

Early Postemergence Programs in Glyphosate-Resistant Corn.

Project Code: 07-2B-MW50-Corn Location: Belleville Research Center
Investigator: Bryan Young

Investigator: Bryan Young, Associate Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA
Trial Status: Final Updated: 1-23-08

Objective:

Compare herbicide programs that may offer a single pass postemergence weed control ortion in glyphosate-resistant corn.

Weed Code	Common Name	Scientific Name
1. SETFA	foxtail, giant	Setaria faberi Herrm.
2. CYPES	nutsedge, yellow	Cyperus esculentus L.
3. ABUTH	velvetleaf	Abutilon theophrasti Medicus
4. AMATA	waterhemp, common	Amaranthus rudis Sauer
5. CHEAL	lambsquarters, common	Chenopodium album L.
6. IPOHE	morningglory, ivyleaf	Ipomoea hederacea (L.) Jacq.
7. IPOLA	morningglory, pitted	Ipomoea lacunosa L.

Crop 1:	ZEAMX corn, field	Variety:	33K44
Planting Method:	Seeded	Planting Date:	5-24-07
Rate:	28000 S/A	Depth:	1.5 IN
Row Spacing:	30 IN		

Plot Width, Unit:	10 FT	Plot Length, Unit:	28 FT	Reps:	3
Tillage Type:	Reduced-Till	Study Design:	Randomized complete block		
Previous Crop, Year:	GLXMA, 2006				
Field Prep./Maintenance:	N 150 LB/A, P205 0 LB/A, K20 0 LB/A				

Soil Name:	Weir	% OM:	2.4	pH:	6.6	CEC:	8
Texture:	Silt loam	Fert. Level:	P1: 86 LB/A, K: 360 LB/A				

APPLICATION DESCRIPTION

	A	B
Application Date:	6-9-07	6-12-07
Time of Day:	8:00	9:30
Application Method:	Spray	Spray
Application Timing:	5-8"CN	10-12"CN
Applic. Placement:	BROFOL	BROFOL
Air Temp., Unit:	70 F	72 F
% Relative Humidity:	66	70
Wind Velocity, Unit:	1-2 MPH	3-5 MPH
Dew Presence (Y/N):	Y	
Soil Moisture:	NORMAL	NORMAL
% Cloud Cover:	20	

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	ZEAMX V3	ZEAMX V4
Height, Unit:	8 IN	10 IN

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code:	SETFA	SETFA
Stage(leaves):	2-5	4-6
Height (inches):	2-4	2-4
Density:	High	High
Weed 2 Code:	CYPES	CYPES
Stage(leaves):	5-8	6-10
Height (inches):	1-3	1-3
Density:	Low	Low
Weed 3 Code:	ABUTH	ABUTH
Stage(leaves):	2-3	4-6
Height (inches):	1-3	2-4
Density:	Medium	Medium
Weed 4 Code:	AMATA	AMATA
Stage(leaves):	2-5	4-6
Height (inches):	1-3	1-3
Density:	High	High
Weed 5 Code:	CHEAL	CHEAL
Stage(leaves):	2-4	4-6
Height (inches):	1-2	3-5
Density:	Medium	Medium
Weed 6 Code:	IPOSS	IPOSS
Stage(leaves):	1-3	3-5
Height (inches):	1-3	1-3
Density:	Medium	Low

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	CO2 sprayer	CO2 sprayer
Operating Pressure:	40 PSI	40 PSI
Nozzle Type:	Flat fan	Flat fan
Nozzle Size:	XR 8002	XR 8002
Boom Length, Unit:	7.5 FT	7.5 FT
Spray Volume, Unit:	15 GPA	15 GPA

NOTES:

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Weed Code
 Crop Code
 Rating Data Type
 Rating Unit
 Rating Date
 Trt-Eval Interval

ZEAMX ZEAMX ZEAMX ZEAMX ZEAMX ZEAMX
 Moisture Yield Injury Injury Injury Injury
 Percent bu/A Percent Percent Percent Percent
 10-4-07 10-4-07 6-14-07 6-23-07 7-7-07 8-4-07
 5 DA-A 14 DA-A 28 DA-A 56 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	Moisture Percent	Yield bu/A	Injury Percent	Injury Percent	Injury Percent	Injury Percent
1	NONTREATED									16.1 bc	58 c	0 a	0 a	0 a	0 a
2	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	5-8"CN	A	15.7 c	177 ab	0 a	0 a	0 a	0 a
2	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	5-8"CN	A						
3	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	10-12"CN	B	17.0 a	161 b	0 a	0 a	0 a	0 a
3	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	10-12"CN	B						
4	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	5-8"CN	A	15.9 bc	186 a	0 a	0 a	0 a	0 a
4	STATUS	56	WG	0.0875	lb ai/a	2.5	oz/a	5-8"CN	A						
4	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	5-8"CN	A						
5	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	5-8"CN	A	16.2 abc	181 ab	0 a	0 a	0 a	0 a
5	STATUS	56	WG	0.175	lb ai/a	5.0	oz/a	5-8"CN	A						
5	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	5-8"CN	A						
6	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	5-8"CN	A	16.5 abc	188 a	0 a	0 a	0 a	0 a
6	CALLISTO	4	SC	0.047	lb ai/a	1.5	fl oz/a	5-8"CN	A						
6	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	5-8"CN	A						
7	BAS 756	5	CS	1.87	lb ai/a	3.0	pt/a	5-8"CN	A	16.0 bc	185 a	0 a	0 a	0 a	0 a
7	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	5-8"CN	A						
7	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	5-8"CN	A						
8	BAS 756	5	CS	1.87	lb ai/a	3.0	pt/a	5-8"CN	A	16.2 abc	190 a	0 a	0 a	0 a	0 a
8	AATREX	90	WG	0.5	lb ai/a	8.9	oz/a	5-8"CN	A						
8	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	5-8"CN	A						
8	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	5-8"CN	A						
9	SURESTART	4.25	SE	0.93	lb ai/a	1.75	pt/a	5-8"CN	A	16.7 ab	191 a	0 a	0 a	0 a	0 a
9	DURANGO	4	SL	0.75	lb ae/a	24	fl oz/a	5-8"CN	A						
9	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	5-8"CN	A						
10	HALEX GT	4.38	SC	2.2	lb ai/a	4.0	pt/a	5-8"CN	A	16.5 abc	187 a	0 a	0 a	0 a	0 a
10	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	5-8"CN	A						
10	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	5-8"CN	A						
LSD (P=.05)										0.88	20.6	0.0	0.0	0.0	0.0
Replicate F										6.601	0.246	0.000	0.000	0.000	0.000
Replicate Prob(F)										0.0071	0.7844	1.0000	1.0000	1.0000	1.0000
Treatment F										1.659	34.062	0.000	0.000	0.000	0.000
Treatment Prob(F)										0.1724	0.0001	1.0000	1.0000	1.0000	1.0000

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

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									SETFA	SETFA	SETFA	CYPES	CYPES	CYPES	
									Control	Control	Control	Control	Control	Control	
									Percent	Percent	Percent	Percent	Percent	Percent	
									6-23-07	7-7-07	8-4-07	6-23-07	7-7-07	8-4-07	
									14 DA-A	28 DA-A	56 DA-A	14 DA-A	28 DA-A	56 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code						
1	NONTREATED									0 d	0 f	0 h	0 d	0 d	0 c
2	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	5-8"CN	A	99 a	97 bc	86 g	73 c	87 bc	92 ab
2	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	5-8"CN	A						
3	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	10-12"CN	B	99 a	97 bc	89 f	77 bc	90 ab	92 ab
3	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	10-12"CN	B						
4	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	5-8"CN	A	98 bc	96 cd	90 ef	88 a	82 c	90 ab
4	STATUS	56	WG	0.0875	lb ai/a	2.5	oz/a	5-8"CN	A						
4	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	5-8"CN	A						
5	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	5-8"CN	A	98 c	96 cd	92 cde	85 ab	90 ab	92 ab
5	STATUS	56	WG	0.175	lb ai/a	5.0	oz/a	5-8"CN	A						
5	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	5-8"CN	A						
6	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	5-8"CN	A	98 c	95 e	95 abc	83 ab	87 bc	87 b
6	CALLISTO	4	SC	0.047	lb ai/a	1.5	fl oz/a	5-8"CN	A						
6	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	5-8"CN	A						
7	BAS 756	5	CS	1.87	lb ai/a	3.0	pt/a	5-8"CN	A	99 a	96 d	94 bcd	84 ab	88 b	90 ab
7	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	5-8"CN	A						
7	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	5-8"CN	A						
8	BAS 756	5	CS	1.87	lb ai/a	3.0	pt/a	5-8"CN	A	99 a	97 ab	92 def	87 a	88 b	93 a
8	AATREX	90	WG	0.5	lb ai/a	8.9	oz/a	5-8"CN	A						
8	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	5-8"CN	A						
8	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	5-8"CN	A						
9	SURESTART	4.25	SE	0.93	lb ai/a	1.75	pt/a	5-8"CN	A	99 ab	98 a	97 a	89 a	89 ab	95 a
9	DURANGO	4	SL	0.75	lb ae/a	24	fl oz/a	5-8"CN	A						
9	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	5-8"CN	A						
10	HALEX GT	4.38	SC	2.2	lb ai/a	4.0	pt/a	5-8"CN	A	99 a	98 a	96 ab	83 ab	94 a	90 ab
10	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	5-8"CN	A						
10	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	5-8"CN	A						
LSD (P=.05)										0.4	1.0	3.0	9.5	5.3	5.0
Replicate F										1.588	0.310	1.279	6.946	7.494	1.043
Replicate Prob(F)										0.2316	0.7370	0.3023	0.0058	0.0043	0.3728
Treatment F										46393.180	8727.828	851.010	70.077	247.743	288.854
Treatment Prob(F)										0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

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										ABUTH	ABUTH	ABUTH	AMATA	AMATA	AMATA
										Control	Control	Control	Control	Control	Control
										Percent	Percent	Percent	Percent	Percent	Percent
										6-23-07	7-7-07	8-4-07	6-23-07	7-7-07	8-4-07
										14 DA-A	28 DA-A	56 DA-A	14 DA-A	28 DA-A	56 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Prod Rate	Prod Unit	Grow Stg	Appl Code							
1	NONTREATED								0 d	0 c	0 b	0 c	0 b	0 b	
2	ROUNDUP W-MAX	4.5	SL	0.77 lb ae/a	22 fl oz/a	5-8"CN	A		97 abc	97 ab	98 a	99 b	99 a	99 a	
2	N-PAK AMS	100	LIQ	2.5 % v/v	2.5 % v/v	5-8"CN	A								
3	ROUNDUP W-MAX	4.5	SL	0.77 lb ae/a	22 fl oz/a	10-12"CN	B		96 abc	97 ab	99 a	99 a	99 a	99 a	
3	N-PAK AMS	100	LIQ	2.5 % v/v	2.5 % v/v	10-12"CN	B								
4	ROUNDUP W-MAX	4.5	SL	0.77 lb ae/a	22 fl oz/a	5-8"CN	A		94 bc	94 ab	98 a	99 a	99 a	99 a	
4	STATUS	56	WG	0.0875 lb ai/a	2.5 oz/a	5-8"CN	A								
4	N-PAK AMS	100	LIQ	2.5 % v/v	2.5 % v/v	5-8"CN	A								
5	ROUNDUP W-MAX	4.5	SL	0.77 lb ae/a	22 fl oz/a	5-8"CN	A		98 ab	94 ab	99 a	99 a	99 a	99 a	
5	STATUS	56	WG	0.175 lb ai/a	5.0 oz/a	5-8"CN	A								
5	N-PAK AMS	100	LIQ	2.5 % v/v	2.5 % v/v	5-8"CN	A								
6	ROUNDUP W-MAX	4.5	SL	0.77 lb ae/a	22 fl oz/a	5-8"CN	A		96 abc	96 ab	98 a	99 a	99 a	99 a	
6	CALLISTO	4	SC	0.047 lb ai/a	1.5 fl oz/a	5-8"CN	A								
6	N-PAK AMS	100	LIQ	2.5 % v/v	2.5 % v/v	5-8"CN	A								
7	BAS 756	5	CS	1.87 lb ai/a	3.0 pt/a	5-8"CN	A		98 a	97 a	98 a	99 a	98 a	99 a	
7	ACTIVATOR 90	100	LIQ	0.25 % v/v	0.25 % v/v	5-8"CN	A								
7	N-PAK AMS	100	LIQ	2.5 % v/v	2.5 % v/v	5-8"CN	A								
8	BAS 756	5	CS	1.87 lb ai/a	3.0 pt/a	5-8"CN	A		99 a	98 a	98 a	99 a	99 a	99 a	
8	AATREX	90	WG	0.5 lb ai/a	8.9 oz/a	5-8"CN	A								
8	ACTIVATOR 90	100	LIQ	0.25 % v/v	0.25 % v/v	5-8"CN	A								
8	N-PAK AMS	100	LIQ	2.5 % v/v	2.5 % v/v	5-8"CN	A								
9	SURESTART	4.25	SE	0.93 lb ai/a	1.75 pt/a	5-8"CN	A		93 c	92 b	99 a	99 a	99 a	99 a	
9	DURANGO	4	SL	0.75 lb ae/a	24 fl oz/a	5-8"CN	A								
9	N-PAK AMS	100	LIQ	2.5 % v/v	2.5 % v/v	5-8"CN	A								
10	HALEX GT	4.38	SC	2.2 lb ai/a	4.0 pt/a	5-8"CN	A		98 ab	97 ab	96 a	99 a	99 a	99 a	
10	ACTIVATOR 90	100	LIQ	0.25 % v/v	0.25 % v/v	5-8"CN	A								
10	N-PAK AMS	100	LIQ	2.5 % v/v	2.5 % v/v	5-8"CN	A								
LSD (P=.05)									4.3	4.8	4.2	0.3	0.7	0.0	
Replicate F									6.272	3.077	0.142	1.000	0.574	0.000	
Replicate Prob(F)									0.0086	0.0709	0.8686	0.3874	0.5730	1.0000	
Treatment F									442.565	354.071	490.488	88144.009	16854.045	0.000	
Treatment Prob(F)									0.0001	0.0001	0.0001	0.0001	0.0001	1.0000	

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

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Weed Code	CHEAL	CHEAL	CHEAL	IPOSS	IPOSS	IPOSS
Crop Code	Control	Control	Control	Control	Control	Control
Rating Data Type	Percent	Percent	Percent	Percent	Percent	Percent
Rating Unit	6-23-07	7-7-07	8-4-07	6-23-07	7-7-07	8-4-07
Rating Date	14 DA-A	28 DA-A	56 DA-A	14 DA-A	28 DA-A	56 DA-A
Trt-Eval Interval						

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	CHEAL 6-23-07	CHEAL 7-7-07	CHEAL 8-4-07	IPOSS 6-23-07	IPOSS 7-7-07	IPOSS 8-4-07
1	NONTREATED									0 b	0 b	0 c	0 c	0 d	0 f
2	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	5-8"CN	A	99 a	99 a	97 b	97 a	86 bc	77 e
2	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	5-8"CN	A						
3	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	10-12"CN	B	99 a	99 a	99 a	91 b	83 c	75 e
3	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	10-12"CN	B						
4	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	5-8"CN	A	99 a	99 a	99 a	98 a	87 bc	78 de
4	STATUS	56	WG	0.0875	lb ai/a	2.5	oz/a	5-8"CN	A						
4	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	5-8"CN	A						
5	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	5-8"CN	A	99 a	99 a	99 a	98 a	90 ab	82 cd
5	STATUS	56	WG	0.175	lb ai/a	5.0	oz/a	5-8"CN	A						
5	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	5-8"CN	A						
6	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	5-8"CN	A	99 a	99 a	99 a	99 a	86 bc	83 bc
6	CALLISTO	4	SC	0.047	lb ai/a	1.5	fl oz/a	5-8"CN	A						
6	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	5-8"CN	A						
7	BAS 756	5	CS	1.87	lb ai/a	3.0	pt/a	5-8"CN	A	98 a	99 a	99 a	97 a	85 bc	78 de
7	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	5-8"CN	A						
7	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	5-8"CN	A						
8	BAS 756	5	CS	1.87	lb ai/a	3.0	pt/a	5-8"CN	A	99 a	99 a	99 a	99 a	94 a	87 ab
8	AATREX	90	WG	0.5	lb ai/a	8.9	oz/a	5-8"CN	A						
8	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	5-8"CN	A						
8	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	5-8"CN	A						
9	SURESTART	4.25	SE	0.93	lb ai/a	1.75	pt/a	5-8"CN	A	99 a	99 a	97 b	98 a	93 a	89 a
9	DURANGO	4	SL	0.75	lb ae/a	24	fl oz/a	5-8"CN	A						
9	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	5-8"CN	A						
10	HALEX GT	4.38	SC	2.2	lb ai/a	4.0	pt/a	5-8"CN	A	99 a	99 a	99 a	99 a	91 ab	89 a
10	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	5-8"CN	A						
10	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	5-8"CN	A						
LSD (P=.05)										0.7	0.0	1.5	2.6	5.5	3.7
Replicate F										0.574	0.000	1.588	4.523	3.525	2.144
Replicate Prob(F)										0.5730	1.0000	0.2316	0.0256	0.0511	0.1461
Treatment F										16854.045	0.000	3859.456	1291.185	229.934	444.219
Treatment Prob(F)										0.0001	1.0000	0.0001	0.0001	0.0001	0.0001

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

Trial Comments

1. Protocol: BASF, Dow, Syngenta.
2. Ratings: CI 5 da "A"; CI/WC at 14, 28 + 56 da "A".
3. Yield.
4. Pictures if possible.
5. DA-A = Days after 5-8"CN application.
 Ratings at 5, 14, 28 and 56 DA-A were also 2, 11, 25 and 53 DA-B.
6. IPOSS was IPOHE (ivyleaf morningglory) and IPOLA (pitted morningglory).
7. Harvested 10-4-07, (2) 30 inch rows by 25 ft.