

Corn, Tilled Weed Control Studies

Southern Illinois University

Prequel Evaluation in Corn.

Trial ID: 08-11B-E70 Location: Belleville Res. Center

Investigator: Bryan Young, Professor, Southern Illinois University, bgyoung@siu.edu
 City State Zip Country: Belleville IL 62221 USA
 Trial Status: FINAL Initiation Date: 06-15-08

Objectives: Evaluate the rate of Prequel required for optimum control of key broadleaf weeds.

Crop 1: ZEAMD Dent corn Variety: P33K44
 Planting Method: SEEDED Planting Date: 06-15-08
 Rate, Unit: 28000 S/A Depth, Unit: 1.5 IN
 Row Spacing, Unit: 30 IN

Pest 1 Type: W Code: SETFA Setaria faberi Herrm. foxtail, giant
 Pest 2 Type: W Code: ABUTH Abutilon theophrasti Medicus velvetleaf
 Pest 3 Type: W Code: CYPES Cyperus esculentus L. nutsedge, yellow
 Pest 4 Type: W Code: AMATA Amaranthus rudis Sauer waterhemp, common
 Pest 5 Type: W Code: IPOSS Ipomoea sp. morningglory, species

Plot Width, Unit: 10 FT Site Type: FIELD
 Plot Length, Unit: 26 FT Tillage Type: REDUCED-TILL
 Replications: 3 Study Design: Randomized Complete Block

Prior Crops, Year
 1. GLXMA 2007

Field Prep./Maintenance: N 150 LB/A, P2O5 0 LB/A, K2O 100 LB/A

% OM: 2.3 Texture: SILT LOAM
 pH: 6.1 Soil Name: BETHALTO
 CEC: 12 Fert. Level: P1 87 LB/A, K 446 LB/A

	Application Description				
	A	B	C	D	E
Application Date:	06-16-08	07-04-08	07-09-08	07-04-08	07-14-08
Time of Day:	10:30	10:30	15:45	10:30	15:30
Application Method:	Spray	Spray	Spray	Spray	Spray
Application Timing:	PRE	3-4"W-1	4-8"W	3-4"W-2	3-4"RG
Application Placement:	BROSIO	BROFOL	BROFOL	BROFOL	BROFOL
Applied By:	NRJ	BGY	DKT	BGY	TGM
Air Temperature, Unit:	80 F	72 F	84 F	72 F	86 F
% Relative Humidity:	60	92	56	92	50
Wind Velocity, Unit:	2 MPH	2 MPH	2 MPH	2 MPH	1 MPH
Dew Presence (Y/N):		N		N	
Soil Temperature, Unit:	71 F	73 F	85 F	73 F	87 F
Soil Moisture:	NORMAL	ABONOR	ABONOR	ABONOR	ABONOR
% Cloud Cover:	50	80		80	
Crop stage at application:	NA	V5	V6	V5	V7
Height Min, Max (inch):		12 14	22 26	12 14	31 39

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Pest Stage At Each Application

Application Date:	06-16-08	07-04-08	07-09-08	07-04-08	07-14-08
Weed Code:	SETFA	SETFA	SETFA	SETFA	SETFA
Stage Majority (leaves):	2	2	4	2	4
Stage Min, Max:	1 4	1 4	2 5	1 4	3 5
Height Majority:	2.5 IN	2.5 IN	8 IN	2.5 IN	4 IN
Height Min, Max:	0.5 3.5	0.5 3.5	4 11	0.5 3.5	2 6
Density, Unit:	10 FT2	10 FT2	5 FT2	10 FT2	1 FT2
Weed Code:	ABUTH	ABUTH	ABUTH	ABUTH	ABUTH
Stage Majority (leaves):	N/A	3	4	3	2
Stage Min, Max:		COTY 4	3 4	COTY 4	COTY 4
Height Majority:		3 IN	8 IN	3 IN	3 IN
Height Min, Max:		0.25 4	4 10	0.25 4	1 4
Density, Unit:		2 FT2	1 FT2	2 FT2	1 FT2
Weed Code:	CYPES	CYPES	CYPES	CYPES	CYPES
Stage Majority (leaves):	N/A	5	N/A	5	5
Stage Min, Max:		2 8		2 8	3 6
Height Majority:		3 IN		3 IN	6 IN
Height Min, Max:		1.5 5		1.5 5	2 8
Density, Unit:		5 FT2		5 FT2	3 FT2
Weed Code:	AMATA	AMATA	AMATA	AMATA	AMATA
Stage Majority (leaves):	N/A	5	12	5	5
Stage Min, Max:		COTY 7	4 14	COTY 7	3 6
Height Majority:		2 IN	7 IN	2 IN	4 IN
Height Min, Max:		0.25 5	1 8	0.25 5	2 6
Density, Unit:		5 FT2	2 FT2	5 FT2	3 FT2
Weed Code:	IPOSS	IPOSS	IPOSS	IPOSS	IPOSS
Stage Majority (leaves):	N/A	1	8	1	2
Stage Min, Max:		COTY 3	2 10	COTY 3	COTY 3
Height Majority:		2 IN	5 IN	2 IN	2 IN
Height Min, Max:		0.5 3	1 6	0.5 3	1 3
Density, Unit:		4 FT2	2 FT2	4 FT2	1 FT2

Application Equipment

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

Prequel Evaluation in Corn.

Trial ID: 08-11B-E70 Location: Belleville Res. Center

Pest Code												SETFA	SETFA			
Crop Code												ZEAMD	ZEAMD			
Rating Date												11-13-08	11-13-08			
Rating Data Type												Moisture	Yield			
Rating Unit												Percent	bu/A			
Rating Timing												Injury	Injury			
Trt-Eval Interval												Percent	Percent			
												14 DA-A	0 DA-D			
												14 DA-D	0 DA-D			
												14 DA-D	14 DA-D			
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code							
1	DPX-E9636	25	WG	0.0078	lb ai/a	0.5	oz/a	PRE	A	18.6	a	200	cd	0	a	
1	BALANCE PRO	4	SC	0.0156	lb ai/a	0.5	fl oz/a	PRE	A					0	b	
1	AATREX NINE-O	90	WG	1	lb ai/a	1.11	lb/a	PRE	A					32	f	
2	DPX-E9636	25	WG	0.0156	lb ai/a	1	oz/a	PRE	A	19.1	a	179	d	0	a	
2	BALANCE PRO	4	SC	0.0313	lb ai/a	1	fl oz/a	PRE	A					43	def	
2	AATREX NINE-O	90	WG	1	lb ai/a	1.11	lb/a	PRE	A					20	c	
3	DPX-E9636	25	WG	0.0234	lb ai/a	1.5	oz/a	PRE	A	19.2	a	210	abc	0	a	
3	BALANCE PRO	4	SC	0.047	lb ai/a	1.5	fl oz/a	PRE	A					63	b-e	
3	AATREX NINE-O	90	WG	1	lb ai/a	1.11	lb/a	PRE	A					47	b	
4	DPX-E9636	25	WG	0.0078	lb ai/a	0.5	oz/a	PRE	A	19.8	a	217	abc	0	a	
4	BALANCE PRO	4	SC	0.0156	lb ai/a	0.5	fl oz/a	PRE	A					40	ef	
4	AATREX NINE-O	90	WG	1	lb ai/a	1.11	lb/a	PRE	A					97	a	
4	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-2	D							
4	N-PAK AMS	100	SL	4	% v/v	4	% v/v	3-4"W-2	D							
5	DPX-E9636	25	WG	0.0156	lb ai/a	1	oz/a	PRE	A	20.3	a	225	abc	0	a	
5	BALANCE PRO	4	SC	0.0313	lb ai/a	1	fl oz/a	PRE	A					47	c-f	
5	AATREX NINE-O	90	WG	1	lb ai/a	1.11	lb/a	PRE	A					98	a	
5	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-2	D							
5	N-PAK AMS	100	SL	4	% v/v	4	% v/v	3-4"W-2	D							
6	DPX-E9636	25	WG	0.0234	lb ai/a	1.5	oz/a	PRE	A	19.5	a	229	ab	0	a	
6	BALANCE PRO	4	SC	0.047	lb ai/a	1.5	fl oz/a	PRE	A					67	bcd	
6	AATREX NINE-O	90	WG	1	lb ai/a	1.11	lb/a	PRE	A					98	a	
6	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-2	D							
6	N-PAK AMS	100	SL	4	% v/v	4	% v/v	3-4"W-2	D							
7	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-1	B	18.9	a	209	bc		2	a
7	N-PAK AMS	100	SL	4	% v/v	4	% v/v	3-4"W-1	B					88	a	
8	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-1	B	18.9	a	212	abc		0	b
8	N-PAK AMS	100	SL	4	% v/v	4	% v/v	3-4"W-1	B					98	a	
8	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"RG	E							
8	N-PAK AMS	100	SL	4	% v/v	4	% v/v	3-4"RG	E							
9	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	4-8"W	C	19.4	a	214	abc		0	b
9	N-PAK AMS	100	SL	4	% v/v	4	% v/v	4-8"W	C					99	a	
10	DEGREE XTRA	4.04	CS	2	lb ai/a	2	qt/a	PRE	A	19.2	a	238	a	0	a	
10	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-2	D					93	a	
10	N-PAK AMS	100	SL	4	% v/v	4	% v/v	3-4"W-2	D					98	a	
11	NONTREATED									19.3	a	175	d	0	a	
12	CINCH ATZ	5.5	SC	1.38	lb ai/a	1	qt/a	PRE	A	19.8	a	219	abc	0	a	
12	RESOLVE Q	22.4	WG			1.25	oz/a	3-4"W-2	D					75	ab	
12	DPX-E9636	25	WG	0.01437	lb ai/a			3-4"W-2	D					99	a	
12	HARMONY SG	50	SG	0.00313	lb ai/a			3-4"W-2	D							
12	DPX-4145	50	WG	0.00719	lb ai/a			3-4"W-2	D							
12	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-2	D							
12	AATREX NINE-O	90	WG	1	lb ai/a	1.11	lb/a	3-4"W-2	D							
12	N-PAK AMS	100	SL	4	% v/v	4	% v/v	3-4"W-2	D							
13	CINCH ATZ	5.5	SC	1.38	lb ai/a	1	qt/a	PRE	A	19.5	a	226	abc	0	a	
13	RESOLVE Q	22.4	WG			1.25	oz/a	3-4"W-2	D					72	abc	
13	DPX-E9636	25	WG	0.01437	lb ai/a			3-4"W-2	D					99	a	
13	HARMONY SG	50	SG	0.00313	lb ai/a			3-4"W-2	D							
13	DPX-4145	50	WG	0.00719	lb ai/a			3-4"W-2	D							
13	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-2	D							
13	N-PAK AMS	100	SL	4	% v/v	4	% v/v	3-4"W-2	D							
14	CINCH ATZ	5.5	SC	1.38	lb ai/a	1	qt/a	PRE	A	18.9	a	224	abc	0	a	
14	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-2	D					73	ab	
14	AATREX NINE-O	90	WG	1	lb ai/a	1.11	lb/a	3-4"W-2	D					99	a	
14	N-PAK AMS	100	SL	4	% v/v	4	% v/v	3-4"W-2	D							

LSD (P=.05)

1.67 28.1 0.0 0.0 1.3 26.6 12.5

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Pest Code	ZEAMD					SETFA	SETFA				
Crop Code	11-13-08	11-13-08	06-30-08	07-02-08	07-18-08	07-02-08	07-18-08				
Rating Date	Moisture	Yield	Injury	Injury	Injury	Control	Control				
Rating Data Type	Percent	bu/A	Percent	Percent	Percent	Percent	Percent				
Rating Unit			14 DA-A	0 DA-D	14 DA-D	0 DA-D	14 DA-D				
Rating Timing											
Trt-Eval Interval											
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code		
Replicate F		6.702		3.208		0.000		0.000	1.000	2.812	0.833
Replicate Prob(F)		0.0045		0.0569		1.0000		1.0000	0.3816	0.0839	0.4461
Treatment F		0.596		3.395		0.000		0.000	1.000	8.249	75.726
Treatment Prob(F)		0.8353		0.0039		1.0000		1.0000	0.4786	0.0001	0.0001

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

Prequel Evaluation in Corn.

Trial ID: 08-11B-E70 Location: Belleville Res. Center

Pest Code	IPOSS	IPOSS	ABUTH	ABUTH	CYPES	CYPES	AMATA	AMATA
Crop Code	07-02-08	07-18-08	07-02-08	07-18-08	07-02-08	07-18-08	07-02-08	07-18-08
Rating Date	Control	Control	Control	Control	Control	Control	Control	Control
Rating Data Type	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Unit								
Rating Timing								
Trt-Eval Interval	0 DA-D	14 DA-D	0 DA-D	14 DA-D	0 DA-D	14 DA-D	0 DA-D	14 DA-D

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code								
1	DPX-E9636	25	WG	0.0078	lb ai/a	0.5	oz/a	PRE	A	27 abc	37 c	32 b	40 d	17 cd	20 d	97 ab	94 b
1	BALANCE PRO	4	SC	0.0156	lb ai/a	0.5	fl oz/a	PRE	A								
1	AATREX NINE-O	90	WG	1	lb ai/a	1.11	lb/a	PRE	A								
2	DPX-E9636	25	WG	0.0156	lb ai/a	1	oz/a	PRE	A	45 a	30 c	72 a	62 c	20 bcd	20 d	98 a	95 b
2	BALANCE PRO	4	SC	0.0313	lb ai/a	1	fl oz/a	PRE	A								
2	AATREX NINE-O	90	WG	1	lb ai/a	1.11	lb/a	PRE	A								
3	DPX-E9636	25	WG	0.0234	lb ai/a	1.5	oz/a	PRE	A	40 ab	33 c	87 a	83 b	60 a	57 c	98 a	98 a
3	BALANCE PRO	4	SC	0.047	lb ai/a	1.5	fl oz/a	PRE	A								
3	AATREX NINE-O	90	WG	1	lb ai/a	1.11	lb/a	PRE	A								
4	DPX-E9636	25	WG	0.0078	lb ai/a	0.5	oz/a	PRE	A	17 bcd	97 a	27 bc	98 a	47 abc	92 ab	94 bc	99 a
4	BALANCE PRO	4	SC	0.0156	lb ai/a	0.5	fl oz/a	PRE	A								
4	AATREX NINE-O	90	WG	1	lb ai/a	1.11	lb/a	PRE	A								
4	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-2	D								
4	N-PAK AMS	100	SL	4	% v/v	4	% v/v	3-4"W-2	D								
5	DPX-E9636	25	WG	0.0156	lb ai/a	1	oz/a	PRE	A	27 abc	95 a	33 b	99 a	33 a-d	92 ab	93 c	99 a
5	BALANCE PRO	4	SC	0.0313	lb ai/a	1	fl oz/a	PRE	A								
5	AATREX NINE-O	90	WG	1	lb ai/a	1.11	lb/a	PRE	A								
5	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-2	D								
5	N-PAK AMS	100	SL	4	% v/v	4	% v/v	3-4"W-2	D								
6	DPX-E9636	25	WG	0.0234	lb ai/a	1.5	oz/a	PRE	A	47 a	96 a	72 a	99 a	55 a	92 ab	98 a	99 a
6	BALANCE PRO	4	SC	0.047	lb ai/a	1.5	fl oz/a	PRE	A								
6	AATREX NINE-O	90	WG	1	lb ai/a	1.11	lb/a	PRE	A								
6	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-2	D								
6	N-PAK AMS	100	SL	4	% v/v	4	% v/v	3-4"W-2	D								
7	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-1	B		82 b		92 ab		89 ab		88 c
7	N-PAK AMS	100	SL	4	% v/v	4	% v/v	3-4"W-1	B								
8	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-1	B		93 a		97 a		87 ab		99 a
8	N-PAK AMS	100	SL	4	% v/v	4	% v/v	3-4"W-1	B								
8	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"RG	E								
8	N-PAK AMS	100	SL	4	% v/v	4	% v/v	3-4"RG	E								
9	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	4-8"W	C		78 b		99 a		77 b		99 a
9	N-PAK AMS	100	SL	4	% v/v	4	% v/v	4-8"W	C								
10	DEGREE XTRA	4.04	CS	2	lb ai/a	2	qt/a	PRE	A	13 cd	96 a	18 bcd	96 a	10 d	91 ab	98 a	99 a
10	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-2	D								
10	N-PAK AMS	100	SL	4	% v/v	4	% v/v	3-4"W-2	D								
11	NONTREATED									0 d	0 d	0 d	0 e	0 d	0 e	0 d	0 d
12	CINCH ATZ	5.5	SC	1.38	lb ai/a	1	qt/a	PRE	A	7 cd	98 a	7 cd	99 a	45 abc	97 a	98 a	99 a
12	RESOLVE Q	22.4	WG			1.25	oz/a	3-4"W-2	D								
12	DPX-E9636	25	WG	0.01437	lb ai/a			3-4"W-2	D								
12	HARMONY SG	50	SG	0.00313	lb ai/a			3-4"W-2	D								
12	DPX-4145	50	WG	0.00719	lb ai/a			3-4"W-2	D								
12	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-2	D								
12	AATREX NINE-O	90	WG	1	lb ai/a	1.11	lb/a	3-4"W-2	D								
12	N-PAK AMS	100	SL	4	% v/v	4	% v/v	3-4"W-2	D								
13	CINCH ATZ	5.5	SC	1.38	lb ai/a	1	qt/a	PRE	A	13 cd	91 a	17 bcd	95 a	52 ab	92 ab	98 a	99 a
13	RESOLVE Q	22.4	WG			1.25	oz/a	3-4"W-2	D								
13	DPX-E9636	25	WG	0.01437	lb ai/a			3-4"W-2	D								
13	HARMONY SG	50	SG	0.00313	lb ai/a			3-4"W-2	D								
13	DPX-4145	50	WG	0.00719	lb ai/a			3-4"W-2	D								
13	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-2	D								
13	N-PAK AMS	100	SL	4	% v/v	4	% v/v	3-4"W-2	D								
14	CINCH ATZ	5.5	SC	1.38	lb ai/a	1	qt/a	PRE	A	10 cd	98 a	13 bcd	99 a	45 abc	98 a	98 a	99 a
14	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-4"W-2	D								
14	AATREX NINE-O	90	WG	1	lb ai/a	1.11	lb/a	3-4"W-2	D								
14	N-PAK AMS	100	SL	4	% v/v	4	% v/v	3-4"W-2	D								

LSD (P=.05) 25.3 8.1 20.1 11.1 33.6 18.9 3.5 2.7

Prequel Evaluation in Corn.

Trial ID: 08-11B-E70

Location: Belleville Res. Center

Pest Code	IPOSS	IPOSS	ABUTH	ABUTH	CYPES	CYPES	AMATA	AMATA				
Crop Code												
Rating Date	07-02-08	07-18-08	07-02-08	07-18-08	07-02-08	07-18-08	07-02-08	07-18-08				
Rating Data Type	Control	Control	Control	Control	Control	Control	Control	Control				
Rating Unit	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent				
Rating Timing												
Trt-Eval Interval	0 DA-D	14 DA-D	0 DA-D	14 DA-D	0 DA-D	14 DA-D	0 DA-D	14 DA-D				
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Other Rate	Other Rate	Growth Unit	Stage	Appl Code			
Replicate F		0.372		0.379		0.070		0.831	5.273	0.394	2.003	2.069
Replicate Prob(F)		0.6943		0.6885		0.9322		0.4468	0.0145	0.6780	0.1611	0.1466
Treatment F		3.469		140.563		18.334		59.178	3.129	26.475	610.241	802.191
Treatment Prob(F)		0.0086		0.0001		0.0001		0.0001	0.0143	0.0001	0.0001	0.0001

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

Trial Comments

1. Protocol: DuPont (08-003).
2. Ratings: CI at 14 da PRE; CI/WC at 0 and 14 da "D" or the final glyphosate application.
3. Yield.
4. DA-A = Days after PRE application. DA-D = Days after the 3-4"W-2 application.
IPOSS = Morningglory species including IPOHE and IPOLA.
5. At the Belleville Research Center the above normal rainfall in spring 2008 (no more than four consecutive rain-free days between March 22 and June 15) delayed corn and soybean planting until mid-June.
6. Following the PRE application on June 16, rainfall was 0.29 inch 4 days later and 0.35 inch 11 days later.
7. Harvested 11-13-08, (2) 30 inch rows by 23 ft.