

Authority Product Understanding.

Trial ID: 13-DSO-Authority Location: De Soto, IL Trial Year: 2013
Investigator: Bryan Young

Trial Status: F one-year/final Initiation Date: 5-24-13 Completion Date: 10-19-13		Trial Location
City: De Soto Country: USA State/Prov.: Illinois IL Postal Code: 62924		

Objectives:
Evaluate glyphosate-resistant waterhemp control from Authority products versus competitive programs.

Contacts	
Study Director: Bryan Young Organization: Southern Illinois University Address: 1205 Lincoln Drive - AG 176 - MC 4415 City+State/Prov: Carbondale IL Postal Code: 62901 Country: USA	Title: Professor Phone No.: 618-453-7679 Mobile No.: 618-713-6471 E-mail: bgyoung@siu.edu

Crop Description	
Crop 1: GLXMA Glycine max Soybean Variety: AG3832 Description: RR2Y Planting Date: 5-24-13 Planting Rate, Unit: 145000 S/A Planting Method: SEEDED Depth, Unit: 1.25 IN Row Spacing, Unit: 30 IN	

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

Site and Design							
Treated Plot Width: 6.67 FT Total Plot Width: 10 FT Treated Plot Length: 30 FT Total Plot Length: 30 FT	Site Type: FIELD Experimental Unit: 1 PLOT Tillage Type: NOTILL no-till Study Design: RACOB L Randomized Complete Block (RCB)						
Replications: 4 Untreated Arrangement: INCLUDED single control randomized in each block							
<table border="1" style="width: 100%;"> <tr> <th>No.</th> <th>Previous Crop</th> <th>Year</th> </tr> <tr> <td>1.</td> <td>ZEAMD</td> <td>2012</td> </tr> </table>		No.	Previous Crop	Year	1.	ZEAMD	2012
No.	Previous Crop	Year					
1.	ZEAMD	2012					

Maintenance					
<table border="1" style="width: 100%;"> <tr> <th>No.</th> <th>Maintenance Product Name</th> </tr> <tr> <td>1.</td> <td>N 0 LB/A, P2O5 0 LB/A, K2O 0 LB/A</td> </tr> </table>		No.	Maintenance Product Name	1.	N 0 LB/A, P2O5 0 LB/A, K2O 0 LB/A
No.	Maintenance Product Name				
1.	N 0 LB/A, P2O5 0 LB/A, K2O 0 LB/A				

Soil Description										
% Sand: 15.4 % OM: 2.15 Texture: SIL silt loam % Silt: 64.7 pH: 6.9 Soil Name: Okaw % Clay: 19.9 CEC: 12.4										
Additional Measured Elements										
<table border="1" style="width: 100%;"> <tr> <th>Element</th> <th>Quantity</th> <th>Unit</th> </tr> <tr> <td>P1</td> <td>94</td> <td>lb/A</td> </tr> <tr> <td>K</td> <td>468</td> <td>lb/A</td> </tr> </table>		Element	Quantity	Unit	P1	94	lb/A	K	468	lb/A
Element	Quantity	Unit								
P1	94	lb/A								
K	468	lb/A								

Moisture and Weather Conditions	
Overall Moisture Conditions: NORMAL Closest Weather Station: SOUTHERN IL AIRPORT (93810)	Distance, Unit: 1.5 MI

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No.	Date	Amount	Unit	Type	Type Description	Interval	Unit	Min Temp	Max Temp	Temp Unit
1.	5-3-13	1.33	IN	RAIN	rain	3	DAY			
2.	5-5-13	0.75	IN	RAIN	rain	2	DAY			
3.	5-6-13					7	DAY	41	80	F
4.	5-10-13	0.17	IN	RAIN	rain	3	DAY			
5.	5-13-13					7	DAY	37	87	F
6.	5-16-13	0.23	IN	RAIN	rain	2	DAY			
7.	5-20-13					7	DAY	43	85	F
8.	5-21-13	0.91	IN	RAIN	rain	1	DAY			
9.	5-27-13					7	DAY	59	86	F
10.	5-31-13	0.7	IN	RAIN	rain	3	DAY			
11.	6-1-13	1.67	IN	RAIN	rain	2	DAY			
12.	6-3-13					7	DAY	50	82	F
13.	6-10-13	0.13	IN	RAIN	rain	5	DAY			
14.	6-10-13					7	DAY	57	93	F
15.	6-17-13	0.36	IN	RAIN	rain	2	DAY			
16.	6-17-13					7	DAY	61	92	F
17.	6-22-13	0.34	IN	RAIN	rain	2	DAY			
18.	6-24-13					7	DAY	64	93	F
19.	6-26-13	1.25	IN	RAIN	rain	2	DAY			
20.	6-30-13	0.3	IN	RAIN	rain	2	DAY			
21.	7-1-13					7	DAY	57	88	F
22.	7-2-13	1.16	IN	RAIN	rain	2	DAY			
23.	7-8-13					7	DAY	59	92	F
24.	7-14-13	0.05	IN	RAIN	rain	5	DAY			
25.	7-15-13					7	DAY	68	93	F
26.	7-20-13	1.24	IN	RAIN	rain	2	DAY			
27.	7-22-13					7	DAY	51	90	F
28.	7-27-13	0.13	IN	RAIN	rain	2	DAY			
29.	7-29-13					7	DAY	58	86	F
30.	7-30-13	0.98	IN	RAIN	rain	1	DAY			
31.	8-3-13	0.24	IN	RAIN	rain	3	DAY			
32.	8-5-13	0.53	IN	RAIN	rain	2	DAY			
33.	8-5-13					7	DAY	61	98	F
34.	8-8-13	1.78	IN	RAIN	rain	4	DAY			
35.	8-12-13	0.12	IN	RAIN	rain	2	DAY			
36.	8-12-13					7	DAY	51	84	F
37.	8-17-13	0.21	IN	RAIN	rain	2	DAY			
38.	8-19-13	0.01	IN	RAIN	rain	1	DAY			
39.	8-19-13					7	DAY	60	90	F

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Application Description

	A	B	C	D
Application Date:	5-24-13	6-27-13	6-16-13	7-3-13
Appl. Start Time:	13:50	7:45	9:00	10:30
Appl. Stop Time:	14:30	8:30	9:15	10:35
Application Method:	Spray	Spray	Spray	Spray
Application Timing:	PRE	1-2"W	1-2T	4-6"W
Application Placement:	BROSOI	BROFOL	BROFOL	BROFOL
Applied By:	LXF	NTH	LXF	NTH
Air Temperature, Unit:	83 F	90 F	92 F	90 F
% Relative Humidity:	31	65	45	50
Wind Velocity, Unit:	2 MPH	3 MPH	0 MPH	2 MPH
Wind Direction:	N	NE		S
Dew Presence (Y/N):	N	N	N	N
Soil Temperature, Unit:	77 F	79 F	79 F	74 F
Soil Moisture:	NORMAL	ABONOR	NORMAL	ABONOR
% Cloud Cover:	0	5	10	25
Next Moisture Occurred On:	5-30-13	6-29-13	6-17-13	7-4-13
Time to Next Moisture, Unit:	5 DAY	2 DAY	29 HR	17 HR

Crop Stage At Each Application

	A	B	C	D
Crop 1 Code, BBCH Scale:	GLXMA	GLXMA	GLXMA	GLXMA
Stage Scale Used:	DESC	DESC	DESC	DESC
Stage Majority, Percent:	NA	V5	V2	V7
Stage Minimum, Percent:		V4	V1	V6
Stage Maximum, Percent:		V5	V2	V7
Height, Unit:	12 IN	8 IN	18 IN	
Height Minimum, Maximum:		10 12	6 8	15 18

Pest Stage At Each Application

	A	B	C	D
Pest 1 Code, Type, Scale:	AMATA W	AMATA W	AMATA W	AMATA W
Stage Majority, Percent:	NA	10	4	16
Stage Minimum, Percent:		2	COTY	4
Stage Maximum, Percent:		25	8	40
Height, Unit:		3 IN	1 IN	5 IN
Height Minimum, Maximum:		1 12	0.5 1	1 12
Density, Unit:		1 FT2	0.01 FT2	0.8 FT2

Application Equipment

	A	B	C	D
Appl. Equipment:	CO2 sprayer	CO2 sprayer	CO2 sprayer	CO2 sprayer
Equipment Type:	BACSPR	BACSPR	BACSPR	BACSPR
Operation Pressure, Unit:	30 PSI	30 PSI	30 PSI	30 PSI
Nozzle Type:	XR	XR	XR	XR
Nozzle Size:	8002	8002	8002	8002
Boom Length, Unit:	6.67 FT	6.67 FT	6.67 FT	6.67 FT
Spray Volume, Unit:	15 GPA	15 GPA	15 GPA	15 GPA

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Pest Code Crop Code Rating Date Rating Type Rating Unit Rating Timing Trt-Eval Interval							GLXMA 10-19-13 Moisture Percent	GLXMA 10-19-13 Yield bu/A
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code
1	AUTHORITY XL ROUNDUP POWERMAX N-PAK AMS	70 WG 4.5 SL 100 SL		0.284 lb ai/a 0.77 lb ae/a 2.5 % v/v	6.5 oz/a 22 fl oz/a 2.5 % v/v		PRE A 1-2"W B 1-2"W B	16.6 a 71 ab
2	AUTHORITY FIRST ROUNDUP POWERMAX N-PAK AMS	70 WG 4.5 SL 100 SL		0.28 lb ai/a 0.77 lb ae/a 2.5 % v/v	6.4 oz/a 22 fl oz/a 2.5 % v/v		PRE A 1-2"W B 1-2"W B	16.0 a 74 ab
3	AUTHORITY MAXX ROUNDUP POWERMAX N-PAK AMS	66 WG 4.5 SL 100 SL		0.396 lb ai/a 0.77 lb ae/a 2.5 % v/v	9.6 oz/a 22 fl oz/a 2.5 % v/v		PRE A 1-2"W B 1-2"W B	15.4 a 74 ab
4	VALOR XLT ROUNDUP POWERMAX N-PAK AMS	40.3 WG 4.5 SL 100 SL		0.101 lb ai/a 0.77 lb ae/a 2.5 % v/v	4 oz/a 22 fl oz/a 2.5 % v/v		PRE A 1-2"W B 1-2"W B	15.5 a 70 b
5	OPTILL PRO (CO-PACK) OPTILL OUTLOOK ROUNDUP POWERMAX N-PAK AMS	68 WG 6 EC 4.5 SL 100 SL		0.085 lb ai/a 0.47 lb ai/a 0.77 lb ae/a 2.5 % v/v	2 oz/a 10 fl oz/a 22 fl oz/a 2.5 % v/v		PRE A PRE A PRE A 1-2"W B 1-2"W B	15.7 a 70 b
6	AUTHORITY ELITE ROUNDUP POWERMAX N-PAK AMS	7 SC 4.5 SL 100 SL		1.75 lb ai/a 0.77 lb ae/a 2.5 % v/v	32 fl oz/a 22 fl oz/a 2.5 % v/v		PRE A 1-2"W B 1-2"W B	15.3 a 72 ab
7	PREFIX ROUNDUP POWERMAX N-PAK AMS	5.29 EC 4.5 SL 100 SL		1.32 lb ai/a 0.77 lb ae/a 2.5 % v/v	2 pt/a 22 fl oz/a 2.5 % v/v		PRE A 1-2"W B 1-2"W B	15.8 a 76 a
8	FIERCE ROUNDUP POWERMAX N-PAK AMS	76 WG 4.5 SL 100 SL		0.143 lb ai/a 0.77 lb ae/a 2.5 % v/v	3 oz/a 22 fl oz/a 2.5 % v/v		PRE A 1-2"W B 1-2"W B	15.5 a 71 ab
9	FIERCE XLT ROUNDUP POWERMAX N-PAK AMS	55.68 WG 4.5 SL 100 SL		0.13 lb ai/a 0.77 lb ae/a 2.5 % v/v	3.75 oz/a 22 fl oz/a 2.5 % v/v		PRE A 1-2"W B 1-2"W B	16.4 a 74 ab
10	INTIMIDATOR AUTHORITY XL ROUNDUP POWERMAX N-PAK AMS	4.81 SL 70 WG 4.5 SL 100 SL		1.68 lb ai/a 0.14 lb ai/a 0.77 lb ae/a 2.5 % v/v	2.8 pt/a 3.2 oz/a 22 fl oz/a 2.5 % v/v		PRE A PRE A 1-2"W B 1-2"W B	15.1 a 73 ab
11	AUTHORITY XL ANTHEM ROUNDUP POWERMAX N-PAK AMS	70 WG 2.15 SE 4.5 SL 100 SL		0.175 lb ai/a 0.101 lb ai/a 0.77 lb ae/a 2.5 % v/v	4 oz/a 6 fl oz/a 22 fl oz/a 2.5 % v/v		PRE A 1-2T C 1-2T C 1-2T C	16.3 a 69 bc
12	AUTHORITY MAXX WARRANT ROUNDUP POWERMAX N-PAK AMS	66 WG 3 CS 4.5 SL 100 SL		0.29 lb ai/a 1.13 lb ai/a 0.77 lb ae/a 2.5 % v/v	7 oz/a 3 pt/a 22 fl oz/a 2.5 % v/v		PRE A 1-2T C 1-2T C 1-2T C	15.2 a 70 ab
13	AUTHORITY MAXX MARVEL NIS (ACTIVATOR 90) ROUNDUP POWERMAX N-PAK AMS	66 WG 3 SL 100 SL 4.5 SL 100 SL		0.29 lb ai/a 0.17 lb ai/a 0.25 % v/v 0.77 lb ae/a 2.5 % v/v	7 oz/a 7.25 fl oz/a 0.25 % v/v 22 fl oz/a 2.5 % v/v		PRE A 4-6"W D 4-6"W D 4-6"W D 4-6"W D	15.3 a 64 c

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

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Pest Code Crop Code Rating Date Rating Type Rating Unit Rating Timing Trt-Eval Interval										GLXMA 10-19-13 Moisture Percent	GLXMA 10-19-13 Yield bu/A
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit Unit	Other Rate	Other Rate	Growth Unit	Stage	Appl Code	
14	NONTREATED										18.3 a 28 d
LSD (P=.05)										1.73	5.6
Standard Deviation										1.21	3.9
CV										7.63	5.71
Replicate F										1.909	1.988
Replicate Prob(F)										0.1441	0.1317
Treatment F										1.912	38.257
Treatment Prob(F)										0.0593	0.0001

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Pest Code Crop Code Rating Date Rating Type Rating Unit Rating Timing Trt-Eval Interval									GLXMA 6-8-13 Injury Percent	GLXMA 6-23-13 Injury Percent	GLXMA 7-2-13 Injury Percent	GLXMA 7-12-13 Injury Percent	GLXMA 7-17-13 Injury Percent	GLXMA 7-24-13 Injury Percent	GLXMA 8-3-13 Injury Percent
									15 DA-A	30 DA-A	16 DA-C	15 DA-B	31 DA-C	61 DA-A	31 DA-D
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code							
1	AUTHORITY XL ROUNDUP POWERMAX N-PAK AMS	70 WG 4.5 SL 100 SL		0.284 lb ai/a 0.77 lb ae/a 2.5 % v/v	6.5 oz/a 22 fl oz/a 2.5 % v/v		PRE 1-2"W 1-2"W	A B B	18 a	12 ab	11 ab	6 cde	1 bc	1 cd	0 b
2	AUTHORITY FIRST ROUNDUP POWERMAX N-PAK AMS	70 WG 4.5 SL 100 SL		0.28 lb ai/a 0.77 lb ae/a 2.5 % v/v	6.4 oz/a 22 fl oz/a 2.5 % v/v		PRE 1-2"W 1-2"W	A B B	11 b	4 efg	3 ef	2 fg	0 c	0 d	0 b
3	AUTHORITY MAXX ROUNDUP POWERMAX N-PAK AMS	66 WG 4.5 SL 100 SL		0.396 lb ai/a 0.77 lb ae/a 2.5 % v/v	9.6 oz/a 22 fl oz/a 2.5 % v/v		PRE 1-2"W 1-2"W	A B B	17 a	8 bcd	8 bcd	5 c-f	1 bc	1 cd	0 b
4	VALOR XLT ROUNDUP POWERMAX N-PAK AMS	40.3 WG 4.5 SL 100 SL		0.101 lb ai/a 0.77 lb ae/a 2.5 % v/v	4 oz/a 22 fl oz/a 2.5 % v/v		PRE 1-2"W 1-2"W	A B B	5 cd	11 abc	11 abc	6 bcd	0 c	0 d	0 b
5	OPTILL PRO (CO-PACK) OPTILL OUTLOOK ROUNDUP POWERMAX N-PAK AMS	68 WG 6 EC 4.5 SL 100 SL		0.085 lb ai/a 0.47 lb ai/a 0.77 lb ae/a 2.5 % v/v	2 oz/a 10 fl oz/a 22 fl oz/a 2.5 % v/v		PRE PRE 1-2"W 1-2"W	A A B B	10 bc	5 def	8 bcd	3 d-g	1 bc	0 d	0 b
6	AUTHORITY ELITE ROUNDUP POWERMAX N-PAK AMS	7 SC 4.5 SL 100 SL		1.75 lb ai/a 0.77 lb ae/a 2.5 % v/v	32 fl oz/a 22 fl oz/a 2.5 % v/v		PRE 1-2"W 1-2"W	A B B	8 bc	3 fg	1 f	0 g	0 c	0 d	0 b
7	PREFIX ROUNDUP POWERMAX N-PAK AMS	5.29 EC 4.5 SL 100 SL		1.32 lb ai/a 0.77 lb ae/a 2.5 % v/v	2 pt/a 22 fl oz/a 2.5 % v/v		PRE 1-2"W 1-2"W	A B B	0 e	0 g	0 f	0 g	0 c	0 d	0 b
8	FIERCE ROUNDUP POWERMAX N-PAK AMS	76 WG 4.5 SL 100 SL		0.143 lb ai/a 0.77 lb ae/a 2.5 % v/v	3 oz/a 22 fl oz/a 2.5 % v/v		PRE 1-2"W 1-2"W	A B B	3 de	1 fg	1 ef	0 g	0 c	0 d	0 b
9	FIERCE XLT ROUNDUP POWERMAX N-PAK AMS	55.68 WG 4.5 SL 100 SL		0.13 lb ai/a 0.77 lb ae/a 2.5 % v/v	3.75 oz/a 22 fl oz/a 2.5 % v/v		PRE 1-2"W 1-2"W	A B B	8 bc	7 cde	7 cd	5 c-f	1 bc	0 d	0 b
10	INTIMIDATOR AUTHORITY XL ROUNDUP POWERMAX N-PAK AMS	4.81 SL 70 WG 4.5 SL 100 SL		1.68 lb ai/a 0.14 lb ai/a 0.77 lb ae/a 2.5 % v/v	2.8 pt/a 3.2 oz/a 22 fl oz/a 2.5 % v/v		PRE PRE 1-2"W 1-2"W	A A B B	6 cd	4 def	5 de	3 efg	0 c	0 d	0 b
11	AUTHORITY XL ANTHEM ROUNDUP POWERMAX N-PAK AMS	70 WG 2.15 SE 4.5 SL 100 SL		0.175 lb ai/a 0.101 lb ai/a 0.77 lb ae/a 2.5 % v/v	4 oz/a 6 fl oz/a 22 fl oz/a 2.5 % v/v		PRE 1-2T 1-2T 1-2T	A C C C	11 b	12 ab	13 a	9 b	2 b	2 ab	2 a
12	AUTHORITY MAXX WARRANT ROUNDUP POWERMAX N-PAK AMS	66 WG 3 CS 4.5 SL 100 SL		0.29 lb ai/a 1.13 lb ai/a 0.77 lb ae/a 2.5 % v/v	7 oz/a 3 pt/a 22 fl oz/a 2.5 % v/v		PRE 1-2T 1-2T 1-2T	A C C C	17 a	12 ab	14 a	8 bc	2 b	2 bc	0 b
13	AUTHORITY MAXX MARVEL NIS (ACTIVATOR 90) ROUNDUP POWERMAX N-PAK AMS	66 WG 3 SL 100 SL 4.5 SL 100 SL		0.29 lb ai/a 0.17 lb ai/a 0.25 % v/v 0.77 lb ae/a 2.5 % v/v	7 oz/a 7.25 fl oz/a 0.25 % v/v 22 fl oz/a 2.5 % v/v		PRE 4-6"W 4-6"W 4-6"W 4-6"W	A D D D D	20 a	13 a	11 ab	28 a	5 a	4 a	1 ab

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Pest Code								
Crop Code								
Rating Date	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA
Rating Type	6-8-13	6-23-13	7-2-13	7-12-13	7-17-13	7-24-13	8-3-13	
Rating Unit	Injury	Injury	Injury	Injury	Injury	Injury	Injury	Injury
Rating Timing	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Trt-Eval Interval	15 DA-A	30 DA-A	16 DA-C	15 DA-B	31 DA-C	61 DA-A	31 DA-D	
Trt Treatment	Form	Form	Rate	Other	Other	Growth	Appl	
No. Name	Conc	Type	Rate	Unit	Rate	Rate	Unit	Code
14 NONTREATED	0 e	0 g	0 f	0 g	0 c	0 d	0 b	
LSD (P=.05)	4.4	4.2	4.1	3.3	1.6	1.3	0.9	
Standard Deviation	3.1	2.9	2.9	2.3	1.1	0.9	0.6	
CV	32.39	45.44	43.88	44.18	136.42	142.44	372.56	
Replicate F	4.426	1.229	1.200	0.473	0.922	0.563	1.644	
Replicate Prob(F)	0.0090	0.3123	0.3224	0.7026	0.4393	0.6425	0.1950	
Treatment F	17.653	10.055	12.138	39.327	5.094	5.908	2.103	
Treatment Prob(F)	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0368	

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Pest Code Crop Code Rating Date Rating Type Rating Unit Rating Timing Trt-Eval Interval								AMATA-HR 6-8-13 Control Percent 15 DA-A	AMATA-HR 6-23-13 Control Percent 30 DA-A	AMATA-HR 7-12-13 Control Percent 49 DA-A 15 DA-B	AMATA-HR 7-17-13 Control Percent 14 DA-D 31 DA-C	AMATA-HR 7-24-13 Control Percent 27 DA-B 61 DA-A	AMATA-HR 8-3-13 Control Percent 31 DA-D
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code					
1	AUTHORITY XL ROUNDUP POWERMAX N-PAK AMS	70 WG 4.5 SL 100 SL		0.284 lb ai/a 0.77 lb ae/a 2.5 % v/v	6.5 oz/a 22 fl oz/a 2.5 % v/v		PRE 1-2"W 1-2"W	A B B	99 a	95 ab	97 ab	97 abc	97 a
2	AUTHORITY FIRST ROUNDUP POWERMAX N-PAK AMS	70 WG 4.5 SL 100 SL		0.28 lb ai/a 0.77 lb ae/a 2.5 % v/v	6.4 oz/a 22 fl oz/a 2.5 % v/v		PRE 1-2"W 1-2"W	A B B	99 a	93 abc	97 ab	97 abc	97 a
3	AUTHORITY MAXX ROUNDUP POWERMAX N-PAK AMS	66 WG 4.5 SL 100 SL		0.396 lb ai/a 0.77 lb ae/a 2.5 % v/v	9.6 oz/a 22 fl oz/a 2.5 % v/v		PRE 1-2"W 1-2"W	A B B	99 a	96 ab	98 ab	98 a	98 a
4	VALOR XLT ROUNDUP POWERMAX N-PAK AMS	40.3 WG 4.5 SL 100 SL		0.101 lb ai/a 0.77 lb ae/a 2.5 % v/v	4 oz/a 22 fl oz/a 2.5 % v/v		PRE 1-2"W 1-2"W	A B B	99 a	81 ef	93 c	95 cd	94 b
5	OPTILL PRO (CO-PACK) OPTILL OUTLOOK ROUNDUP POWERMAX N-PAK AMS	68 WG 6 EC 4.5 SL 100 SL		0.085 lb ai/a 0.47 lb ai/a 0.77 lb ae/a 2.5 % v/v	2 oz/a 10 fl oz/a 22 fl oz/a 2.5 % v/v		PRE PRE PRE 1-2"W 1-2"W	A A A B B	99 a	76 f	92 c	94 d	94 b
6	AUTHORITY ELITE ROUNDUP POWERMAX N-PAK AMS	7 SC 4.5 SL 100 SL		1.75 lb ai/a 0.77 lb ae/a 2.5 % v/v	32 fl oz/a 22 fl oz/a 2.5 % v/v		PRE 1-2"W 1-2"W	A B B	99 a	96 ab	97 ab	98 ab	98 a
7	PREFIX ROUNDUP POWERMAX N-PAK AMS	5.29 EC 4.5 SL 100 SL		1.32 lb ai/a 0.77 lb ae/a 2.5 % v/v	2 pt/a 22 fl oz/a 2.5 % v/v		PRE 1-2"W 1-2"W	A B B	99 a	85 de	96 b	97 abc	97 a
8	FIERCE ROUNDUP POWERMAX N-PAK AMS	76 WG 4.5 SL 100 SL		0.143 lb ai/a 0.77 lb ae/a 2.5 % v/v	3 oz/a 22 fl oz/a 2.5 % v/v		PRE 1-2"W 1-2"W	A B B	99 a	90 cd	96 ab	97 ab	97 a
9	FIERCE XLT ROUNDUP POWERMAX N-PAK AMS	55.68 WG 4.5 SL 100 SL		0.13 lb ai/a 0.77 lb ae/a 2.5 % v/v	3.75 oz/a 22 fl oz/a 2.5 % v/v		PRE 1-2"W 1-2"W	A B B	99 a	91 bc	97 ab	97 ab	97 a
10	INTIMIDATOR AUTHORITY XL ROUNDUP POWERMAX N-PAK AMS	4.81 SL 70 WG 4.5 SL 100 SL		1.68 lb ai/a 0.14 lb ai/a 0.77 lb ae/a 2.5 % v/v	2.8 pt/a 3.2 oz/a 22 fl oz/a 2.5 % v/v		PRE PRE 1-2"W 1-2"W	A A B B	99 a	97 a	98 ab	98 ab	98 a
11	AUTHORITY XL ANTHEM ROUNDUP POWERMAX N-PAK AMS	70 WG 2.15 SE 4.5 SL 100 SL		0.175 lb ai/a 0.101 lb ai/a 0.77 lb ae/a 2.5 % v/v	4 oz/a 6 fl oz/a 22 fl oz/a 2.5 % v/v		PRE 1-2T 1-2T 1-2T	A C C C	99 a	98 a	96 b	96 bc	94 b
12	AUTHORITY MAXX WARRANT ROUNDUP POWERMAX N-PAK AMS	66 WG 3 CS 4.5 SL 100 SL		0.29 lb ai/a 1.13 lb ai/a 0.77 lb ae/a 2.5 % v/v	7 oz/a 3 pt/a 22 fl oz/a 2.5 % v/v		PRE 1-2T 1-2T 1-2T	A C C C	99 a	98 a	96 ab	95 cd	94 b
13	AUTHORITY MAXX MARVEL NIS (ACTIVATOR 90) ROUNDUP POWERMAX N-PAK AMS	66 WG 3 SL 100 SL 4.5 SL 100 SL		0.29 lb ai/a 0.17 lb ai/a 0.25 % v/v 0.77 lb ae/a 2.5 % v/v	7 oz/a 7.25 fl oz/a 0.25 % v/v 22 fl oz/a 2.5 % v/v		PRE 4-6"W 4-6"W 4-6"W 4-6"W	A D D D D	99 a	96 ab	99 a	98 a	98 a

Authority Product Understanding.

Trial ID: 13-DSO-Authority Location: De Soto, IL Trial Year: 2013
Investigator: Bryan Young

Pest Code	AMATA-HR	AMATA-HR	AMATA-HR	AMATA-HR	AMATA-HR	AMATA-HR
Crop Code						
Rating Date	6-8-13	6-23-13	7-12-13	7-17-13	7-24-13	8-3-13
Rating Type	Control	Control	Control	Control	Control	Control
Rating Unit	Percent	Percent	Percent	Percent	Percent	Percent
Rating Timing			49 DA-A	14 DA-D	27 DA-B	
Trt-Eval Interval	15 DA-A	30 DA-A	15 DA-B	31 DA-C	61 DA-A	31 DA-D
Trt Treatment	Form	Form	Rate	Other	Other	Growth
No. Name	Conc	Type	Rate	Unit	Rate	Unit
14 NONTREATED						
	0 b	0 g	0 d	0 e	0 c	0 d
LSD (P=.05)	0.3	5.2	2.9	2.1	2.2	2.5
Standard Deviation	0.2	3.7	2.0	1.4	1.6	1.8
CV	0.2	4.29	2.28	1.61	1.76	1.97
Replicate F	2.167	0.915	1.256	0.146	0.058	0.255
Replicate Prob(F)	0.1074	0.4428	0.3026	0.9313	0.9814	0.8573
Treatment F	84877.008	193.284	638.576	1289.525	1076.541	860.019
Treatment Prob(F)	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Authority Product Understanding.

Trial ID: 13-DSO-Authority Location: De Soto, IL Trial Year: 2013
Investigator: Bryan Young

Pest Code Crop Code Rating Date Rating Type Rating Unit Rating Timing Trt-Eval Interval							AMATA-HR
							8-22-13 Control Percent
							90 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Other Rate Rate Unit	Growth Stage Appl Code
1	AUTHORITY XL ROUNDUP POWERMAX N-PAK AMS	70 WG 4.5 SL 100 SL		0.284 lb ai/a 0.77 lb ae/a 2.5 % v/v		6.5 oz/a 22 fl oz/a 2.5 % v/v	PRE A 1-2"W B 1-2"W B
2	AUTHORITY FIRST ROUNDUP POWERMAX N-PAK AMS	70 WG 4.5 SL 100 SL		0.28 lb ai/a 0.77 lb ae/a 2.5 % v/v		6.4 oz/a 22 fl oz/a 2.5 % v/v	PRE A 1-2"W B 1-2"W B
3	AUTHORITY MAXX ROUNDUP POWERMAX N-PAK AMS	66 WG 4.5 SL 100 SL		0.396 lb ai/a 0.77 lb ae/a 2.5 % v/v		9.6 oz/a 22 fl oz/a 2.5 % v/v	PRE A 1-2"W B 1-2"W B
4	VALOR XLT ROUNDUP POWERMAX N-PAK AMS	40.3 WG 4.5 SL 100 SL		0.101 lb ai/a 0.77 lb ae/a 2.5 % v/v		4 oz/a 22 fl oz/a 2.5 % v/v	PRE A 1-2"W B 1-2"W B
5	OPTILL PRO (CO-PACK) OPTILL OUTLOOK ROUNDUP POWERMAX N-PAK AMS	68 WG 6 EC 4.5 SL 100 SL		0.085 lb ai/a 0.47 lb ai/a 0.77 lb ae/a 2.5 % v/v		2 oz/a 10 fl oz/a 22 fl oz/a 2.5 % v/v	PRE A PRE A PRE A 1-2"W B 1-2"W B
6	AUTHORITY ELITE ROUNDUP POWERMAX N-PAK AMS	7 SC 4.5 SL 100 SL		1.75 lb ai/a 0.77 lb ae/a 2.5 % v/v		32 fl oz/a 22 fl oz/a 2.5 % v/v	PRE A 1-2"W B 1-2"W B
7	PREFIX ROUNDUP POWERMAX N-PAK AMS	5.29 EC 4.5 SL 100 SL		1.32 lb ai/a 0.77 lb ae/a 2.5 % v/v		2 pt/a 22 fl oz/a 2.5 % v/v	PRE A 1-2"W B 1-2"W B
8	FIERCE ROUNDUP POWERMAX N-PAK AMS	76 WG 4.5 SL 100 SL		0.143 lb ai/a 0.77 lb ae/a 2.5 % v/v		3 oz/a 22 fl oz/a 2.5 % v/v	PRE A 1-2"W B 1-2"W B
9	FIERCE XLT ROUNDUP POWERMAX N-PAK AMS	55.68 WG 4.5 SL 100 SL		0.13 lb ai/a 0.77 lb ae/a 2.5 % v/v		3.75 oz/a 22 fl oz/a 2.5 % v/v	PRE A 1-2"W B 1-2"W B
10	INTIMIDATOR AUTHORITY XL ROUNDUP POWERMAX N-PAK AMS	4.81 SL 70 WG 4.5 SL 100 SL		1.68 lb ai/a 0.14 lb ai/a 0.77 lb ae/a 2.5 % v/v		2.8 pt/a 3.2 oz/a 22 fl oz/a 2.5 % v/v	PRE A PRE A 1-2"W B 1-2"W B
11	AUTHORITY XL ANTHEM ROUNDUP POWERMAX N-PAK AMS	70 WG 2.15 SE 4.5 SL 100 SL		0.175 lb ai/a 0.101 lb ai/a 0.77 lb ae/a 2.5 % v/v		4 oz/a 6 fl oz/a 22 fl oz/a 2.5 % v/v	PRE A 1-2T C 1-2T C 1-2T C
12	AUTHORITY MAXX WARRANT ROUNDUP POWERMAX N-PAK AMS	66 WG 3 CS 4.5 SL 100 SL		0.29 lb ai/a 1.13 lb ai/a 0.77 lb ae/a 2.5 % v/v		7 oz/a 3 pt/a 22 fl oz/a 2.5 % v/v	PRE A 1-2T C 1-2T C 1-2T C
13	AUTHORITY MAXX MARVEL NIS (ACTIVATOR 90) ROUNDUP POWERMAX N-PAK AMS	66 WG 3 SL 100 SL 4.5 SL 100 SL		0.29 lb ai/a 0.17 lb ai/a 0.25 % v/v 0.77 lb ae/a 2.5 % v/v		7 oz/a 7.25 fl oz/a 0.25 % v/v 22 fl oz/a 2.5 % v/v	PRE A 4-6"W D 4-6"W D 4-6"W D 4-6"W D

Authority Product Understanding.

Trial ID: 13-DSO-Authority Location: De Soto, IL Trial Year: 2013
Investigator: Bryan Young

Pest Code	AMATA-HR									
Crop Code										
Rating Date	8-22-13									
Rating Type	Control									
Rating Unit	Percent									
Rating Timing										
Trt-Eval Interval	90 DA-A									
Trt Treatment	Form	Form	Rate	Other	Other	Growth	Appl			
No. Name	Conc	Type	Rate	Unit	Rate	Rate	Unit	Stage	Code	
14 NONTREATED	0 e									
LSD (P=.05)	3.2									
Standard Deviation	2.2									
CV	2.5									
Replicate F	0.130									
Replicate Prob(F)	0.9418									
Treatment F	534.936									
Treatment Prob(F)	0.0001									

Authority Product Understanding.

Trial ID: 13-DSO-Authority Location: De Soto, IL Trial Year: 2013
Investigator: Bryan Young

Trial Comments

1. Protocol:FMC (Authority Understanding).
2. CI 15 and 30 DA-A, 15 and 30 DA-B, 15 and 30 DA-C;
WC 15, 30, 60, and 90 DA-A, and 15, and 30 DA-D.
3. Blanket burndown application of glyphosate (1.5 lbae/A) plus Salvo (12 floz/A)
was applied to all plots on 4-2-13.
Blanket application prior to planting of Gramoxone (2.5 pt/A) was applied to all plots on 5-24-13.
Following the PRE application the first rainfall event, beginning 6 days later, was 2.37 inch over 3 days.
Following the 1-2T application the first rainfall event, beginning 1 day later, was 0.36 inch over 2 days.
4. Yield if possible.
5. AMATA-HR = Herbicide-resistant waterhemp (glyphosate).
6. Harvested 10-19-13, (2) 30 inch rows by 26.5 ft.