

Effect of Delayed Glyphosate Applications on Weed Control and Soybean Yield in Late Planted Soybean.

Project Code: 03-9B-Alleys Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA
 Trial Status: Final Updated: 11-5-03

Weed Code	Common Name	Scientific Name
1.	ABUTH velvetleaf	Abutilon theophrasti Medicus
2.	AMATA waterhemp, common	Amaranthus rudis Sauer
3.	IPOHE morningglory, ivyleaf	Ipomoea hederacea (L.) Jacq.
4.	CYPES nutsedge, yellow	Cyperus esculentus L.
5.	AMAPA amaranth, Palmer	Amaranthus palmeri S.Wats.
6.	SETFA foxtail, giant	Setaria faberi Herrm.
7.	XANST cocklebur, common	Xanthium strumarium L.

Crop 1: GLXMA soybean Variety: AG 4403 RR
 Planting Method: Seeded Planting Date: 6-21-03
 Rate: 75 lb/A Depth: 1.0 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: ZEAMX, 2002

Field Prep./Maintenance: N 0 LB/A, P205 50 LB/A, K20 150 LB/A

Soil Name: Ebbert % OM: 1.5 pH: 6.7 CEC: 14
 Texture: Silt loam Fert. Level: P1: 90 LB/A, K: 301 LB/A

APPLICATION DESCRIPTION

	A	B	C	D	E	F
Application Date:	6-23-03	7-15-03	7-16-03	7-25-03	8-4-03	8-10-03
Time of Day:	11:30	7:00	11:00	10:00	14:00	16:00
Application Method:	Spray	Spray	Spray	Spray	Spray	Spray
Application Timing:	PRE	0-4"W	2-4"W	4-8"W	8-12"W	12-16"W
Applic. Placement:	BROS0I	BROFOL	BROFOL	BROFOL	BROFOL	BROFOL
Air Temp., Unit:	82 F	76 F	64 F	76 F	84 F	82 F
% Relative Humidity:	32	92	98	50	54	50
Wind Velocity, Unit:	5 MPH	3 MPH	0 MPH	3 MPH	3 MPH	3 MPH
Soil Moisture:	NORMAL	NORMAL	ABONOR	NORMAL	ABONOR	NORMAL
	G	H	I	J	K	L
Application Date:	8-15-03	8-19-03	8-25-03	8-28-03	9-5-03	8-10-03
Time of Day:	13:00	10:00	9:00	13:00	13:00	16:00
Application Method:	Spray	Spray	Spray	Spray	Spray	Spray
Application Timing:	16-20"W	20-24"W	24-28"W	28-32"W	32-36"W	2-4"RG-1
Applic. Placement:	BROFOL	BROFOL	BROFOL	BROFOL	BROFOL	BROFOL
Air Temp., Unit:	88 F	82 F	72 F	90 F	72 F	82 F
% Relative Humidity:	50	68	90	56	40	50
Wind Velocity, Unit:	0 MPH	3 MPH	0 MPH	0 MPH	0 MPH	3 MPH
Soil Moisture:	NORMAL	NORMAL	BELNOR	BELNOR	NORMAL	NORMAL
	M	N				
Application Date:	8-19-03					
Time of Day:	10:00	Not applied				
Application Method:	Spray	Not needed				
Application Timing:	2-4"RG-2	2-4"RG-3				
Applic. Placement:	BROFOL	BROFOL				
Air Temp., Unit:	82 F					
% Relative Humidity:	68					
Wind Velocity, Unit:	3 MPH					
Soil Moisture:	NORMAL					

CROP STAGE AT EACH APPLICATION

	A	B	C	D	E	F
Crop 1 Code, Stage:	GLXMA NA	GLXMA V2	GLXMA V3	GLXMA V4	GLXMA R1	GLXMA R1
Height, Unit:	NA NA	3-5 IN	6 IN	6-10 IN	8-12 IN	16-20 IN
	G	H	I	J	K	L
Crop 1 Code, Stage:	GLXMA R3	GLXMA R3	GLXMA R4	GLXMA R5	GLXMA R5.5	GLXMA R1
Height, Unit:	20-24 IN	24-26 IN	28-30 IN	28-30 IN	28-30 IN	16-20 IN

	M	N
Crop 1 Code, Stage:	GLXMA R4	GLXMA NA
Height, Unit:	28-30 IN	NA NA

WEED STAGE AT EACH APPLICATION

	A	B	C	D	E	F
Weed 1 Code:		ABUTH		ABUTH	ABUTH	ABUTH
Stage(leaves):		4-5		5-6	5-8	5-8
Height(inches):		1-3		4-8	8-12	12-16
Density:		Medium		Medium	Medium	Medium
Weed 2 Code:		AMATA		AMATA	AMATA	AMATA
Stage(leaves):		5-6		10+	10+	10+
Height(inches):		1-3		4-8	8-12	12-16
Density:		Medium		Medium	Medium	Medium
Weed 3 Code:		IPOHE		IPOHE	IPOHE	IPOHE
Stage(leaves):		3-4		5-6	10+	10+
Height(inches):		1-3		4-6	4-10	4-10
Density:		Low		High	Medium	Medium
Weed 4 Code:		CYPES		CYPES	CYPES	CYPES
Stage(leaves):		5-6		5-6	5-8	5-8
Height(inches):		1-4		4-10	8-14	8-10
Density:		Medium		Low	Medium	Medium
Weed 5 Code:		AMAPA		AMAPA	AMAPA	AMAPA
Stage(leaves):		5-6		10+	10+	10+
Height(inches):		1-3		4-8	8-12	12-16
Density:		Medium		Medium	Medium	Medium
Weed 6 Code:		SETFA	SETFA	SETFA	SETFA	SETFA
Stage(leaves):		5-6	1-4	5-6	5-8	5-8
Height(inches):		1-5	2-4	5-10	8-14	12-16
Density:		High	Low	High	High	High
Weed 7 Code:		XANST		XANST	XANST	XANST
Stage(leaves):		5-6		6-8	8-10	8-10
Height(inches):		1-4		4-8	8-12	12-16
Density:		Medium		Medium	Medium	Medium
	G	H	I	J	K	L
Weed 1 Code:	ABUTH	ABUTH	ABUTH	ABUTH	ABUTH	ABUTH
Stage(leaves):	8-10	10+	10+	10+	10+	5-6
Height(inches):	16-20	20-28	24-28	28-32	28-32	2-4
Density:	Medium	Medium	Low	Medium	Low	Medium
Weed 2 Code:	AMATA	AMATA	AMATA	AMATA	AMATA	AMATA
Stage(leaves):	10+	10+	10+	10+	10+	5-10
Height(inches):	16-20	20-24	24-28	28-32	28-32	2-6
Density:	Medium	Medium	Low	Low	Low	Low
Weed 3 Code:	IPOHE	IPOHE	IPOHE	IPOHE	IPOHE	IPOHE
Stage(leaves):	10+	10+	10+	10+	10+	5-8
Height(inches):	4-10	6-12	6-12	28-32	6-12	2-4
Density:	Medium	Medium	Low	Low	Low	Low
Weed 4 Code:	CYPES	CYPES	CYPES	CYPES		
Stage(leaves):	5-8	6-10	6-10	6-10		
Height(inches):	16-20	20-24	24-28	28-32		
Density:	Medium	Medium	Low	Low		
Weed 5 Code:	AMAPA	AMAPA	AMAPA	AMAPA	AMAPA	
Stage(leaves):	10+	10+	10+	10+	10+	
Height(inches):	16-20	20-24	24-28	28-32	28-32	
Density:	Medium	Medium	Low	Low	Low	
Weed 6 Code:	SETFA	SETFA	SETFA	SETFA	SETFA	
Stage(leaves):	8-10	10+	10+	10+	10+	
Height(inches):	16-20	20-24	24-28	28-32	32-36	
Density:	High	High	High	High	Medium	

Weed 7 Code:	XANST	XANST	XANST	XANST	XANST
Stage(leaves):	8-10	10+	10+	10+	10+
Height(inches):	16-20	20-28	24-28	28-32	32-36
Density:	Medium	Medium	Low	Medium	Medium

	M	N
Weed 1 Code:	ABUTH	
Stage(leaves):	4-5	
Height(inches):	2-4	
Density:	Medium	

Weed 2 Code:
Stage(leaves):
Height(inches):
Density:

Weed 3 Code: IPOHE
Stage(leaves): 2-5
Height(inches): 2-4
Density: Low

Weed 4 Code: CYPES
Stage(leaves): 2-5
Height(inches): 5-6
Density: Low

Weed 5 Code:
Stage(leaves):
Height(inches):
Density:

Weed 6 Code:
Stage(leaves):
Height(inches):
Density:

Weed 7 Code:
Stage(leaves):
Height(inches):
Density:

APPLICATION EQUIPMENT

	A	B	C	D	E	F
Appl. Equipment:	CO2 sprayer	CO2 sprayer	CO2 sprayer	CO2 sprayer	CO2 sprayer	CO2 sprayer
Operating Pressure:	40 PSI	40 PSI	40 PSI	40 PSI	40 PSI	40 PSI
Nozzle Type:	Flat fan	Flat fan	Flat fan	Flat fan	Flat fan	Flat fan
Nozzle Size:	8002	8002	8002	8002	8002	8002
Boom Length, Unit:	10 FT	10 FT	10 FT	10 FT	10 FT	10 FT
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA	20 GPA	20 GPA	20 GPA

	G	H	I	J	K	L
Appl. Equipment:	CO2 sprayer	CO2 sprayer	CO2 sprayer	CO2 sprayer	CO2 sprayer	CO2 sprayer
Operating Pressure:	40 PSI	40 PSI	40 PSI	40 PSI	40 PSI	40 PSI
Nozzle Type:	Flat fan	Flat fan	Flat fan	Flat fan	Flat fan	Flat fan
Nozzle Size:	8002	8002	8002	8002	8002	8002
Boom Length, Unit:	10 FT	10 FT	10 FT	10 FT	10 FT	10 FT
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA	20 GPA	20 GPA	20 GPA

	M	N
Appl. Equipment:	CO2 sprayer	CO2 sprayer
Operating Pressure:	40 PSI	40 PSI
Nozzle Type:	Flat fan	Flat fan
Nozzle Size:	8002	8002
Boom Length, Unit:	10 FT	10 FT
Spray Volume, Unit:	20 GPA	20 GPA

NOTES:

At application "K" ABUTH, AMATA, AMAPA, SETFA and XANST were headed.
 Also SETFA at applications "I" and "J" was headed.
 Harvested Oct-22-03, (2) 30 inch rows by 25 ft.

Effect of Delayed Glyphosate Applications on Weed Control and Soybean Yield in Late Planted Soybean.
 Project Code: 03-9B-Alleys Location: Belleville Research Center

Weed Code	GLXMA	GLXMA	GLXMA	ABUTH	AMATA	IPOHE	CYPES	AMAPA	SETFA	XANST
Crop Code	Height	Maturity	Yield	Control	Control	Control	Control	Control	Control	Control
Rating Data Type	Inch	DAP	bu/A	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Unit	10-13-03		10-22-03	28 DAT	28 DAT	28 DAT	28 DAT	28 DAT	28 DAT	28 DAT
Rating Date	EOS									
Trt-Eval Interval										

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	GLXMA Height	GLXMA Maturity	GLXMA Yield	ABUTH Control	AMATA Control	IPOHE Control	CYPES Control	AMAPA Control	SETFA Control	XANST Control	
1	NONTREATED									29	121	16	0	0	0	0	0	0	0	0
2	ROUNDUP ULTRA MAX	3.7	SL	1.12	LB AE/A	38.7	FL OZ/A	0-4"W	B	29	114	44	72	95	88	90	100	100	100	100
2	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	FL OZ/A	2-4"RG-1	L											
3	ROUNDUP ULTRA MAX	3.7	SL	1.12	LB AE/A	38.7	FL OZ/A	4-8"W	D	27	114	41	77	100	99	96	100	100	100	100
3	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	FL OZ/A	2-4"RG-2	M											
4	ROUNDUP ULTRA MAX	3.7	SL	1.12	LB AE/A	38.7	FL OZ/A	8-12"W	E	28	114	39	94	100	98	95	100	100	100	100
4	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	FL OZ/A	2-4"RG-3	N											
5	ROUNDUP ULTRA MAX	3.7	SL	1.12	LB AE/A	38.7	FL OZ/A	12-16"W	F	28	114	35	91	100	90	93	100	100	100	100
5	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	FL OZ/A	2-4"RG-3	N											
6	ROUNDUP ULTRA MAX	3.7	SL	1.12	LB AE/A	38.7	FL OZ/A	16-20"W	G	28	114	33	92	100	92	95	100	100	100	100
6	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	FL OZ/A	2-4"RG-3	N											
7	ROUNDUP ULTRA MAX	3.7	SL	1.12	LB AE/A	38.7	FL OZ/A	20-24"W	H	29	114	33	90	100	90	98	100	100	100	100
7	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	FL OZ/A	2-4"RG-3	N											
8	ROUNDUP ULTRA MAX	3.7	SL	1.12	LB AE/A	38.7	FL OZ/A	24-28"W	I	29	114	31	90	100	95	95	100	100	100	100
8	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	FL OZ/A	2-4"RG-3	N											
9	ROUNDUP ULTRA MAX	3.7	SL	1.12	LB AE/A	38.7	FL OZ/A	28-30"W	J	29	114	25	90	98	97	95	100	100	100	100
9	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	FL OZ/A	2-4"RG-3	N											
10	ROUNDUP ULTRA MAX	3.7	SL	1.12	LB AE/A	38.7	FL OZ/A	32-36"W	K	29	114	21	90	100	90	95	100	100	100	100
10	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	FL OZ/A	2-4"RG-3	N											
11	HANDWEED									31	114	43	100	100	100	100	100	100	100	100
11	NO HERBICIDE																			
12	AUTHORITY	75	WG	0.25	LB A/A	5.3	OZ/A	PRE	A	31	114	47	100	100	100	100	100	100	100	98
12	FIRSTRATE	84	WG	0.031	LB A/A	0.59	OZ/A	PRE	A											
12	ROUNDUP ULTRA MAX	3.7	SL	0.56	LB AE/A	1.2	PT/A	2-4"W	C											
LSD (P=.05)										2.0	0.0	6.5	14.0	1.4	2.8	4.9	0.0	0.0	1.4	
Replicate F										2.712	0.000	4.043	3.396	1.000	0.560	4.235	0.000	0.000	1.000	
Replicate Prob(F)										0.0896	1.0000	0.0327	0.0518	0.3840	0.5790	0.0278	1.0000	1.0000	0.3840	
Treatment F										3.040	0.000	18.971	32.266	3565.818	807.046	273.051	0.000	0.000	3590.091	
Treatment Prob(F)										0.0137	1.0000	0.0001	0.0001	0.0001	0.0001	0.0001	1.0000	1.0000	0.0001	

Effect of Delayed Glyphosate Applications on Weed Control and Soybean
Yield in Late Planted Soybean.

Project Code: 03-9B-Alleys Location: Belleville Research Center

Trial Comments

1. Protocol: SIU - RFK.
2. Ratings:
3. DAT = days after treatment. EOS = end of season. DAP = days after planting.
4. Ratings at 28 days after the 0-4"W, 2-4"W, 4-8"W, 8-12"W, 12-16"W, 16-20"W, 20-24"W, 24-28"W, 28-32"W and 32-36"W application were on 8-12-03, 8-13-03, 8-22-03, 9-1-03, 9-7-03, 9-12-03, 9-16-03, 9-22-03, 9-26-03 and 10-3-03, respectively.