

Anthem Preemergence and Postemergence in Corn.

Trial ID: 11-DSO-AnthemCN Location: De Soto, IL

Investigator: Bryan Young, Professor, Southern Illinois University, bgyoung@siu.edu  
 City State Zip Country: De Soto IL 62924 USA  
 Trial Status: FINAL Initiation Date: 5-20-11

Objectives: Evaluate glyphosate-resistant waterhemp control from Anthem compared with competitive standards.

Crop 1: ZEAMD Dent corn Variety: DKC 61-21 GENSS Description: RR2/LL  
 Planting Method: SEEDED Planting Date: 5-20-11  
 Rate, Unit: 28000 S/A Depth, Unit: 1.5 IN  
 Row Spacing, Unit: 30 IN

Pest 1 Type: W Code: AMATA Amaranthus rudis Sauer waterhemp, common  
 Pest Description: glyphosate-resistant waterhemp

Plot Width, Unit: 10 FT Site Type: FIELD  
 Plot Length, Unit: 30 FT Tillage Type: NO-TILL  
 Replications: 3 Study Design: Randomized Complete Block

Prior Crops, Year  
 1. GLXMA 2010

Field Prep./Maintenance: N 177 LB/A, P205 69 LB/A, K20 90 LB/A

% Sand: 14.0 % OM: 2.2 Texture: SILT LOAM  
 % Silt: 67.0 pH: 6.4 Soil Name: OKAW  
 % Clay: 19.0 CEC: 11.3 Fert. Level: P1 33 LB/A, K 257 LB/A

	Application Description			
	A	B	C	D
Application Date:	5-20-11	6-3-11	6-22-11	
Time of Day:	14:00	15:00	8:30	See
Application Method:	Spray	Spray	Spray	Comment
Application Timing:	PRE	V2-3	3-4"W-1	3-4"W-2
Application Placement:	BROSOI	BROFOL	BROFOL	BROFOL
Applied By:	LAH	LAH	JRK	
Air Temperature, Unit:	84 F	94 F	85 F	
% Relative Humidity:	44	46	60	
Wind Velocity, Unit:	5 MPH	3 MPH	5 MPH	
Wind Direction:	SE	SW	SW	
Dew Presence (Y/N):	N	N	Y	
Soil Temperature, Unit:	75 F	91 F	75 F	
Soil Moisture:	ABONOR	NORMAL	NORMAL	
% Cloud Cover:	50	10	15	

	20-5-11	3-6-11	22-6-11	
Crop stage at application:	NA	V2-V3	V5-V6	NA
Height Min, Max (inch):		5 9 24	31	

	Pest Stage At Each Application			
	5-20-11	6-3-11	6-22-11	
Weed Code:	AMATA	AMATA	AMATA	AMATA
Stage Majority (leaves):	NA	coty 6	6	NA
Stage Min, Max:		coty 7	coty 10	
Height Majority:		0.5 IN	4 IN	
Height Min, Max:		0.5 2	1 8	
Density, Unit:		1 FT2	0.3 FT2	

	Application Equipment			
Appl. Equipment:	CO2 sprayer	CO2 sprayer	CO2 sprayer	CO2 sprayer
Operating Pressure:	30 PSI	30 PSI	30 PSI	30 PSI
Nozzle Type:	Flat fan	Flat fan	Flat fan	Flat fan
Nozzle Size:	XR 8002	XR 8002	XR 8002	XR 8002
Boom Length, Unit:	6.67 FT	6.67 FT	6.67 FT	6.67 FT
Spray Volume, Unit:	15 GPA	15 GPA	15 GPA	15 GPA

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Pest Code	Crop Code	Rating Date	Rating Data Type	Rating Unit	Rating Timing	Trt-Eval Interval	ZEAMD 9-30-11 Moisture Percent	ZEAMD 9-30-11 Test wt. lb/bu	ZEAMD 9-30-11 Yield bu/A	ZEAMD 6-8-11 Injury Percent	ZEAMD 6-17-11 Injury Percent	ZEAMD 6-24-11 Injury Percent	ZEAMD 7-3-11 Injury Percent
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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code	14 DAE	14 DA-B	30 DAE	30 DA-B
1	ANTHEM	2.15	SE	0.118	lb ai/a	7	fl oz/a	PRE	A	15.9 de	59.2 ab	113 a	0 b
1	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-1	C			0 b	0 a
1	N-PAK AMS	100	SL	5	% v/v	5	% v/v	3-4"W-1	C				
2	ANTHEM	2.15	SE	0.151	lb ai/a	9	fl oz/a	PRE	A	16.9 a-d	58.8 bcd	136 a	0 b
2	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-1	C			0 b	0 a
2	N-PAK AMS	100	SL	5	% v/v	5	% v/v	3-4"W-1	C				
3	ANTHEM	2.15	SE	0.118	lb ai/a	7	fl oz/a	PRE	A	17.2 ab	58.6 cd	139 a	2 b
3	AATREX	4	SC	0.9	lb ai/a	0.9	qt/a	PRE	A			0 b	0 a
3	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-1	C				
3	N-PAK AMS	100	SL	5	% v/v	5	% v/v	3-4"W-1	C				
4	ANTHEM	2.15	SE	0.151	lb ai/a	9	fl oz/a	PRE	A	16.8 a-d	58.7 bcd	129 a	0 b
4	AATREX	4	SC	1.16	lb ai/a	1.16	qt/a	PRE	A			0 b	0 a
4	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-1	C				
4	N-PAK AMS	100	SL	5	% v/v	5	% v/v	3-4"W-1	C				
5	DUAL II MAGNUM	7.64	EC	1.34	lb ai/a	1.4	pt/a	PRE	A	16.0 cde	59.2 ab	112 a	0 b
5	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-1	C			0 b	0 a
5	N-PAK AMS	100	SL	5	% v/v	5	% v/v	3-4"W-1	C				
6	BICEP II MAGNUM	5.5	SC	2.9	lb ai/a	2.1	qt/a	PRE	A	16.4 b-e	59.0 a-d	137 a	0 b
6	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-1	C			0 b	0 a
6	N-PAK AMS	100	SL	5	% v/v	5	% v/v	3-4"W-1	C				
7	FIERCE	76	WG	0.143	lb ai/a	3	oz/a	PRE	A	17.6 a	58.4 d	132 a	14 a
7	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-1	C			17 a	0 a
7	N-PAK AMS	100	SL	5	% v/v	5	% v/v	3-4"W-1	C				
8	LEXAR	3.7	SC	2.08	lb ai/a	2.25	qt/a	PRE	A	16.3 b-e	59.1 abc	127 a	0 b
8	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-1	C			0 b	0 a
8	N-PAK AMS	100	SL	5	% v/v	5	% v/v	3-4"W-1	C				
9	ANTHEM	2.15	SE	0.101	lb ai/a	6	fl oz/a	V2-3	B	17.2 ab	58.7 bcd	133 a	1 b
9	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	V2-3	B			0 b	0 a
9	N-PAK AMS	100	SL	5	% v/v	5	% v/v	V2-3	B				
9	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-2	SEE				
9	N-PAK AMS	100	SL	5	% v/v	5	% v/v	3-4"W-2	COMENT				
10	ANTHEM	2.15	SE	0.134	lb ai/a	8	fl oz/a	V2-3	B	17.2 abc	58.7 bcd	136 a	4 a
10	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	V2-3	B			0 b	0 a
10	N-PAK AMS	100	SL	5	% v/v	5	% v/v	V2-3	B				
10	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-2	SEE				
10	N-PAK AMS	100	SL	5	% v/v	5	% v/v	3-4"W-2	COMENT				
11	ANTHEM	2.15	SE	0.101	lb ai/a	6	fl oz/a	V2-3	B	15.4 e	59.5 a	107 a	3 a
11	AATREX	4	SC	0.8	lb ai/a	0.8	qt/a	V2-3	B			0 b	0 a
11	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	V2-3	B				
11	N-PAK AMS	100	SL	5	% v/v	5	% v/v	V2-3	B				
11	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-2	SEE				
11	N-PAK AMS	100	SL	5	% v/v	5	% v/v	3-4"W-2	COMENT				
12	HALEX GT	4.38	CS	1.97	lb ai/a	3.6	pt/a	V2-3	B	16.6 a-d	58.9 a-d	116 a	1 b
12	NIS (ACTIVATOR 90)	100	SL	0.25	% v/v	0.25	% v/v	V2-3	B			0 b	0 a
12	N-PAK AMS	100	SL	5	% v/v	5	% v/v	V2-3	B				
12	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-2	SEE				
12	N-PAK AMS	100	SL	5	% v/v	5	% v/v	3-4"W-2	COMENT				
13	CAPRENO	3.45	SC	0.081	lb ai/a	3	fl oz/a	V2-3	B	16.7 a-d	58.8 bcd	131 a	0 b
13	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	V2-3	B			0 b	0 a
13	N-PAK AMS	100	SL	5	% v/v	5	% v/v	V2-3	B				
13	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-2	SEE				
13	N-PAK AMS	100	SL	5	% v/v	5	% v/v	3-4"W-2	COMENT				
14	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	V2-3	B	16.5 a-e	59.0 a-d	122 a	0 b
14	N-PAK AMS	100	SL	5	% v/v	5	% v/v	V2-3	B			0 b	0 a
14	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-2	SEE				
14	N-PAK AMS	100	SL	5	% v/v	5	% v/v	3-4"W-2	COMENT				

LSD (P=.05)

1.15 0.61 33.0 3.3 1.6 2.6 0.0

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Pest Code																					
Crop Code																					
Rating Date																					
Rating Data Type																					
Rating Unit																					
Rating Timing																					
Trt-Eval Interval																					

Trt No.	Treatment Name	Form Conc	Form Type	Form Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code	14 DAE	14 DA-B	30 DAE	30 DA-B			
	Replicate F									2.421	2.439	2.239	0.108	0.294	1.000	0.000
	Replicate Prob(F)									0.1086	0.1070	0.1267	0.8983	0.7514	0.3816	1.0000
	Treatment F									2.255	1.923	0.866	21.763	12.294	25.000	0.000
	Treatment Prob(F)									0.0376	0.0757	0.5947	0.0001	0.0005	0.0001	1.0000

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

Anthem Preemergence and Postemergence in Corn.

Trial ID: 11-DSO-AnthemCN Location: De Soto, IL

								AMATA-HR	AMATA-HR	AMATA-HR	AMATA-HR	AMATA-HR	AMATA-HR		
Pest Code	Crop Code	Rating Date	Rating Data Type	Rating Unit	Rating Timing	Trt-Eval Interval	6-19-11 Control Percent	6-24-11 Control Percent	7-3-11 Control Percent	7-19-11 Control Percent	8-2-11 Control Percent	9-1-11 Control Percent			
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code						
1	ANTHEM	2.15	SE	0.118	lb ai/a	7	fl oz/a	PRE	A	75 b	78 b	80 b	75 c	71 c	73 c
1	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-1	C						
	N-PAK AMS	100	SL	5	% v/v	5	% v/v	3-4"W-1	C						
2	ANTHEM	2.15	SE	0.151	lb ai/a	9	fl oz/a	PRE	A	97 a	97 a	97 a	97 a	97 a	97 a
2	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-1	C						
	N-PAK AMS	100	SL	5	% v/v	5	% v/v	3-4"W-1	C						
3	ANTHEM	2.15	SE	0.118	lb ai/a	7	fl oz/a	PRE	A	98 a	98 a	98 a	97 a	98 a	98 a
3	AATREX	4	SC	0.9	lb ai/a	0.9	qt/a	PRE	A						
3	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-1	C						
	N-PAK AMS	100	SL	5	% v/v	5	% v/v	3-4"W-1	C						
4	ANTHEM	2.15	SE	0.151	lb ai/a	9	fl oz/a	PRE	A	99 a	99 a	99 a	99 a	99 a	99 a
4	AATREX	4	SC	1.16	lb ai/a	1.16	qt/a	PRE	A						
4	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-1	C						
	N-PAK AMS	100	SL	5	% v/v	5	% v/v	3-4"W-1	C						
5	DUAL II MAGNUM	7.64	EC	1.34	lb ai/a	1.4	pt/a	PRE	A	80 b	80 b	83 b	83 abc	83 abc	85 abc
5	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-1	C						
	N-PAK AMS	100	SL	5	% v/v	5	% v/v	3-4"W-1	C						
6	BICEP II MAGNUM	5.5	SC	2.9	lb ai/a	2.1	qt/a	PRE	A	98 a	98 a	98 a	97 a	97 a	98 a
6	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-1	C						
	N-PAK AMS	100	SL	5	% v/v	5	% v/v	3-4"W-1	C						
7	FIERCE	76	WG	0.143	lb ai/a	3	oz/a	PRE	A	95 a	95 a	96 a	94 ab	94 ab	95 ab
7	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-1	C						
	N-PAK AMS	100	SL	5	% v/v	5	% v/v	3-4"W-1	C						
8	LEXAR	3.7	SC	2.08	lb ai/a	2.25	qt/a	PRE	A	99 a	99 a	99 a	99 a	99 a	99 a
8	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-1	C						
	N-PAK AMS	100	SL	5	% v/v	5	% v/v	3-4"W-1	C						
9	ANTHEM	2.15	SE	0.101	lb ai/a	6	fl oz/a	V2-3	B	99 a	99 a	98 a	98 a	98 a	99 a
9	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	V2-3	B						
	N-PAK AMS	100	SL	5	% v/v	5	% v/v	V2-3	B						
9	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-2	SEE						
	N-PAK AMS	100	SL	5	% v/v	5	% v/v	3-4"W-2	COMENT						
10	ANTHEM	2.15	SE	0.134	lb ai/a	8	fl oz/a	V2-3	B	99 a	99 a	99 a	99 a	99 a	99 a
10	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	V2-3	B						
	N-PAK AMS	100	SL	5	% v/v	5	% v/v	V2-3	B						
10	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-2	SEE						
	N-PAK AMS	100	SL	5	% v/v	5	% v/v	3-4"W-2	COMENT						
11	ANTHEM	2.15	SE	0.101	lb ai/a	6	fl oz/a	V2-3	B	99 a	99 a	99 a	98 a	98 a	98 a
11	AATREX	4	SC	0.8	lb ai/a	0.8	qt/a	V2-3	B						
11	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	V2-3	B						
	N-PAK AMS	100	SL	5	% v/v	5	% v/v	V2-3	B						
11	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-2	SEE						
	N-PAK AMS	100	SL	5	% v/v	5	% v/v	3-4"W-2	COMENT						
12	HALEX GT	4.38	CS	1.97	lb ai/a	3.6	pt/a	V2-3	B	99 a	99 a	99 a	98 a	98 a	98 a
12	NIS (ACTIVATOR 90)	100	SL	0.25	% v/v	0.25	% v/v	V2-3	B						
	N-PAK AMS	100	SL	5	% v/v	5	% v/v	V2-3	B						
12	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-2	SEE						
	N-PAK AMS	100	SL	5	% v/v	5	% v/v	3-4"W-2	COMENT						
13	CAPRENO	3.45	SC	0.081	lb ai/a	3	fl oz/a	V2-3	B	97 a	93 a	83 b	80 bc	80 bc	80 bc
13	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	V2-3	B						
	N-PAK AMS	100	SL	5	% v/v	5	% v/v	V2-3	B						
13	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-2	SEE						
	N-PAK AMS	100	SL	5	% v/v	5	% v/v	3-4"W-2	COMENT						
14	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	V2-3	B	77 b	65 c	58 c	17 d	13 d	13 d
	N-PAK AMS	100	SL	5	% v/v	5	% v/v	V2-3	B						
14	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-2	SEE						
	N-PAK AMS	100	SL	5	% v/v	5	% v/v	3-4"W-2	COMENT						

LSD (P=.05)

11.7 10.7 8.9 16.0 16.0 16.5

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Trial ID: 11-DSO-AnthemCN Location: De Soto, IL

Pest Code	AMATA-HR							
Crop Code	AMATA-HR	AMATA-HR	AMATA-HR	AMATA-HR	AMATA-HR	AMATA-HR		
Rating Date	6-19-11	6-24-11	7-3-11	7-19-11	8-2-11	9-1-11		
Rating Data Type	Control	Control	Control	Control	Control	Control		
Rating Unit	Percent	Percent	Percent	Percent	Percent	Percent		
Rating Timing	-3 DA-C	2 DA-C	44 DA-A	60 DA-A	74 DA-A	104 DA-A		
Trt-Eval Interval	30 DA-A	30 DAE	30 DA-B	46 DA-B	60 DA-B	90 DA-B		
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Other Rate	Other Rate	Growth Stage	Appl Code
Replicate F		3.132		2.276		2.091		3.000
Replicate Prob(F)		0.0605		0.1228		0.1438		0.0673
Treatment F		5.044		8.233		14.929		15.941
Treatment Prob(F)		0.0002		0.0001		0.0001		0.0001

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

## Trial Comments

1. Protocol: FMC.
2. Ratings: CI at 14 and 30 DAE and 14 and 30 DA-B;  
WC 30 DA-A or at C, 60 and 90 DA-A, and at 30, 60, and 90 DA-B.  
WC for all plots at 60 DA-B.
3. Yield.
4. Blanket application of Roundup WeatherMax (22 floz/A) + 2,4-D LV4 (1 pt/A) + NPAK AMS (2.5 %v/v) was applied to all plots on 4-2-11.  
Blanket burndown application of Roundup WeatherMax (22 floz/A) was applied to all plots on 5-19-11.  
Blanket burndown application of Gramoxone Inteon (3.5 pt/A) plus COC (1% v/v) was applied to all plots on 5-20-11.
5. Rainfall for the week prior to planting and the PRE application was 1.2 inch.  
Rainfall (weekly totals) for the the next six weeks were 2.18, 0, 0, 0.75, 1.81, and 4.38 inch.
6. AMATA-HR = Herbicide-resistant waterhemp (glyphosate).  
DAE = Days after crop emergence.
7. The planned 3-4"W-2 application was not needed because the corn grew too tall (40 inches) before the the weeds re-grew.
8. Harvested 9-30-11, (2) 30 inch rows by 26.5 ft.