

Comparison of Glyphosate Formulations in Corn.

00-50W-N90

OBJECTIVE: Evaluate performance of various commercial formulations of glyphosate in glyphosate-resistant corn.

SUMMARY: Little to no corn injury was observed in this study. All treatments provided excellent control of giant foxtail, Pennsylvania smartweed, and common waterhemp at 28 days after treatment (DAT). Yellow nutsedge control from glyphosate treatments was variable, ranging from 67 to 93%. Corn yield ranged from 157 to 196 bu/A with few significant differences between treatments.

HERBICIDES

AATREX 90 WG
 ACQUIRE 3 SL
 FULTIME 4 SC
 GLYFOS 3 SL
 GLYFOS X-TRA 3 SL
 GLYPHOMAX 3 SL
 GLYPHOMAX PLUS 3 SL
 ROUNDUP CUSTOM 4 SL
 ROUNDUP ORIGINAL 3 SL
 ROUNDUP ULTRA 3 SL
 ROUNDUP ULTRA DRY 65 WG
 ROUNDUP ULTRA MAX 3.75 SL
 TOUCHDOWN 3 SL

WEEDS

FOXTAIL, GIANT
 NUTSEEDGE, YELLOW
 SMARTWEED, PENNSYLVANIA
 WATERHEMP, COMMON

CROP

CORN, FIELD

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PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Comparison of Glyphosate Formulations in Corn.

Project Code: 00-50W-N90 Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

Weed Code	Common Name	Scientific Name
1. SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2. CYPES	NUTSEDGE, YELLOW	CYPERUS ESCULENTUS L.
3. AMATA	WATERHEMP, COMMON	AMARANTHUS RUDIS SAUER
4. POLPY	SMARTWEED, PENNSYLVANIA	POLYGONUM PENNSYLVANICUM L.

Crop 1:	ZEAMX CORN, FIELD	Variety:	DK 626 RR
Planting Method:	SEEDS	Planting Date:	May-16-00
Rate:	28000 S/A	Depth:	1.5 IN
Row Spacing:	30 IN		

Plot Width, Unit:	10 FT	Plot Length, Unit:	27 FT	Reps:	3
Tillage Type:	REDUCED-TILL	Study Design:	RCB		
Previous Crop, Year:	GLXMA, 1999	Fertilizer applied:	N 150 LB/A,	P ₂ O ₅ 0 LB/A,	K ₂ O 0 LB/A

Soil Name:	WEIR	% OM:	2.6	pH:	6.6	CEC:	12
Texture:	SILT LOAM	P ₁ :	87 LB/A,	K:	439 LB/A		

APPLICATION DESCRIPTION

	A	B
Application Date:	May-16-00	Jun-13-00
Time of Day:	17:00	10:45
Application Method:	SPRAY	SPRAY
Application Timing:	PRE	4"W
Applic. Placement:	BROSOI	BROFOL
Air Temp., Unit:	78 F	83 F
% Relative Humidity:	40	55
Wind Velocity, Unit:	3-5 MPH	3-5 MPH
Soil Moisture:	NORMAL	NORMAL
% Cloud Cover:	80	0

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	NA	ZEAMX V5-V6
Height, Unit:	NA	15 IN

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code:		SETFA
Stage(leaves):		4-6
Height(inches):		4-6
Density:		HIGH
Weed 2 Code:		CYPES
Stage(leaves):		4-6
Height(inches):		4-6
Density:		LOW
Weed 3 Code:		AMATA
Stage(leaves):		4-10
Height(inches):		2-7
Density:		HIGH
Weed 4 Code:		POLPY
Stage(leaves):		5-10
Height(inches):		4-6
Density:		LOW

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	CO ₂ SPRAY	CO ₂ SPRAY
Operating Pressure:	40 PSI	40 PSI
Nozzle Type:	FLAT FAN	FLAT FAN
Nozzle Size:	8003	8002
Boom Length, Unit:	7.33 FT	7.33 FT
Spray Volume, Unit:	20 GPA	20 GPA

NOTES:

Harvested Oct-06-00, (2) 30 inch rows by 25 ft.

TABLE. COMPARISON OF GLYPHOSATE FORMULATIONS IN CORN. PROJECT CODE:00-50W-N90

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	YIELD	ZEAMX INJURY		CONTROL, DAYS AFTER 4"W							
								DA 4"W		SETFA		CYPES		POLPY		AMATA	
								14	28	14	28	14	28	14	28	14	28
1 NONTREATED							170	0	0	0	0	0	0	0	0	0	0
2 TOUCHDOWN	3 SL	0.75	LB AE/A	2.0	PT/A	4"W B	183	0	0	99	99	63	83	94	98	99	97
3 TOUCHDOWN	3 SL	0.75	LB AE/A	2.0	PT/A	4"W B	185	2	0	99	98	83	83	98	99	98	98
3 AMS	100 DRY	1.0	% W/W	1.0	%W/W	4"W B											
4 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	4"W B	196	0	0	99	97	70	85	99	99	99	99
5 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	4"W B	172	0	0	99	98	75	82	99	99	98	98
5 AMS	100 DRY	1.0	% W/W	1.0	%W/W	4"W B											
6 ROUNDUP ULTRA MAX	3.75 SL	0.75	LB AE/A	1.6	PT/A	4"W B	182	0	0	99	99	72	86	99	99	99	99
6 AMS	100 DRY	1.0	% W/W	1.0	%W/W	4"W B											
7 ROUNDUP ULTRA DRY	65 WG	0.75	LB AE/A	1.15	LB/A	4"W B	186	0	0	99	97	72	75	99	99	99	99
7 AMS	100 DRY	1.0	% W/W	1.0	%W/W	4"W B											
8 ROUNDUP ORIGINAL	3 SL	0.75	LB AE/A	2.0	PT/A	4"W B	185	0	0	99	97	72	73	97	98	94	95
8 ACTIVATOR 90	100 LIQ	0.5	% V/V	0.5	%V/V	4"W B											
8 AMS	100 DRY	1.0	% W/W	1.0	%W/W	4"W B											
9 ROUNDUP CUSTOM	4 SL	0.75	LB AE/A	1.5	PT/A	4"W B	180	0	0	99	98	80	83	91	99	96	95
9 ACTIVATOR 90	100 LIQ	0.5	% V/V	0.5	%V/V	4"W B											
9 AMS	100 DRY	1.0	% W/W	1.0	%W/W	4"W B											
10 GLYFOS X-TRA	3 SL	0.75	LB AE/A	2.0	PT/A	4"W B	181	0	0	99	99	75	93	96	98	99	99
10 AMS	100 DRY	1.0	% W/W	1.0	%W/W	4"W B											
11 GLYFOS	3 SL	0.75	LB AE/A	2.0	PT/A	4"W B	177	0	0	99	98	80	86	96	98	92	96
11 ACTIVATOR 90	100 LIQ	0.5	% V/V	0.5	%V/V	4"W B											
11 AMS	100 DRY	1.0	% W/W	1.0	%W/W	4"W B											
12 GLYPHOMAX PLUS	3 SL	0.75	LB AE/A	2.0	PT/A	4"W B	157	2	0	99	99	65	67	96	99	97	97
12 AMS	100 DRY	1.0	% W/W	1.0	%W/W	4"W B											
13 GLYPHOMAX	3 SL	0.75	LB AE/A	2.0	PT/A	4"W B	182	2	0	99	98	65	72	97	99	93	93
13 ACTIVATOR 90	100 LIQ	0.5	% V/V	0.5	%V/V	4"W B											
13 AMS	100 DRY	1.0	% W/W	1.0	%W/W	4"W B											
14 ACQUIRE	3 SL	0.75	LB AE/A	2.0	PT/A	4"W B	158	3	0	99	98	65	70	98	99	97	95
14 ACTIVATOR 90	100 LIQ	0.5	% V/V	0.5	%V/V	4"W B											
14 AMS	100 DRY	1.0	% W/W	1.0	%W/W	4"W B											
15 FULTIME	4 SC	3.25	LB A/A	3.25	QT/A	PRE A	186	0	0	99	97	50	50	99	99	99	99
16 FULTIME	4 SC	3.25	LB A/A	3.25	QT/A	PRE A	189	0	0	99	98	53	40	99	99	99	99
16 AATREX	90 WG	0.7	LB A/A	0.78	LB/A	PRE A											
LSD							25	3	0	0.6	2	13	25	5	2	4	3
P							0.2	0.2	1.0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

1. PROTOCOL: ZENECA.
2. RATING DATES:
14 DAT, AND 28 DAT ON JUN-27-00, AND JUL-11-00, RESPECTIVELY.