

Evaluation of Soil and POST Herbicides for Common Waterhemp Control.

Trial ID: 15-DSO-SOIL_POST Location: De Soto, IL Trial Year: 2015
Investigator: Ronald F. Krausz

Trial Status: F one-year/final
Initiation Date: 5-28-15
Completion Date: 7-24-14

Trial Location

City: De Soto **Country:** USA
State/Prov.: Illinois IL
Postal Code: 62924

Objectives:

Evaluate the efficacy of a single herbicide for common waterhemp control.

Contacts

Study Director: Ronald F. Krausz **Title:** Researcher/Farm Manager
Organization: Belleville Research Center - Southern Illinois Univ Carbondale
Address: 2036 Charles Lane **Phone No.:** 618-566-4761
City+State/Prov: Belleville, IL **E-mail:** rkrausz@siu.edu
Postal Code: 62221
Country: USA

Crop Description

Crop 1: GLXMA Glycine max Soybean
Variety: HS44L42 **BBCH Scale:** BSOY
Description: LL
Planting Date: 5-28-15
Planting Rate, Unit: 140000 S/A **Planting Method:** SEEDED
Depth, Unit: 1 IN
Row Spacing, Unit: 30 IN

Pest Description

Pest 1 Type: W **Code:** AMATA *Amaranthus rudis* Sauer
Common Name: waterhemp, common
Description: glyphosate-resistant waterhemp

Pest 2 Type: W **Code:** AMBTR *Ambrosia trifida* L.
Common Name: ragweed, giant

Site and Design

Treated Plot Width: 6.67 FT **Total Plot Width:** 10 FT **Site Type:** FIELD
Treated Plot Length: 25 FT **Total Plot Length:** 25 FT **Experimental Unit:** 1 PLOT
Tillage Type: NOTILL no-till
Replications: 3 **Study Design:** RACOB L Randomized Complete Block (RCB)
Untreated Arrangement: INCLUDED single control randomized in each block

No.	Previous Crop	Year
1.	GLXMA	2014

Maintenance

No.	Maintenance Product Name
1.	N 0 LB/A, P2O5 0 LB/A, K2O 0 LB/A

Soil Description

Description Name: DSO_west_2011_-_corn_in_2012
% Sand: 15.4 **% OM:** 2.15 **Texture:** SIL silt loam
% Silt: 64.7 **pH:** 6.9 **Soil Name:** Okaw
% Clay: 19.9 **CEC:** 12.4

Additional Measured Elements

Element	Quantity	Unit
P1	94	lb/A
K	468	lb/A

Moisture and Weather Conditions

Overall Moisture Conditions: ABONOR
Closest Weather Station: SOUTHERN IL AIRPORT (93810) **Distance, Unit:** 1.5 MI

Evaluation of Soil and POST Herbicides for Common Waterhemp Control.

Trial ID: 15-DSO-SOIL_POST Location: De Soto, IL Trial Year: 2015
Investigator: Ronald F. Krausz

No.	Date	Amount	Unit	Type	Type Description	Interval	Unit	Min Temp	Max Temp	Temp Unit
1.	4-1-15					7	DAY	33	76	F
2.	4-2-15	2.72	IN	RAIN	rain	2	DAY			
3.	4-6-15	1.65	IN	RAIN	rain	4	DAY			
4.	4-8-15					7	DAY	43	78	F
5.	4-13-15	0.15	IN	RAIN	rain	4	DAY			
6.	4-15-15					7	DAY	42	79	F
7.	4-19-15	0.89	IN	RAIN	rain	3	DAY			
8.	4-22-15					7	DAY	36	77	F
9.	4-25-15	0.26	IN	RAIN	rain	1	DAY			
10.	4-29-15					7	DAY	36	84	F
11.	5-6-15					7	DAY	49	85	F
12.	5-7-15	1.59	IN	RAIN	rain	5	DAY			
13.	5-13-15					7	DAY	45	83	F
14.	5-14-15	0.49	IN	RAIN	rain	5	DAY			
15.	5-20-15					7	DAY	44	85	F
16.	5-20-15	0.46	IN	RAIN	rain	1	DAY			
17.	5-24-15	0.46	IN	RAIN	rain	1	DAY			
18.	5-25-15	0.05	IN	RAIN	rain	1	DAY			
19.	5-27-15					7	DAY	55	84	F
20.	5-27-15	0.13	IN	RAIN	rain	1	DAY			
21.	5-29-15	0.07	IN	RAIN	rain	1	DAY			
22.	5-30-15	0.62	IN	RAIN	rain	1	DAY			
23.	6-3-15					7	DAY	53	89	F
24.	6-5-15	0.1	IN	RAIN	rain	1	DAY			
25.	6-8-15	1.13	IN	RAIN	rain	1	DAY			
26.	6-10-15					7	DAY	64	91	F
27.	6-13-15	0.39	IN	RAIN	rain	2	DAY			
28.	6-16-15	1.78	IN	RAIN	rain	2	DAY			
29.	6-17-15					7	DAY	71	91	F
30.	6-19-15	3.17	IN	RAIN	rain	1	DAY			
31.	6-24-15					7	DAY	61	91	F
32.	6-25-15	0.18	IN	RAIN	rain	2	DAY			
33.	6-28-15	0.15	IN	RAIN	rain	1	DAY			
34.	7-1-15					7	DAY	65	85	F
35.	7-1-15	0.49	IN	RAIN	rain	1	DAY			
36.	7-2-15	0.86	IN	RAIN	rain	1	DAY			
37.	7-7-15	1.6	IN	RAIN	rain	1	DAY			
38.	7-8-15					7	DAY	64	93	F
39.	7-8-15	0.54	IN	RAIN	rain	1	DAY			
40.	7-9-15	0.27	IN	RAIN	rain	1	DAY			
41.	7-10-15	0.49	IN	RAIN	rain	1	DAY			
42.	7-15-15					7	DAY	68	92	F
43.	7-19-15	0.38	IN	RAIN	rain	1	DAY			
44.	7-20-15	0.25	IN	RAIN	rain	1	DAY			
45.	7-22-15					7	DAY	64	85	F

Evaluation of Soil and POST Herbicides for Common Waterhemp Control.

Trial ID: 15-DSO-SOIL_POST Location: De Soto, IL Trial Year: 2015
Investigator: Ronald F. Krausz

Application Description

	A	B
Application Date:	5-29-15	6-18-15
Appl. Start Time:	9:00	8:15
Appl. Stop Time:	9:30	8:25
Application Method:	Spray	Spray
Application Timing:	PRE	3-4"W
Application Placement:	BROSOI	BROFOL
Applied By:	EJM	EJM
Air Temperature, Unit:	80 F	80 F
% Relative Humidity:	73	85
Wind Velocity, Unit:	3 MPH	1 MPH
Wind Direction:	S	W
Dew Presence (Y/N):	N	Y
Soil Temperature, Unit:	68 F	80 F
Soil Moisture:	NORMAL	ABONOR
% Cloud Cover:	75	100
Next Moisture Occurred On:	5-29-15	6-19-15
Time to Next Moisture, Unit:	12 HR	1 DAY

Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale:	GLXMA	GLXMA
Stage Scale Used:	DESC	DESC
Stage Majority, Percent:	NA	V2
Stage Minimum, Percent:		V1
Stage Maximum, Percent:		V3
Height, Unit:		6 IN
Height Minimum, Maximum:		5 7

Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale:	AMATA W	AMATA W
Stage Majority, Percent:	3	6
Stage Minimum, Percent:	2	1
Stage Maximum, Percent:	4	8
Height, Unit:	0.25 IN	3.5 IN
Height Minimum, Maximum:	0.1 0.5	0.1 5
Density, Unit:	50 FT2	50 FT2
Pest 2 Code, Type, Scale:	AMBTR W	AMBTR W
Stage Majority, Percent:	NA	2
Stage Minimum, Percent:		40
Stage Maximum, Percent:		12
Height, Unit:		8 IN
Height Minimum, Maximum:		2 14
Density, Unit:		3 FT2

Application Equipment

	A	B
Appl. Equipment:	CO2 sprayer	CO2 sprayer
Equipment Type:	BACSPR	BACSPR
Operation Pressure, Unit:	30 PSI	30 PSI
Nozzle Type:	XR	XR
Nozzle Size:	8002	8002
Boom Length, Unit:	6.67 FT	6.67 FT
Incorporation Equip.:	NA	NA
Spray Volume, Unit:	15 GPA	15 GPA

Evaluation of Soil and POST Herbicides for Common Waterhemp Control.

Trial ID: 15-DSO-SOIL_POST Location: De Soto, IL Trial Year: 2015
 Investigator: Ronald F. Krausz

Pest Code							GLXMA	GLXMA	AMATA	AMATA	AMBTR	
Crop Code							Injury	Injury	Control	Control	Control	
Rating Date							Percent	Percent	Percent	Percent	Percent	
Rating Type							14 DAT	28 DAT	14 DAT	28 DAT	14 DAT	
Rating Unit												
Rating Timing												
Trt-Eval Interval												
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Other Rate	Other Rate	Growth Unit	Appl Stage	Code			
1	NONTREATED									0	0	0
2	ANTHEM	2.15	SE	0.134 lb ai/a	8 fl oz/a		PRE	A		0 c	0 a	99 a
3	DUAL MAGNUM	7.62	EC	1.27 lb ai/a	1.33 pt/a		PRE	A		3 c	2 a	98 a
4	WARRANT	3	CS	1.13 lb ai/a	3 pt/a		PRE	A		0 c	0 a	94 a
5	PROWL H2O	3.8	CS	1.19 lb ai/a	2.5 pt/a		PRE	A		0 c	0 a	50 c
6	ZIDUA	85	WG	0.133 lb ai/a	2.5 oz/a		PRE	A		0 c	0 a	98 a
7	SHARPEN	2.85	SC	0.0223 lb ai/a	1 fl oz/a		PRE	A		0 c	0 a	83 b
8	SPARTAN 4F	4	SC	0.25 lb ai/a	8 fl oz/a		PRE	A		0 c	0 a	98 a
9	SPARTAN 4F	4	SC	0.313 lb ai/a	10 fl oz/a		PRE	A		0 c	0 a	99 a
10	SPARTAN 4F	4	SC	0.375 lb ai/a	12 fl oz/a		PRE	A		22 a	0 a	99 a
11	VALOR SX	51	WG	0.063 lb ai/a	2 oz/a		PRE	A		0 c	0 a	96 a
12	VALOR SX	51	WG	0.08 lb ai/a	2.5 oz/a		PRE	A		3 c	0 a	97 a
13	VALOR SX	51	WG	0.096 lb ai/a	3 oz/a		PRE	A		0 c	2 a	95 a
14	COBRA	2	EC	0.188 lb ai/a	12 fl oz/a		3-4"W	B		27 a	0 a	52 c
	COC (PRIME OIL)	100	SL	1 % v/v	1 % v/v		3-4"W	B				35 e
	N-PAK AMS	100	SL	5 % v/v	5 % v/v		3-4"W	B				99 a
15	FLEXSTAR	1.88	EC	0.353 lb ai/a	24 fl oz/a		3-4"W	B		12 b	0 a	45 c
	COC (PRIME OIL)	100	SL	1 % v/v	1 % v/v		3-4"W	B				52 d
	N-PAK AMS	100	SL	5 % v/v	5 % v/v		3-4"W	B				96 a
16	CADET	0.91	EC	0.0064 lb ai/a	0.9 fl oz/a		3-4"W	B		3 c	0 a	0 e
	COC (PRIME OIL)	100	SL	1 % v/v	1 % v/v		3-4"W	B				0 g
	N-PAK AMS	100	SL	5 % v/v	5 % v/v		3-4"W	B				28 b
17	RESOURCE	0.86	EC	0.054 lb ai/a	8 fl oz/a		3-4"W	B		12 b	0 a	20 d
	COC (PRIME OIL)	100	SL	1 % v/v	1 % v/v		3-4"W	B				0 g
	N-PAK AMS	100	SL	5 % v/v	5 % v/v		3-4"W	B				42 b
18	LIBERTY 280	2.34	EC	0.58 lb ai/a	31.7 fl oz/a		3-4"W	B		12 b	0 a	0 e
	N-PAK AMS	100	SL	5 % v/v	5 % v/v		3-4"W	B				0 g
												97 a
LSD P=.05							5.8	1.6	10.6	14.6	25.4	
Standard Deviation							3.5	1.0	6.4	8.8	15.3	
CV							63.68	488.94	8.86	14.8	60.18	
Replicate F							1.724	2.133	1.877	1.292	0.735	
Replicate Prob(F)							0.1945	0.1350	0.1695	0.2886	0.4874	
Treatment F							17.023	1.000	98.148	58.424	18.097	
Treatment Prob(F)							0.0001	0.4807	0.0001	0.0001	0.0001	

Means followed by same letter do not significantly differ (P=.05, LSD)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Evaluation of Soil and POST Herbicides for Common Waterhemp Control.

Trial ID: 15-DSO-SOIL_POST Location: De Soto, IL Trial Year: 2015
Investigator: Ronald F. Krausz

Trial Comments

1. Protocol: SIU.
2. Ratings:
CI 14, 28, and 56 DA-A; and CI 14, 28, and 56 DA-B;
WC 14, 28, and 56 DA-A; WC 14, 28, and 56 DA-B
3. No yield.
4. Photos at 28 and 56 DA-A.
5. Blanket burndown (start clean) was Gramoxone (3 pt/A) on 5-15-15 and again 5-29-15.
6. Rainfall following application A (PRE) was 0.69" over two days beginning 12 hours later.
Rainfall following application B (3-4"W) was 3.7" the following day beginning 24 hours later.
7. DAT = 'days after treatment' ratings dates.
Ratings at 14 and 28 days after application A (PRE) were on 6-12-15 and 6-26-15, respectively.
Ratings at 14 and 28 days after application B (3-4"W) were on 7-2-15 and 7-16-15, respectively.
8. 56 DAT ratings were not possible due to the amount of AMBTR present in the trial area.
Trial was terminated following the 7-16-15 rating.
9. Photos are available from 6-26-15, 7-2-15, and 7-16-15.
10. Not harvested.