

Permit and Yukon Foliar and Residual Activity.

Project Code: 07-10B-MW50 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:**

Evaluate the contribution of Permit and Yukon to enhance foliar and residual control of key weed species in Roundup Ready corn.

Weed Code	Common Name	Scientific Name
1. SETFA	foxtail, giant	Setaria faberi Herrm.
2. CYPES	nutsedge, yellow	Cyperus esculentus L.
3. AMBTR	ragweed, giant	Ambrosia trifida L.
4. XANST	cocklebur, common	Xanthium strumarium L.
5. AMBEL	ragweed, common	Ambrosia artemisiifolia L.
6. IPOHE	morningglory, ivyleaf	Ipomoea hederacea (L.) Jacq.
7. IPOLA	morningglory, pitted	Ipomoea lacunosa L.
8. ABUTH	velvetleaf	Abutilon theophrasti Medicus

Crop 1:	ZEAMX	corn, field	Variety:	33K44
Planting Method:	Seeded		Planting Date:	4-30-07
Rate:	28000	S/A	Depth:	1.5 IN
Row Spacing:	30	IN		

Plot Width, Unit:	10	FT	Plot Length, Unit:	24	FT	Reps:	4
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:	2.2	pH:	6.5	CEC:	11
Texture:	Silt loam	Fert. Level:	P1: 70 LB/A,	K:	421 LB/A		

**APPLICATION DESCRIPTION**

Application Date:	5-21-07
Time of Day:	8:30
Application Method:	Spray
Application Timing:	3-5"W
Applic. Placement:	BROPOL
Air Temp., Unit:	64 F
% Relative Humidity:	90
Wind Velocity, Unit:	1-2 MPH
Dew Presence (Y/N):	N
Soil Moisture:	NORMAL
% Cloud Cover:	20

**CROP STAGE AT EACH APPLICATION**

Crop 1 Code, Stage:	ZEAMX V3
Height, Unit:	8 IN

**WEED STAGE AT EACH APPLICATION**

Weed 1 Code:	SETFA
Stage (leaves):	3-4
Height (inches):	3-5
Density:	Medium
Weed 2 Code:	CYPES
Stage (leaves):	3-5
Height (inches):	3-5
Density:	High
Weed 3 Code:	AMBTR
Stage (leaves):	2-4
Height (inches):	2-5
Density:	Medium
Weed 4 Code:	XANST
Stage (leaves):	2-4
Height (inches):	3-6
Density:	High
Weed 5 Code:	AMBEL
Stage (leaves):	2-4
Height (inches):	1-3
Density:	Low
Weed 8 Code:	ABUTH
Stage (leaves):	2-3
Height (inches):	1-3
Density:	High

**APPLICATION EQUIPMENT**

Appl. Equipment:	CO2 sprayer
Operating Pressure:	40 PSI
Nozzle Type:	Flat fan
Nozzle Size:	XR 8002
Boom Length, Unit:	7.5 FT
Spray Volume, Unit:	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 ZEAMX  
 Moisture Yield Injury Injury Injury Injury Injury  
 Percent bu/A Percent Percent Percent Percent Percent  
 9-21-07 9-21-07 5-28-07 6-4-07 6-18-07 7-20-07 9-18-07  
 7 DA-A 14 DA-A 28 DA-A 60 DA-A 120 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code										
1	PERMIT	75	WG	0.0314	lb ai/a	0.67	oz/a	3-5"W	A	14.4	a	137	a	0	a	0	a		
1	ROUNDUP ORIG MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-5"W	A										
1	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	3-5"W	A										
1	AMS	100	DRY	2.5	lb ai/a	2.5	lb/a	3-5"W	A										
2	PERMIT	75	WG	0.0234	lb ai/a	0.5	oz/a	3-5"W	A	14.5	a	130	a	0	a	0	a		
2	ROUNDUP ORIG MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-5"W	A										
2	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	3-5"W	A										
2	AMS	100	DRY	2.5	lb ai/a	2.5	lb/a	3-5"W	A										
3	YUKON	67.5	WG	0.169	lb ai/a	4.0	oz/a	3-5"W	A	14.5	a	124	a	0	a	0	a		
3	ROUNDUP ORIG MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-5"W	A										
3	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	3-5"W	A										
3	AMS	100	DRY	2.5	lb ai/a	2.5	lb/a	3-5"W	A										
4	YUKON	67.5	WG	0.127	lb ai/a	3.0	oz/a	3-5"W	A	15.0	a	123	a	0	a	0	a		
4	ROUNDUP ORIG MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-5"W	A										
4	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	3-5"W	A										
4	AMS	100	DRY	2.5	lb ai/a	2.5	lb/a	3-5"W	A										
5	ROUNDUP ORIG MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-5"W	A	14.8	a	121	a	0	a	0	a		
5	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	3-5"W	A										
5	AMS	100	DRY	2.5	lb ai/a	2.5	lb/a	3-5"W	A										
6	NONTREATED									15.1	a	6	b	0	a	0	a		
LSD (P=.05)										0.94		23.7		0.0		0.0		0.0	
Replicate F										0.507		1.467		0.000		0.000		0.000	
Replicate Prob(F)										0.6167		0.2820		1.0000		1.0000		1.0000	
Treatment F										1.005		43.450		0.000		0.000		0.000	
Treatment Prob(F)										0.4628		0.0001		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	SETFA	CYPES	CYPES	CYPES	CYPES						
Weed Code	Crop Code			Control	Control	Control	Control	Control	Control	Control	Control						
Rating Data Type	Rating Unit			Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent						
Rating Date	Trt-Eval Interval			6-4-07	6-18-07	7-20-07	9-18-07	6-4-07	6-18-07	7-20-07	9-18-07						
				14 DA-A	28 DA-A	60 DA-A	120 DA-A	14 DA-A	28 DA-A	60 DA-A	120 DA-A						
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code								
1	PERMIT	75	WG	0.0314	lb ai/a	0.67	oz/a	3-5"W	A	99 a	97 ab	93 a	93 a	83 b	91 a	87 a	87 a
1	ROUNDUP ORIG MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-5"W	A								
1	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	3-5"W	A								
1	AMS	100	DRY	2.5	lb ai/a	2.5	lb/a	3-5"W	A								
2	PERMIT	75	WG	0.0234	lb ai/a	0.5	oz/a	3-5"W	A	99 a	98 a	90 a	90 a	80 b	91 a	88 a	88 a
2	ROUNDUP ORIG MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-5"W	A								
2	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	3-5"W	A								
2	AMS	100	DRY	2.5	lb ai/a	2.5	lb/a	3-5"W	A								
3	YUKON	67.5	WG	0.169	lb ai/a	4.0	oz/a	3-5"W	A	99 a	98 a	90 a	90 a	88 a	95 a	87 a	87 a
3	ROUNDUP ORIG MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-5"W	A								
3	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	3-5"W	A								
3	AMS	100	DRY	2.5	lb ai/a	2.5	lb/a	3-5"W	A								
4	YUKON	67.5	WG	0.127	lb ai/a	3.0	oz/a	3-5"W	A	99 a	97 ab	86 a	86 a	84 ab	93 a	85 a	85 a
4	ROUNDUP ORIG MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-5"W	A								
4	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	3-5"W	A								
4	AMS	100	DRY	2.5	lb ai/a	2.5	lb/a	3-5"W	A								
5	ROUNDUP ORIG MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-5"W	A	99 a	96 b	88 a	88 a	74 c	49 b	33 b	33 b
5	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	3-5"W	A								
5	AMS	100	DRY	2.5	lb ai/a	2.5	lb/a	3-5"W	A								
6	NONTREATED									0 b	0 c	0 b	0 b	0 d	0 c	0 c	0 c
LSD (P=.05)										0.0	1.2	11.9	10.3	4.9	7.4	8.9	7.7
Replicate F										0.000	0.172	1.684	1.123	1.141	0.242	0.517	0.345
Replicate Prob(F)										1.0000	0.9134	0.2342	0.3857	0.3643	0.8659	0.6113	0.7937
Treatment F										0.000	9775.242	93.625	124.834	426.393	247.428	176.138	234.849
Treatment Prob(F)										1.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

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

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										AMBTR	AMBTR	AMBTR	AMBTR	XANST	XANST	XANST	XANST
										Control	Control	Control	Control	Control	Control	Control	Control
										Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
										6-4-07	6-18-07	7-20-07	9-18-07	6-4-07	6-18-07	7-20-07	9-18-07
										14 DA-A	28 DA-A	60 DA-A	120 DA-A	14 DA-A	28 DA-A	60 DA-A	120 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code								
1	PERMIT	75	WG	0.0314	lb ai/a	0.67	oz/a	3-5"W	A	97 ab	96 ab	94 a	94 a	98 a	98 a	96 a	96 a
1	ROUNDUP ORIG MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-5"W	A								
1	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	3-5"W	A								
1	AMS	100	DRY	2.5	lb ai/a	2.5	lb/a	3-5"W	A								
2	PERMIT	75	WG	0.0234	lb ai/a	0.5	oz/a	3-5"W	A	96 b	97 a	93 ab	93 a	99 a	98 a	97 a	97 a
2	ROUNDUP ORIG MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-5"W	A								
2	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	3-5"W	A								
2	AMS	100	DRY	2.5	lb ai/a	2.5	lb/a	3-5"W	A								
3	YUKON	67.5	WG	0.169	lb ai/a	4.0	oz/a	3-5"W	A	98 a	97 a	93 ab	93 a	98 a	95 a	97 a	97 a
3	ROUNDUP ORIG MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-5"W	A								
3	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	3-5"W	A								
3	AMS	100	DRY	2.5	lb ai/a	2.5	lb/a	3-5"W	A								
4	YUKON	67.5	WG	0.127	lb ai/a	3.0	oz/a	3-5"W	A	98 a	97 a	95 a	95 a	98 a	94 a	96 a	96 a
4	ROUNDUP ORIG MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-5"W	A								
4	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	3-5"W	A								
4	AMS	100	DRY	2.5	lb ai/a	2.5	lb/a	3-5"W	A								
5	ROUNDUP ORIG MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-5"W	A	97 ab	93 b	83 b	83 b	91 b	80 b	57 b	57 b
5	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	3-5"W	A								
5	AMS	100	DRY	2.5	lb ai/a	2.5	lb/a	3-5"W	A								
6	NONTREATED									0 c	0 c	0 c	0 c	0 c	0 c	0 c	0 c
LSD (P=.05)										1.6	3.1	10.1	8.8	2.4	11.9	4.8	4.1
Replicate F										1.226	0.440	0.394	0.262	0.290	2.241	0.538	0.359
Replicate Prob(F)										0.3346	0.7275	0.6845	0.8510	0.8318	0.1255	0.6001	0.7840
Treatment F										5328.227	1428.218	138.156	184.203	2520.188	95.432	674.955	900.044
Treatment Prob(F)										0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

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

Permit and Yukon Foliar and Residual Activity.

Project Code: 07-10B-MW50 Location: Belleville Research Center  
 Investigator: Bryan Young

Weed Code		AMBEL	AMBEL	AMBEL	AMBEL	IPOSS	IPOSS	IPOSS	IPOSS								
Crop Code																	
Rating Data Type		Control	Control	Control	Control	Control	Control	Control	Control								
Rating Unit		Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent								
Rating Date		6-4-07	6-18-07	7-20-07	9-18-07	6-4-07	6-18-07	7-20-07	9-18-07								
Trt-Eval Interval		14 DA-A	28 DA-A	60 DA-A	120 DA-A	14 DA-A	28 DA-A	60 DA-A	120 DA-A								
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code								
1	PERMIT	75	WG	0.0314	lb ai/a	0.67	oz/a	3-5"W	A	99 a	99 a	98 a	98 a	90 bc	83 ab	70 b	90 a
1	ROUNDUP ORIG MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-5"W	A								
1	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	3-5"W	A								
1	AMS	100	DRY	2.5	lb ai/a	2.5	lb/a	3-5"W	A								
2	PERMIT	75	WG	0.0234	lb ai/a	0.5	oz/a	3-5"W	A	99 a	99 a	98 a	98 a	90 c	80 b	78 ab	90 a
2	ROUNDUP ORIG MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-5"W	A								
2	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	3-5"W	A								
2	AMS	100	DRY	2.5	lb ai/a	2.5	lb/a	3-5"W	A								
3	YUKON	67.5	WG	0.169	lb ai/a	4.0	oz/a	3-5"W	A	99 a	99 a	98 a	98 a	95 a	89 a	86 a	90 a
3	ROUNDUP ORIG MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-5"W	A								
3	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	3-5"W	A								
3	AMS	100	DRY	2.5	lb ai/a	2.5	lb/a	3-5"W	A								
4	YUKON	67.5	WG	0.127	lb ai/a	3.0	oz/a	3-5"W	A	99 a	99 a	98 a	98 a	94 ab	82 ab	83 a	90 a
4	ROUNDUP ORIG MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-5"W	A								
4	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	3-5"W	A								
4	AMS	100	DRY	2.5	lb ai/a	2.5	lb/a	3-5"W	A								
5	ROUNDUP ORIG MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-5"W	A	99 a	99 b	95 a	95 a	88 c	65 c	52 c	90 a
5	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	3-5"W	A								
5	AMS	100	DRY	2.5	lb ai/a	2.5	lb/a	3-5"W	A								
6	NONTREATED									0 b	0 c	0 b	0 b	0 d	0 d	0 d	0 b
LSD (P=.05)										0.0	0.4	3.4	3.0	3.9	7.6	8.9	0.0
Replicate F										0.000	1.000	1.000	0.666	0.905	4.549	2.399	0.000
Replicate Prob(F)										1.0000	0.4199	0.4019	0.5917	0.4617	0.0185	0.1410	1.0000
Treatment F										0.000	117377.410	1336.863	1782.308	834.857	175.379	133.308	0.000
Treatment Prob(F)										1.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	1.0000

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

Permit and Yukon Foliar and Residual Activity.

Project Code: 07-10B-MW50 Location: Belleville Research Center  
 Investigator: Bryan Young

Weed Code	ABUTH	ABUTH	ABUTH	ABUTH
Crop Code				
Rating Data Type	Control	Control	Control	Control
Rating Unit	Percent	Percent	Percent	Percent
Rating Date	6-4-07	6-18-07	7-20-07	9-18-07
Trt-Eval Interval	14 DA-A	28 DA-A	60 DA-A	120 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code				
1	PERMIT	75	WG	0.0314	lb ai/a	0.67	oz/a	3-5"W	A	97 a	90 ab	89 a	89 a
1	ROUNDUP ORIG MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-5"W	A				
1	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	3-5"W	A				
1	AMS	100	DRY	2.5	lb ai/a	2.5	lb/a	3-5"W	A				
2	PERMIT	75	WG	0.0234	lb ai/a	0.5	oz/a	3-5"W	A	98 a	89 b	88 a	88 a
2	ROUNDUP ORIG MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-5"W	A				
2	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	3-5"W	A				
2	AMS	100	DRY	2.5	lb ai/a	2.5	lb/a	3-5"W	A				
3	YUKON	67.5	WG	0.169	lb ai/a	4.0	oz/a	3-5"W	A	98 a	94 a	95 a	95 a
3	ROUNDUP ORIG MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-5"W	A				
3	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	3-5"W	A				
3	AMS	100	DRY	2.5	lb ai/a	2.5	lb/a	3-5"W	A				
4	YUKON	67.5	WG	0.127	lb ai/a	3.0	oz/a	3-5"W	A	98 a	90 ab	90 a	88 a
4	ROUNDUP ORIG MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-5"W	A				
4	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	3-5"W	A				
4	AMS	100	DRY	2.5	lb ai/a	2.5	lb/a	3-5"W	A				
5	ROUNDUP ORIG MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	3-5"W	A	90 b	68 c	62 b	62 b
5	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	3-5"W	A				
5	AMS	100	DRY	2.5	lb ai/a	2.5	lb/a	3-5"W	A				
6	NONTREATED									0 c	0 d	0 c	0 c
LSD (P=.05)										1.8	4.9	8.9	7.1
Replicate F										1.859	1.996	1.791	1.426
Replicate Prob(F)										0.1799	0.1579	0.2164	0.2924
Treatment F										4428.531	501.964	168.544	260.926
Treatment Prob(F)										0.0001	0.0001	0.0001	0.0001

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

Trial Comments

1. Protocol: Gowan (PER-07-17).
2. Ratings CI 7 + 14 DAT; CI/WC 14, 28, 60 + 120 DAT.
3. Yield.
4. DA-A = Days after 3-5"W application.
5. IPOSS was IPOHE (ivyleaf morningglory) and IPOLA (pitted morningglory).
6. Harvested 9-21-07, (2) 30 inch rows by 21 ft.