

Solstice Programs.

Trial ID: 16-21M-MMW30 Location: Belleville Res. Center Trial Year: 2016
 Investigator: Karla L. Gage, Ph.D.

<p>Trial Status: F one-year/final Initiation Date: 5-29-16 Completion Date: 10-3-16</p>	Trial Location
<p>City: Belleville Country: USA State/Prov.: Illinois IL Postal Code: 62221</p>	

<p>Objectives: Evaluate Solstice concepts for weed control performance and crop safety.</p>

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

Crop Description
<p>Crop 1: ZEAMD Zea mays indentata Dent corn Variety: DKC 63-33 BBCH Scale: BCOR Description: SS RIB</p> <p style="text-align: right;">Planting Date: 5-29-16</p> <p>Planting Rate, Unit: 32000 S/A Planting Method: SEEDED Depth, Unit: 1.5 IN Row Spacing, Unit: 30 IN</p>

Pest Description
<p>Pest 1 Type: W Code: PANDI <i>Panicum dichotomiflorum</i> Michx. Common Name: panicum, fall</p> <p>Pest 2 Type: W Code: CYPES <i>Cyperus esculentus</i> L. Common Name: nutsedge, yellow</p> <p>Pest 3 Type: W Code: AMBTR <i>Ambrosia trifida</i> L. Common Name: ragweed, giant</p> <p>Pest 4 Type: W Code: ABUTH <i>Abutilon theophrasti</i> Medik. Common Name: velvetleaf</p> <p>Pest 5 Type: W Code: AMATA <i>Amaranthus rudis</i> Sauer Common Name: waterhemp, common</p> <p>Pest 6 Type: W Code: IPOHE <i>Ipomoea hederacea</i> (L.) Jacq. Common Name: morningglory, ivyleaf</p>

Site and Design						
<p>Treated Plot Width: 7.5 FT Total Plot Width: 10 FT Site Type: FIELD Treated Plot Length: 30 FT Total Plot Length: 30 FT Experimental Unit: 1 PLOT Tillage Type: REDTIL reduced-till Replications: 3 Study Design: RACOB� Randomized Complete Block (RCB) Untreated Arrangement: INCLUDED single control randomized in each block</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th style="width: 5%;">No.</th> <th style="width: 45%;">Previous Crop</th> <th style="width: 50%;">Year</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1.</td> <td>GLXMA</td> <td style="text-align: center;">2015</td> </tr> </tbody> </table>	No.	Previous Crop	Year	1.	GLXMA	2015
No.	Previous Crop	Year				
1.	GLXMA	2015				

Maintenance				
<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 150 LB/A, P2O5 50 LB/A, K2O 150 LB/A</td> </tr> </tbody> </table>	No.	Maintenance Product Name	1.	N 150 LB/A, P2O5 50 LB/A, K2O 150 LB/A
No.	Maintenance Product Name			
1.	N 150 LB/A, P2O5 50 LB/A, K2O 150 LB/A			

Soil Description
<p>Description Name: 21M_2013 % OM: 3.4 Texture: SIL silt loam pH: 6.5 Soil Name: Bethalto CEC: 12</p>

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Additional Measured Elements

Element	Quantity	Unit
P1	71	lb/A
K	297	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.	4-1-16					7	DAY	32	75	F
2.	4-6-16	0.49	IN	RAIN	rain	1	DAY			
3.	4-8-16					7	DAY	28	71	F
4.	4-10-16	0.97	IN	RAIN	rain	2	DAY			
5.	4-15-16					7	DAY	48	81	F
6.	4-20-16	0.45	IN	RAIN	rain	3	DAY			
7.	4-22-16					7	DAY	47	85	F
8.	4-26-16	1.74	IN	RAIN	rain	2	DAY			
9.	4-29-16					7	DAY	46	75	F
10.	4-29-16	1.94	IN	RAIN	rain	2	DAY			
11.	5-4-16	0.02	IN	RAIN	rain	1	DAY			
12.	5-6-16					7	DAY	44	87	F
13.	5-7-16	0.07	IN	RAIN	rain	1	DAY			
14.	5-9-16	2.12	IN	RAIN	rain	5	DAY			
15.	5-13-16					7	DAY	41	76	F
16.	5-16-16	1.06	IN	RAIN	rain	2	DAY			
17.	5-20-16					7	DAY	51	83	F
18.	5-20-16	0.06	IN	RAIN	rain	1	DAY			
19.	5-25-16	0.68	IN	RAIN	rain	3	DAY			
20.	5-27-16					7	DAY	62	88	F
21.	5-31-16	0.03	IN	RAIN	rain	2	DAY			
22.	6-3-16					7	DAY	55	89	F
23.	6-3-16	0.01	IN	RAIN	rain	1	DAY			
24.	6-4-16	0.72	IN	RAIN	rain	1	DAY			
25.	6-10-16					7	DAY	65	96	F
26.	6-13-16	0.03	IN	RAIN	rain	1	DAY			
27.	6-17-16					7	DAY	67	97	F
28.	6-21-16	0.01	IN	RAIN	rain	1	DAY			
29.	6-24-16					7	DAY	57	95	F
30.	6-25-16	0.02	IN	RAIN	rain	1	DAY			
31.	6-30-16	0.03	IN	RAIN	rain	1	DAY			
32.	7-1-16					7	DAY	60	91	F
33.	7-1-16	2.26	IN	RAIN	rain	4	DAY			
34.	7-6-16	0.32	IN	RAIN	rain	3	DAY			
35.	7-8-16					7	DAY	67	93	F
36.	7-13-16	0.49	IN	RAIN	rain	2	DAY			
37.	7-15-16					7	DAY	68	93	F
38.	7-17-16	0.02	IN	RAIN	rain	1	DAY			
39.	7-19-16	1.47	IN	RAIN	rain	2	DAY			
40.	7-22-16					7	DAY	72	94	F
41.	7-25-16	0.1	IN	RAIN	rain	1	DAY			
42.	7-29-16					7	DAY	69	91	F
43.	7-31-16	0.52	IN	RAIN	rain	3	DAY			
44.	8-3-16	0.75	IN	RAIN	rain	1	DAY			
45.	8-5-16					7	DAY	66	93	F
46.	8-5-16	0.06	IN	RAIN	rain	1	DAY			
47.	8-12-16					7	DAY	68	91	F
48.	8-12-16	4.85	IN	RAIN	rain	5	DAY			
49.	8-19-16					7	DAY	57	93	F

Comment:

Rainfall was recorded on station and provided by Illinois Climate Network.
 Air temperature was recorded at Scott Air Force Base 2.5 miles north and provided by NOAA's National Centers for Environmental Information.
 Air temperatures given are summarized as weekly high and low, detailed weather data is available on request.

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Application Description

	A
Application Date:	6-17-16
Appl. Start Time:	9:20
Appl. Stop Time:	9:50
Application Method:	Spray
Application Timing:	4-5"W
Application Placement:	BROFOL
Applied By:	RLS
Air Temperature, Unit:	78 F
% Relative Humidity:	67
Wind Velocity, Unit:	5 MPH
Wind Direction:	NE
Dew Presence (Y/N):	N
Soil Temperature, Unit:	80 F
Soil Moisture:	BELNOR
% Cloud Cover:	10
Next Moisture Occurred On:	6-30-16
Time to Next Moisture, Unit:	13 DAY

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale:	ZEAMD
Stage Scale Used:	DESC
Stage Majority, Percent:	V5
Stage Minimum, Percent:	V4
Stage Maximum, Percent:	V5
Height, Unit:	10 IN
Height Minimum, Maximum:	8 10

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Pest Stage At Each Application

	A
Pest 1 Code, Type, Scale:	PANDI W
Stage Majority, Percent:	3
Stage Minimum, Percent:	2
Stage Maximum, Percent:	6
Height, Unit:	4 IN
Height Minimum, Maximum:	2 6
Density, Unit:	1 FT2
Pest 2 Code, Type, Scale:	CYPES W
Stage Majority, Percent:	6
Stage Minimum, Percent:	4
Stage Maximum, Percent:	8
Height, Unit:	3 IN
Height Minimum, Maximum:	1 4
Density, Unit:	0.1 FT2
Pest 3 Code, Type, Scale:	AMBTR W
Stage Majority, Percent:	4
Stage Minimum, Percent:	4
Stage Maximum, Percent:	6
Height, Unit:	3 IN
Height Minimum, Maximum:	2 5
Density, Unit:	2 FT2
Pest 4 Code, Type, Scale:	ABUTH W
Stage Majority, Percent:	6
Stage Minimum, Percent:	5
Stage Maximum, Percent:	7
Height, Unit:	3 IN
Height Minimum, Maximum:	2 4
Density, Unit:	1 FT2
Pest 5 Code, Type, Scale:	AMATA W
Stage Majority, Percent:	5
Stage Minimum, Percent:	3
Stage Maximum, Percent:	7
Height, Unit:	3 IN
Height Minimum, Maximum:	1 5
Density, Unit:	2 FT2
Pest 6 Code, Type, Scale:	IPOHE W
Stage Majority, Percent:	6
Stage Minimum, Percent:	4
Stage Maximum, Percent:	10+
Height, Unit:	3 IN
Height Minimum, Maximum:	1 8
Density, Unit:	1 FT2

Application Equipment

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

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Pest Code	Crop Code	Rating Date	Rating Type	Rating Unit	Rating Timing	Trt-Eval Interval	ZEAMD 10-3-16 Moisture Percent	ZEAMD 10-3-16 Test wt. lb/bu	ZEAMD 10-3-16 Yield bu/A	ZEAMD 6-24-16 Injury Percent	ZEAMD 7-1-16 Injury Percent	ZEAMD 7-15-16 Injury Percent			
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code	7 DA-A	7 DA-A	28 DA-A			
1	SOLSTICE	4	SC	0.098	lb ai/a	3.15	fl oz/a	4-5"W	A	17.1 a	55.1 b	117 a	4 b	3 cde	0 a
	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a	4-5"W	A						
	COC	100	SL	0.5	% v/v	0.5	% v/v	4-5"W	A						
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	4-5"W	A						
2	LAUDIS	3.5	SC	0.082	lb ai/a	3	fl oz/a	4-5"W	A	17.3 a	54.9 b	112 a	0 d	2 def	0 a
	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a	4-5"W	A						
	COC	100	SL	0.5	% v/v	0.5	% v/v	4-5"W	A						
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	4-5"W	A						
3	SOLSTICE	4	SC	0.098	lb ai/a	3.15	fl oz/a	4-5"W	A	16.9 a	55.2 b	113 a	2 c	5 bc	0 a
	AATREX 4L	4	SC	1	lb ai/a	32	fl oz/a	4-5"W	A						
	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a	4-5"W	A						
	COC	100	SL	0.5	% v/v	0.5	% v/v	4-5"W	A						
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	4-5"W	A						
4	CAPRENO	3.45	SC	0.081	lb ai/a	3	fl oz/a	4-5"W	A	17.2 a	55.0 b	107 a	10 a	10 a	0 a
	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a	4-5"W	A						
	COC	100	SL	0.5	% v/v	0.5	% v/v	4-5"W	A						
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	4-5"W	A						
5	SOLSTICE	4	SC	0.078	lb ai/a	2.5	fl oz/a	4-5"W	A	16.8 a	55.2 b	116 a	3 bc	7 b	0 a
	ANTHEM MAXX	4.3	SC	0.067	lb ai/a	2	fl oz/a	4-5"W	A						
	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a	4-5"W	A						
	COC	100	SL	0.5	% v/v	0.5	% v/v	4-5"W	A						
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	4-5"W	A						
6	SOLSTICE	4	SC	0.078	lb ai/a	2.5	fl oz/a	4-5"W	A	17.0 a	55.1 b	121 a	2 c	4 cd	0 a
	ANTHEM MAXX	4.3	SC	0.067	lb ai/a	2	fl oz/a	4-5"W	A						
	AATREX 4L	4	SC	1	lb ai/a	32	fl oz/a	4-5"W	A						
	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a	4-5"W	A						
	COC	100	SL	0.5	% v/v	0.5	% v/v	4-5"W	A						
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	4-5"W	A						
7	ACURON FLEXI	3.26	ES	1.63	lb ai/a	2	qt/a	4-5"W	A	21.7 a	52.9 c	97 a	0 d	0 f	0 a
	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a	4-5"W	A						
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	4-5"W	A						
8	HALEX GT	4.389	CS	1.98	lb ai/a	3.6	pt/a	4-5"W	A	17.0 a	55.1 b	114 a	0 d	1 ef	0 a
	NIS	100	SL	0.25	% v/v	0.25	% v/v	4-5"W	A						
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	4-5"W	A						
9	NONTREATED										59.2 a	8 b	0	0	0
LSD P=.05										3.54	1.59	35.4	1.5	2.5	.
Standard Deviation										2.02	0.91	20.5	0.9	1.4	0.0
CV										11.45	1.65	20.39	33.67	35.76	0.0
Replicate F										1.061	1.094	0.175	2.106	0.977	0.000
Replicate Prob(F)										0.3725	0.3601	0.8407	0.1587	0.4006	1.0000
Treatment F										2.052	9.642	8.966	46.171	14.470	0.000
Treatment Prob(F)										0.1196	0.0001	0.0001	0.0001	0.0001	1.0000

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Missing data estimates are included in columns: Average=7
 Could not calculate LSD (% mean diff) for columns 24 because error mean square = 0.

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Pest Code	Crop Code	Rating Date	Rating Type	Rating Unit	Rating Timing	Trt-Eval Interval	PANDI	PANDI	PANDI	PANDI	PANDI	
							6-24-16	7-1-16	7-15-16	8-12-16	9-9-16	
							Control	Control	Control	Control	Control	
							Percent	Percent	Percent	Percent	Percent	
							7 DA-A	14 DA-A	28 DA-A	56 DA-A	84 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Other Rate	Other Unit	Growth Stage	Appl Code			
1	SOLSTICE	4	SC	0.098	lb ai/a	3.15	fl oz/a	4-5"W	A	98 a	99 a	96 a
	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a	4-5"W	A			
	COC	100	SL	0.5	% v/v	0.5	% v/v	4-5"W	A			
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	4-5"W	A			
2	LAUDIS	3.5	SC	0.082	lb ai/a	3	fl oz/a	4-5"W	A	98 a	98 a	96 a
	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a	4-5"W	A			
	COC	100	SL	0.5	% v/v	0.5	% v/v	4-5"W	A			
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	4-5"W	A			
3	SOLSTICE	4	SC	0.098	lb ai/a	3.15	fl oz/a	4-5"W	A	98 a	98 a	96 a
	AATREX 4L	4	SC	1	lb ai/a	32	fl oz/a	4-5"W	A			
	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a	4-5"W	A			
	COC	100	SL	0.5	% v/v	0.5	% v/v	4-5"W	A			
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	4-5"W	A			
4	CAPRENO	3.45	SC	0.081	lb ai/a	3	fl oz/a	4-5"W	A	98 a	99 a	99 a
	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a	4-5"W	A			
	COC	100	SL	0.5	% v/v	0.5	% v/v	4-5"W	A			
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	4-5"W	A			
5	SOLSTICE	4	SC	0.078	lb ai/a	2.5	fl oz/a	4-5"W	A	98 a	99 a	99 a
	ANTHEM MAXX	4.3	SC	0.067	lb ai/a	2	fl oz/a	4-5"W	A			
	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a	4-5"W	A			
	COC	100	SL	0.5	% v/v	0.5	% v/v	4-5"W	A			
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	4-5"W	A			
6	SOLSTICE	4	SC	0.078	lb ai/a	2.5	fl oz/a	4-5"W	A	98 a	99 a	99 a
	ANTHEM MAXX	4.3	SC	0.067	lb ai/a	2	fl oz/a	4-5"W	A			
	AATREX 4L	4	SC	1	lb ai/a	32	fl oz/a	4-5"W	A			
	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a	4-5"W	A			
	COC	100	SL	0.5	% v/v	0.5	% v/v	4-5"W	A			
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	4-5"W	A			
7	ACURON FLEXI	3.26	ES	1.63	lb ai/a	2	qt/a	4-5"W	A	98 a	99 a	99 a
	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a	4-5"W	A			
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	4-5"W	A			
8	HALEX GT	4.389	CS	1.98	lb ai/a	3.6	pt/a	4-5"W	A	98 a	99 a	99 a
	NIS	100	SL	0.25	% v/v	0.25	% v/v	4-5"W	A			
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	4-5"W	A			
9	NONTREATED									0	0	0
LSD P=.05										0.5	1.0	4.7
Standard Deviation										0.3	0.6	2.7
CV										0.27	0.6	2.75
Replicate F										2.333	2.492	4.200
Replicate Prob(F)										0.1335	0.1187	0.0373
Treatment F										1.000	0.746	1.000
Treatment Prob(F)										0.4706	0.6390	0.4706

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Crop Code										
Rating Date						6-24-16	7-1-16	7-15-16	8-12-16	9-9-16
Rating Type						Control	Control	Control	Control	Control
Rating Unit						Percent	Percent	Percent	Percent	Percent
Rating Timing										
Trt-Eval Interval						7 DA-A	14 DA-A	28 DA-A	56 DA-A	84 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Other Rate	Other Rate	Unit	Growth Stage	Appl Code
1	SOLSTICE	4	SC	0.098	lb ai/a	3.15	fl oz/a		4-5"W	A
	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a		4-5"W	A
	COC	100	SL	0.5	% v/v	0.5	% v/v		4-5"W	A
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v		4-5"W	A
2	LAUDIS	3.5	SC	0.082	lb ai/a	3	fl oz/a		4-5"W	A
	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a		4-5"W	A
	COC	100	SL	0.5	% v/v	0.5	% v/v		4-5"W	A
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v		4-5"W	A
3	SOLSTICE	4	SC	0.098	lb ai/a	3.15	fl oz/a		4-5"W	A
	AATREX 4L	4	SC	1	lb ai/a	32	fl oz/a		4-5"W	A
	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a		4-5"W	A
	COC	100	SL	0.5	% v/v	0.5	% v/v		4-5"W	A
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v		4-5"W	A
4	CAPRENO	3.45	SC	0.081	lb ai/a	3	fl oz/a		4-5"W	A
	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a		4-5"W	A
	COC	100	SL	0.5	% v/v	0.5	% v/v		4-5"W	A
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v		4-5"W	A
5	SOLSTICE	4	SC	0.078	lb ai/a	2.5	fl oz/a		4-5"W	A
	ANTHEM MAXX	4.3	SC	0.067	lb ai/a	2	fl oz/a		4-5"W	A
	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a		4-5"W	A
	COC	100	SL	0.5	% v/v	0.5	% v/v		4-5"W	A
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v		4-5"W	A
6	SOLSTICE	4	SC	0.078	lb ai/a	2.5	fl oz/a		4-5"W	A
	ANTHEM MAXX	4.3	SC	0.067	lb ai/a	2	fl oz/a		4-5"W	A
	AATREX 4L	4	SC	1	lb ai/a	32	fl oz/a		4-5"W	A
	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a		4-5"W	A
	COC	100	SL	0.5	% v/v	0.5	% v/v		4-5"W	A
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v		4-5"W	A
7	ACURON FLEXI	3.26	ES	1.63	lb ai/a	2	qt/a		4-5"W	A
	ROUNDUP POWERMAX	4.5	SL	1.13	lb ae/a	32	fl oz/a		4-5"W	A
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v		4-5"W	A
8	HALEX GT	4.389	CS	1.98	lb ai/a	3.6	pt/a		4-5"W	A
	NIS	100	SL	0.25	% v/v	0.25	% v/v		4-5"W	A
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v		4-5"W	A
9	NONTREATED									
LSD P=.05						1.4	1.9	0.9	2.2	2.2
Standard Deviation						0.8	1.1	0.5	1.3	1.3
CV						0.83	1.1	0.5	1.27	1.27
Replicate F						1.577	1.000	5.293	0.424	0.424
Replicate Prob(F)						0.2413	0.3927	0.0194	0.6624	0.6624
Treatment F						9.000	1.612	1.073	0.773	0.773
Treatment Prob(F)						0.0003	0.2115	0.4288	0.6197	0.6197

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Missing data estimates are included in columns: Average=7
 Could not calculate LSD (% mean diff) for columns 24 because error mean square = 0.

Solstice Programs.

Trial ID: 16-21M-MMW30 Location: Belleville Res. Center Trial Year: 2016
 Investigator: Karla L. Gage, Ph.D.

Pest Code		ABUTH	ABUTH	ABUTH	ABUTH	ABUTH							
Crop Code													
Rating Date		6-24-16	7-1-16	7-15-16	8-12-16	9-9-16							
Rating Type		Control	Control	Control	Control	Control							
Rating Unit		Percent	Percent	Percent	Percent	Percent							
Rating Timing													
Trt-Eval Interval		7 DA-A	14 DA-A	28 DA-A	56 DA-A	84 DA-A							
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code					
1	SOLSTICE	4	SC	0.098 lb ai/a	3.15 fl oz/a		4-5"W	A	98 a	99 a	99 a	99 a	99 a
	ROUNDUP POWERMAX	4.5	SL	1.13 lb ae/a	32 fl oz/a		4-5"W	A					
	COC	100	SL	0.5 % v/v	0.5 % v/v		4-5"W	A					
	AMS - LIQUID	100	SL	2.5 % v/v	2.5 % v/v		4-5"W	A					
2	LAUDIS	3.5	SC	0.082 lb ai/a	3 fl oz/a		4-5"W	A	96 a	98 a	98 a	99 a	99 a
	ROUNDUP POWERMAX	4.5	SL	1.13 lb ae/a	32 fl oz/a		4-5"W	A					
	COC	100	SL	0.5 % v/v	0.5 % v/v		4-5"W	A					
	AMS - LIQUID	100	SL	2.5 % v/v	2.5 % v/v		4-5"W	A					
3	SOLSTICE	4	SC	0.098 lb ai/a	3.15 fl oz/a		4-5"W	A	99 a	99 a	99 a	99 a	99 a
	AATREX 4L	4	SC	1 lb ai/a	32 fl oz/a		4-5"W	A					
	ROUNDUP POWERMAX	4.5	SL	1.13 lb ae/a	32 fl oz/a		4-5"W	A					
	COC	100	SL	0.5 % v/v	0.5 % v/v		4-5"W	A					
	AMS - LIQUID	100	SL	2.5 % v/v	2.5 % v/v		4-5"W	A					
4	CAPRENO	3.45	SC	0.081 lb ai/a	3 fl oz/a		4-5"W	A	93 a	99 a	98 a	98 a	98 a
	ROUNDUP POWERMAX	4.5	SL	1.13 lb ae/a	32 fl oz/a		4-5"W	A					
	COC	100	SL	0.5 % v/v	0.5 % v/v		4-5"W	A					
	AMS - LIQUID	100	SL	2.5 % v/v	2.5 % v/v		4-5"W	A					
5	SOLSTICE	4	SC	0.078 lb ai/a	2.5 fl oz/a		4-5"W	A	99 a	99 a	99 a	99 a	99 a
	ANTHEM MAXX	4.3	SC	0.067 lb ai/a	2 fl oz/a		4-5"W	A					
	ROUNDUP POWERMAX	4.5	SL	1.13 lb ae/a	32 fl oz/a		4-5"W	A					
	COC	100	SL	0.5 % v/v	0.5 % v/v		4-5"W	A					
	AMS - LIQUID	100	SL	2.5 % v/v	2.5 % v/v		4-5"W	A					
6	SOLSTICE	4	SC	0.078 lb ai/a	2.5 fl oz/a		4-5"W	A	99 a	99 a	99 a	99 a	99 a
	ANTHEM MAXX	4.3	SC	0.067 lb ai/a	2 fl oz/a		4-5"W	A					
	AATREX 4L	4	SC	1 lb ai/a	32 fl oz/a		4-5"W	A					
	ROUNDUP POWERMAX	4.5	SL	1.13 lb ae/a	32 fl oz/a		4-5"W	A					
	COC	100	SL	0.5 % v/v	0.5 % v/v		4-5"W	A					
	AMS - LIQUID	100	SL	2.5 % v/v	2.5 % v/v		4-5"W	A					
7	ACURON FLEXI	3.26	ES	1.63 lb ai/a	2 qt/a		4-5"W	A	96 a	99 a	99 a	99 a	99 a
	ROUNDUP POWERMAX	4.5	SL	1.13 lb ae/a	32 fl oz/a		4-5"W	A					
	AMS - LIQUID	100	SL	2.5 % v/v	2.5 % v/v		4-5"W	A					
8	HALEX GT	4.389	CS	1.98 lb ai/a	3.6 pt/a		4-5"W	A	99 a	99 a	99 a	99 a	99 a
	NIS	100	SL	0.25 % v/v	0.25 % v/v		4-5"W	A					
	AMS - LIQUID	100	SL	2.5 % v/v	2.5 % v/v		4-5"W	A					
9	NONTREATED								0	0	0	0	0
LSD P=.05									4.4	0.7	0.8	0.6	0.6
Standard Deviation									2.5	0.4	0.5	0.3	0.3
CV									2.56	0.41	0.46	0.34	0.34
Replicate F									2.683	1.000	4.200	4.789	4.789
Replicate Prob(F)									0.1032	0.3927	0.0373	0.0260	0.0260
Treatment F									2.317	1.000	1.257	1.632	1.632
Treatment Prob(F)									0.0857	0.4706	0.3377	0.2062	0.2062

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Missing data estimates are included in columns: Average=7
 Could not calculate LSD (% mean diff) for columns 24 because error mean square = 0.

Solstice Programs.

Trial ID: 16-21M-MMW30 Location: Belleville Res. Center Trial Year: 2016
 Investigator: Karla L. Gage, Ph.D.

Pest Code		AMATA	AMATA	AMATA	AMATA	AMATA							
Crop Code													
Rating Date		6-24-16	7-1-16	7-15-16	8-12-16	9-9-16							
Rating Type		Control	Control	Control	Control	Control							
Rating Unit		Percent	Percent	Percent	Percent	Percent							
Rating Timing													
Trt-Eval Interval		7 DA-A	14 DA-A	28 DA-A	56 DA-A	84 DA-A							
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code					
1	SOLSTICE	4	SC	0.098 lb ai/a	3.15 fl oz/a		4-5"W	A	85 c	85 c	87 b	92 b	92 b
	ROUNDUP POWERMAX	4.5	SL	1.13 lb ae/a	32 fl oz/a		4-5"W	A					
	COC	100	SL	0.5 % v/v	0.5 % v/v		4-5"W	A					
	AMS - LIQUID	100	SL	2.5 % v/v	2.5 % v/v		4-5"W	A					
2	LAUDIS	3.5	SC	0.082 lb ai/a	3 fl oz/a		4-5"W	A	91 bc	91 bc	85 b	93 b	93 b
	ROUNDUP POWERMAX	4.5	SL	1.13 lb ae/a	32 fl oz/a		4-5"W	A					
	COC	100	SL	0.5 % v/v	0.5 % v/v		4-5"W	A					
	AMS - LIQUID	100	SL	2.5 % v/v	2.5 % v/v		4-5"W	A					
3	SOLSTICE	4	SC	0.098 lb ai/a	3.15 fl oz/a		4-5"W	A	98 a	99 a	99 a	99 a	99 a
	AATREX 4L	4	SC	1 lb ai/a	32 fl oz/a		4-5"W	A					
	ROUNDUP POWERMAX	4.5	SL	1.13 lb ae/a	32 fl oz/a		4-5"W	A					
	COC	100	SL	0.5 % v/v	0.5 % v/v		4-5"W	A					
	AMS - LIQUID	100	SL	2.5 % v/v	2.5 % v/v		4-5"W	A					
4	CAPRENO	3.45	SC	0.081 lb ai/a	3 fl oz/a		4-5"W	A	95 ab	96 ab	96 a	95 ab	95 ab
	ROUNDUP POWERMAX	4.5	SL	1.13 lb ae/a	32 fl oz/a		4-5"W	A					
	COC	100	SL	0.5 % v/v	0.5 % v/v		4-5"W	A					
	AMS - LIQUID	100	SL	2.5 % v/v	2.5 % v/v		4-5"W	A					
5	SOLSTICE	4	SC	0.078 lb ai/a	2.5 fl oz/a		4-5"W	A	95 ab	96 ab	96 a	96 ab	96 ab
	ANTHEM MAXX	4.3	SC	0.067 lb ai/a	2 fl oz/a		4-5"W	A					
	ROUNDUP POWERMAX	4.5	SL	1.13 lb ae/a	32 fl oz/a		4-5"W	A					
	COC	100	SL	0.5 % v/v	0.5 % v/v		4-5"W	A					
	AMS - LIQUID	100	SL	2.5 % v/v	2.5 % v/v		4-5"W	A					
6	SOLSTICE	4	SC	0.078 lb ai/a	2.5 fl oz/a		4-5"W	A	98 a	99 a	99 a	99 a	99 a
	ANTHEM MAXX	4.3	SC	0.067 lb ai/a	2 fl oz/a		4-5"W	A					
	AATREX 4L	4	SC	1 lb ai/a	32 fl oz/a		4-5"W	A					
	ROUNDUP POWERMAX	4.5	SL	1.13 lb ae/a	32 fl oz/a		4-5"W	A					
	COC	100	SL	0.5 % v/v	0.5 % v/v		4-5"W	A					
	AMS - LIQUID	100	SL	2.5 % v/v	2.5 % v/v		4-5"W	A					
7	ACURON FLEXI	3.26	ES	1.63 lb ai/a	2 qt/a		4-5"W	A	95 ab	95 ab	97 a	99 a	99 a
	ROUNDUP POWERMAX	4.5	SL	1.13 lb ae/a	32 fl oz/a		4-5"W	A					
	AMS - LIQUID	100	SL	2.5 % v/v	2.5 % v/v		4-5"W	A					
8	HALEX GT	4.389	CS	1.98 lb ai/a	3.6 pt/a		4-5"W	A	92 ab	92 bc	92 ab	94 ab	94 ab
	NIS	100	SL	0.25 % v/v	0.25 % v/v		4-5"W	A					
	AMS - LIQUID	100	SL	2.5 % v/v	2.5 % v/v		4-5"W	A					
9	NONTREATED								0	0	0	0	0
LSD P=.05									6.5	6.7	7.9	4.8	4.8
Standard Deviation									3.7	3.8	4.5	2.7	2.7
CV									3.97	4.06	4.79	2.87	2.87
Replicate F									2.941	3.007	2.644	1.164	1.164
Replicate Prob(F)									0.0859	0.0819	0.1061	0.3407	0.3407
Treatment F									4.125	4.563	4.382	3.102	3.102
Treatment Prob(F)									0.0116	0.0076	0.0091	0.0340	0.0340

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Missing data estimates are included in columns: Average=7
 Could not calculate LSD (% mean diff) for columns 24 because error mean square = 0.

Solstice Programs.

Trial ID: 16-21M-MMW30 Location: Belleville Res. Center Trial Year: 2016
Investigator: Karla L. Gage, Ph.D.

Pest Code						IP0HE	IP0HE	IP0HE	IP0HE	IP0HE
Crop Code						6-24-16	7-1-16	7-15-16	8-12-16	9-9-16
Rating Date						Control	Control	Control	Control	Control
Rating Type						Percent	Percent	Percent	Percent	Percent
Rating Unit						7 DA-A	14 DA-A	28 DA-A	56 DA-A	84 DA-A
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	SOLSTICE	4	SC	0.098 lb ai/a	3.15 fl oz/a		4-5"W	A	92 bc	91 ab
	ROUNDUP POWERMAX	4.5	SL	1.13 lb ae/a	32 fl oz/a		4-5"W	A		
	COC	100	SL	0.5 % v/v	0.5 % v/v		4-5"W	A		
	AMS - LIQUID	100	SL	2.5 % v/v	2.5 % v/v		4-5"W	A		
2	LAUDIS	3.5	SC	0.082 lb ai/a	3 fl oz/a		4-5"W	A	90 bcd	92 ab
	ROUNDUP POWERMAX	4.5	SL	1.13 lb ae/a	32 fl oz/a		4-5"W	A		
	COC	100	SL	0.5 % v/v	0.5 % v/v		4-5"W	A		
	AMS - LIQUID	100	SL	2.5 % v/v	2.5 % v/v		4-5"W	A		
3	SOLSTICE	4	SC	0.098 lb ai/a	3.15 fl oz/a		4-5"W	A	99 a	99 a
	AATREX 4L	4	SC	1 lb ai/a	32 fl oz/a		4-5"W	A		
	ROUNDUP POWERMAX	4.5	SL	1.13 lb ae/a	32 fl oz/a		4-5"W	A		
	COC	100	SL	0.5 % v/v	0.5 % v/v		4-5"W	A		
	AMS - LIQUID	100	SL	2.5 % v/v	2.5 % v/v		4-5"W	A		
4	CAPRENO	3.45	SC	0.081 lb ai/a	3 fl oz/a		4-5"W	A	85 de	87 b
	ROUNDUP POWERMAX	4.5	SL	1.13 lb ae/a	32 fl oz/a		4-5"W	A		
	COC	100	SL	0.5 % v/v	0.5 % v/v		4-5"W	A		
	AMS - LIQUID	100	SL	2.5 % v/v	2.5 % v/v		4-5"W	A		
5	SOLSTICE	4	SC	0.078 lb ai/a	2.5 fl oz/a		4-5"W	A	95 ab	90 b
	ANTHEM MAXX	4.3	SC	0.067 lb ai/a	2 fl oz/a		4-5"W	A		
	ROUNDUP POWERMAX	4.5	SL	1.13 lb ae/a	32 fl oz/a		4-5"W	A		
	COC	100	SL	0.5 % v/v	0.5 % v/v		4-5"W	A		
	AMS - LIQUID	100	SL	2.5 % v/v	2.5 % v/v		4-5"W	A		
6	SOLSTICE	4	SC	0.078 lb ai/a	2.5 fl oz/a		4-5"W	A	99 a	99 a
	ANTHEM MAXX	4.3	SC	0.067 lb ai/a	2 fl oz/a		4-5"W	A		
	AATREX 4L	4	SC	1 lb ai/a	32 fl oz/a		4-5"W	A		
	ROUNDUP POWERMAX	4.5	SL	1.13 lb ae/a	32 fl oz/a		4-5"W	A		
	COC	100	SL	0.5 % v/v	0.5 % v/v		4-5"W	A		
	AMS - LIQUID	100	SL	2.5 % v/v	2.5 % v/v		4-5"W	A		
7	ACURON FLEXI	3.26	ES	1.63 lb ai/a	2 qt/a		4-5"W	A	80 e	85 b
	ROUNDUP POWERMAX	4.5	SL	1.13 lb ae/a	32 fl oz/a		4-5"W	A		
	AMS - LIQUID	100	SL	2.5 % v/v	2.5 % v/v		4-5"W	A		
8	HALEX GT	4.389	CS	1.98 lb ai/a	3.6 pt/a		4-5"W	A	88 cd	87 b
	NIS	100	SL	0.25 % v/v	0.25 % v/v		4-5"W	A		
	AMS - LIQUID	100	SL	2.5 % v/v	2.5 % v/v		4-5"W	A		
9	NONTREATED								0	0
LSD P=.05									5.1	8.8
Standard Deviation									2.9	5.0
CV									3.2	5.49
Replicate F									0.299	3.923
Replicate Prob(F)									0.7460	0.0444
Treatment F									15.489	3.475
Treatment Prob(F)									0.0001	0.0226
									8.916	0.0032
									3.806	0.0479
									5.895	1.396
									0.2812	0.2812

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Missing data estimates are included in columns: Average=7

Could not calculate LSD (% mean diff) for columns 24 because error mean square = 0.

Solstice Programs.

Trial ID: 16-21M-MMW30 Location: Belleville Res. Center Trial Year: 2016
Investigator: Karla L. Gage, Ph.D.

Trial Comments

1. Protocol: FMC (Solstice).
2. Ratings:
CI 7, 14, and 28 DA-A.
WC 7, 14, 28, 56, and 84 DA-A.
3. Yield if possible.
4. Photos not requested.
5. Rainfall following the 4-5"W application A was 2.61 inch over 9 days beginning 13 days later.
6. Weed control ratings that increased after the 28 DA-A ratings date were influenced by crop canopy, especially for IPOHE.
7. Harvested 10-3-16, (2) 30 inch rows by 27 ft.