

Southern Illinois University

BASF Soybean Residual Programs Comparison.

Trial ID: 12-FagerS-BASF-Program  
 Location: Murphysboro, IL

Investigator: Bryan Young

General Trial Information	
<b>Study Director:</b> Bryan Young	<b>Title:</b> Professor
<b>Investigator:</b> Bryan Young	
<b>Trial Status:</b> F - one-year/final	
<b>Initiation Date:</b> 5-1-12	
Trial Location	
<b>City:</b> Murphysboro	
<b>State/Prov.:</b> IL	
<b>Postal Code:</b> 62966	
<b>Country:</b> USA	

<b>Objectives:</b> Evaluate control of glyphosate-resistant waterhemp with various programs including total postemergence without residual, preemergence, and preemergence followed by postemergence residual.
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Personnel	
<b>Study Director:</b> Bryan Young	<b>Title:</b> Professor
<b>Investigator:</b> Bryan Young	
<b>Affiliation:</b> Southern Illinois University	
<b>Address:</b> 1205 Lincoln Drive - AG 176 - MC 4415	
<b>Location:</b> Carbondale IL	
<b>Postal Code:</b> 62901	<b>E-mail:</b> bgyoung@siu.edu
<b>Phone No.:</b> 618-453-7679	<b>Mobile No.:</b> 618-713-6471

Crop Description	
<b>Crop 1:</b> GLXMA Glycine max Soybean	<b>Description:</b> RR2Y
<b>Variety:</b> AG3832	<b>Planting Date:</b> 5-1-12
<b>BBCH Scale:</b> BSOY	<b>Rate, Unit:</b> 155000 S/A
<b>Planting Method:</b> SEEDED Seeded	
<b>Depth, Unit:</b> 2 IN	
<b>Row Spacing, Unit:</b> 30 IN	

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

Site and Design	
<b>Plot Width, Unit:</b> 10 FT	<b>Site Type:</b> FIELD field
<b>Plot Length, Unit:</b> 30 FT	
<b>Plot Area, Unit:</b> 300 FT2	<b>Tillage Type:</b> NOTILL no-till
<b>Replications:</b> 3	<b>Study Design:</b> RACOBL Randomized Complete Block (RCB)

No.	Previous Crop	Year
1.	GLXMA	2011

Maintenance	
<b>No.</b>	<b>Maintenance Treatment Name</b>
1.	N 0 LB/A, P205 0 LB/A, K20 0 LB/A

Soil Description		
<b>% OM:</b> 1.87	<b>Texture:</b> SIL SILT LOAM	
<b>pH:</b> 5.5	<b>Soil Name:</b> ALVIN	
<b>CEC:</b> 7.06		
Additional Measured Elements		
<b>Element</b>	<b>Quantity</b>	<b>Unit</b>
P1	172	LB/A
K	446	LB/A

Moisture and Weather Conditions	
<b>Overall Moisture Conditions:</b> BELNOR below normal	
<b>Closest Weather Station:</b> SOUTHERN IL AIRPORT (93810)	<b>Distance, Unit:</b> 3.5 MI

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Application Description				
	A	B	C	D
Application Date:	5-2-12	5-22-12	6-5-12	6-5-12
Time of Day:	7:30	8:00	8:30	8:30
Application Method:	Spray	Spray	Spray	Spray
Application Timing:	PRE	2-4"WH-1	2-4"WH-2	2-4"RG
Application Placement:	BROFOL	BROFOL	BROFOL	BROFOL
Applied By:	JRK	RJW	RJW	RJW
Air Temperature, Unit:	74 F	58 F	70 F	70 F
% Relative Humidity:	76	80	60	60
Wind Velocity, Unit:	4 MPH	2 MPH	4 MPH	4 MPH
Wind Direction:	S	N	N	N
Dew Presence (Y/N):	Y yes	Y yes	Y yes	Y yes
Soil Temperature, Unit:	69 F	66 F	71 F	71 F
Soil Moisture:	NORMAL	NORMAL	NORMAL	NORMAL
% Cloud Cover:	0	0	0	0
Next Rain Occurred On:	5-6-12	5-31-12	6-11-12	6-11-12

Crop Stage At Each Application				
	A	B	C	D
Crop 1 Code, BBCH Scale:	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY
Stage Scale Used:	DESC	DESC	DESC	DESC
Stage Majority, Percent:	NA	V1	V4	V4
Stage Minimum, Percent:		V1	V3	V3
Stage Maximum, Percent:		V1	V4	V4
Height, Unit:		4 IN	8 IN	8 IN
Height Minimum, Maximum:		2 4	6 8	6 8

Pest Stage At Each Application				
	A	B	C	D
Pest 1 Code, Type, Scale:	AMATA W DESC	AMATA W DESC	AMATA W DESC	AMATA W DESC
Stage Majority, Percent:	NA	12	14	14
Stage Minimum, Percent:		4	4	4
Stage Maximum, Percent:		16	20	20
Height, Unit:		2 IN	4 IN	4 IN
Height Minimum, Maximum:		0.5 4	0.5 8	0.5 8
Density, Unit:		10 FT2	5 FT2	5 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 5-20-12 Injury Percent 14 DAE 18 DA-A	GLXMA 6-5-12 Injury Percent 14 DA-B 0 DA-C	GLXMA 6-19-12 Injury Percent 14 DA-C	GLXMA 7-3-12 Injury Percent 28 DA-C			
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Other Rate	Other Unit	Growth Stage	Appl Code					
1	ROUNDUP POWERMAX N-PAK AMS	4.5 SL 100 SL		0.77 lb ae/a 2.5 % v/v		22 fl oz/a 2.5 % v/v		2-4"WH-1 B 2-4"WH-1 B	B B		0 a	0 b	0 c	
	ROUNDUP POWERMAX N-PAK AMS	4.5 SL 100 SL		0.77 lb ae/a 2.5 % v/v		22 fl oz/a 2.5 % v/v		2-4"RG 2-4"RG	D D					
2	ROUNDUP POWERMAX N-PAK AMS	4.5 SL 100 SL		0.77 lb ae/a 2.5 % v/v		22 fl oz/a 2.5 % v/v		2-4"WH-1 B 2-4"WH-1 B	B B		0 a	5 a	1 bc	
	ROUNDUP POWERMAX ULTRA BLAZER N-PAK AMS	4.5 SL 2 EC 100 SL		0.77 lb ae/a 0.375 lb ai/a 2.5 % v/v		22 fl oz/a 24 fl oz/a 2.5 % v/v		2-4"RG 2-4"RG 2-4"RG	D D D					
3	OPTILL PRO (CO-PACK) OPTILL OUTLOOK	68 WG 6 EC		0.085 lb ai/a 0.47 lb ai/a		2 oz/a 10 fl oz/a		PRE PRE	A A		0 b	0 a	5 a	2 ab
	ROUNDUP POWERMAX ULTRA BLAZER N-PAK AMS	4.5 SL 2 EC 100 SL		0.77 lb ae/a 0.375 lb ai/a 2.5 % v/v		22 fl oz/a 24 fl oz/a 2.5 % v/v		2-4"WH-2 C 2-4"WH-2 C 2-4"WH-2 C	C C C					
4	VERDICT OUTLOOK	5.57 EC 6 EC		0.218 lb ai/a 0.47 lb ai/a		5 fl oz/a 10 fl oz/a		PRE PRE	A A		0 b	0 a	5 a	3 a
	ROUNDUP POWERMAX ULTRA BLAZER N-PAK AMS	4.5 SL 2 EC 100 SL		0.77 lb ae/a 0.375 lb ai/a 2.5 % v/v		22 fl oz/a 24 fl oz/a 2.5 % v/v		2-4"WH-2 C 2-4"WH-2 C 2-4"WH-2 C	C C C					
5	VERDICT ZIDUA	5.57 EC 85 WG		0.218 lb ai/a 0.106 lb ai/a		5 fl oz/a 2 oz/a		PRE PRE	A A		0 b	0 a	5 a	3 a
	ROUNDUP POWERMAX ULTRA BLAZER N-PAK AMS	4.5 SL 2 EC 100 SL		0.77 lb ae/a 0.375 lb ai/a 2.5 % v/v		22 fl oz/a 24 fl oz/a 2.5 % v/v		2-4"WH-2 C 2-4"WH-2 C 2-4"WH-2 C	C C C					
6	PREFIX ROUNDUP POWERMAX	5.29 EC 4.5 SL		1.32 lb ai/a 0.77 lb ae/a		2 pt/a 22 fl oz/a		PRE 2-4"WH-2 C	A C		2 a	0 a	5 a	2 ab
	ULTRA BLAZER N-PAK AMS	2 EC 100 SL		0.375 lb ai/a 2.5 % v/v		24 fl oz/a 2.5 % v/v		2-4"WH-2 C 2-4"WH-2 C	C C					
7	FIERCE XLT ROUNDUP POWERMAX	55.68 WG 4.5 SL		0.104 lb ai/a 0.77 lb ae/a		3 oz/a 22 fl oz/a		PRE 2-4"WH-2 C	A C		0 b	0 a	5 a	2 ab
	ULTRA BLAZER N-PAK AMS	2 EC 100 SL		0.375 lb ai/a 2.5 % v/v		24 fl oz/a 2.5 % v/v		2-4"WH-2 C 2-4"WH-2 C	C C					
8	VALOR XLT ROUNDUP POWERMAX	40.3 WG 4.5 SL		0.0756 lb ai/a 0.77 lb ae/a		3 oz/a 22 fl oz/a		PRE 2-4"WH-2 C	A C		0 b	0 a	5 a	2 ab
	ULTRA BLAZER N-PAK AMS	2 EC 100 SL		0.375 lb ai/a 2.5 % v/v		24 fl oz/a 2.5 % v/v		2-4"WH-2 C 2-4"WH-2 C	C C					
9	AUTHORITY XL ROUNDUP POWERMAX	70 WG 4.5 SL		0.175 lb ai/a 0.77 lb ae/a		4 oz/a 22 fl oz/a		PRE 2-4"WH-2 C	A C		0 b	0 a	5 a	2 ab
	ULTRA BLAZER N-PAK AMS	2 EC 100 SL		0.375 lb ai/a 2.5 % v/v		24 fl oz/a 2.5 % v/v		2-4"WH-2 C 2-4"WH-2 C	C C					
10	OPTILL PRO (CO-PACK) OPTILL OUTLOOK	68 WG 6 EC		0.085 lb ai/a 0.47 lb ai/a		2 oz/a 10 fl oz/a		PRE PRE	A A		0 b	0 a	5 a	2 ab
	ZIDUA ROUNDUP POWERMAX ULTRA BLAZER N-PAK AMS	85 WG 4.5 SL 2 EC 100 SL		0.08 lb ai/a 0.77 lb ae/a 0.375 lb ai/a 2.5 % v/v		1.5 oz/a 22 fl oz/a 24 fl oz/a 2.5 % v/v		2-4"WH-2 C 2-4"WH-2 C 2-4"WH-2 C 2-4"WH-2 C	C C C C					

Means followed by same letter do not significantly differ (P=0.05, LSD)  
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

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Pest Code									GLXMA	GLXMA	GLXMA	GLXMA	
Crop Code									5-20-12	6-5-12	6-19-12	7-3-12	
Rating Date									Injury	Injury	Injury	Injury	
Rating Type									Percent	Percent	Percent	Percent	
Rating Unit									14 DAE	14 DA-B	14 DA-C	28 DA-C	
Rating Timing									18 DA-A	0 DA-C			
Trt-Eval Interval													
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Other Rate	Other Rate	Growth Unit Stage	Appl Code				
11	VALOR XLT	40.3	WG	0.0756	lb ai/a	3	oz/a	PRE	A	0 b	0 a	5 a	3 a
	WARRANT	3	CS	1.13	lb ai/a	3	pt/a	2-4"WH-2	C				
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"WH-2	C				
	ULTRA BLAZER	2	EC	0.375	lb ai/a	24	fl oz/a	2-4"WH-2	C				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	2-4"WH-2	C				
12	NONTREATED									0 b	0 a	0 b	0 c
LSD (P=.05)										0.9	0.0	0.0	1.6
Standard Deviation										0.5	0.0	0.0	1.0
CV										273.86	0.0	0.0	49.08
Replicate F										1.000	0.000	0.000	0.030
Replicate Prob(F)										0.3874	1.0000	1.0000	0.9708
Treatment F										4.000	0.000	0.000	3.523
Treatment Prob(F)										0.0060	1.0000	1.0000	0.0058

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Pest Code Crop Code Rating Date Rating Type Rating Unit Rating Timing Trt-Eval Interval								AMATA-HR 6-5-12 Control Percent 14 DA-B 0 DA-C	AMATA-HR 6-19-12 Control Percent 14 DA-C	AMATA-HR 7-3-12 Control Percent 28 DA-C		
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Other Rate	Other Unit	Growth Stage	Appl Code			
1	ROUNDUP POWERMAX N-PAK AMS ROUNDUP POWERMAX N-PAK AMS	4.5 SL 100 SL 4.5 SL 100 SL	SL SL SL SL	0.77 lb ae/a 2.5 % v/v 0.77 lb ae/a 2.5 % v/v	ae/a v/v ae/a v/v	22 fl oz/a 2.5 % v/v 22 fl oz/a 2.5 % v/v	oz/a v/v oz/a v/v	2-4*WH-1 B 2-4*WH-1 B 2-4*RG D 2-4*RG D		57 d	52 e	53 d
2	ROUNDUP POWERMAX N-PAK AMS ROUNDUP POWERMAX ULTRA BLAZER N-PAK AMS	4.5 SL 100 SL 4.5 SL 2 EC 100 SL	SL SL SL EC SL	0.77 lb ae/a 2.5 % v/v 0.77 lb ae/a 0.375 lb ai/a 2.5 % v/v	ae/a v/v ae/a ai/a v/v	22 fl oz/a 2.5 % v/v 22 fl oz/a 24 fl oz/a 2.5 % v/v	oz/a v/v oz/a oz/a v/v	2-4*WH-1 B 2-4*WH-1 B 2-4*RG D 2-4*RG D 2-4*RG D		52 d	57 e	57 d
3	OPTILL PRO (CO-PACK) OPTILL OUTLOOK ROUNDUP POWERMAX ULTRA BLAZER N-PAK AMS	68 WG 6 EC 4.5 SL 2 EC 100 SL	WG EC SL EC SL	0.085 lb ai/a 0.47 lb ai/a 0.77 lb ae/a 0.375 lb ai/a 2.5 % v/v	ai/a ai/a ae/a ai/a v/v	2 oz/a 10 fl oz/a 22 fl oz/a 24 fl oz/a 2.5 % v/v	oz/a fl oz/a fl oz/a fl oz/a v/v	PRE A PRE A PRE A 2-4*WH-2 C 2-4*WH-2 C 2-4*WH-2 C		86 ab	92 abc	89 ab
4	VERDICT OUTLOOK ROUNDUP POWERMAX ULTRA BLAZER N-PAK AMS	5.57 EC 6 EC 4.5 SL 2 EC 100 SL	EC EC SL EC SL	0.218 lb ai/a 0.47 lb ai/a 0.77 lb ae/a 0.375 lb ai/a 2.5 % v/v	ai/a ai/a ae/a ai/a v/v	5 fl oz/a 10 fl oz/a 22 fl oz/a 24 fl oz/a 2.5 % v/v	oz/a fl oz/a fl oz/a fl oz/a v/v	PRE A PRE A 2-4*WH-2 C 2-4*WH-2 C 2-4*WH-2 C		87 ab	94 a	92 a
5	VERDICT ZIDUA ROUNDUP POWERMAX ULTRA BLAZER N-PAK AMS	5.57 EC 85 WG 4.5 SL 2 EC 100 SL	EC WG SL EC SL	0.218 lb ai/a 0.106 lb ai/a 0.77 lb ae/a 0.375 lb ai/a 2.5 % v/v	ai/a ai/a ae/a ai/a v/v	5 fl oz/a 2 oz/a 22 fl oz/a 24 fl oz/a 2.5 % v/v	oz/a oz/a fl oz/a fl oz/a v/v	PRE A PRE A 2-4*WH-2 C 2-4*WH-2 C 2-4*WH-2 C		94 a	96 a	96 a
6	PREFIX ROUNDUP POWERMAX ULTRA BLAZER N-PAK AMS	5.29 EC 4.5 SL 2 EC 100 SL	EC SL EC SL	1.32 lb ai/a 0.77 lb ae/a 0.375 lb ai/a 2.5 % v/v	ai/a ae/a ai/a v/v	2 pt/a 22 fl oz/a 24 fl oz/a 2.5 % v/v	pt/a fl oz/a fl oz/a v/v	PRE A 2-4*WH-2 C 2-4*WH-2 C 2-4*WH-2 C		92 a	96 a	95 a
7	FIERCE XLT ROUNDUP POWERMAX ULTRA BLAZER N-PAK AMS	55.68 WG 4.5 SL 2 EC 100 SL	WG SL EC SL	0.104 lb ai/a 0.77 lb ae/a 0.375 lb ai/a 2.5 % v/v	ai/a ae/a ai/a v/v	3 oz/a 22 fl oz/a 24 fl oz/a 2.5 % v/v	oz/a fl oz/a fl oz/a v/v	PRE A 2-4*WH-2 C 2-4*WH-2 C 2-4*WH-2 C		89 a	93 ab	92 a
8	VALOR XLT ROUNDUP POWERMAX ULTRA BLAZER N-PAK AMS	40.3 WG 4.5 SL 2 EC 100 SL	WG SL EC SL	0.0756 lb ai/a 0.77 lb ae/a 0.375 lb ai/a 2.5 % v/v	ai/a ae/a ai/a v/v	3 oz/a 22 fl oz/a 24 fl oz/a 2.5 % v/v	oz/a fl oz/a fl oz/a v/v	PRE A 2-4*WH-2 C 2-4*WH-2 C 2-4*WH-2 C		75 c	72 d	73 c
9	AUTHORITY XL ROUNDUP POWERMAX ULTRA BLAZER N-PAK AMS	70 WG 4.5 SL 2 EC 100 SL	WG SL EC SL	0.175 lb ai/a 0.77 lb ae/a 0.375 lb ai/a 2.5 % v/v	ai/a ae/a ai/a v/v	4 oz/a 22 fl oz/a 24 fl oz/a 2.5 % v/v	oz/a fl oz/a fl oz/a v/v	PRE A 2-4*WH-2 C 2-4*WH-2 C 2-4*WH-2 C		78 c	80 cd	78 c
10	OPTILL PRO (CO-PACK) OPTILL OUTLOOK ZIDUA ROUNDUP POWERMAX ULTRA BLAZER N-PAK AMS	68 WG 6 EC 85 WG 4.5 SL 2 EC 100 SL	WG EC WG SL EC SL	0.085 lb ai/a 0.47 lb ai/a 0.08 lb ai/a 0.77 lb ae/a 0.375 lb ai/a 2.5 % v/v	ai/a ai/a ai/a ae/a ai/a v/v	2 oz/a 10 fl oz/a 1.5 oz/a 22 fl oz/a 24 fl oz/a 2.5 % v/v	oz/a fl oz/a oz/a fl oz/a fl oz/a v/v	PRE A PRE A PRE A 2-4*WH-2 C 2-4*WH-2 C 2-4*WH-2 C 2-4*WH-2 C		90 a	95 a	94 a

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Pest Code								AMATA-HR	AMATA-HR	AMATA-HR		
Crop Code								6-5-12	6-19-12	7-3-12		
Rating Date								Control	Control	Control		
Rating Type								Percent	Percent	Percent		
Rating Unit								14 DA-B	14 DA-C	28 DA-C		
Rating Timing								0 DA-C				
Trt-Eval Interval												
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code			
11	VALOR XLT	40.3	WG	0.0756	lb ai/a	3	oz/a	PRE	A	79	bc	81
	WARRANT	3	CS	1.13	lb ai/a	3	pt/a	2-4"WH-2	C			
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"WH-2	C			
	ULTRA BLAZER	2	EC	0.375	lb ai/a	24	fl oz/a	2-4"WH-2	C			
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	2-4"WH-2	C			
12	NONTREATED									0	e	0
	LSD (P=.05)									8.3		12.0
	Standard Deviation									4.9		7.1
	CV									6.7		9.41
	Replicate F									2.178		1.447
	Replicate Prob(F)									0.1371		0.2568
	Treatment F									88.690		47.517
	Treatment Prob(F)									0.0001		0.0001

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Trial Comments

1. Protocol: BASF.
2. Ratings: CI at 14 DAE and 0, 14, and 28 DA-C. WC at 0, 14, and 28 DA-C.
3. Take photos at 0 and 14-28 DA-C.
4. Blanket burndown application of Intimidator Plus (48 floz/A) and 2,4-D (1 pt/A) was applied at 14 DBP, on 4-17-12.
5. Blanket burndown application of Gramoxone Inteon (4 pt/A) plus NIS (0.5%) was applied at planting on 5-1-12.
6. No yield data necessary.
7. AMATA-HR = Herbicide-resistant waterhemp (glyphosate).
8. Not harvested.