

Weed Control with Sonic and Surveil Followed by Durango DMA.

Trial ID: 14-51W-N80 Location: Belleville Res. Center Trial Year: 2014
Investigator: Ronald F. Krausz

Trial Status: F one-year/final Initiation Date: 5-11-14 Completion Date: 10-25-14	
Trial Location	
City: Belleville State/Prov.: Illinois IL Postal Code: 62221	Country: USA

Objectives: Evaluate efficacy, crop tolerance, and yield with Sonic and Surveil followed by Durango DMA.
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Study Director: Ronald F. Krausz Organization: Belleville Research Center - Southern Illinois Univ Carbondale Address: 2036 Charles Lane City+State/Prov: Belleville, IL Postal Code: 62221 Country: USA	Contacts Title: Researcher/Farm Manager Phone No.: 618-566-4761 E-mail: rkrausz@siu.edu
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Crop Description	
Crop 1: GLXMA Glycine max Variety: AG3832 Description: RR2Y	Soybean BBCH Scale: BSOY
Planting Rate, Unit: 140000 S/A Depth, Unit: 1 IN Row Spacing, Unit: 30 IN	Planting Date: 5-11-14 Planting Method: SEEDED

Pest Description	
Pest 1 Type: W Code: AMBTR Ambrosia trifida L. Common Name: ragweed, giant	
Pest 2 Type: W Code: ABUTH Abutilon theophrasti Medik. Common Name: velvetleaf	
Pest 3 Type: W Code: AMATA Amaranthus rudis Sauer Common Name: waterhemp, common	
Pest 4 Type: W Code: IPOHE Ipomoea hederacea (L.) Jacq. Common Name: morningglory, ivyleaf	

Site and Design							
Treated Plot Width: 7.5 FT Treated Plot Length: 27 FT	Total Plot Width: 10 FT Total Plot Length: 27 FT						
Site Type: FIELD Experimental Unit: 1 PLOT Tillage Type: REDTIL reduced-till Study Design: RACOB L Randomized Complete Block (RCB)							
Replications: 4 Untreated Arrangement: INCLUDED single control randomized in each block							
<table border="1"> <thead> <tr> <th>No.</th> <th>Previous Crop</th> <th>Year</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>ZEAMD</td> <td>2013</td> </tr> </tbody> </table>		No.	Previous Crop	Year	1.	ZEAMD	2013
No.	Previous Crop	Year					
1.	ZEAMD	2013					

Maintenance					
<table border="1"> <thead> <tr> <th>No.</th> <th>Maintenance Product Name</th> </tr> </thead> <tbody> <tr> <td>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				

Soil Description										
% OM: 2.8 pH: 6.6 CEC: 10	Texture: SIL silt loam Soil Name: Pierron									
Additional Measured Elements										
<table border="1"> <thead> <tr> <th>Element</th> <th>Quantity</th> <th>Unit</th> </tr> </thead> <tbody> <tr> <td>P1</td> <td>49</td> <td>lb/A</td> </tr> <tr> <td>K</td> <td>286</td> <td>lb/A</td> </tr> </tbody> </table>		Element	Quantity	Unit	P1	49	lb/A	K	286	lb/A
Element	Quantity	Unit								
P1	49	lb/A								
K	286	lb/A								

Moisture and Weather Conditions	
Overall Moisture Conditions: NORMAL Closest Weather Station: ICN - Belleville IL Distance, Unit: 0.5 MI	

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No.	Date	Amount	Unit	Type	Type Description	Interval	Unit	Min Temp	Max Temp	Temp Unit
1.	4-1-14	3.19	IN	RAIN	rain	4	DAY			
2.	4-1-14					7	DAY	34	66	F
3.	4-7-14	0.3	IN	RAIN	rain	2	DAY			
4.	4-8-14					7	DAY	34	83	F
5.	4-12-14	0.66	IN	RAIN	rain	3	DAY			
6.	4-15-14					7	DAY	31	79	F
7.	4-21-14	0.17	IN	RAIN	rain	2	DAY			
8.	4-22-14					7	DAY	44	78	F
9.	4-24-14	2.24	IN	RAIN	rain	5	DAY			
10.	4-29-14	0.09	IN	RAIN	rain	2	DAY			
11.	4-29-14					7	DAY	41	87	F
12.	5-6-14					7	DAY	56	86	F
13.	5-8-14	0.13	IN	RAIN	rain	2	DAY			
14.	5-12-14	0.88	IN	RAIN	rain	4	DAY			
15.	5-13-14					7	DAY	37	76	F
16.	5-20-14					7	DAY	55	87	F
17.	5-21-14	0.06	IN	RAIN	rain	1	DAY			
18.	5-25-14	0.49	IN	RAIN	rain	2	DAY			
19.	5-27-14	0.08	IN	RAIN	rain	2	DAY			
20.	5-27-14					7	DAY	60	86	F
21.	5-31-14	0.14	IN	RAIN	rain	1	DAY			
22.	6-1-14	0.13	IN	RAIN	rain	1	DAY			
23.	6-3-14					7	DAY	59	90	F
24.	6-4-14	0.67	IN	RAIN	rain	1	DAY			
25.	6-7-14	0.6	IN	RAIN	rain	1	DAY			
26.	6-9-14	1.38	IN	RAIN	rain	2	DAY			
27.	6-10-14					7	DAY	51	90	F
28.	6-12-14	0.07	IN	RAIN	rain	1	DAY			
29.	6-15-14	0.02	IN	RAIN	rain	1	DAY			
30.	6-17-14					7	DAY	67	92	F
31.	6-20-14	2.09	IN	RAIN	rain	5	DAY			
32.	6-24-14					7	DAY	65	91	F
33.	6-27-14	0.11	IN	RAIN	rain	2	DAY			
34.	7-1-14	0.01	IN	RAIN	rain	1	DAY			
35.	7-1-14					7	DAY	55	90	F
36.	7-7-14	0.79	IN	RAIN	rain	2	DAY			
37.	7-8-14					7	DAY	59	89	F
38.	7-12-14	0.49	IN	RAIN	rain	3	DAY			
39.	7-15-14					7	DAY	54	85	F
40.	7-22-14					7	DAY	57	98	F
41.	7-25-14	0.02	IN	RAIN	rain	1	DAY			
42.	7-29-14					7	DAY	52	89	F
43.	8-1-14	0.04	IN	RAIN	rain	1	DAY			
44.	8-5-14	4.04	IN	RAIN	rain	4	DAY			
45.	8-5-14					7	DAY	66	88	F
46.	8-12-14					7	DAY	57	84	F
47.	8-15-14	1.21	IN	RAIN	rain	3	DAY			
48.	8-19-14					7	DAY	67	95	F
49.	8-20-14	0.11	IN	RAIN	rain	1	DAY			
50.	8-27-14	1.56	IN	RAIN	rain	2	DAY			
51.	9-1-14	2.21	IN	RAIN	rain	2	DAY			
52.	9-2-14					7	DAY	54	93	F
53.	9-5-14	0.24	IN	RAIN	rain	1	DAY			
54.	9-9-14					7	DAY	45	85	F
55.	9-10-14	1.06	IN	RAIN	rain	1	DAY			
56.	9-16-14					7	DAY	46	86	F
57.	9-23-14					7	DAY	46	86	F
58.	9-30-14					7	DAY	37	87	F
59.	10-1-14	0.99	IN	RAIN	rain	3	DAY			
60.	10-6-14	0.31	IN	RAIN	rain	2	DAY			
61.	10-7-14					7	DAY	46	77	F
62.	10-9-14	1.44	IN	RAIN	rain	2	DAY			
63.	10-12-14	1.24	IN	RAIN	rain	3	DAY			
64.	10-14-14					7	DAY	37	73	F
65.	10-21-14					7	DAY	36	82	F
66.	10-28-14	0.26	IN	RAIN	rain	1	DAY			

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Application Description

	A	B
Application Date:	5-13-14	6-6-14
Appl. Start Time:	8:00	14 00
Appl. Stop Time:	8:30	14:30
Application Method:	Spray	Spray
Application Timing:	PRE	4-6"W
Application Placement:	BROSOI	BROFOL
Applied By:	RFK	LXF
Air Temperature, Unit:	63 F	80 F
% Relative Humidity:	100	65
Wind Velocity, Unit:	4 MPH	2 MPH
Wind Direction:	W	E
Dew Presence (Y/N):	N	N
Soil Temperature, Unit:	67 F	72 F
Soil Moisture:	ABONOR	NORMAL
% Cloud Cover:	100	80
Next Moisture Occurred On:	5-14-14	6-7-14
Time to Next Moisture, Unit:	26 HR	27 HR

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:		V2
Stage Maximum, Percent:		V2
Height, Unit:		8 IN
Height Minimum, Maximum:		6 8

Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale:	AMBTR W	AMBTR W
Stage Majority, Percent:	NA	6
Stage Minimum, Percent:		2
Stage Maximum, Percent:		8
Height, Unit:		6 IN
Height Minimum, Maximum:		2 8
Density, Unit:		0.5 FT2
Pest 2 Code, Type, Scale:	ABUTH W	ABUTH W
Stage Majority, Percent:	NA	4
Stage Minimum, Percent:		2
Stage Maximum, Percent:		6
Height, Unit:		3 IN
Height Minimum, Maximum:		1 4
Density, Unit:		0.1 FT2
Pest 3 Code, Type, Scale:	AMATA W	AMATA W
Stage Majority, Percent:	NA	4
Stage Minimum, Percent:		2
Stage Maximum, Percent:		6
Height, Unit:		2 IN
Height Minimum, Maximum:		1 3
Density, Unit:		0.01 FT2
Pest 4 Code, Type, Scale:	IPOHE W	IPOHE W
Stage Majority, Percent:	NA	4
Stage Minimum, Percent:		1
Stage Maximum, Percent:		8
Height, Unit:		2 IN
Height Minimum, Maximum:		0.5 2
Density, Unit:		0.1 FT2

Application Equipment

	A	B
Appl. Equipment:	CO2 sprayer	CO2 sprayer
Equipment Type:	BACSPR	BACSPR
Operation Pressure, Unit:	30 PSI	30 PSI
Nozzle Type:	XR	XR
Nozzle Size:	8002	8002
Boom Length, Unit:	7.5 FT	7.5 FT
Spray Volume, Unit:	15 GPA	15 GPA

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Pest Code Crop Code Rating Date										GLXMA 10-25-14	GLXMA 10-25-14	GLXMA 10-25-14
Rating Type Rating Unit Rating Timing										Moisture Percen	Test wt. lb/bu	Yield bu/A
Trt-Eval Interval												
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code				
1	SONIC DURANGO DMA N-PAK AMS	70 WG 4 SL 100 SL		0.131 lb ai/a 0.75 lb ae/a 2.5 % v/v	3 oz/a 24 fl oz/a 2.5 % v/v		PRE 4-6"W 4-6"W	A B B	13.3 b	56.9 a	63 a	
2	SONIC DURANGO DMA N-PAK AMS	70 WG 4 SL 100 SL		0.197 lb ai/a 0.75 lb ae/a 2.5 % v/v	4.5 oz/a 24 fl oz/a 2.5 % v/v		PRE 4-6"W 4-6"W	A B B	13.3 b	56.9 a	66 a	
3	SONIC DURANGO DMA N-PAK AMS	70 WG 4 SL 100 SL		0.263 lb ai/a 0.75 lb ae/a 2.5 % v/v	6 oz/a 24 fl oz/a 2.5 % v/v		PRE 4-6"W 4-6"W	A B B	13.3 b	56.9 a	66 a	
4	SONIC DURANGO DMA FIRSTRATE N-PAK AMS	70 WG 4 SL 84 WG 100 SL		0.131 lb ai/a 0.75 lb ae/a 0.0158 lb ai/a 2.5 % v/v	3 oz/a 24 fl oz/a 0.3 oz/a 2.5 % v/v		PRE 4-6"W 4-6"W 4-6"W	A B B B	13.4 b	56.9 a	66 a	
5	SURVEIL CO-PACK VALOR SX FIRSTRATE DURANGO DMA N-PAK AMS	51 WG 84 WG 4 SL 100 SL		0.096 lb ai/a 0.0315 lb ai/a 0.75 lb ae/a 2.5 % v/v	3.6 oz/a 24 fl oz/a 2.5 % v/v		PRE PRE PRE 4-6"W 4-6"W	A A A B B	13.4 b	56.9 a	64 a	
6	VALOR XLT ROUNDUP POWERMAX N-PAK AMS	40.3 WG 4.5 SL 100 SL		0.088 lb ai/a 1.13 lb ae/a 2.5 % v/v	3.5 oz/a 32 fl oz/a 2.5 % v/v		PRE 4-6"W 4-6"W	A B B	13.5 b	56.8 a	65 a	
7	AUTHORITY XL ROUNDUP POWERMAX N-PAK AMS	70 WG 4.5 SL 100 SL		0.28 lb ai/a 1.13 lb ae/a 2.5 % v/v	6.4 oz/a 32 fl oz/a 2.5 % v/v		PRE 4-6"W 4-6"W	A B B	13.5 b	56.8 a	69 a	
8	AUTHORITY MAXX ROUNDUP POWERMAX N-PAK AMS	66 WG 4.5 SL 100 SL		0.33 lb ai/a 1.13 lb ae/a 2.5 % v/v	8 oz/a 32 fl oz/a 2.5 % v/v		PRE 4-6"W 4-6"W	A B B	13.5 b	56.8 a	66 a	
9	BOUNDARY FLEXSTAR GT 3.5 MSO (MSO ULTRA) N-PAK AMS	6.5 EC 2.82 SL 100 SL 100 SL		1.62 lb ai/a 1.23 lb ae/a 1 % v/v 2.5 % v/v	2 pt/a 3.5 pt/a 1 % v/v 2.5 % v/v		PRE 4-6"W 4-6"W 4-6"W	A B B B	13.5 b	56.8 a	64 a	
10	PREFIX TOUCHDOWN TOTAL N-PAK AMS	5.29 EC 4.17 SL 100 SL		1.65 lb ai/a 1.04 lb ae/a 2.5 % v/v	2.5 pt/a 32 fl oz/a 2.5 % v/v		PRE 4-6"W 4-6"W	A B B	13.3 b	57.0 a	60 a	
11	ENVIVE ABUNDIT EXTRA N-PAK AMS	41.3 WG 3 SL 100 SL		0.09 lb ai/a 0.75 lb ae/a 2.5 % v/v	3.5 oz/a 32 fl oz/a 2.5 % v/v		PRE 4-6"W 4-6"W	A B B	13.5 b	56.9 a	62 a	
12 NONTREATED										14.4 a	56.2 b	12 b
LSD (P=.05)										0.46	0.22	11.5
Standard Deviation										0.32	0.15	8.0
CV										2.36	0.27	13.17
Replicate F										3.041	3.072	0.449
Replicate Prob(F)										0.0431	0.0421	0.7199
Treatment F										3.418	7.466	15.161
Treatment Prob(F)										0.0032	0.0001	0.0001

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.

Missing data estimates are included in columns: Average=2,3,5

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Pest Code	Crop Code	Rating Date	Rating Type	Rating Unit	Rating Timing	Trt-Eval Interval	GLXMA 5-27-14 Injury Percent	GLXMA 6-6-14 Injury Percent 24 DA-A	GLXMA 6-20-14 Injury Percent	GLXMA 7-4-14 Injury Percent	GLXMA 8-1-14 Injury Percent
							14 DA-A	0 DA-B	14 DA-B	28 DA-B	56 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code		
1	SONIC DURANGO DMA N-PAK AMS	70 WG 4 SL 100 SL		0.131 lb ai/a 0.75 lb ae/a 2.5 % v/v		3 oz/a 24 fl oz/a 2.5 % v/v		PRE 4-6"W 4-6"W	A B B	0 a	0 a
2	SONIC DURANGO DMA N-PAK AMS	70 WG 4 SL 100 SL		0.197 lb ai/a 0.75 lb ae/a 2.5 % v/v		4.5 oz/a 24 fl oz/a 2.5 % v/v		PRE 4-6"W 4-6"W	A B B	0 a	0 a
3	SONIC DURANGO DMA N-PAK AMS	70 WG 4 SL 100 SL		0.263 lb ai/a 0.75 lb ae/a 2.5 % v/v		6 oz/a 24 fl oz/a 2.5 % v/v		PRE 4-6"W 4-6"W	A B B	0 a	0 a
4	SONIC DURANGO DMA FIRSTRATE N-PAK AMS	70 WG 4 SL 84 WG 100 SL		0.131 lb ai/a 0.75 lb ae/a 0.0158 lb ai/a 2.5 % v/v		3 oz/a 24 fl oz/a 0.3 oz/a 2.5 % v/v		PRE 4-6"W 4-6"W 4-6"W	A B B B	0 a	0 a
5	SURVEIL CO-PACK VALOR SX FIRSTRATE DURANGO DMA N-PAK AMS	51 WG 84 WG 4 SL 100 SL		0.096 lb ai/a 0.0315 lb ai/a 0.75 lb ae/a 2.5 % v/v		3.6 oz/a 24 fl oz/a 2.5 % v/v		PRE PRE PRE 4-6"W 4-6"W	A A A B B	0 a	0 a
6	VALOR XLT ROUNDUP POWERMAX N-PAK AMS	40.3 WG 4.5 SL 100 SL		0.088 lb ai/a 1.13 lb ae/a 2.5 % v/v		3.5 oz/a 32 fl oz/a 2.5 % v/v		PRE 4-6"W 4-6"W	A B B	0 a	0 a
7	AUTHORITY XL ROUNDUP POWERMAX N-PAK AMS	70 WG 4.5 SL 100 SL		0.28 lb ai/a 1.13 lb ae/a 2.5 % v/v		6.4 oz/a 32 fl oz/a 2.5 % v/v		PRE 4-6"W 4-6"W	A B B	0 a	0 a
8	AUTHORITY MAXX ROUNDUP POWERMAX N-PAK AMS	66 WG 4.5 SL 100 SL		0.33 lb ai/a 1.13 lb ae/a 2.5 % v/v		8 oz/a 32 fl oz/a 2.5 % v/v		PRE 4-6"W 4-6"W	A B B	0 a	0 a
9	BOUNDARY FLEXSTAR GT 3.5 MSO (MSO ULTRA) N-PAK AMS	6.5 EC 2.82 SL 100 SL 100 SL		1.62 lb ai/a 1.23 lb ae/a 1 % v/v 2.5 % v/v		2 pt/a 3.5 pt/a 1 % v/v 2.5 % v/v		PRE 4-6"W 4-6"W 4-6"W	A B B B	0 a	0 a
10	PREFIX TOUCHDOWN TOTAL N-PAK AMS	5.29 EC 4.17 SL 100 SL		1.65 lb ai/a 1.04 lb ae/a 2.5 % v/v		2.5 pt/a 32 fl oz/a 2.5 % v/v		PRE 4-6"W 4-6"W	A B B	0 a	0 a
11	ENVIVE ABUNDIT EXTRA N-PAK AMS	41.3 WG 3 SL 100 SL		0.09 lb ai/a 0.75 lb ae/a 2.5 % v/v		3.5 oz/a 32 fl oz/a 2.5 % v/v		PRE 4-6"W 4-6"W	A B B	0 a	0 a
12	NONTREATED									0	0
LSD (P=.05)							0.0	0.0	2.1	0.0	0.0
Standard Deviation							0.0	0.0	1.4	0.0	0.0
CV							0.0	0.0	141.13	0.0	0.0
Replicate F							0.000	0.000	1.000	0.000	0.000
Replicate Prob(F)							1.0000	1.0000	0.4064	1.0000	1.0000
Treatment F							0.000	0.000	22.091	0.000	0.000
Treatment Prob(F)							1.0000	1.0000	0.0001	1.0000	1.0000

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Pest Code Crop Code Rating Date Rating Type Rating Unit Rating Timing							AMBTR	AMBTR	AMBTR	AMBTR	AMBTR
Trt-Eval Interval							5-27-14 Injury Percent	6-6-14 Injury Percent 24 DA-A	6-20-14 Injury Percent	7-4-14 Injury Percent	8-1-14 Injury Percent
Trt Treatment No. Name							14 DA-A	0 DA-B	14 DA-B	28 DA-B	56 DA-B
Form	Form	Rate	Other	Other	Growth	Appl					
Conc	Type	Unit	Rate	Rate	Unit	Stage	Code				
1 SONIC	70 WG	0.131 lb ai/a	3 oz/a	PRE	A		95 bc	93 a-d	99 a	94 a	93 a
DURANGO DMA	4 SL	0.75 lb ae/a	24 fl oz/a	4-6"W	B						
N-PAK AMS	100 SL	2.5 % v/v	2.5 % v/v	4-6"W	B						
2 SONIC	70 WG	0.197 lb ai/a	4.5 oz/a	PRE	A		98 ab	94 abc	99 a	96 a	93 a
DURANGO DMA	4 SL	0.75 lb ae/a	24 fl oz/a	4-6"W	B						
N-PAK AMS	100 SL	2.5 % v/v	2.5 % v/v	4-6"W	B						
3 SONIC	70 WG	0.263 lb ai/a	6 oz/a	PRE	A		98 ab	95 ab	99 a	97 a	95 a
DURANGO DMA	4 SL	0.75 lb ae/a	24 fl oz/a	4-6"W	B						
N-PAK AMS	100 SL	2.5 % v/v	2.5 % v/v	4-6"W	B						
4 SONIC	70 WG	0.131 lb ai/a	3 oz/a	PRE	A		93 cd	90 b-e	99 a	98 a	98 a
DURANGO DMA	4 SL	0.75 lb ae/a	24 fl oz/a	4-6"W	B						
FIRSTRATE	84 WG	0.0158 lb ai/a	0.3 oz/a	4-6"W	B						
N-PAK AMS	100 SL	2.5 % v/v	2.5 % v/v	4-6"W	B						
5 SURVEIL CO-PACK			3.6 oz/a	PRE	A		99 a	97 a	99 a	98 a	98 a
VALOR SX	51 WG	0.096 lb ai/a		PRE	A						
FIRSTRATE	84 WG	0.0315 lb ai/a		PRE	A						
DURANGO DMA	4 SL	0.75 lb ae/a	24 fl oz/a	4-6"W	B						
N-PAK AMS	100 SL	2.5 % v/v	2.5 % v/v	4-6"W	B						
6 VALOR XLT	40.3 WG	0.088 lb ai/a	3.5 oz/a	PRE	A		98 ab	92 a-d	99 a	99 a	98 a
ROUNDUP POWERMAX	4.5 SL	1.13 lb ae/a	32 fl oz/a	4-6"W	B						
N-PAK AMS	100 SL	2.5 % v/v	2.5 % v/v	4-6"W	B						
7 AUTHORITY XL	70 WG	0.28 lb ai/a	6.4 oz/a	PRE	A		94 bcd	88 cde	99 a	94 a	94 a
ROUNDUP POWERMAX	4.5 SL	1.13 lb ae/a	32 fl oz/a	4-6"W	B						
N-PAK AMS	100 SL	2.5 % v/v	2.5 % v/v	4-6"W	B						
8 AUTHORITY MAXX	66 WG	0.33 lb ai/a	8 oz/a	PRE	A		90 d	85 e	99 a	97 a	96 a
ROUNDUP POWERMAX	4.5 SL	1.13 lb ae/a	32 fl oz/a	4-6"W	B						
N-PAK AMS	100 SL	2.5 % v/v	2.5 % v/v	4-6"W	B						
9 BOUNDARY	6.5 EC	1.62 lb ai/a	2 pt/a	PRE	A		0 e	0 f	99 a	99 a	99 a
FLEXSTAR GT 3.5	2.82 SL	1.23 lb ae/a	3.5 pt/a	4-6"W	B						
MSO (MSO ULTRA)	100 SL	1 % v/v	1 % v/v	4-6"W	B						
N-PAK AMS	100 SL	2.5 % v/v	2.5 % v/v	4-6"W	B						
10 PREFIX	5.29 EC	1.65 lb ai/a	2.5 pt/a	PRE	A		95 bc	93 a-d	99 a	99 a	99 a
TOUCHDOWN TOTAL	4.17 SL	1.04 lb ae/a	32 fl oz/a	4-6"W	B						
N-PAK AMS	100 SL	2.5 % v/v	2.5 % v/v	4-6"W	B						
11 ENVIVE	41.3 WG	0.09 lb ai/a	3.5 oz/a	PRE	A		93 cd	86 de	99 a	98 a	97 a
ABUNDIT EXTRA	3 SL	0.75 lb ae/a	32 fl oz/a	4-6"W	B						
N-PAK AMS	100 SL	2.5 % v/v	2.5 % v/v	4-6"W	B						
12 NONTREATED							0	0	0	0	0
LSD (P=.05)							4.3	6.4	0 0	3.6	4.1
Standard Deviation							3.0	4.4	0 0	2.5	2.9
CV							3.48	5.35	0 0	2.56	2.98
Replicate F							1.810	0.355	0.000	0.827	1.831
Replicate Prob(F)							0.1666	0.7861	1.0000	0.4892	0.1627
Treatment F							365.952	156.251	0.000	1.881	2.085
Treatment Prob(F)							0.0001	0.0001	1.0000	0.0885	0.0586

Weed Control with Sonic and Surveil Followed by Durango DMA.

Trial ID: 14-51W-N80 Location: Belleville Res. Center Trial Year: 2014
Investigator: Ronald F. Krausz

Pest Code	Crop Code	Rating Date	Rating Type	Rating Unit	Rating Timing	Trt-Eval Interval	ABUTH	ABUTH	ABUTH	ABUTH	ABUTH
							5-27-14 Injury Percent	6-6-14 Injury Percent	6-20-14 Injury Percent	7-4-14 Injury Percent	8-1-14 Injury Percent
							14 DA-A	24 DA-A	14 DA-B	28 DA-B	56 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Form Rate	Rate Unit	Other Rate	Other Unit	Growth Stage	Appl Code		
1	SONIC	70 WG		0.131 lb ai/a		3 oz/a		PRE A		95 a	93 a
	DURANGO DMA	4 SL		0.75 lb ae/a		24 fl oz/a		4-6"W B			
	N-PAK AMS	100 SL		2.5 % v/v		2.5 % v/v		4-6"W B			
2	SONIC	70 WG		0.197 lb ai/a		4.5 oz/a		PRE A		97 a	95 a
	DURANGO DMA	4 SL		0.75 lb ae/a		24 fl oz/a		4-6"W B			
	N-PAK AMS	100 SL		2.5 % v/v		2.5 % v/v		4-6"W B			
3	SONIC	70 WG		0.263 lb ai/a		6 oz/a		PRE A		98 a	97 a
	DURANGO DMA	4 SL		0.75 lb ae/a		24 fl oz/a		4-6"W B			
	N-PAK AMS	100 SL		2.5 % v/v		2.5 % v/v		4-6"W B			
4	SONIC	70 WG		0.131 lb ai/a		3 oz/a		PRE A		98 a	94 a
	DURANGO DMA	4 SL		0.75 lb ae/a		24 fl oz/a		4-6"W B			
	FIRSTRATE	84 WG		0.0158 lb ai/a		0.3 oz/a		4-6"W B			
	N-PAK AMS	100 SL		2.5 % v/v		2.5 % v/v		4-6"W B			
5	SURVEIL CO-PACK	51 WG		0.096 lb ai/a		3.6 oz/a		PRE A		99 a	99 a
	VALOR SX	84 WG		0.0315 lb ai/a				PRE A			
	FIRSTRATE	4 SL		0.75 lb ae/a		24 fl oz/a		4-6"W B			
	DURANGO DMA	100 SL		2.5 % v/v		2.5 % v/v		4-6"W B			
6	VALOR XLT	40.3 WG		0.088 lb ai/a		3.5 oz/a		PRE A		99 a	98 a
	ROUNDUP POWERMAX	4.5 SL		1.13 lb ae/a		32 fl oz/a		4-6"W B			
	N-PAK AMS	100 SL		2.5 % v/v		2.5 % v/v		4-6"W B			
7	AUTHORITY XL	70 WG		0.28 lb ai/a		6.4 oz/a		PRE A		99 a	96 a
	ROUNDUP POWERMAX	4.5 SL		1.13 lb ae/a		32 fl oz/a		4-6"W B			
	N-PAK AMS	100 SL		2.5 % v/v		2.5 % v/v		4-6"W B			
8	AUTHORITY MAXX	66 WG		0.33 lb ai/a		8 oz/a		PRE A		96 a	93 a
	ROUNDUP POWERMAX	4.5 SL		1.13 lb ae/a		32 fl oz/a		4-6"W B			
	N-PAK AMS	100 SL		2.5 % v/v		2.5 % v/v		4-6"W B			
9	BOUNDARY	6.5 EC		1.62 lb ai/a		2 pt/a		PRE A		65 b	63 b
	FLEXSTAR GT 3.5	2.82 SL		1.23 lb ae/a		3.5 pt/a		4-6"W B			
	MSO (MSO ULTRA)	100 SL		1 % v/v		1 % v/v		4-6"W B			
	N-PAK AMS	100 SL		2.5 % v/v		2.5 % v/v		4-6"W B			
10	PREFIX	5.29 EC		1.65 lb ai/a		2.5 pt/a		PRE A		65 b	53 b
	TOUCHDOWN TOTAL	4.17 SL		1.04 lb ae/a		32 fl oz/a		4-6"W B			
	N-PAK AMS	100 SL		2.5 % v/v		2.5 % v/v		4-6"W B			
11	ENVIVE	41.3 WG		0.09 lb ai/a		3.5 oz/a		PRE A		99 a	99 a
	ABUNDIT EXTRA	3 SL		0.75 lb ae/a		32 fl oz/a		4-6"W B			
	N-PAK AMS	100 SL		2.5 % v/v		2.5 % v/v		4-6"W B			
12	NONTREATED									0	0
LSD (P=.05)										25.8	23.5
Standard Deviation										17.9	16.3
CV										19.51	18.32
Replicate F										2.106	2.953
Replicate Prob(F)										0.1204	0.0484
Treatment F										2.206	3.786
Treatment Prob(F)										0.0460	0.0022
										1.0000	1.0000
										0.4654	0.4654

Weed Control with Sonic and Surveil Followed by Durango DMA.

Trial ID: 14-51W-N80 Location: Belleville Res. Center Trial Year: 2014
Investigator: Ronald F. Krausz

Pest Code	Crop Code	Rating Date	Rating Type	Rating Unit	Rating Timing	Trt-Eval Interval	AMATA	AMATA	AMATA	AMATA	AMATA
							5-27-14 Injury Percent	6-6-14 Injury Percent	6-20-14 Injury Percent	7-4-14 Injury Percent	8-1-14 Injury Percent
							14 DA-A	24 DA-B	14 DA-B	28 DA-B	56 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code			
1	SONIC	70 WG		0.131 lb ai/a	3 oz/a		PRE A		99 a	97 a	99 a
	DURANGO DMA	4 SL		0.75 lb ae/a	24 fl oz/a		4-6"W B			98 b	98 a
	N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v		4-6"W B				
2	SONIC	70 WG		0.197 lb ai/a	4.5 oz/a		PRE A		99 a	98 a	99 a
	DURANGO DMA	4 SL		0.75 lb ae/a	24 fl oz/a		4-6"W B			99 a	97 a
	N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v		4-6"W B				
3	SONIC	70 WG		0.263 lb ai/a	6 oz/a		PRE A		99 a	99 a	99 a
	DURANGO DMA	4 SL		0.75 lb ae/a	24 fl oz/a		4-6"W B			99 a	99 a
	N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v		4-6"W B				
4	SONIC	70 WG		0.131 lb ai/a	3 oz/a		PRE A		99 a	95 a	99 a
	DURANGO DMA	4 SL		0.75 lb ae/a	24 fl oz/a		4-6"W B			98 b	97 a
	FIRSTRATE	84 WG		0.0158 lb ai/a	0.3 oz/a		4-6"W B				
	N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v		4-6"W B				
5	SURVEIL CO-PACK	51 WG		0.096 lb ai/a	3.6 oz/a		PRE A		99 a	99 a	99 a
	VALOR SX	84 WG		0.0315 lb ai/a			PRE A				
	FIRSTRATE	4 SL		0.75 lb ae/a	24 fl oz/a		4-6"W B				
	DURANGO DMA	100 SL		2.5 % v/v	2.5 % v/v		4-6"W B				
6	VALOR XLT	40.3 WG		0.088 lb ai/a	3.5 oz/a		PRE A		99 a	99 a	99 a
	ROUNDUP POWERMAX	4.5 SL		1.13 lb ae/a	32 fl oz/a		4-6"W B			99 a	99 a
	N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v		4-6"W B				
7	AUTHORITY XL	70 WG		0.28 lb ai/a	6.4 oz/a		PRE A		99 a	99 a	99 a
	ROUNDUP POWERMAX	4.5 SL		1.13 lb ae/a	32 fl oz/a		4-6"W B			99 a	99 a
	N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v		4-6"W B				
8	AUTHORITY MAXX	66 WG		0.33 lb ai/a	8 oz/a		PRE A		99 a	99 a	99 a
	ROUNDUP POWERMAX	4.5 SL		1.13 lb ae/a	32 fl oz/a		4-6"W B			99 a	99 a
	N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v		4-6"W B				
9	BOUNDARY	6.5 EC		1.62 lb ai/a	2 pt/a		PRE A		99 a	99 a	99 a
	FLEXSTAR GT 3.5	2.82 SL		1.23 lb ae/a	3.5 pt/a		4-6"W B			99 a	99 a
	MSO (MSO ULTRA)	100 SL		1 % v/v	1 % v/v		4-6"W B				
	N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v		4-6"W B				
10	PREFIX	5.29 EC		1.65 lb ai/a	2.5 pt/a		PRE A		99 a	99 a	99 a
	TOUCHDOWN TOTAL	4.17 SL		1.04 lb ae/a	32 fl oz/a		4-6"W B			99 a	99 a
	N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v		4-6"W B				
11	ENVIVE	41.3 WG		0.09 lb ai/a	3.5 oz/a		PRE A		99 a	99 a	99 a
	ABUNDIT EXTRA	3 SL		0.75 lb ae/a	32 fl oz/a		4-6"W B			99 a	99 a
	N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v		4-6"W B				
12	NONTREATED								0	0	0
LSD (P=.05)									0.0	2.9	0.0
Standard Deviation									0.0	2.0	0.0
CV									0.0	2.07	0.0
Replicate F									0.000	2.377	0.000
Replicate Prob(F)									1.0000	0.0897	1.0000
Treatment F									0.000	2.014	0.000
Treatment Prob(F)									1.0000	0.0676	1.0000
										0.0159	0.1801

Weed Control with Sonic and Surveil Followed by Durango DMA.

Trial ID: 14-51W-N80 Location: Belleville Res. Center Trial Year: 2014
Investigator: Ronald F. Krausz

Pest Code	Crop Code	Rating Date	Rating Type	Rating Unit	Rating Timing	Trt-Eval Interval	IPOHE	IPOHE	IPOHE	IPOHE	IPOHE
							5-27-14 Injury Percent	6-6-14 Injury Percent	6-20-14 Injury Percent	7-4-14 Injury Percent	8-1-14 Injury Percent
							14 DA-A	24 DA-A	14 DA-B	28 DA-B	56 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code			
1	SONIC	70 WG		0.131 lb ai/a	3 oz/a		PRE	A	98 a	96 a	99 a
	DURANGO DMA	4 SL		0.75 lb ae/a	24 fl oz/a		4-6"W	B			
	N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v		4-6"W	B			
2	SONIC	70 WG		0.197 lb ai/a	4.5 oz/a		PRE	A	97 a	93 a	99 a
	DURANGO DMA	4 SL		0.75 lb ae/a	24 fl oz/a		4-6"W	B			
	N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v		4-6"W	B			
3	SONIC	70 WG		0.263 lb ai/a	6 oz/a		PRE	A	99 a	99 a	99 a
	DURANGO DMA	4 SL		0.75 lb ae/a	24 fl oz/a		4-6"W	B			
	N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v		4-6"W	B			
4	SONIC	70 WG		0.131 lb ai/a	3 oz/a		PRE	A	99 a	96 a	99 a
	DURANGO DMA	4 SL		0.75 lb ae/a	24 fl oz/a		4-6"W	B			
	FIRSTRATE	84 WG		0.0158 lb ai/a	0.3 oz/a		4-6"W	B			
	N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v		4-6"W	B			
5	SURVEIL CO-PACK				3.6 oz/a		PRE	A	99 a	99 a	99 a
	VALOR SX	51 WG		0.096 lb ai/a			PRE	A			
	FIRSTRATE	84 WG		0.0315 lb ai/a			PRE	A			
	DURANGO DMA	4 SL		0.75 lb ae/a	24 fl oz/a		4-6"W	B			
	N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v		4-6"W	B			
6	VALOR XLT	40.3 WG		0.088 lb ai/a	3.5 oz/a		PRE	A	97 a	93 ab	99 a
	ROUNDUP POWERMAX	4.5 SL		1.13 lb ae/a	32 fl oz/a		4-6"W	B		98 bc	98 bc
	N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v		4-6"W	B			
7	AUTHORITY XL	70 WG		0.28 lb ai/a	6.4 oz/a		PRE	A	99 a	97 a	99 a
	ROUNDUP POWERMAX	4.5 SL		1.13 lb ae/a	32 fl oz/a		4-6"W	B			
	N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v		4-6"W	B			
8	AUTHORITY MAXX	66 WG		0.33 lb ai/a	8 oz/a		PRE	A	99 a	99 a	99 a
	ROUNDUP POWERMAX	4.5 SL		1.13 lb ae/a	32 fl oz/a		4-6"W	B			
	N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v		4-6"W	B			
9	BOUNDARY	6.5 EC		1.62 lb ai/a	2 pt/a		PRE	A	65 b	61 c	99 a
	FLEXSTAR GT 3.5	2.82 SL		1.23 lb ae/a	3.5 pt/a		4-6"W	B		98 abc	98 abc
	MSO (MSO ULTRA)	100 SL		1 % v/v	1 % v/v		4-6"W	B			
	N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v		4-6"W	B			
10	PREFIX	5.29 EC		1.65 lb ai/a	2.5 pt/a		PRE	A	94 a	74 bc	99 a
	TOUCHDOWN TOTAL	4.17 SL		1.04 lb ae/a	32 fl oz/a		4-6"W	B		97 c	97 c
	N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v		4-6"W	B			
11	ENVIVE	41.3 WG		0.09 lb ai/a	3.5 oz/a		PRE	A	97 a	91 ab	99 a
	ABUNDIT EXTRA	3 SL		0.75 lb ae/a	32 fl oz/a		4-6"W	B		99 ab	99 ab
	N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v		4-6"W	B			
12	NONTREATED								0	0	0
LSD (P=.05)									19.2	19.1	0.0
Standard Deviation									13.3	13.2	0.0
CV									14.02	14.6	0.0
Replicate F									1.169	2.029	0.000
Replicate Prob(F)									0.3381	0.1310	1.0000
Treatment F									2.264	3.329	0.000
Treatment Prob(F)									0.0409	0.0051	1.0000
										0.0059	0.0059

Weed Control with Sonic and Surveil Followed by Durango DMA.

Trial ID: 14-51W-N80 Location: Belleville Res. Center Trial Year: 2014
Investigator: Ronald F. Krausz

Trial Comments

1. Protocol: Dow (Sonic and Surveil); SIU.
2. Ratings: CI 14 and 28 DA-A; CI 14, 28, and 56 DA-B.
WC 14 and 28 DA-A, WC 0, 14, 28, and 56 DA-B.
Rate PREs before applying POST.
3. Yield.
4. Following the PRE application the first significant rainfall event was 0.49 inch the next day.
Following the 4-6"W application the first significant rainfall event was 2.05 inch over the next 6 days.
5. Harvested 10-25-14, (2) 30 inch rows by 24 ft.