0.5919	1.0000	1.0000	1.0000

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Missing data estimates are included in columns: Average=9
 Could not calculate LSD (% mean diff) for columns 10,13,15 because error mean square = 0.

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Pest Code									AMATA-HR	AMATA-HR	AMATA-HR	AMATA-HR	AMATA-HR	
Crop Code									6-7-16	6-7-16	6-21-16	7-5-16	7-19-16	
Rating Date									Burndown	Residual	Residual	Residual	Residual	
Rating Type									Percent	Percent	Percent	Percent	Percent	
Rating Unit									14 DAP	14 DAP	28 DAP	42 DAP	56 DAP	
Rating Timing									31 DA-A	31 DA-A	13 DA-B	27 DA-B	41 DA-B	
Trt-Eval Interval														
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code					
1	NONTREATED									0	0	0	0	0
2	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a	7-14EPP A		83 c	10 b	93 ab	67 b	40 b
	CLARITY	4	SL	0.5	lb ae/a	1	pt/a	7-14EPP A						
	NIS (ACTIVATOR 90)	100	SL	0.25	% v/v	0.25	% v/v	7-14EPP A						
	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a	2" W B						
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	NIS (ACTIVATOR 90)	100	SL	0.25	% v/v	0.25	% v/v	2" W B						
3	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a	7-14EPP A		92 b	68 a	65 d	53 b	20 b
	CLARITY	4	SL	0.5	lb ae/a	1	pt/a	7-14EPP A						
	VALOR SX	51	WG	0.08	lb ai/a	2.5	oz/a	7-14EPP A						
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	NIS (ACTIVATOR 90)	100	SL	0.25	% v/v	0.25	% v/v	2" W B						
4	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a	7-14EPP A		97 a	65 a	77 cd	67 b	37 b
	CLARITY	4	SL	0.5	lb ae/a	1	pt/a	7-14EPP A						
	FIERCE	76	WG	0.143	lb ai/a	3	oz/a	7-14EPP A						
	NIS (ACTIVATOR 90)	100	SL	0.25	% v/v	0.25	% v/v	7-14EPP A						
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5	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a	7-14EPP A		97 a	72 a	99 a	84 a	70 a
	CLARITY	4	SL	0.5	lb ae/a	1	pt/a	7-14EPP A						
	FIERCE	76	WG	0.143	lb ai/a	3	oz/a	7-14EPP A						
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	V-10404	2.17	SC	0.81	lb ai/a	48	fl oz/a	7-14EPP A						
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	NIS (ACTIVATOR 90)	100	SL	0.25	% v/v	0.25	% v/v	2" W B						
LSD P=.05										3.9	12.2	11.9	15.1	23.1
Standard Deviation										2.1	6.5	6.3	8.0	12.3
CV										2.24	11.25	7.55	12.02	29.91
Replicate F										2.489	13.822	2.893	0.252	0.100
Replicate Prob(F)										0.1444	0.0025	0.1134	0.7833	0.9062
Treatment F										25.458	51.347	13.463	5.814	6.526
Treatment Prob(F)										0.0001	0.0001	0.0013	0.0171	0.0123

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Trial Comments

1. Protocol: Valent (VUSA2016FIERCEMD6406).
2. Ratings:
CI 14, 28, and 42 DAP
Burndown WC 14 DAP; Residual WC 28, 42, and 56 DAP.
3. Yield (do not sell grain).
4. Application A, 7-14EPP is 7-14 days before planting and weeds emerged.
Application B, 2"WH is 2 inch waterhemp in trts 4+5 with Fierce.
5. Early season blanket burndown for better release of summer annuals was
Roundup Powermax (32 floz/A) + 2,4-D LV4 (1 pt/A) + AMS (2.5%) applied 4-4-16.
6. Rainfall following the 7-14EPP application A was 2.92 inch over 4 days beginning 60 hours later.
Rainfall following the 2"W application B was 0.21 inch over 1 day beginning 7 days later then
no rain for the next 10 days.
7. At 56 DAP the soybean crop had nearly canopied.
8. AMATA-HR = Herbicide-resistant waterhemp (glyphosate).
9. Missing yield data in the nontreated plots, too weedy to harvest.
10. Harvested 10-9-16, (2) 30 inch rows by 27 ft.