

Marvel Product Understanding.

Trial ID: 15-50W-N70 Location: Belleville Res. Center Trial Year: 2015  
 Investigator: Ronald F. Krausz

<p><b>Trial Status:</b> F one-year/final  <b>Initiation Date:</b> 6-12-15  <b>Completion Date:</b> 10-17-15</p> <p><b>City:</b> Belleville    <b>Country:</b> USA  <b>State/Prov.:</b> Illinois IL  <b>Postal Code:</b> 62221</p>	<p><b>Trial Location</b></p>
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<p><b>Objectives:</b>          Evaluate Marvel plus glyphosate tank-mixes with alternative adjuvants at different weed heights and determine the value of PRE fb POST application methods.</p>
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<p><b>Study Director:</b> Ronald F. Krausz  <b>Organization:</b> Belleville Research Center - Southern Illinois Univ Carbondale  <b>Address:</b> 2036 Charles Lane  <b>City+State/Prov:</b> Belleville, IL  <b>Postal Code:</b> 62221  <b>Country:</b> USA</p>	<p><b>Contacts</b>  <b>Title:</b> Researcher/Farm Manager  <b>Phone No.:</b> 618-566-4761  <b>E-mail:</b> rkrausz@siu.edu</p>
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<p><b>Crop 1:</b> GLXMA Glycine max    Soybean  <b>Variety:</b> AG3832    <b>BBCH Scale:</b> BSOY  <b>Description:</b> RR2Y</p> <p><b>Planting Rate, Unit:</b> 140000 S/A  <b>Depth, Unit:</b> 1 IN  <b>Row Spacing, Unit:</b> 30 IN</p>	<p><b>Crop Description</b>  <b>Planting Date:</b> 6-12-15  <b>Planting Method:</b> SEEDED</p>
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<p><b>Pest Description</b></p>
<p><b>Pest 1 Type:</b> W    <b>Code:</b> SETFA Setaria faberi Herrm.  <b>Common Name:</b> foxtail, giant</p> <p><b>Pest 2 Type:</b> W    <b>Code:</b> AMBTR Ambrosia trifida L.  <b>Common Name:</b> ragweed, giant</p> <p><b>Pest 3 Type:</b> W    <b>Code:</b> ABUTH Abutilon theophrasti Medik.  <b>Common Name:</b> velvetleaf</p> <p><b>Pest 4 Type:</b> W    <b>Code:</b> AMATA Amaranthus rudis Sauer  <b>Common Name:</b> waterhemp, common</p>

<p><b>Treated Plot Width:</b> 7.5 FT    <b>Total Plot Width:</b> 10 FT  <b>Treated Plot Length:</b> 27 FT    <b>Total Plot Length:</b> 27 FT</p> <p><b>Replications:</b> 3  <b>Untreated Arrangement:</b> INCLUDED single control randomized in each block</p>	<p><b>Site and Design</b>  <b>Site Type:</b> FIELD  <b>Experimental Unit:</b> 1 PLOT  <b>Tillage Type:</b> REDTIL reduced-till  <b>Study Design:</b> RACOB� Randomized Complete Block (RCB)</p>						
<table border="1" style="width: 100%; border-collapse: collapse;"> <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>ZEAMD</td> <td>2014</td> </tr> </tbody> </table>		No.	Previous Crop	Year	1.	ZEAMD	2014
No.	Previous Crop	Year					
1.	ZEAMD	2014					

<p><b>Maintenance</b></p>				
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">No.</th> <th style="width: 95%;">Maintenance Product Name</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1.</td> <td>N 0 LB/A, P2O5 50 LB/A, K2O 150 LB/A</td> </tr> </tbody> </table>	No.	Maintenance Product Name	1.	N 0 LB/A, P2O5 50 LB/A, K2O 150 LB/A
No.	Maintenance Product Name			
1.	N 0 LB/A, P2O5 50 LB/A, K2O 150 LB/A			

<p><b>Description Name:</b> 50W 2013  <b>% OM:</b> 2.7    <b>Texture:</b> SIL silt loam  <b>pH:</b> 6.8    <b>Soil Name:</b> Pierron  <b>CEC:</b> 9</p>	<p><b>Soil Description</b></p>									
<p><b>Additional Measured Elements</b></p>										
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Element</th> <th style="width: 45%;">Quantity</th> <th style="width: 40%;">Unit</th> </tr> </thead> <tbody> <tr> <td>P1</td> <td>54</td> <td>lb/A</td> </tr> <tr> <td>K</td> <td>262</td> <td>lb/A</td> </tr> </tbody> </table>		Element	Quantity	Unit	P1	54	lb/A	K	262	lb/A
Element	Quantity	Unit								
P1	54	lb/A								
K	262	lb/A								

Marvel Product Understanding.

Trial ID: 15-50W-N70 Location: Belleville Res. Center Trial Year: 2015  
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Overall Moisture Conditions: ABONOR						Moisture and Weather Conditions				
Closest Weather Station: ICN - Belleville IL						Distance, Unit: 0.5 MI				
No.	Date	Amount	Unit	Type	Type Description	Interval	Unit	Min Temp	Max Temp	Temp Unit
1.	4-29-15					7	DAY	36	84	F
2.	5-6-15					7	DAY	49	85	F
3.	5-8-15	4.09	IN	RAIN	rain	4	DAY			
4.	5-13-15					7	DAY	45	83	F
5.	5-14-15	0.33	IN	RAIN	rain	4	DAY			
6.	5-20-15					7	DAY	44	85	F
7.	5-20-15	0.16	IN	RAIN	rain	1	DAY			
8.	5-24-15	0.89	IN	RAIN	rain	1	DAY			
9.	5-26-15	0.59	IN	RAIN	rain	2	DAY			
10.	5-27-15					7	DAY	55	84	F
11.	5-29-15	2.15	IN	RAIN	rain	2	DAY			
12.	6-3-15					7	DAY	53	89	F
13.	6-5-15	0.17	IN	RAIN	rain	1	DAY			
14.	6-8-15	0.66	IN	RAIN	rain	1	DAY			
15.	6-10-15					7	DAY	64	91	F
16.	6-14-15	0.16	IN	RAIN	rain	1	DAY			
17.	6-15-15	0.11	IN	RAIN	rain	1	DAY			
18.	6-16-15	2.25	IN	RAIN	rain	1	DAY			
19.	6-17-15					7	DAY	69	91	F
20.	6-17-15	0.09	IN	RAIN	rain	1	DAY			
21.	6-18-15	0.14	IN	RAIN	rain	1	DAY			
22.	6-19-15	3.29	IN	RAIN	rain	1	DAY			
23.	6-20-15	0.2	IN	RAIN	rain	2	DAY			
24.	6-24-15					7	DAY	62	93	F
25.	6-25-15	1.66	IN	RAIN	rain	2	DAY			
26.	6-28-15	0.6	IN	RAIN	rain	2	DAY			
27.	7-1-15					7	DAY	63	88	F
28.	7-1-15	0.64	IN	RAIN	rain	2	DAY			
29.	7-7-15	1.33	IN	RAIN	rain	2	DAY			
30.	7-8-15					7	DAY	59	97	F
31.	7-10-15	0.26	IN	RAIN	rain	1	DAY			
32.	7-15-15					7	DAY	69	93	F
33.	7-19-15	0.35	IN	RAIN	rain	2	DAY			
34.	7-22-15					7	DAY	65	95	F
35.	7-26-15	1.21	IN	RAIN	rain	3	DAY			
36.	7-29-15					7	DAY	65	93	F
37.	8-5-15					7	DAY	64	88	F
38.	8-5-15	2.25	IN	RAIN	rain	1	DAY			
39.	8-9-15	0.47	IN	RAIN	rain	1	DAY			
40.	8-12-15					7	DAY	63	89	F
41.	8-18-15	2.23	IN	RAIN	rain	2	DAY			
42.	8-19-15					7	DAY	52	82	F
43.	8-22-15	0.18	IN	RAIN	rain	1	DAY			
44.	8-26-15					7	DAY	54	91	F
45.	9-2-15					7	DAY	68	94	F
46.	9-8-15	1.93	IN	RAIN	rain	2	DAY			
47.	9-9-15					7	DAY	47	83	F
48.	9-11-15	0.4	IN	RAIN	rain	1	DAY			
49.	9-16-15					7	DAY	51	90	F
50.	9-19-15	0.14	IN	RAIN	rain	1	DAY			
51.	9-23-15					7	DAY	54	85	F
52.	9-28-15	0.13	IN	RAIN	rain	1	DAY			

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## Application Description

	A	B	C
<b>Application Date:</b>	6-13-15	6-30-15	7-13-15
<b>Appl. Start Time:</b>	11:00	17:00	10:15
<b>Appl. Stop Time:</b>	11:10	17:30	10:25
<b>Application Method:</b>	Spray	Spray	Spray
<b>Application Timing:</b>	PRE	4"W	8"W
<b>Application Placement:</b>	BROSOI	BROFOL	BROFOL
<b>Applied By:</b>	LXF	MEJ	EAE
<b>Air Temperature, Unit:</b>	83 F	82 F	90 F
<b>% Relative Humidity:</b>	72	60	68
<b>Wind Velocity, Unit:</b>	7 MPH	2 MPH	4 MPH
<b>Wind Direction:</b>	SW	W	SW
<b>Dew Presence (Y/N):</b>	N	N	N
<b>Soil Temperature, Unit:</b>	75 F	76 F	80 F
<b>Soil Moisture:</b>	NORMAL	ABONOR	ABONOR
<b>% Cloud Cover:</b>	50	100	0
<b>Next Moisture Occurred On:</b>	6-14-15	7-1-15	7-19-15
<b>Time to Next Moisture, Unit:</b>	22 HR	10 HR	6 DAY

## Crop Stage At Each Application

	A	B	C
<b>Crop 1 Code, BBCH Scale:</b>	GLXMA	GLXMA	GLXMA
<b>Stage Scale Used:</b>	DESC	DESC	DESC
<b>Stage Majority, Percent:</b>	NA	V2	V4
<b>Stage Minimum, Percent:</b>		V1	V3
<b>Stage Maximum, Percent:</b>		V2	V4
<b>Height, Unit:</b>		5 IN	12 IN
<b>Height Minimum, Maximum:</b>		3 5	9 12

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Pest Stage At Each Application			
	A	B	C
<b>Pest 1 Code, Type, Scale:</b>	SETFA W	SETFA W	SETFA W
<b>Stage Majority, Percent:</b>	NA	4	NA
<b>Stage Minimum, Percent:</b>		2	
<b>Stage Maximum, Percent:</b>		5	
<b>Height, Unit:</b>		4 IN	
<b>Height Minimum, Maximum:</b>		1 6	
<b>Density, Unit:</b>		0.01 FT2	
<b>Pest 2 Code, Type, Scale:</b>	AMBTR W	AMBTR W	AMBTR W
<b>Stage Majority, Percent:</b>	NA	6	8
<b>Stage Minimum, Percent:</b>		2	4
<b>Stage Maximum, Percent:</b>		8	10
<b>Height, Unit:</b>		4 IN	8 IN
<b>Height Minimum, Maximum:</b>		1.5 4	6 8
<b>Density, Unit:</b>		0.1 FT2	1 FT2
<b>Pest 3 Code, Type, Scale:</b>	ABUTH W	ABUTH W	ABUTH W
<b>Stage Majority, Percent:</b>	NA	4	NA
<b>Stage Minimum, Percent:</b>		2	
<b>Stage Maximum, Percent:</b>		4	
<b>Height, Unit:</b>		1 IN	
<b>Height Minimum, Maximum:</b>		0.5 1.5	
<b>Density, Unit:</b>		0.001 FT2	
<b>Pest 4 Code, Type, Scale:</b>	AMATA W	AMATA W	AMATA W
<b>Stage Majority, Percent:</b>	NA	4	NA
<b>Stage Minimum, Percent:</b>		2	
<b>Stage Maximum, Percent:</b>		4	
<b>Height, Unit:</b>		1 IN	
<b>Height Minimum, Maximum:</b>		1 2	
<b>Density, Unit:</b>		0.001 FT2	

Application Equipment			
	A	B	C
<b>Appl. Equipment:</b>	CO2 sprayer	CO2 sprayer	CO2 sprayer
<b>Equipment Type:</b>	BACSPR	BACSPR	BACSPR
<b>Operation Pressure, Unit:</b>	30 PSI	30 PSI	30 PSI
<b>Nozzle Type:</b>	XR	XR	XR
<b>Nozzle Size:</b>	8002	8002	8002
<b>Boom Length, Unit:</b>	7.5 FT	7.5 FT	7.5 FT
<b>Incorporation Equip.:</b>	NA	NA	NA
<b>Spray Volume, Unit:</b>	15 GPA	15 GPA	15 GPA

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Pest Code							GLXMA	GLXMA	GLXMA
Crop Code							10-17-15	10-17-15	10-17-15
Rating Date							Moisture	Test wt.	Yield
Rating Type							Percent	lb/bu	bu/A
Rating Unit									
Rating Timing									
Trt-Eval Interval									
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code	
1	AUTHORITY MAXX	66	WG	0.248 lb ai/a		6 oz/a	PRE	A	9.5 a 58.8 a 43 b
2	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B	10.1 a 58.4 a 54 a
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B	
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B	
3	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B	9.6 a 58.7 a 54 ab
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B	
	COC (PRIME OIL)	100	SL	0.5 % v/v	0.5 % v/v		4"W	B	
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B	
4	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B	10.7 a 57.8 a 58 a
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B	
	MSO (MSO ULTRA)	100	SL	0.5 % v/v	0.5 % v/v		4"W	B	
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B	
5	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		8"W	C	9.5 a 58.8 a 59 a
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		8"W	C	
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		8"W	C	
6	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		8"W	C	10.8 a 57.5 a 52 ab
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		8"W	C	
	COC (PRIME OIL)	100	SL	0.5 % v/v	0.5 % v/v		8"W	C	
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		8"W	C	
7	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		8"W	C	9.7 a 58.7 a 57 a
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		8"W	C	
	MSO (MSO ULTRA)	100	SL	0.5 % v/v	0.5 % v/v		8"W	C	
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		8"W	C	
8	AUTHORITY MAXX	66	WG	0.248 lb ai/a		6 oz/a	PRE	A	9.3 a 58.9 a 55 a
	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B	
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B	
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B	
9	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B	9.8 a 58.6 a 55 a
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B	
	COC (PRIME OIL)	100	SL	1 % v/v	1 % v/v		4"W	B	
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B	
10	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B	9.9 a 58.6 a 55 a
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B	
	MSO (MSO ULTRA)	100	SL	1 % v/v	1 % v/v		4"W	B	
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B	
11	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B	9.5 a 58.8 a 56 a
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B	
	COC (PRIME OIL)	100	SL	1 % v/v	1 % v/v		4"W	B	
	28% UAN	100	SL	4 % v/v	4 % v/v		4"W	B	
12	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B	9.6 a 58.7 a 56 a
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B	
	MSO (MSO ULTRA)	100	SL	1 % v/v	1 % v/v		4"W	B	
	28% UAN	100	SL	4 % v/v	4 % v/v		4"W	B	

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.  
 Could not calculate LSD (% mean diff) for columns 10,11,14,27,31,13,16,21,25,17,22,26 because error mean square = 0.

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Pest Code										GLXMA 10-17-15 Moisture Percent	GLXMA 10-17-15 Test wt. lb/bu	GLXMA 10-17-15 Yield bu/A
Crop Code												
Rating Date												
Rating Type												
Rating Unit												
Rating Timing												
Trt-Eval Interval												
Trt. Treatment No. Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate	Unit	Growth Stage	Appl Code			
13 NONTREATED												24 c
LSD P=.05										1.30	1.30	11.5
Standard Deviation										0.77	0.77	6.8
CV										7.83	1.31	13.06
Replicate F										0.117	0.241	2.236
Replicate Prob(F)										0.8899	0.7877	0.1286
Treatment F										1.154	0.930	5.723
Treatment Prob(F)										0.3705	0.5307	0.0001

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Pest Code							GLXMA	GLXMA	GLXMA
Crop Code							6-18-15	6-28-15	7-13-15
Rating Date							Injury	Injury	Injury
Rating Type							Percent	Percent	Percent
Rating Unit							5 DA-A	15 DA-A	30 DA-A
Rating Timing									
Trt-Eval Interval									
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Other Rate	Other Unit	Growth Stage	Appl Code	
1	AUTHORITY MAXX	66	WG	0.248 lb ai/a	6 oz/a		PRE	A	0 a 10 a 0 b
2	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B	
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B	
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B	
3	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B	
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B	
	COC (PRIME OIL)	100	SL	0.5 % v/v	0.5 % v/v		4"W	B	
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B	
4	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B	
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B	
	MSO (MSO ULTRA)	100	SL	0.5 % v/v	0.5 % v/v		4"W	B	
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B	
5	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		8"W	C	
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		8"W	C	
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		8"W	C	
6	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		8"W	C	
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		8"W	C	
	COC (PRIME OIL)	100	SL	0.5 % v/v	0.5 % v/v		8"W	C	
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		8"W	C	
7	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		8"W	C	
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		8"W	C	
	MSO (MSO ULTRA)	100	SL	0.5 % v/v	0.5 % v/v		8"W	C	
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		8"W	C	
8	AUTHORITY MAXX	66	WG	0.248 lb ai/a	6 oz/a		PRE	A	0 a 10 a 5 a
	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B	
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B	
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B	
9	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B	
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B	
	COC (PRIME OIL)	100	SL	1 % v/v	1 % v/v		4"W	B	
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B	
10	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B	
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B	
	MSO (MSO ULTRA)	100	SL	1 % v/v	1 % v/v		4"W	B	
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B	
11	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B	
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B	
	COC (PRIME OIL)	100	SL	1 % v/v	1 % v/v		4"W	B	
	28% UAN	100	SL	4 % v/v	4 % v/v		4"W	B	
12	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B	
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B	
	MSO (MSO ULTRA)	100	SL	1 % v/v	1 % v/v		4"W	B	
	28% UAN	100	SL	4 % v/v	4 % v/v		4"W	B	

Marvel Product Understanding.

Trial ID: 15-50W-N70 Location: Belleville Res. Center Trial Year: 2015  
 Investigator: Ronald F. Krausz

Pest Code	GLXMA	GLXMA	GLXMA
Crop Code	6-18-15	6-28-15	7-13-15
Rating Date	Injury	Injury	Injury
Rating Type	Percent	Percent	Percent
Rating Unit	5 DA-A	15 DA-A	30 DA-A
Rating Timing			
Trt-Eval Interval			
Trt. Treatment	Form Form	Rate	Other Other
No. Name	Conc Type Rate	Unit	Rate Rate Unit Stage Code
13 NONTREATED	0 a	0 b	0 b
LSD P=.05	.	.	.
Standard Deviation	0.0	0.0	0.0
CV	0.0	0.0	0.0
Replicate F	0.000	0.000	0.000
Replicate Prob(F)	1.0000	1.0000	1.0000
Treatment F	0.000	0.000	0.000
Treatment Prob(F)	1.0000	1.0000	1.0000



Marvel Product Understanding.

Trial ID: 15-50W-N70 Location: Belleville Res. Center Trial Year: 2015  
 Investigator: Ronald F. Krausz

Pest Code							GLXMA	GLXMA	GLXMA	GLXMA			
Crop Code							Injury	Injury	Injury	Injury			
Rating Date							Percent	Percent	Percent	Percent			
Rating Type													
Rating Unit													
Rating Timing													
Trt-Eval Interval							5 DA-PO	15 DA-PO	30 DA-PO	60 DA-PO			
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code				
1	AUTHORITY MAXX	66	WG	0.248	lb ai/a	6	oz/a	PRE	A	0 e	0 d	0 a	0 a
2	MARVEL	3	SL	0.17	lb ai/a	7.25	fl oz/a	4"W	B	18 d	8 ab	0 a	0 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	4"W	B				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	4"W	B				
3	MARVEL	3	SL	0.17	lb ai/a	7.25	fl oz/a	4"W	B	25 c	8 ab	0 a	0 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	4"W	B				
	COC (PRIME OIL)	100	SL	0.5	% v/v	0.5	% v/v	4"W	B				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	4"W	B				
4	MARVEL	3	SL	0.17	lb ai/a	7.25	fl oz/a	4"W	B	28 bc	8 ab	0 a	0 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	4"W	B				
	MSO (MSO ULTRA)	100	SL	0.5	% v/v	0.5	% v/v	4"W	B				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	4"W	B				
5	MARVEL	3	SL	0.17	lb ai/a	7.25	fl oz/a	8"W	C	32 ab	7 bc	0 a	0 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8"W	C				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	8"W	C				
6	MARVEL	3	SL	0.17	lb ai/a	7.25	fl oz/a	8"W	C	35 a	10 a	0 a	0 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8"W	C				
	COC (PRIME OIL)	100	SL	0.5	% v/v	0.5	% v/v	8"W	C				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	8"W	C				
7	MARVEL	3	SL	0.17	lb ai/a	7.25	fl oz/a	8"W	C	35 a	10 a	0 a	0 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8"W	C				
	MSO (MSO ULTRA)	100	SL	0.5	% v/v	0.5	% v/v	8"W	C				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	8"W	C				
8	AUTHORITY MAXX	66	WG	0.248	lb ai/a	6	oz/a	PRE	A	13 d	5 c	0 a	0 a
	MARVEL	3	SL	0.17	lb ai/a	7.25	fl oz/a	4"W	B				
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	4"W	B				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	4"W	B				
9	MARVEL	3	SL	0.17	lb ai/a	7.25	fl oz/a	4"W	B	35 a	5 c	0 a	0 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	4"W	B				
	COC (PRIME OIL)	100	SL	1	% v/v	1	% v/v	4"W	B				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	4"W	B				
10	MARVEL	3	SL	0.17	lb ai/a	7.25	fl oz/a	4"W	B	35 a	10 a	0 a	0 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	4"W	B				
	MSO (MSO ULTRA)	100	SL	1	% v/v	1	% v/v	4"W	B				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	4"W	B				
11	MARVEL	3	SL	0.17	lb ai/a	7.25	fl oz/a	4"W	B	35 a	10 a	0 a	0 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	4"W	B				
	COC (PRIME OIL)	100	SL	1	% v/v	1	% v/v	4"W	B				
	28% UAN	100	SL	4	% v/v	4	% v/v	4"W	B				
12	MARVEL	3	SL	0.17	lb ai/a	7.25	fl oz/a	4"W	B	35 a	10 a	0 a	0 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	4"W	B				
	MSO (MSO ULTRA)	100	SL	1	% v/v	1	% v/v	4"W	B				
	28% UAN	100	SL	4	% v/v	4	% v/v	4"W	B				

Marvel Product Understanding.

Trial ID: 15-50W-N70 Location: Belleville Res. Center Trial Year: 2015  
 Investigator: Ronald F. Krausz

Pest Code								GLXMA	GLXMA	GLXMA	GLXMA			
Crop Code														
Rating Date														
Rating Type								Injury	Injury	Injury	Injury			
Rating Unit								Percent	Percent	Percent	Percent			
Rating Timing														
Trt-Eval Interval								5 DA-PO	15 DA-PO	30 DA-PO	60 DA-PO			
Trt. No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit Unit	Other Rate	Other Rate	Growth Unit	Appl Stage	Code				
13	NONTREATED										0 e	0 d	0 a	0 a
LSD P=.05								5.0	2.4	.	.			
Standard Deviation								3.0	1.4	0.0	0.0			
CV								11.92	20.47	0.0	0.0			
Replicate F								0.071	4.000	0.000	0.000			
Replicate Prob(F)								0.9313	0.0317	1.0000	1.0000			
Treatment F								58.107	18.769	0.000	0.000			
Treatment Prob(F)								0.0001	0.0001	1.0000	1.0000			

## Marvel Product Understanding.

Trial ID: 15-50W-N70 Location: Belleville Res. Center Trial Year: 2015  
Investigator: Ronald F. Krausz

Pest Code							AMBTR	AMBTR
Crop Code								
Rating Date							6-28-15	7-13-15
Rating Type							Control	Control
Rating Unit							Percent	Percent
Rating Timing								13 DA-B
Trt-Eval Interval							15 DA-A	30 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Other Rate	Other Unit	Growth Stage	Appl Code
1	AUTHORITY MAXX	66	WG	0.248 lb ai/a		6 oz/a	PRE	A
								93 a
2	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B
3	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B
	COC (PRIME OIL)	100	SL	0.5 % v/v	0.5 % v/v		4"W	B
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B
4	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B
	MSO (MSO ULTRA)	100	SL	0.5 % v/v	0.5 % v/v		4"W	B
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B
5	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		8"W	C
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		8"W	C
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		8"W	C
6	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		8"W	C
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		8"W	C
	COC (PRIME OIL)	100	SL	0.5 % v/v	0.5 % v/v		8"W	C
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		8"W	C
7	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		8"W	C
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		8"W	C
	MSO (MSO ULTRA)	100	SL	0.5 % v/v	0.5 % v/v		8"W	C
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		8"W	C
8	AUTHORITY MAXX	66	WG	0.248 lb ai/a		6 oz/a	PRE	A
	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B
								98 a
9	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B
	COC (PRIME OIL)	100	SL	1 % v/v	1 % v/v		4"W	B
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B
10	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B
	MSO (MSO ULTRA)	100	SL	1 % v/v	1 % v/v		4"W	B
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B
11	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B
	COC (PRIME OIL)	100	SL	1 % v/v	1 % v/v		4"W	B
	28% UAN	100	SL	4 % v/v	4 % v/v		4"W	B
12	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B
	MSO (MSO ULTRA)	100	SL	1 % v/v	1 % v/v		4"W	B
	28% UAN	100	SL	4 % v/v	4 % v/v		4"W	B

## Marvel Product Understanding.

Trial ID: 15-50W-N70      Location: Belleville Res. Center      Trial Year: 2015  
 Investigator: Ronald F. Krausz

Pest Code									AMBTR	AMBTR	
Crop Code											
Rating Date									6-28-15	7-13-15	
Rating Type									Control	Control	
Rating Unit									Percent	Percent	
Rating Timing										13 DA-B	
Trt-Eval Interval									15 DA-A	30 DA-A	
Trt. Treatment No. Name	Form Conc	Form Type	Rate Rate	Unit Unit	Other Rate	Other Rate	Unit Unit	Growth Stage	Appl Code		
13 NONTREATED										0 b	0 c
LSD P=.05										6.0	7.6
Standard Deviation										2.7	3.3
CV										4.2	5.48
Replicate F										1.000	1.000
Replicate Prob(F)										0.4444	0.4444
Treatment F										1281.063	764.590
Treatment Prob(F)										0.0001	0.0001

## Marvel Product Understanding.

Trial ID: 15-50W-N70 Location: Belleville Res. Center Trial Year: 2015  
Investigator: Ronald F. Krausz

Pest Code							AMBTR	AMBTR	AMBTR	AMBTR			
Crop Code													
Rating Date													
Rating Type							Control	Control	Control	Control			
Rating Unit							Percent	Percent	Percent	Percent			
Rating Timing													
Trt-Eval Interval							5 DA-PO	15 DA-PO	30 DA-PO	60 DA-PO			
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code				
1	AUTHORITY MAXX	66	WG	0.248	lb ai/a	6	oz/a	PRE	A	83 b	83 b	55 b	55 b
2	MARVEL	3	SL	0.17	lb ai/a	7.25	fl oz/a	4"W	B	99 a	99 a	95 a	93 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	4"W	B				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	4"W	B				
3	MARVEL	3	SL	0.17	lb ai/a	7.25	fl oz/a	4"W	B	99 a	99 a	88 a	88 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	4"W	B				
	COC (PRIME OIL)	100	SL	0.5	% v/v	0.5	% v/v	4"W	B				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	4"W	B				
4	MARVEL	3	SL	0.17	lb ai/a	7.25	fl oz/a	4"W	B	99 a	99 a	87 a	87 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	4"W	B				
	MSO (MSO ULTRA)	100	SL	0.5	% v/v	0.5	% v/v	4"W	B				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	4"W	B				
5	MARVEL	3	SL	0.17	lb ai/a	7.25	fl oz/a	8"W	C	99 a	99 a	97 a	97 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8"W	C				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	8"W	C				
6	MARVEL	3	SL	0.17	lb ai/a	7.25	fl oz/a	8"W	C	99 a	99 a	99 a	99 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8"W	C				
	COC (PRIME OIL)	100	SL	0.5	% v/v	0.5	% v/v	8"W	C				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	8"W	C				
7	MARVEL	3	SL	0.17	lb ai/a	7.25	fl oz/a	8"W	C	99 a	99 a	98 a	97 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8"W	C				
	MSO (MSO ULTRA)	100	SL	0.5	% v/v	0.5	% v/v	8"W	C				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	8"W	C				
8	AUTHORITY MAXX	66	WG	0.248	lb ai/a	6	oz/a	PRE	A	99 a	99 a	96 a	95 a
	MARVEL	3	SL	0.17	lb ai/a	7.25	fl oz/a	4"W	B				
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	4"W	B				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	4"W	B				
9	MARVEL	3	SL	0.17	lb ai/a	7.25	fl oz/a	4"W	B	99 a	99 a	83 a	83 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	4"W	B				
	COC (PRIME OIL)	100	SL	1	% v/v	1	% v/v	4"W	B				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	4"W	B				
10	MARVEL	3	SL	0.17	lb ai/a	7.25	fl oz/a	4"W	B	99 a	99 a	89 a	89 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	4"W	B				
	MSO (MSO ULTRA)	100	SL	1	% v/v	1	% v/v	4"W	B				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	4"W	B				
11	MARVEL	3	SL	0.17	lb ai/a	7.25	fl oz/a	4"W	B	99 a	99 a	94 a	93 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	4"W	B				
	COC (PRIME OIL)	100	SL	1	% v/v	1	% v/v	4"W	B				
	28% UAN	100	SL	4	% v/v	4	% v/v	4"W	B				
12	MARVEL	3	SL	0.17	lb ai/a	7.25	fl oz/a	4"W	B	99 a	99 a	90 a	90 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	4"W	B				
	MSO (MSO ULTRA)	100	SL	1	% v/v	1	% v/v	4"W	B				
	28% UAN	100	SL	4	% v/v	4	% v/v	4"W	B				

## Marvel Product Understanding.

Trial ID: 15-50W-N70 Location: Belleville Res. Center Trial Year: 2015  
 Investigator: Ronald F. Krausz

								AMBTR	AMBTR	AMBTR	AMBTR	
								Control Percent	Control Percent	Control Percent	Control Percent	
								5 DA-PO	15 DA-PO	30 DA-PO	60 DA-PO	
Trt. Treatment No. Name	Form Conc	Form Type	Rate Rate	Unit Unit	Other Rate	Other Rate	Growth Unit Stage	Appl Code				
13 NONTREATED									0 c	0 c	0 c	0 c
LSD P=.05								2.7	2.7	17.8	17.8	
Standard Deviation								1.6	1.6	10.5	10.6	
CV								1.78	1.78	12.79	12.87	
Replicate F								1.000	1.000	0.712	0.615	
Replicate Prob(F)								0.3827	0.3827	0.5009	0.5491	
Treatment F								880.915	880.915	20.059	19.698	
Treatment Prob(F)								0.0001	0.0001	0.0001	0.0001	

Marvel Product Understanding.

Trial ID: 15-50W-N70 Location: Belleville Res. Center Trial Year: 2015  
 Investigator: Ronald F. Krausz

Pest Code							ABUTH	ABUTH
Crop Code								
Rating Date							6-28-15	7-13-15
Rating Type							Control	Control
Rating Unit							Percent	Percent
Rating Timing								13 DA-B
Trt-Eval Interval							15 DA-A	30 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Other Rate	Other Unit	Growth Stage	Appl Code
1	AUTHORITY MAXX	66	WG	0.248 lb ai/a	6 oz/a		PRE	A
2	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B
3	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B
	COC (PRIME OIL)	100	SL	0.5 % v/v	0.5 % v/v		4"W	B
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B
4	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B
	MSO (MSO ULTRA)	100	SL	0.5 % v/v	0.5 % v/v		4"W	B
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B
5	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		8"W	C
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		8"W	C
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		8"W	C
6	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		8"W	C
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		8"W	C
	COC (PRIME OIL)	100	SL	0.5 % v/v	0.5 % v/v		8"W	C
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		8"W	C
7	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		8"W	C
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		8"W	C
	MSO (MSO ULTRA)	100	SL	0.5 % v/v	0.5 % v/v		8"W	C
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		8"W	C
8	AUTHORITY MAXX	66	WG	0.248 lb ai/a	6 oz/a		PRE	A
	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B
9	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B
	COC (PRIME OIL)	100	SL	1 % v/v	1 % v/v		4"W	B
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B
10	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B
	MSO (MSO ULTRA)	100	SL	1 % v/v	1 % v/v		4"W	B
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B
11	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B
	COC (PRIME OIL)	100	SL	1 % v/v	1 % v/v		4"W	B
	28% UAN	100	SL	4 % v/v	4 % v/v		4"W	B
12	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B
	MSO (MSO ULTRA)	100	SL	1 % v/v	1 % v/v		4"W	B
	28% UAN	100	SL	4 % v/v	4 % v/v		4"W	B

Marvel Product Understanding.

Trial ID: 15-50W-N70 Location: Belleville Res. Center Trial Year: 2015  
 Investigator: Ronald F. Krausz

Pest Code		ABUTH	ABUTH
Crop Code			
Rating Date		6-28-15	7-13-15
Rating Type		Control	Control
Rating Unit		Percent	Percent
Rating Timing			13 DA-B
Trt-Eval Interval		15 DA-A	30 DA-A
Trt. Treatment No. Name	Form Conc	Form Type	Rate Unit
		Other Rate	Other Rate Unit
		Growth Stage	Appl Code
13 NONTREATED			
		0 b	0 b
LSD P=.05		.	.
Standard Deviation		0.0	0.0
CV		0.0	0.0
Replicate F		0.000	0.000
Replicate Prob(F)		1.0000	1.0000
Treatment F		0.000	0.000
Treatment Prob(F)		1.0000	1.0000



## Marvel Product Understanding.

Trial ID: 15-50W-N70 Location: Belleville Res. Center Trial Year: 2015  
Investigator: Ronald F. Krausz

Pest Code							ABUTH	ABUTH	ABUTH	ABUTH	AMATA	
Crop Code							Control	Control	Control	Control	7-13-15	
Rating Date							Percent	Percent	Percent	Percent	Control	
Rating Type											Percent	
Rating Unit							5 DA-PO	15 DA-PO	30 DA-PO	60 DA-PO	13 DA-B	
Rating Timing											30 DA-A	
Trt-Eval Interval												
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Other Rate	Other Unit	Growth Stage	Appl Code				
1	AUTHORITY MAXX	66	WG	0.248 lb ai/a	6 oz/a		PRE	A	99 a	99 a	99 a	99 a
2	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B	99 a	99 a	89 bc	89 bc
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B				
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B				
3	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B	99 a	99 a	94 abc	94 abc
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B				
	COC (PRIME OIL)	100	SL	0.5 % v/v	0.5 % v/v		4"W	B				
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B				
4	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B	99 a	99 a	94 abc	94 abc
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B				
	MSO (MSO ULTRA)	100	SL	0.5 % v/v	0.5 % v/v		4"W	B				
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B				
5	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		8"W	C	99 a	99 a	97 abc	97 abc
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		8"W	C				
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		8"W	C				
6	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		8"W	C	99 a	99 a	95 abc	95 abc
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		8"W	C				
	COC (PRIME OIL)	100	SL	0.5 % v/v	0.5 % v/v		8"W	C				
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		8"W	C				
7	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		8"W	C	99 a	99 a	98 ab	98 ab
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		8"W	C				
	MSO (MSO ULTRA)	100	SL	0.5 % v/v	0.5 % v/v		8"W	C				
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		8"W	C				
8	AUTHORITY MAXX	66	WG	0.248 lb ai/a	6 oz/a		PRE	A	99 a	99 a	96 abc	96 abc
	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B				
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B				
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B				
9	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B	99 a	99 a	93 abc	93 abc
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B				
	COC (PRIME OIL)	100	SL	1 % v/v	1 % v/v		4"W	B				
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B				
10	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B	99 a	99 a	88 c	88 c
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B				
	MSO (MSO ULTRA)	100	SL	1 % v/v	1 % v/v		4"W	B				
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B				
11	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B	99 a	99 a	95 abc	95 abc
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B				
	COC (PRIME OIL)	100	SL	1 % v/v	1 % v/v		4"W	B				
	28% UAN	100	SL	4 % v/v	4 % v/v		4"W	B				
12	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B	99 a	99 a	93 abc	93 abc
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B				
	MSO (MSO ULTRA)	100	SL	1 % v/v	1 % v/v		4"W	B				
	28% UAN	100	SL	4 % v/v	4 % v/v		4"W	B				

Marvel Product Understanding.

Trial ID: 15-50W-N70 Location: Belleville Res. Center Trial Year: 2015  
 Investigator: Ronald F. Krausz

Pest Code	ABUTH				AMATA							
Crop Code	ABUTH				AMATA							
Rating Date	ABUTH				AMATA							
Rating Type	ABUTH				AMATA							
Rating Unit	Control Percent	Control Percent	Control Percent	Control Percent	7-13-15 Control Percent							
Rating Timing	5 DA-PO	15 DA-PO	30 DA-PO	60 DA-PO	13 DA-B							
Trt-Eval Interval	5 DA-PO	15 DA-PO	30 DA-PO	60 DA-PO	30 DA-A							
Trt. Treatment No. Name	Form Conc	Form Type	Rate Rate	Other Rate	Other Rate	Growth Unit Stage	Appl Code					
13 NONTREATED								0 b	0 b	0 d	0 d	0 b
LSD P=.05										8.8	8.8	.
Standard Deviation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	5.2	0.0
CV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.01	6.01	0.0
Replicate F	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.479	0.479	0.000
Replicate Prob(F)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.6252	0.6252	1.0000
Treatment F	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	75.887	75.887	0.000
Treatment Prob(F)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0001	0.0001	1.0000

## Marvel Product Understanding.

Trial ID: 15-50W-N70 Location: Belleville Res. Center Trial Year: 2015  
Investigator: Ronald F. Krausz

Pest Code							AMATA	AMATA	AMATA	AMATA		
Crop Code												
Rating Date												
Rating Type							Control	Control	Control	Control		
Rating Unit							Percent	Percent	Percent	Percent		
Rating Timing												
Trt-Eval Interval							5 DA-PO	15 DA-PO	30 DA-PO	60 DA-PO		
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Other Rate	Other Unit	Growth Stage	Appl Code				
1	AUTHORITY MAXX	66	WG	0.248 lb ai/a	6 oz/a		PRE	A	99 a	99 a	99 a	99 a
2	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B	99 a	99 a	93 bc	93 bcd
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B				
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B				
3	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B	99 a	99 a	93 bc	93 bcd
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B				
	COC (PRIME OIL)	100	SL	0.5 % v/v	0.5 % v/v		4"W	B				
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B				
4	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B	99 a	99 a	91 bc	90 cd
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B				
	MSO (MSO ULTRA)	100	SL	0.5 % v/v	0.5 % v/v		4"W	B				
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B				
5	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		8"W	C	99 a	99 a	99 a	99 a
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		8"W	C				
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		8"W	C				
6	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		8"W	C	99 a	99 a	99 a	99 a
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		8"W	C				
	COC (PRIME OIL)	100	SL	0.5 % v/v	0.5 % v/v		8"W	C				
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		8"W	C				
7	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		8"W	C	99 a	99 a	99 a	99 a
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		8"W	C				
	MSO (MSO ULTRA)	100	SL	0.5 % v/v	0.5 % v/v		8"W	C				
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		8"W	C				
8	AUTHORITY MAXX	66	WG	0.248 lb ai/a	6 oz/a		PRE	A	99 a	99 a	99 a	99 a
	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B				
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B				
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B				
9	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B	99 a	99 a	99 a	99 a
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B				
	COC (PRIME OIL)	100	SL	1 % v/v	1 % v/v		4"W	B				
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B				
10	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B	99 a	99 a	90 c	88 d
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B				
	MSO (MSO ULTRA)	100	SL	1 % v/v	1 % v/v		4"W	B				
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		4"W	B				
11	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B	99 a	99 a	96 ab	96 ab
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B				
	COC (PRIME OIL)	100	SL	1 % v/v	1 % v/v		4"W	B				
	28% UAN	100	SL	4 % v/v	4 % v/v		4"W	B				
12	MARVEL	3	SL	0.17 lb ai/a	7.25 fl oz/a		4"W	B	99 a	99 a	96 ab	95 abc
	ROUNDUP POWERMAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		4"W	B				
	MSO (MSO ULTRA)	100	SL	1 % v/v	1 % v/v		4"W	B				
	28% UAN	100	SL	4 % v/v	4 % v/v		4"W	B				

Marvel Product Understanding.

Trial ID: 15-50W-N70 Location: Belleville Res. Center Trial Year: 2015  
 Investigator: Ronald F. Krausz

								AMATA	AMATA	AMATA	AMATA		
								Control	Control	Control	Control		
								Percent	Percent	Percent	Percent		
								5 DA-PO	15 DA-PO	30 DA-PO	60 DA-PO		
Trt. Treatment	Form	Form	Rate	Other	Other	Growth	Appl						
No. Name	Conc	Type	Rate	Unit	Rate	Rate	Unit	Stage	Code				
13 NONTREATED								0 b	0 b	0 d	0 e		
LSD P=.05								.	.	5.2	4.7		
Standard Deviation								0.0	0.0	3.1	2.8		
CV								0.0	0.0	3.45	3.17		
Replicate F								0.000	0.000	5.702	4.122		
Replicate Prob(F)								1.0000	1.0000	0.0094	0.0289		
Treatment F								0.000	0.000	231.152	274.145		
Treatment Prob(F)								1.0000	1.0000	0.0001	0.0001		

Marvel Product Understanding.

Trial ID: 15-50W-N70      Location: Belleville Res. Center      Trial Year: 2015  
Investigator: Ronald F. Krausz

## Trial Comments

1. Protocol: FMC (Marvel Understanding).
2. Ratings:  
CI 5 and 15 DA-A; and CI 0, 5, and 15 DA-B+C.  
WC 5 and 15 DA-A; and WC 0, 5, 15, 30, and 60 DA-B+C.  
Rate all treated plots each time, rate and record DA-B and DA-C in different columns.  
Rate before spray applications B and C.
3. Yield.
4. Photos.
5. Rainfall following the PRE application was 2.52 inch over 3 days beginning 22 hours later.  
Rainfall following the 4"W application was 0.64 inch over 2 days beginning 10 hours later.  
Rainfall following the 8"W application was 0.35 inch over 1 day beginning 6 days later.
6. At 5 DA-A there were no weeds emerged in the nontreated areas, not possible to rate weed control.  
At 30 DA-B and 30 DA-C, weed control that was less than complete was due to new emergence.  
Crop injury was necrosis.  
Ratings at 5 DA-A and 15 DA-A were prior to the 4"W and 8"W applications.  
Ratings at 30 DA-A were also 13 days after the 4"W application and prior to the 8"W application.  
DA-PO = Days after various POST applications (B and C).  
Ratings at 5 days after application B and C were on 7-5-15 and 7-18-15, respectively.  
Ratings at 15 days after application B and C were on 7-15-15 and 7-28-15, respectively.  
Ratings at 30 days after application B and C were on 7-30-15 and 8-12-15, respectively.  
Ratings at 60 days after application B and C were on 8-29-15 and 9-11-15, respectively.
7. Harvested 10-17-15, (2) 30 inch rows by 24 ft.