

## Waterhemp Control Programs in Soybean.

Project Code: 03-50W-S80 Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA  
 Trial Status: Final Updated: 10-28-03

## Objective:

Evaluate various herbicide strategies for control of common waterhemp.

Weed Code Common Name Scientific Name  
 1. AMATA waterhemp, common Amaranthus rudis Sauer

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: 27 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 200 LB/A

Soil Name: Weir % OM: 1.4 pH: 6.5 CEC: 12  
 Texture: Silt loam Fert. Level: P1: 77 LB/A, K: 198 LB/A

## APPLICATION DESCRIPTION

	A	B	C	D	E
Application Date:	6-9-03	7-10-03	7-19-03	7-16-03	7-28-03
Time of Day:	13:00	7:30	11:00	9:30	12:00
Application Method:	Spray	Spray	Spray	Spray	Spray
Application Timing:	PRE	4-6"W-1	8-10"W	4-6"W-2	2-4"RG
Applic. Placement:	BROSOI	BROFOL	BROFOL	BROFOL	BROFOL
Air Temp., Unit:	80 F	86 F	74 F	82 F	80 F
% Relative Humidity:	34	42	96	50	76
Wind Velocity, Unit:	0-5 MPH	5 MPH	0 MPH	0 MPH	3 MPH
Soil Moisture:	NORMAL	ABONOR	ABONOR	NORMAL	NORMAL

## CROP STAGE AT EACH APPLICATION

	A	B	C	D	E
Crop 1 Code, Stage:	GLXMA NA	GLXMA V2	GLXMA V3	GLXMA V3	GLXMA V5
Height, Unit:	NA NA	5 IN	6-8 IN	6 IN	16-20 IN

## WEED STAGE AT EACH APPLICATION

	A	B	C	D	E
Weed 1 Code:		AMATA	AMATA	AMATA	AMATA
Stage(leaves):		3-8	10+		5-6
Height(inches):		3-7	2-10		2-4
Density:		High	High		Low

## APPLICATION EQUIPMENT

	A	B	C	D	E
Appl. Equipment:	CO2 sprayer	CO2 sprayer	CO2 sprayer	CO2 sprayer	CO2 sprayer
Operating Pressure:	40 PSI	40 PSI	40 PSI	40 PSI	40 PSI
Nozzle Type:	Flat fan	Flat fan	Flat fan	Flat fan	Flat fan
Nozzle Size:	8003	8002	8002	8002	8002
Boom Length, Unit:	7.5 FT	7.5 FT	7.5 FT	7.5 FT	7.5 FT
Spray Volume, Unit:	20 GPA	10/20 GPA	10 GPA	10/20 GPA	10 GPA

## NOTES:

Spray volume is either 10 or 20 GPA, see treatment list.  
 Harvested Oct-20-03, (2) 30 inch rows by 24 ft.

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Weed Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	AMATA	AMATA	AMATA	AMATA
Crop Code	Yield	Injury	Injury	Injury	Injury	Control	Control	Control	Control
Rating Data Type	bu/A	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Unit	10-20-03	7-16-03	7-29-03	8-12-03	9-6-03	7-16-03	7-29-03	8-12-03	9-6-03
Rating Date	0 DA-D	13 DA-D	27 DA-D	52 DA-D	0 DA-D	13 DA-D	27 DA-D	52 DA-D	
Trt-Eval Interval									

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	Spray Volume	Volume Unit	GLXMA Yield	GLXMA Injury	GLXMA Injury	GLXMA Injury	GLXMA Injury	AMATA Control	AMATA Control	AMATA Control	AMATA Control
1	NONTREATED											22	0	0	0	0	0	0	0	0
2	TOUCHDOWN TOTAL	4.17	SC	0.75	LB AE/A	23	FL OZ/A	4-6"W-1	B	10	GAL/AC	45		0	0	0		98	91	90
2	AMS	100	DRY	2.0	% W/W	2	% W/W	4-6"W-1	B	10	GAL/AC									
3	TOUCHDOWN TOTAL	4.17	SC	0.75	LB AE/A	23	FL OZ/A	8-10"W	C	10	GAL/AC	42		0	0	0		99	99	98
3	AMS	100	DRY	2.0	% W/W	2	% W/W	8-10"W	C	10	GAL/AC									
4	AUTHORITY	75	WG	0.25	LB A/A	5.33	OZ/A	PRE	A	20	GAL/AC	24	0	0	0	0	99	98	96	96
5	AUTHORITY	75	WG	0.25	LB A/A	5.33	OZ/A	PRE	A	20	GAL/AC	48	0	0	0	0	99	99	99	98
5	TOUCHDOWN TOTAL	4.17	SC	0.75	LB AE/A	23	FL OZ/A	4-6"W-2	D	10	GAL/AC									
5	AMS	100	DRY	2.0	% W/W	2	% W/W	4-6"W-2	D	10	GAL/AC									
6	DUAL II MAGNUM	7.64	EC	1.43	LB A/A	1.5	PT/A	PRE	A	20	GAL/AC	52	0	0	0	0	98	99	99	99
6	TOUCHDOWN TOTAL	4.17	SC	0.75	LB AE/A	23	FL OZ/A	4-6"W-2	D	10	GAL/AC									
6	AMS	100	DRY	2.0	% W/W	2	% W/W	4-6"W-2	D	10	GAL/AC									
7	TOUCHDOWN TOTAL	4.17	SC	0.75	LB AE/A	23	FL OZ/A	4-6"W-1	B	10	GAL/AC	50		0	0	0		99	99	99
7	AMS	100	DRY	2.0	% W/W	2	% W/W	4-6"W-1	B	10	GAL/AC									
7	TOUCHDOWN TOTAL	4.17	SC	0.75	LB AE/A	23	FL OZ/A	2-4"RG	E	10	GAL/AC									
7	AMS	100	DRY	2.0	% W/W	2	% W/W	2-4"RG	E	10	GAL/AC									
8	PROWL	3.3	EC	1.24	LB A/A	3	PT/A	PRE	A	20	GAL/AC	47	0	0	0	0	57	99	99	99
8	TOUCHDOWN TOTAL	4.17	SC	0.75	LB AE/A	23	FL OZ/A	4-6"W-2	D	10	GAL/AC									
8	AMS	100	DRY	2.0	% W/W	2	% W/W	4-6"W-2	D	10	GAL/AC									
9	DOMAIN	60	WG	0.45	LB A/A	12	OZ/A	PRE	A	20	GAL/AC	45	0	0	0	0	60	99	99	98
9	TOUCHDOWN TOTAL	4.17	SC	0.75	LB AE/A	23	FL OZ/A	4-6"W-2	D	10	GAL/AC									
9	AMS	100	DRY	2.0	% W/W	2	% W/W	4-6"W-2	D	10	GAL/AC									
10	DUAL II MAGNUM	7.64	EC	1.43	LB A/A	1.5	PT/A	PRE	A	20	GAL/AC	47	0	0	0	0	99	99	99	99
10	AUTHORITY	75	WG	0.1875	LB A/A	4	OZ/A	PRE	A	20	GAL/AC									
10	TOUCHDOWN TOTAL	4.17	SC	0.75	LB AE/A	23	FL OZ/A	4-6"W-2	D	10	GAL/AC									
10	AMS	100	DRY	2.0	% W/W	2	% W/W	4-6"W-2	D	10	GAL/AC									
11	DUAL II MAGNUM	7.64	EC	1.43	LB A/A	1.5	PT/A	PRE	A	20	GAL/AC	51	0	0	0	0	99	99	99	99
11	CANOPY XL	56.3	WG			6	OZ/A	PRE	A											
11	->CLASSIC	25	WG	0.0352	LB A/A			PRE	A	20	GAL/AC									
11	->AUTHORITY	75	WG	0.176	LB A/A			PRE	A	20	GAL/AC									
11	TOUCHDOWN TOTAL	4.17	SC	0.75	LB AE/A	23	FL OZ/A	4-6"W-2	D	10	GAL/AC									
11	AMS	100	DRY	2.0	% W/W	2	% W/W	4-6"W-2	D	10	GAL/AC									

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	Spray Volume	Volume Unit	GLXMA Yield 10-20-03 bu/A	GLXMA Injury 7-16-03 Percent	GLXMA Injury 7-29-03 Percent	GLXMA Injury 8-12-03 Percent	GLXMA Injury 9-6-03 Percent	AMATA Control 7-16-03 Percent	AMATA Control 7-29-03 Percent	AMATA Control 8-12-03 Percent	AMATA Control 9-6-03 Percent
12	BOUNDARY	7.8	EC	1.22	LB A/A	20	FL OZ/A	PRE	A	20	GAL/AC	49	0	0	0	0	99	99	99	99
12	TOUCHDOWN TOTAL	4.17	SC	0.75	LB AE/A	23	FL OZ/A	4-6"W-2	D	10	GAL/AC									
12	AMS	100	DRY	2.0	% W/W	2	% W/W	4-6"W-2	D	10	GAL/AC									
13	BOUNDARY	7.8	EC	1.46	LB A/A	24	FL OZ/A	PRE	A	20	GAL/AC	47	0	0	0	0	99	99	99	99
13	TOUCHDOWN TOTAL	4.17	SC	0.75	LB AE/A	23	FL OZ/A	4-6"W-2	D	10	GAL/AC									
13	AMS	100	DRY	2.0	% W/W	2	% W/W	4-6"W-2	D	10	GAL/AC									
14	BOUNDARY	7.8	EC	1.22	LB A/A	20	FL OZ/A	PRE	A	20	GAL/AC	49	0	0	0	0	99	99	99	99
14	FLEXSTAR	1.88	EC	0.294	LB A/A	20	FL OZ/A	4-6"W-2	D	20	GAL/AC									
14	FUSION	2.56	EC	0.2078	LB A/A	10.4	FL OZ/A	4-6"W-2	D	20	GAL/AC									
14	PRIME OIL COC	100	LIQ	1.0	% V/V	1	% V/V	4-6"W-2	D	20	GAL/AC									
14	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	4-6"W-2	D	20	GAL/AC									
15	FLEXSTAR	1.88	EC	0.294	LB A/A	20	FL OZ/A	4-6"W-1	B	20	GAL/AC	34		0	0	0		99	99	99
15	PRIME OIL COC	100	LIQ	1.0	% V/V	1	% V/V	4-6"W-1	B	20	GAL/AC									
15	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	4-6"W-1	B	20	GAL/AC									
16	FLEXSTAR	1.88	EC	0.176	LB A/A	12	FL OZ/A	4-6"W-1	B	10	GAL/AC	44		0	0	0		98	92	83
16	TOUCHDOWN TOTAL	4.17	SC	0.75	LB AE/A	23	FL OZ/A	4-6"W-1	B	10	GAL/AC									
16	AMS	100	DRY	2.0	% W/W	2	% W/W	4-6"W-1	B	10	GAL/AC									
LSD (P=.05)												7.0	0.0	0.0	0.0	0.0	7.5	1.7	3.4	5.5
Replicate F												3.592	0.000	0.000	0.000	0.000	2.154	0.743	0.312	0.091
Replicate Prob(F)												0.0399	1.0000	1.0000	1.0000	1.0000	0.1421	0.4842	0.7340	0.9137
Treatment F												13.482	0.000	0.000	0.000	0.000	154.544	1761.751	431.534	164.342
Treatment Prob(F)												0.0001	1.0000	1.0000	1.0000	1.0000	0.0001	0.0001	0.0001	0.0001

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Trial Comments

1. Protocol: Syngenta.
2. Ratings: CI and WC prior to POST; CI and WC 14, 28 and 56 DAT.
3. Yield and photos if possible.
4. 0 DA-D = 0 days prior to 4-6"W-2 application and 3 days prior 8-10"W application.
5. Ratings on 7-29-03 were 19, 10 and 13 days after 4-6"W-1, 8-10"W and 4-6"W-2 applications, respectively.  
Ratings on 8-12-09 were 33, 24 and 21 days after 4-6"W-1, 8-10"W and 4-6"W-2 applications, respectively.  
Ratings on 9-6-03 were 58, 49 and 46 days after 4-6"W-1, 8-10"W and 4-6"W-2 applications, respectively.