

GPA and MPH Factorial.

Project Code: 03-51E-M180 Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA
 Trial Status: Final Updated: 9-3-03

Objective:

Determine the influence of application factors (carrier volume and travel speed) on glyphosate efficacy.

Weed Code	Common Name	Scientific Name
1. SETFA	foxtail, giant	Setaria faberi Herrm.
2. AMATA	waterhemp, common	Amaranthus rudis Sauer
3. AMBTR	ragweed, giant	Ambrosia trifida L.
4. XANST	cocklebur, common	Xanthium strumarium L.

Crop 1: GLXMA soybean Variety: Asgrow 4403 RR
 Planting Method: Seeded Planting Date: 6-20-03
 Rate: 75 lb/A Depth: 1.0 IN
 Row Spacing: 30 IN

Plot Width, Unit: 10 FT Plot Length, Unit: 70 FT Reps: 3
 Tillage Type: Reduced-Till Study Design: Non-randomized
 Previous Crop, Year: GLXMA, 2002

Field Prep./Maintenance: N 0 LB/A, P205 50 LB/A, K2O 200 LB/A

Soil Name: Weir % OM: 1.7 pH: 7.1 CEC: 11
 Texture: Silt loam Fert. Level: P1: 84 LB/A, K: 172 LB/A

APPLICATION DESCRIPTION

A

Application Date: 7-17-03
 Time of Day: 11:00
 Application Method: Spray
 Application Timing: 8-12"W
 Applic. Placement: BROFOL
 Air Temp., Unit: 84 F
 % Relative Humidity: 50
 Wind Velocity, Unit: 3 MPH
 Dew Presence (Y/N): N
 Soil Moisture: BELNOR
 % Cloud Cover: 15

CROP STAGE AT EACH APPLICATION

A

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

WEED STAGE AT EACH APPLICATION

A

Weed 1 Code: SETFA
 Stage(leaves): 3-5
 Height(inches): 4-15
 Density: Low

Weed 2 Code: AMATA
 Stage(leaves): 6-20
 Height(inches): 5-15
 Density: Medium

Weed 3 Code: AMBTR
 Stage(leaves): 6-10
 Height(inches): 7-16
 Density: High

Weed 4 Code: XANST
Stage(leaves): 6-10
Height(inches): 6-16
Density: Medium

APPLICATION EQUIPMENT

A

Appl. Equipment: CO2 sprayer
Operating Pressure: See note
Nozzle Type: See note
Nozzle Size: See note
Boom Length, Unit: 6.67 FT
Spray Volume, Unit: See note

NOTES:

Nozzle type and size, and spray volume are listed in treatment list.
Spray pressure depends on treatment.
Not harvested.

GPA and MPH Factorial.

Project Code: 03-51E-M180 Location: Belleville Research Center

Weed Code						SETFA	SETFA	AMATA	AMATA	AMBTR	AMBTR	XANST	XANST					
Crop Code						GLXMA												
Rating Data Type						Injury	Control	Control	Control	Control	Control	Control	Control					
Rating Unit						Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent					
Rating Date						7-31-03	7-31-03	8-14-03	7-31-03	8-14-03	7-31-03	8-14-03	7-31-03	8-14-03				
Trt-Eval Interval						14 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A				
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code									
1	NONTREATED									0	0	0	0	0	0	0	0	
2	5 MPH									0	99	99	90	90	80	81	99	99
2	5 GPA																	
2	XR NOZZLES																	
2	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FLOZ/A	8-12"W	A									
2	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8-12"W	A									
3	5 MPH									0	99	99	88	87	85	88	99	99
3	10 GPA																	
3	XR NOZZLES																	
3	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FLOZ/A	8-12"W	A									
3	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8-12"W	A									
4	5 MPH									0	99	99	88	88	85	81	99	99
4	15 GPA																	
4	XR NOZZLES																	
4	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FLOZ/A	8-12"W	A									
4	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8-12"W	A									
5	5 MPH									0	99	99	85	88	80	83	99	99
5	20 GPA																	
5	XR NOZZLES																	
5	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FLOZ/A	8-12"W	A									
5	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8-12"W	A									
6	10 MPH									0	99	99	90	94	88	88	99	93
6	5 GPA																	
6	XR NOZZLES																	
6	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FLOZ/A	8-12"W	A									
6	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8-12"W	A									
7	10 MPH									0	95	97	85	88	80	77	99	99
7	10 GPA																	
7	XR NOZZLES																	
7	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FLOZ/A	8-12"W	A									
7	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8-12"W	A									
8	10 MPH									0	95	95	88	92	75	68	99	99
8	15 GPA																	
8	XR NOZZLES																	
8	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FLOZ/A	8-12"W	A									
8	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8-12"W	A									

Weed Code	GLXMA	SETFA	SETFA	AMATA	AMATA	AMBTR	AMBTR	XANST	XANST
Crop Code	Injury	Control	Control	Control	Control	Control	Control	Control	Control
Rating Data Type	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Unit	7-31-03	7-31-03	8-14-03	7-31-03	8-14-03	7-31-03	8-14-03	7-31-03	8-14-03
Rating Date	14 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A
Trt-Eval Interval									

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code									
9	10 MPH									0	99	98	85	87	80	82	99	99
9	20 GPA																	
9	XR NOZZLES																	
9	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FL OZ/A	8-12"W	A									
9	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8-12"W	A									
10	15 MPH									0	99	99	90	94	90	96	99	99
10	5 GPA																	
10	XR NOZZLES																	
10	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FL OZ/A	8-12"W	A									
10	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8-12"W	A									
11	15 MPH									0	99	99	88	93	82	96	99	99
11	10 GPA																	
11	XR NOZZLES																	
11	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FL OZ/A	8-12"W	A									
11	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8-12"W	A									
12	15 MPH									0	99	99	90	84	85	83	99	93
12	15 GPA																	
12	XR NOZZLES																	
12	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FL OZ/A	8-12"W	A									
12	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8-12"W	A									
13	15 MPH									0	95	95	75	87	75	87	99	99
13	20 GPA																	
13	XR NOZZLES																	
13	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FL OZ/A	8-12"W	A									
13	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8-12"W	A									
14	20 MPH									0	99	99	88	96	88	93	99	99
14	5 GPA																	
14	XR NOZZLES																	
14	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FL OZ/A	8-12"W	A									
14	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8-12"W	A									
15	20 MPH									0	99	99	90	94	90	91	99	99
15	10 GPA																	
15	XR NOZZLES																	
15	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FL OZ/A	8-12"W	A									
15	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8-12"W	A									
16	20 MPH									0	99	99	88	89	80	77	99	99
16	15 GPA																	
16	XR NOZZLES																	
16	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FL OZ/A	8-12"W	A									
16	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8-12"W	A									

Weed Code	GLXMA	SETFA	SETFA	AMATA	AMATA	AMBTR	AMBTR	XANST	XANST
Crop Code	Injury	Control	Control	Control	Control	Control	Control	Control	Control
Rating Data Type	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Unit	7-31-03	7-31-03	8-14-03	7-31-03	8-14-03	7-31-03	8-14-03	7-31-03	8-14-03
Rating Date	14 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A
Trt-Eval Interval									

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code									
17	20 MPH									0	99	99	88	83	80	80	99	99
17	20 GPA																	
17	XR NOZZLES																	
17	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FL OZ/A	8-12"W	A									
17	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8-12"W	A									
18	5 MPH									0	99	99	80	84	82	80	99	99
18	10 GPA																	
18	TT NOZZLES																	
18	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FL OZ/A	8-12"W	A									
18	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8-12"W	A									
19	5 MPH									0	99	99	82	82	82	83	99	99
19	15 GPA																	
19	TT NOZZLES																	
19	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FL OZ/A	8-12"W	A									
19	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8-12"W	A									
20	5 MPH									0	99	99	88	88	88	88	99	99
20	20 GPA																	
20	TT NOZZLES																	
20	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FL OZ/A	8-12"W	A									
20	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8-12"W	A									
21	10 MPH									0	99	99	82	91	80	85	99	99
21	5 GPA																	
21	TT NOZZLES																	
21	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FL OZ/A	8-12"W	A									
21	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8-12"W	A									
22	10 MPH									0	99	99	85	87	85	89	99	99
22	10 GPA																	
22	TT NOZZLES																	
22	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FL OZ/A	8-12"W	A									
22	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8-12"W	A									
23	10 MPH									0	99	99	80	88	85	91	99	99
23	15 GPA																	
23	TT NOZZLES																	
23	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FL OZ/A	8-12"W	A									
23	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8-12"W	A									
24	10 MPH									0	99	99	82	81	82	85	99	99
24	20 GPA																	
24	TT NOZZLES																	
24	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FL OZ/A	8-12"W	A									
24	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8-12"W	A									

Weed Code	GLXMA	SETFA	SETFA	AMATA	AMATA	AMBTR	AMBTR	XANST	XANST
Crop Code	Injury	Control	Control	Control	Control	Control	Control	Control	Control
Rating Data Type	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Unit	7-31-03	7-31-03	8-14-03	7-31-03	8-14-03	7-31-03	8-14-03	7-31-03	8-14-03
Rating Date	14 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A
Trt-Eval Interval									

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code										
25	15 MPH									0	99	99	88	79	88	87	99	99	
25	5 GPA																		
25	TT NOZZLES																		
25	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FL OZ/A	8-12"W	A										
25	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8-12"W	A										
26	15 MPH									0	99	99	90	89	90	93	99	99	
26	10 GPA																		
26	TT NOZZLES																		
26	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FL OZ/A	8-12"W	A										
26	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8-12"W	A										
27	15 MPH									0	99	99	85	89	80	82	99	99	
27	15 GPA																		
27	TT NOZZLES																		
27	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FL OZ/A	8-12"W	A										
27	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8-12"W	A										
28	20 MPH									0	99	99	90	85	92	89	99	99	
28	5 GPA																		
28	TT NOZZLES																		
28	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FL OZ/A	8-12"W	A										
28	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8-12"W	A										
29	20 MPH									0	99	99	85	75	80	73	99	99	
29	10 GPA																		
29	TT NOZZLES																		
29	ROUNDUP ORIGINAL	3	SL	0.188	LB AE/A	8	FL OZ/A	8-12"W	A										
29	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	8-12"W	A										
LSD (P=.05)										.	.	0.7	.	6.9	.	7.4	.	1.8	
Replicate F												0.521		2.461		0.986		1.446	
Replicate Prob(F)												0.5970		0.0945		0.3794		0.2441	
Treatment F												5079.963		48.610		42.309		843.522	
Treatment Prob(F)												0.0001		0.0001		0.0001		0.0001	

GPA and MPH Factorial.

Project Code: 03-51E-M180 Location: Belleville Research Center

Trial Comments

1. Protocol: SIU / ISPOB.
2. Ratings: CI and WC 14 and 28 DAT.
3. Mix size and mix amounts are for multiple treatments (nozzle and speed) within each GPA.
4. At 20, 15, 10, and 5 GPA expect to cover 3, 4, 7, and 14 plots, with 0.5, 0.5, 0.09, and 0.07 liter remaining, respectively.
5. DA-A = days after 8-12"W application.
6. This study was not completely randomized.