

Authority Anthem Maxx Non-crop.

Trial ID: 15-9B-S50 Location: Belleville Res. Center Trial Year: 2015  
Investigator: Ronald F. Krausz

**Trial Status:** F one-year/final  
**Initiation Date:** 7-19-15  
**Completion Date:** 10-16-15

**Trial Location**

**City:** Belleville **Country:** USA  
**State/Prov.:** Illinois IL  
**Postal Code:** 62221

**Objectives:**

Evaluate the value of Authority and Anthem in tank-mixes envisioned with Roundup Xtend and Enlist trait systems.

**Contacts**

**Study Director:** Ronald F. Krausz **Title:** Researcher/Farm Manager  
**Organization:** Belleville Research Center - Southern Illinois Univ Carbondale  
**Address:** 2036 Charles Lane **Phone No.:** 618-566-4761  
**City+State/Prov:** Belleville, IL  
**Postal Code:** 62221 **E-mail:** rkrausz@siu.edu  
**Country:** USA

**Crop Description**

**Crop 1:** NONE - Non-crop \_  
**Variety:** NA

**Planting Method:** NA**Pest Description**

**Pest 1 Type:** W **Code:** AMAPA *Amaranthus palmeri* S.Wats.  
**Common Name:** amaranth, Palmer

**Pest 2 Type:** W **Code:** IPOHE *Ipomoea hederacea* (L.) Jacq.  
**Common Name:** morningglory, ivyleaf

**Site and Design**

**Treated Plot Width:** 7.5 FT **Total Plot Width:** 10 FT **Site Type:** FIELD  
**Treated Plot Length:** 25 FT **Total Plot Length:** 25 FT **Experimental Unit:** 1 PLOT  
**Tillage Type:** REDTIL reduced-till  
**Replications:** 4 **Study Design:** RACOB� Randomized Complete Block (RCB)  
**Untreated Arrangement:** INCLUDED single control randomized in each block

No.	Previous Crop	Year
1.	NON-CROP	2014

**Maintenance**

No.	Maintenance Product Name
1.	N 0 LB/A, P2O5 50 LB/A, K2O 150 LB/A

**Soil Description**

**Description Name:** 09B\_2013 **Texture:** SIL silt loam  
**% OM:** 2.9 **Soil Name:** Bethalto  
**pH:** 6.2  
**CEC:** 11

**Additional Measured Elements**

Element	Quantity	Unit
P1	72	lb/A
K	275	lb/A

**Moisture and Weather Conditions**

**Overall Moisture Conditions:** ABONOR  
**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.	7-1-15					7	DAY	63	88	F
2.	7-1-15	0.64	IN	RAIN	rain	2	DAY			
3.	7-7-15	1.33	IN	RAIN	rain	2	DAY			
4.	7-8-15					7	DAY	59	97	F
5.	7-10-15	0.26	IN	RAIN	rain	1	DAY			
6.	7-15-15					7	DAY	69	93	F
7.	7-19-15	0.35	IN	RAIN	rain	2	DAY			
8.	7-22-15					7	DAY	65	95	F
9.	7-26-15	1.21	IN	RAIN	rain	3	DAY			
10.	7-29-15					7	DAY	65	93	F
11.	8-5-15					7	DAY	64	88	F
12.	8-5-15	2.25	IN	RAIN	rain	1	DAY			
13.	8-9-15	0.47	IN	RAIN	rain	1	DAY			
14.	8-12-15					7	DAY	63	89	F
15.	8-18-15	2.23	IN	RAIN	rain	2	DAY			
16.	8-19-15					7	DAY	52	82	F
17.	8-22-15	0.18	IN	RAIN	rain	1	DAY			
18.	8-26-15					7	DAY	54	91	F
19.	9-2-15					7	DAY	68	94	F
20.	9-8-15	1.93	IN	RAIN	rain	2	DAY			
21.	9-9-15					7	DAY	47	83	F
22.	9-11-15	0.4	IN	RAIN	rain	1	DAY			
23.	9-16-15					7	DAY	51	90	F
24.	9-19-15	0.14	IN	RAIN	rain	1	DAY			
25.	9-23-15					7	DAY	54	85	F
26.	9-28-15	0.13	IN	RAIN	rain	1	DAY			

**Application Description**

	A	B
Application Date:	7-19-15	8-10-15
Appl. Start Time:	9:10	9:35
Appl. Stop Time:	9:25	9:50
Application Method:	Spray	Spray
Application Timing:	PRE	21DA-PRE
Application Placement:	BROSOI	BROFOL
Applied By:	MEJ	MEJ
Air Temperature, Unit:	74 F	81 F
% Relative Humidity:	97	88
Wind Velocity, Unit:	2 MPH	6 MPH
Wind Direction:	W	W
Dew Presence (Y/N):	N	N
Soil Temperature, Unit:	80 F	78 F
Soil Moisture:	NORMAL	ABONOR
% Cloud Cover:	100	70
Next Moisture Occurred On:	7-19-15	8-18-15
Time to Next Moisture, Unit:	12 HR	8 DAY

**Crop Stage At Each Application**

	A	B
Crop 1 Code, BBCH Scale:	NONE	NONE
Stage Scale Used:	DESC	DESC
Stage Majority, Percent:	NA	NA

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	<b>A</b>	<b>B</b>
<b>Pest 1 Code, Type, Scale:</b>	AMAPA W	AMAPA W
<b>Stage Majority, Percent:</b>	NA	10
<b>Stage Minimum, Percent:</b>		4
<b>Stage Maximum, Percent:</b>		10+
<b>Height, Unit:</b>		10 IN
<b>Height Minimum, Maximum:</b>		2 6
<b>Density, Unit:</b>		1 FT2
<b>Pest 2 Code, Type, Scale:</b>	IPOHE W	IPOHE W
<b>Stage Majority, Percent:</b>	NA	6
<b>Stage Minimum, Percent:</b>		4
<b>Stage Maximum, Percent:</b>		8
<b>Height, Unit:</b>		3 IN
<b>Height Minimum, Maximum:</b>		3 4
<b>Density, Unit:</b>		0.001 FT2

**Application Equipment**

	<b>A</b>	<b>B</b>
<b>Appl. Equipment:</b>	CO2 sprayer	CO2 sprayer
<b>Equipment Type:</b>	BACSPR	BACSPR
<b>Operation Pressure, Unit:</b>	30 PSI	30 PSI
<b>Nozzle Type:</b>	TTI	TTI
<b>Nozzle Size:</b>	11002	11002
<b>Boom Length, Unit:</b>	7.5 FT	7.5 FT
<b>Spray Volume, Unit:</b>	15 GPA	15 GPA

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Pest Code							AMAPA	AMAPA	AMAPA	AMAPA	AMAPA	AMAPA
Crop Code							8-3-15	8-10-15	8-25-15	9-9-15	10-9-15	10-16-15
Rating Date							Control	Control	Control	Control	Control	Control
Rating Type							Percent	Percent	Percent	Percent	Percent	Percent
Rating Unit							22 DA-A	0 DA-B	15 DA-B	30 DA-B	60 DA-B	67 DA-B
Rating Timing												
Trt-Eval Interval							15 DA-A	0 DA-B	15 DA-B	30 DA-B	60 DA-B	67 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code			
1	DURANGO DMA	4	SL	0.75	lb ae/a	24	fl oz/a	PRE	A	65 c	56 b	99 a
	2,4-D LV 4	3.8	EC	0.71	lb ae/a	24	fl oz/a	PRE	A			56 c
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	PRE	A			31 b
	DURANGO DMA	4	SL	0.75	lb ae/a	24	fl oz/a	21DA-PRE B				31 b
	2,4-D LV 4	3.8	EC	0.71	lb ae/a	24	fl oz/a	21DA-PRE B				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	21DA-PRE B				
2	ROUNDUP POWERMAX	4.5	SL	1.05	lb ae/a	30	fl oz/a	PRE	A	80 b	69 b	99 a
	CLARITY	4	SL	0.5	lb ae/a	16	fl oz/a	PRE	A			79 b
	ROUNDUP POWERMAX	4.5	SL	1.05	lb ae/a	30	fl oz/a	21DA-PRE B				76 a
	CLARITY	4	SL	0.5	lb ae/a	16	fl oz/a	21DA-PRE B				76 a
3	AUTHORITY FIRST DF	70	WG	0.219	lb ai/a	5	oz/a	PRE	A	98 a	93 a	99 a
	DURANGO DMA	4	SL	0.75	lb ae/a	24	fl oz/a	PRE	A			96 a
	2,4-D LV 4	3.8	EC	0.71	lb ae/a	24	fl oz/a	PRE	A			89 a
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	PRE	A			89 a
	ANTHEM MAXX	4.3	SC	0.084	lb ai/a	2.5	fl oz/a	21DA-PRE B				
	DURANGO DMA	4	SL	0.75	lb ae/a	24	fl oz/a	21DA-PRE B				
	2,4-D LV 4	3.8	EC	0.71	lb ae/a	24	fl oz/a	21DA-PRE B				
	N-PAK AMS	100	SL	2.5	% v/v	2.5	% v/v	21DA-PRE B				
4	AUTHORITY FIRST DF	70	WG	0.219	lb ai/a	5	oz/a	PRE	A	99 a	98 a	99 a
	ROUNDUP POWERMAX	4.5	SL	1.05	lb ae/a	30	fl oz/a	PRE	A			99 a
	CLARITY	4	SL	0.5	lb ae/a	16	fl oz/a	PRE	A			95 a
	ANTHEM MAXX	4.3	SC	0.084	lb ai/a	2.5	fl oz/a	21DA-PRE B				95 a
	ROUNDUP POWERMAX	4.5	SL	1.05	lb ae/a	30	fl oz/a	21DA-PRE B				
	CLARITY	4	SL	0.5	lb ae/a	16	fl oz/a	21DA-PRE B				
5	NONTREATED						0	0	0	0	0	0
LSD P=.05							13.9	19.9	.	12.0	20.4	20.4
Standard Deviation							8.7	12.5	0.0	7.5	12.8	12.8
CV							10.14	15.76	0.0	9.11	17.58	17.58
Replicate F							0.998	1.790	0.000	0.159	0.651	0.651
Replicate Prob(F)							0.4372	0.2190	1.0000	0.9210	0.6018	0.6018
Treatment F							13.989	10.255	0.000	27.319	20.110	20.110
Treatment Prob(F)							0.0010	0.0029	1.0000	0.0001	0.0003	0.0003

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 9,10,12,14,16 because error mean square = 0.

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Crop Code							8-3-15	8-10-15	8-25-15	9-9-15	10-9-15	10-16-15
Rating Date							Control	Control	Control	Control	Control	Control
Rating Type							Percent	Percent	Percent	Percent	Percent	Percent
Rating Unit							15 DA-A	22 DA-A	15 DA-B	30 DA-B	60 DA-B	67 DA-B
Rating Timing							0 DA-B	0 DA-B	0 DA-B	0 DA-B	0 DA-B	0 DA-B
Trt-Eval Interval							15 DA-A	0 DA-B	15 DA-B	30 DA-B	60 DA-B	67 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Other Rate	Other Rate Unit	Growth Stage	Appl Code				
1	DURANGO DMA	4	SL	0.75 lb ae/a	24 fl oz/a		PRE	A	98 a	98 a	99 a	99 a
	2,4-D LV 4	3.8	EC	0.71 lb ae/a	24 fl oz/a		PRE	A				
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		PRE	A				
	DURANGO DMA	4	SL	0.75 lb ae/a	24 fl oz/a		21DA-PRE B					
	2,4-D LV 4	3.8	EC	0.71 lb ae/a	24 fl oz/a		21DA-PRE B					
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		21DA-PRE B					
2	ROUNDUP POWERMAX	4.5	SL	1.05 lb ae/a	30 fl oz/a		PRE	A	96 a	96 a	99 a	99 a
	CLARITY	4	SL	0.5 lb ae/a	16 fl oz/a		PRE	A				
	ROUNDUP POWERMAX	4.5	SL	1.05 lb ae/a	30 fl oz/a		21DA-PRE B					
	CLARITY	4	SL	0.5 lb ae/a	16 fl oz/a		21DA-PRE B					
3	AUTHORITY FIRST DF	70	WG	0.219 lb ai/a	5 oz/a		PRE	A	99 a	99 a	99 a	99 a
	DURANGO DMA	4	SL	0.75 lb ae/a	24 fl oz/a		PRE	A				
	2,4-D LV 4	3.8	EC	0.71 lb ae/a	24 fl oz/a		PRE	A				
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		PRE	A				
	ANTHEM MAXX	4.3	SC	0.084 lb ai/a	2.5 fl oz/a		21DA-PRE B					
	DURANGO DMA	4	SL	0.75 lb ae/a	24 fl oz/a		21DA-PRE B					
	2,4-D LV 4	3.8	EC	0.71 lb ae/a	24 fl oz/a		21DA-PRE B					
	N-PAK AMS	100	SL	2.5 % v/v	2.5 % v/v		21DA-PRE B					
4	AUTHORITY FIRST DF	70	WG	0.219 lb ai/a	5 oz/a		PRE	A	99 a	99 a	99 a	99 a
	ROUNDUP POWERMAX	4.5	SL	1.05 lb ae/a	30 fl oz/a		PRE	A				
	CLARITY	4	SL	0.5 lb ae/a	16 fl oz/a		PRE	A				
	ANTHEM MAXX	4.3	SC	0.084 lb ai/a	2.5 fl oz/a		21DA-PRE B					
	ROUNDUP POWERMAX	4.5	SL	1.05 lb ae/a	30 fl oz/a		21DA-PRE B					
	CLARITY	4	SL	0.5 lb ae/a	16 fl oz/a		21DA-PRE B					
5	NONTREATED								0	0	0	0
LSD P=.05							3.5	3.6	.	.	.	.
Standard Deviation							2.2	2.2	0.0	0.0	0.0	0.0
CV							2.25	2.28	0.0	0.0	0.0	0.0
Replicate F							1.562	1.527	0.000	0.000	0.000	0.000
Replicate Prob(F)							0.2651	0.2732	1.0000	1.0000	1.0000	1.0000
Treatment F							1.803	1.494	0.000	0.000	0.000	0.000
Treatment Prob(F)							0.2166	0.2812	1.0000	1.0000	1.0000	1.0000

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Trial Comments

1. Protocol: FMC (Authority/Anthem).
2. Ratings:  
WC 15 DA-A;  
WC 0, 15, 30, 60, and 90 DA-B.  
Rate before spray application B.
3. No Yield (non-crop).
4. Rainfall following the PRE application was 0.35 inch over 2 days beginning 12 hours later.  
Rainfall following the 21DA-PRE application was 2.23 inch over 2 days beginning 8 days later.
5. The planned weed control evaluation at 90 DA-B (11-8-15) was not possible due to a killing frost on 10-17-15 and 10-18-15. Instead plots were evaluated just prior to the killing frost on 10-16-15 at 67 DA-B.
6. Not harvested (non-crop).