

Control of PPO-Resistant Waterhemp in Liberty Link Soybean.

Project Code: 07-PPO-waterhemp Location: Ferrin, IL
 Investigator: Bryan Young

Investigator: Bryan Young, Associate Professor, Southern Illinois University

City State Zip Country: Ferrin IL 62231 USA
 Trial Status: Final Updated: 1-25-08

Objective:
 To evaluate control of PPO-resistant waterhemp in Liberty Link soybeans.

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

Crop 1: GLXMA soybean Variety: SG3578NLL
 Planting Method: Seeded Planting Date: 5-13-07
 Rate: 168000 S/A Depth: 1.5 IN
 Row Spacing: 30 IN Seed Bed: tilled 2 wks prior
 Soil Moisture: moist

Plot Width, Unit: 10 FT Plot Length, Unit: 30 FT Reps: 3
 Tillage Type: Reduced-Till Study Design: Randomized complete block
 Previous Crop, Year: GLXMA, 2006

Soil Name: Cisne % OM: 1.7 pH: 6.2 CEC: 11
 Texture: silt loam Fert. Level: P1: 60 LB/A, K: 200 LB/A

APPLICATION DESCRIPTION

	A	B	C	D
Application Date:	5-13-07	6-5-07	6-5-07	6-30-07
Time of Day:	16:30	6:45	7:00	8:15
Application Method:	Spray	Spray	Spray	Spray
Application Timing:	PRE	1-3"W	2-4"W	2-4"W-IN
Applic. Placement:	BROSIO	BROFOL	BROFOL	BROFOL
Air Temp., Unit:	78 F	64 F	64 F	70 F
% Relative Humidity:	25	90	90	91
Wind Velocity, Unit:	6 MPH	1-5 MPH	1-5 MPH	0-1 MPH
Dew Presence (Y/N):	N	Y	Y	Y
Soil Temp., Unit:	80 F	67 F	67 F	72 F
Soil Moisture:	ABONOR	ABONOR	ABONOR	ABONOR
% Cloud Cover:	0	10	10	90

CROP STAGE AT EACH APPLICATION

	A	B	C	D
Crop 1 Code, Stage:	GLXMA NA	GLXMA V1-V2	GLXMA V1-V2	GLXMA V8-R1
Height, Unit:	NA IN	4-6 IN	4-6 IN	17-19 IN

WEED STAGE AT EACH APPLICATION

	A	B	C	D
Weed 1 Code:		AMATA	AMATA	AMATA
Stage(leaves):		4-12	4-12	15-20
Height(inches):		0.5-6	0.5-6	5-24
Density:		Medium	Medium	Medium

APPLICATION EQUIPMENT

	A	B	C	D
Appl. Equipment:	CO2 Sprayer	CO2 Sprayer	CO2 Sprayer	CO2 Sprayer
Operating Pressure:	35 PSI	35 PSI	35 PSI	35 PSI
Nozzle Type:	Flat Fan	Flat Fan	Flat Fan	Flat Fan
Nozzle Size:	XR 8002	XR 8002	XR 8002	XR 8002
Boom Length, Unit:	6.67 FT	6.67 FT	6.67 FT	6.67 FT
Spray Volume, Unit:	15 GPA	15 GPA	15 GPA	15 GPA

NOTES:

Control of PPO-Resistant Waterhemp in Liberty Link Soybean.

Project Code: 07-PPO-waterhemp Location: Ferrin, IL
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Weed Code	GLXMA	GLXMA	GLXMA	GLXMA	AMATA	AMATA	AMATA
Crop Code	Injury	Injury	Injury	Injury	Control	Control	Control
Rating Data Type	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Unit	6-5-07	6-12-07	6-19-07	7-10-07	6-5-07	6-19-07	7-10-07
Rating Date	23 DA-A	7 DA-B	14 DA-B	10 DA-D	23 DA-A	14 DA-B	10 DA-D
Trt-Eval Interval							

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code							
1	NONTREATED									0 a	0 a	0 a	0 a	0 e	0 e	0 f
2	PROWL H2O	3.8	CS	1.43	lb ai/a	3	pt/a	PRE	A	0 a	2 a	0 a	0 a	92 a	94 a	97 ab
2	SP102000017385	2.3	SL	0.395	lb ai/a	22	fl oz/a	2-4"W	C							
2	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	2-4"W	C							
2	SP102000017385	2.3	SL	0.395	lb ai/a	22	fl oz/a	2-4"W-IN	D							
2	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	2-4"W-IN	D							
3	CANOPY	75	WG	0.14	lb ai/a	3	oz/a	PRE	A	0 a	0 a	0 a	0 a	85 ab	91 ab	95 abc
3	SP102000017385	2.3	SL	0.395	lb ai/a	22	fl oz/a	2-4"W	C							
3	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	2-4"W	C							
3	SP102000017385	2.3	SL	0.395	lb ai/a	22	fl oz/a	2-4"W-IN	D							
3	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	2-4"W-IN	D							
4	PREFIX	5.28	EW	1.32	lb ai/a	2	pt/a	PRE	A	0 a	0 a	0 a	0 a	80 abc	84 bc	93 bcd
4	SP102000017385	2.3	SL	0.395	lb ai/a	22	fl oz/a	2-4"W	C							
4	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	2-4"W	C							
4	SP102000017385	2.3	SL	0.395	lb ai/a	22	fl oz/a	2-4"W-IN	D							
4	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	2-4"W-IN	D							
5	VALOR SX	51	WG	0.096	lb ai/a	3	oz/a	PRE	A	5 a	0 a	0 a	0 a	85 ab	91 ab	97 ab
5	SP102000017385	2.3	SL	0.395	lb ai/a	22	fl oz/a	2-4"W	C							
5	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	2-4"W	C							
5	SP102000017385	2.3	SL	0.395	lb ai/a	22	fl oz/a	2-4"W-IN	D							
5	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	2-4"W-IN	D							
6	VALOR XLT	40.3	WG	0.0756	lb ai/a	3	oz/a	PRE	A	2 a	2 a	0 a	0 a	76 bcd	86 b	95 a-d
6	->VALOR SX	51	WG	0.056	lb ai/a	1.76	oz/a	PRE	A							
6	->CLASSIC	25	WG	0.0194	lb ai/a	1.24	oz/a	PRE	A							
6	SP102000017385	2.3	SL	0.395	lb ai/a	22	fl oz/a	2-4"W	C							
6	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	2-4"W	C							
6	SP102000017385	2.3	SL	0.395	lb ai/a	22	fl oz/a	2-4"W-IN	D							
6	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	2-4"W-IN	D							
7	AUTHORITY FIRST	70	WG	0.175	lb ai/a	4	oz/a	PRE	A	0 a	0 a	0 a	0 a	67 d	89 ab	91 cd
7	SP102000017385	2.3	SL	0.395	lb ai/a	22	fl oz/a	2-4"W	C							
7	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	2-4"W	C							
7	SP102000017385	2.3	SL	0.395	lb ai/a	22	fl oz/a	2-4"W-IN	D							
7	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	2-4"W-IN	D							
8	AUTHORITY FIRST	70	WG	0.175	lb ai/a	4	oz/a	PRE	A	0 a	0 a	0 a	0 a	70 cd	85 bc	90 d
8	LIBERTY	1.67	EC	0.417	lb ai/a	32	fl oz/a	2-4"W	C							
8	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	2-4"W	C							
8	LIBERTY	1.67	EC	0.417	lb ai/a	32	fl oz/a	2-4"W-IN	D							
8	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	2-4"W-IN	D							
9	SENCOR	75	WG	0.28	lb ai/a	6	oz/a	PRE	A	0 a	0 a	0 a	0 a	89 a	95 a	99 a
9	SP102000017385	2.3	SL	0.395	lb ai/a	22	fl oz/a	2-4"W	C							
9	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	2-4"W	C							
9	SP102000017385	2.3	SL	0.395	lb ai/a	22	fl oz/a	2-4"W-IN	D							
9	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	2-4"W-IN	D							
10	SP102000017385	2.3	SL	0.395	lb ai/a	22	fl oz/a	1-3"W	B		0 a	0 a	0 a		68 d	80 e
10	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	1-3"W	B							
10	SP102000017385	2.3	SL	0.395	lb ai/a	22	fl oz/a	2-4"W	C							
10	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	2-4"W	C							
10	SP102000017385	2.3	SL	0.395	lb ai/a	22	fl oz/a	2-4"W-IN	D							
10	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	2-4"W-IN	D							
11	LIBERTY	1.67	EC	0.417	lb ai/a	32	fl oz/a	1-3"W	B		0 a	0 a	0 a		77 c	83 e
11	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	1-3"W	B							
11	LIBERTY	1.67	EC	0.417	lb ai/a	32	fl oz/a	2-4"W	C							
11	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	2-4"W	C							
11	LIBERTY	1.67	EC	0.417	lb ai/a	32	fl oz/a	2-4"W-IN	D							
11	N-PAK AMS	100	LIQ	2.5	% v/v	2.5	% v/v	2-4"W-IN	D							

LSD (P=.05)	5.1	2.1	0.0	0.0	12.4	8.3	5.3
Replicate F	1.730	0.476	0.000	0.000	0.425	1.180	3.664
Replicate Prob(F)	0.2089	0.6280	1.0000	1.0000	0.6609	0.3278	0.0441
Treatment F	1.000	0.857	0.000	0.000	46.010	91.511	249.667
Treatment Prob(F)	0.4726	0.5842	1.0000	1.0000	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Trial Comments

1. Protocol: Bayer.
2. DA-A = Days after PRE application. DA-B = Days after 1-3"W application.
DA-C = Days after 2-4"W application. DA-D = Days after 2-4"W-IN application.
Ratings at 7, 14 and 35 DA-B were also 7, 14 and 35 DA-C, respectively.
3. Not harvested.