

Evaluation of Herbicide Efficacy on a Waterhemp Population.

Project Code: 03-Pierron-N120 Location: Pierron, IL

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Pierron IL 62273 USA
 Trial Status: Final Updated: 9-23-03

Objective:

Evaluate the efficacy of individual herbicide active ingredients on a population of waterhemp suspected to be resistant to PPO inhibiting herbicides.

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

Crop 1:	GLXMA soybean	Variety:	P94B23 RR
Planting Method:	Seeded	Planting Date:	6-22-03
Rate:	75 lb/A	Depth:	1.0 IN
Row Spacing:	30 IN		

Plot Width, Unit:	10 FT	Plot Length, Unit:	26 FT	Reps:	4
Tillage Type:	Reduced-Till	Study Design:	Randomized complete block		
Previous Crop, Year:	GLXMA, 2002				

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

APPLICATION DESCRIPTION

	A	B
Application Date:	6-10-03	7-15-03
Time of Day:	15:00	11:00
Application Method:	Spray	Spray
Application Timing:	PRE	4-6"W
Applic. Placement:	BROSOI	BROFOL
Air Temp., Unit:	78 F	86 F
% Relative Humidity:	88	68
Wind Velocity, Unit:	5 MPH	5 MPH
Soil Moisture:	ABONOR	NORMAL

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	GLXMA NA	GLXMA V3
Height, Unit:	NA NA	6 IN

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code:		AMATA
Stage(leaves):		3-10
Height(inches):		1-6
Density:		Medium

APPLICATION EQUIPMENT

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

NOTES:

Not harvested.

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Crop Code									GLXMA	GLXMA		
Rating Data Type									Injury	Injury	Control	Control
Rating Unit									Percent	Percent	Percent	Percent
Rating Date									7-22-03	7-29-03	7-22-03	7-29-03
Trt-Eval Interval									7 DA-B	14 DA-B	7 DA-B	14 DA-B
											28 DA-B	56 DA-B

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code						
1	NONTREATED									0	0	0	0	0	0
2	VALOR	51	WG	0.078	LB A/A	2.45	OZ/A	PRE	A	0	0	3	3	13	26
3	AUTHORITY	75	WG	0.25	LB A/A	5.33	OZ/A	PRE	A	0	0	95	87	61	51
4	AATREX	90	WG	1.0	LB A/A	1.11	LB/A	PRE	A	0	0	94	81	58	34
5	SENCOR	75	WG	0.56	LB A/A	12	OZ/A	PRE	A	0	0	93	87	71	63
6	VALOR	51	WG	0.078	LB A/A	2.45	OZ/A	4-6"W	B	85	85	68	68	56	33
6	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	4-6"W	B						
7	AUTHORITY	75	WG	0.25	LB A/A	5.33	OZ/A	4-6"W	B	15	18	28	28	26	11
7	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	4-6"W	B						
8	AATREX	90	WG	1.0	LB A/A	1.11	LB/A	4-6"W	B	99	99	38	35	36	20
8	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	4-6"W	B						
9	SENCOR	75	WG	0.56	LB A/A	12	OZ/A	4-6"W	B	99	97	85	68	56	30
9	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	4-6"W	B						
10	PHOENIX	2	EC	0.195	LB A/A	12.5	OZ/A	4-6"W	B	10	3	20	25	25	20
10	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	4-6"W	B						
10	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	4-6"W	B						
11	PHOENIX	2	EC	0.39	LB A/A	25	OZ/A	4-6"W	B	13	16	28	30	40	29
11	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	4-6"W	B						
11	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	4-6"W	B						
12	ULTRA BLAZER	2	SL	0.375	LB A/A	1.5	PT/A	4-6"W	B	8	5	13	20	24	34
12	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	4-6"W	B						
12	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	4-6"W	B						
13	ULTRA BLAZER	2	SL	0.75	LB A/A	3	PT/A	4-6"W	B	15	15	28	33	34	33
13	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	4-6"W	B						
13	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	4-6"W	B						
14	FLEXSTAR	1.88	EC	0.375	LB A/A	1.6	PT/A	4-6"W	B	6	1	20	25	39	40
14	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	4-6"W	B						
14	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	4-6"W	B						
15	FLEXSTAR	1.88	EC	0.75	LB A/A	3.2	PT/A	4-6"W	B	9	4	50	45	44	54
15	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	4-6"W	B						
15	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	4-6"W	B						

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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code						
16	AIM	40	WG	0.025	LB A/A	1	OZ/A	4-6"W	B	13	8	10	10	10	1
16	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	4-6"W	B						
16	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	4-6"W	B						
17	RESOURCE	0.86	EC	0.081	LB A/A	12	OZ/A	4-6"W	B	4	3	11	13	26	16
17	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	4-6"W	B						
17	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	4-6"W	B						
18	GRAMOXONE MAX	3	SL	0.75	LB A/A	2	PT/A	4-6"W	B	99	99	99	99	96	85
18	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	4-6"W	B						
19	RAPTOR	1	AS	0.039	LB A/A	5	OZ/A	4-6"W	B	1	0	13	19	13	13
19	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	4-6"W	B						
19	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	4-6"W	B						
20	ROUNDUP ULTRA MAX	3.7	SL	0.375	LB AE/A	13	OZ/A	4-6"W	B	0	0	94	97	97	99
20	AMS	100	DRY	2.0	% W/W	2	%W/W	4-6"W	B						
21	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A	4-6"W	B	0	0	99	99	99	99
21	AMS	100	DRY	2.0	% W/W	2	%W/W	4-6"W	B						
22	ROUNDUP ULTRA MAX	3.7	SL	1.13	LB AE/A	39	OZ/A	4-6"W	B	0	0	99	99	99	99
22	AMS	100	DRY	2.0	% W/W	2	%W/W	4-6"W	B						
23	TOUCHDOWN	3	SL	0.75	LB AE/A	2	PT/A	4-6"W	B	0	0	99	99	99	99
23	AMS	100	DRY	2.0	% W/W	2	%W/W	4-6"W	B						
24	LIBERTY	1.67	EC	0.42	LB A/A	32.2	OZ/A	4-6"W	B	99	99	92	88	53	30
24	AMS	100	DRY	2.0	% W/W	2	%W/W	4-6"W	B						
LSD (P=.05)										3.7	9.0	9.1	13.1	22.8	24.7
Replicate F										3.808	5.162	3.998	2.777	3.732	6.187
Replicate Prob(F)										0.0138	0.0028	0.0110	0.0477	0.0151	0.0009
Treatment F										858.907	147.445	146.162	60.205	14.944	13.355
Treatment Prob(F)										0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

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Trial Comments

1. Protocol: SIU (BGY).
2. Ratings: CI and WC 1, 2, 4 and 8 WA postemergence application.
3. Blanket EPOST application of Select + COC at 6 oz/A + 1 %v/v, applied at 2-4 inch grass, to all plots including the nontreated.
4. DA-B = days after 4-6"W application. 7 DA-B was also 42 days after the PRE application.