Comparison of Glyphosate Formulations in Soybean.

00-21M-MMW40

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

SUMMARY: No soybean injury was observed from any treatment. Giant foxtail control was 98 to 99% from all glyphosate formulations except Roundup Ultra (95%) at 28 days after treatment (DAT). Yellow nutsedge control was less than 75% from any glyphosate treatment with few significant differences between treatments. Roundup Ultra Max, Roundup Ultra Dry, and Roundup Custom provided the greatest control of common cocklebur (94%) at 28 DAT. Common cocklebur control was significantly reduced with Roundup Ultra (82%), Roundup Original (85%), Glyfos (89%) and Glyphomax Plus (88%). All glyphosate treatments except Roundup Ultra controlled at least 94% of common ragweed. Ivyleaf morningglory control ranged from 80 (Roundup Original) to 89% (Roundup Custom) from glyphosate treatments.

Soybean yield ranged from 36 bu/A in Roundup Ultra treated plots to 43 bu/A in Glyphomax treated plots with few significant differences between treatments.

HERBICIDES	WEEDS	CROP
ACQUIRE 3 SL	COCKLEBUR, COMMON	SOYBEAN
GLYFOS 3 SL	FOXTAIL, GIANT	
GLYFOS X-TRA 3 SL	MORNINGGLORY, IVYLEAF	
GLYPHOMAX 3 SL	NUTSEDGE, YELLOW	
GLYPHOMAX PLUS 3 SL	RAGWEED, COMMON	
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		

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

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Project Code: 00-21M-MMW40 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. AMBEL	RAGWEED, COMMON	AMBROSIA ARTEMISIIFOLIA L.
4. IPOHE	MORNINGGLORY, IVYLEAF	IPOMOEA HEDERACEA (L.) JACQ.
5. XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM

Crop 1:	GLXMA SOYBEAN	Variety:	B-T 369CR		
Planting Method:	SEEDED	Planting Date:	May-5-00		
Rate:	75 LB/A	Depth:	1.0 IN		
Row Spacing:	30 IN				
Plot Width, Unit:	10 FT	Plot Length, Unit:	30 FT	Reps: 3	
Tillage Type:	REDUCED-TILL	Study Design:	RCB		
Previous Crop, Year:	ZEAMX, 1999	Fertilizer applied:	N 0 LB/A,	P_2O_5 50 LB/A,	K_2O 150 LB/A
Soil Name:	EBBERT	% OM: 2.6	pH: 5.7	CEC: 14	
Texture:	SILT LOAM	P_1: 72 LB/A,	K: 351 LB/A		

APPLICATION DESCRIPTION

	A
Application Date:	Jun-8-00
Time of Day:	12:00
Application Method:	SPRAY
Application Timing:	6"W
Applic. Placement:	BROFOL
Air Temp., Unit:	76 F
% Relative Humidity:	20
Wind Velocity, Unit:	5-10 MPH
Soil Moisture:	NORMAL
% Cloud Cover:	0

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	GLXMA V2
Height, Unit:	5.5 IN

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code:	SETFA
Stage(leaves):	4-6
Height(inches):	3-6
Density:	HIGH
Weed 2 Code:	CYPES
Stage(leaves):	4-6
Height(inches):	4-6
Density:	MEDIUM
Weed 3 Code:	AMBEL
Stage(leaves):	4-6
Height(inches):	3-5
Density:	MEDIUM
Weed 4 Code:	IPOHE
Stage(leaves):	3-5
Height(inches):	2-3
Density:	MEDIUM
Weed 5 Code:	XANST
Stage(leaves):	4-8
Height(inches):	4-8
Density:	HIGH

APPLICATION EQUIPMENT

	A
Appl. Equipment:	CO_2 SPRAY
Operating Pressure:	40 PSI
Nozzle Type:	FLAT FAN
Nozzle Size:	8002
Boom Length, Unit:	7.33 FT
Spray Volume, Unit:	20 GPA

NOTES:

Harvested Sept-20-00, (2) 30 inch rows by 27 ft.

TABLE. COMPARISON OF GLYPHOSATE FORMULATIONS IN SOYBEAN. PROJECT CODE:00-21M-MMW40

	TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	YIELD	GLXMA INJURY DA 6"W		CONTROL, DAYS AFTER 6"W									
											SETFA		CYPES		XANST		AMBEL		IPOHE	
									14	28	14	28	14	28	14	28	14	28	14	28
								BU/A	%	%	%	%	%	%	%	%	%	%	%	%
1	ROUNDUP ULTRA	3	SL	0.75	LB AE/A	2.0	PT/A	36	0	0	97	95	53	57	90	82	72	90	80	83
1	AMS	100	DRY	2.0	% W/W	2.0	%W/W													
2	ROUNDUP ULTRA MAX	3.75	SL	0.75	LB AE/A	1.6	PT/A	42	0	0	98	98	57	58	95	94	83	98	82	83
2	AMS	100	DRY	2.0	% W/W	2.0	%W/W													
3	ROUNDUP ULTRA DRY	65	WG	0.75	LB AE/A	1.15	LB/A	41	0	0	98	99	47	57	96	94	96	99	80	82
3	AMS	100	DRY	2.0	% W/W	2.0	%W/W													
4	ROUNDUP ORIGINAL	3	SL	0.75	LB AE/A	2.0	PT/A	37	0	0	97	98	47	60	91	85	85	96	80	80
4	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	%V/V													
4	AMS	100	DRY	2.0	% W/W	2.0	%W/W													
5	ROUNDUP CUSTOM	4	SL	0.75	LB AE/A	1.5	PT/A	40	0	0	99	98	62	60	99	94	89	98	83	89
5	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	%V/V													
5	AMS	100	DRY	2.0	% W/W	2.0	%W/W													
6	GLYFOS X-TRA	3	SL	0.75	LB AE/A	2.0	PT/A	42	0	0	99	99	57	67	98	92	93	96	83	85
6	AMS	100	DRY	2.0	% W/W	2.0	%W/W													
7	GLYFOS	3	SL	0.75	LB AE/A	2.0	PT/A	40	0	0	98	98	47	60	93	89	70	94	78	83
7	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	%V/V													
7	AMS	100	DRY	2.0	% W/W	2.0	%W/W													
8	GLYPHOMAX PLUS	3	SL	0.75	LB AE/A	2.0	PT/A	41	0	0	99	98	57	53	97	88	80	96	80	84
8	AMS	100	DRY	2.0	% W/W	2.0	%W/W													
9	GLYPHOMAX	3	SL	0.75	LB AE/A	2.0	PT/A	43	0	0	98	99	57	70	98	92	70	98	83	83
9	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	%V/V													
9	AMS	100	DRY	2.0	% W/W	2.0	%W/W													
10	TOUCHDOWN	3	SL	0.75	LB AE/A	2.0	PT/A	40	0	0	99	99	57	57	99	93	78	98	83	88
10	AMS	100	DRY	2.0	% W/W	2.0	%W/W													
11	ACQUIRE	3	SL	0.75	LB AE/A	2.0	PT/A	39	0	0	99	99	60	63	98	92	85	98	85	86
11	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	%V/V													
11	AMS	100	DRY	2.0	% W/W	2.0	%W/W													
12	NONTREATED							12	0	0	0	0	0	0	0	0	0	0	0	0
LSD								6	0	0	1	2	8	12	1	4	23	7	5	5
P								0.01	1.0	1.0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

1. PROTOCOL: SIU-BGY.
2. RATING DATES:
   14 DAYS AFTER 6"W, AND 28 DAYS AFTER 6"W ON JUN-22-00, AND JUL-6-00, RESPECTIVELY.