

Comparison of Corn Soil-Applied Herbicides for Control of Common Waterhemp.

01-West-52-60

OBJECTIVE: Determine the effectiveness of various soil-applied herbicides used in corn for length of residual control of common waterhemp.

SUMMARY: No corn injury was observed in this study. All herbicide treatments except Prowl controlled at least 94% of waterhemp at 28 days after treatment (DAT). However, by 56 DAT, waterhemp control was less than 90% from any herbicide treatment. Atrazine at 1.1 or 2.2 lb/A, Princep at 2.2 lb/A, Balance Pro at 3 oz/A, Callisto at 6 oz/A and Dual II Magnum at 1.33 pt/A controlled 82 to 88% of common waterhemp 56 DAT. Waterhemp control was only 59 to 66% from Princep at 1.1 lb/A, Balance Pro at 1.5 oz/A, and Callisto at 3 oz/A.

Corn yield ranged from 170 bu/A in nontreated plots to 212 bu/A in handweeded plots. There was no significant difference in corn yield between handweeded and herbicide treated plots with the exception of Prowl and Dual II Magnum treated plots, which yielded 17 and 19 bu/A less than the handweeded, respectively.

HERBICIDES

AATREX 90 WG
BALANCE PRO 4 SC
BICEP II MAGNUM 5.5 L
CALLISTO 4 EC
DUAL II MAGNUM 7.64 EC
PRINCEP 90 WG
PROWL 3.3 EC

WEEDS

foxtail, giant
waterhemp, common

CROP

corn, field

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PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

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Project Code: 01-West-52-60 Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA
Trial Status: Final Initiation Date: 4-18-01

Objective:

Determine the effectiveness of various soil-applied herbicides used in corn for length of residual control of common waterhemp.

Weed Code	Common Name	Scientific Name
1.	SETFA foxtail, giant	Setaria faberi Herrm.
2.	AMATA waterhemp, common	Amaranthus rudis Sauer

Crop 1:	ZEAMX corn, field	Variety:	P33G28 LL
Planting Method:	SEEDED	Planting Date:	5-9-01
Rate:	28000 S/A	Depth:	1.5 IN
Row Spacing:	30 IN		

Plot Width, Unit:	10 FT	Plot Length, Unit:	25 FT	Reps:	4
Tillage Type:	Reduced-Till	Study Design:	Randomized complete block		
Previous Crop, Year:	GLXMA, 2000				
Field Prep./Maintenance:	N 150 LB/A, P205 0 LB/A, K20 150 LB/A				

Soil Name:	Weir	% OM:	1.9	pH:	7.1	CEC:	12
Texture:	Silt loam	Fert. Level:	P1: 97 LB/A, K: 282 LB/A				

APPLICATION DESCRIPTION

	A
Application Date:	5-11-01
Time of Day:	10:30
Application Method:	SPRAY
Application Timing:	PRE
Applic. Placement:	BROSOI
Air Temp., Unit:	75 F
% Relative Humidity:	67
Wind Velocity, Unit:	1 MPH
Soil Moisture:	BELNOR

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	ZEAMX NA
Height, Unit:	NA NA

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code:	SETFA
Weed 2 Code:	AMATA

APPLICATION EQUIPMENT

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

NOTES: HARVESTED 9-28-01, 2 ROWS X 22 FT.

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Weed Code	ZEAMX	ZEAMX	ZEAMX	ZEAMX	SETFA	SETFA	SETFA	AMATA	AMATA	AMATA
Crop Code	Yield	Injury	Injury	Injury	Control	Control	Control	Control	Control	Control
Rating Data Type	bu/A	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Unit	9-28-01	6-8-01	7-6-01	8-3-01	6-8-01	7-6-01	8-3-01	6-8-01	7-6-01	8-3-01
Rating Date	28 DA-A	56 DA-A	84 DA-A	28 DA-A	56 DA-A	84 DA-A	28 DA-A	56 DA-A	84 DA-A	28 DA-A
Trt-Eval Interval										

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	Yield	Injury	Injury	Injury	Control	Control	Control	Control	Control	Control
1	AATREX	90	WG	1.0	LB A/A	1.11	LB/A	PRE	A	209	0	0	0	91	83	78	99	82	78
2	AATREX	90	WG	2.0	LB A/A	2.22	LB/A	PRE	A	210	0	0	0	94	88	82	99	88	82
3	PRINCEP	90	WG	1.0	LB A/A	1.11	LB/A	PRE	A	210	0	0	0	94	91	85	94	64	59
4	PRINCEP	90	WG	2.0	LB A/A	2.22	LB/A	PRE	A	210	0	0	0	97	91	89	96	82	79
5	BALANCE PRO	4	SC	0.047	LB A/A	1.5	OZ/A	PRE	A	203	0	0	0	96	91	88	96	59	54
6	BALANCE PRO	4	SC	0.094	LB A/A	3	OZ/A	PRE	A	196	0	0	0	99	92	88	99	84	81
7	CALLISTO	4	SC	0.094	LB A/A	3	OZ/A	PRE	A	209	0	0	0	48	78	73	98	66	60
8	CALLISTO	4	SC	0.188	LB A/A	6	OZ/A	PRE	A	207	0	0	0	18	84	78	99	88	83
9	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE	A	195	0	0	0	99	93	89	99	85	81
10	PROWL	3.3	EC	1.05	LB A/A	2.55	PT/A	PRE	A	193	0	0	0	94	91	87	45	20	10
11	NONTREATED									170	0	0	0	0	0	0	0	0	0
12	BICEP II MAGNUM	5.5	L	2.89	LB A/A	2.1	QT/A	PRE	A	212	0	0	0	99	99	99	99	99	99
12	HANDWEED																		
	LSD (P=.05)									17.0	0.0	0.0	0.0	8.2	4.6	6.2	4.7	8.6	8.6
	Replicate F									4.590	0.000	0.000	0.000	0.578	2.429	0.812	0.131	4.909	6.100
	Replicate Prob(F)									0.0086	1.0000	1.0000	1.0000	0.6334	0.0828	0.4963	0.9409	0.0063	0.0020
	Treatment F									4.178	0.000	0.000	0.000	153.426	277.949	142.579	367.407	98.289	103.674
	Treatment Prob(F)									0.0007	1.0000	1.0000	1.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

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Trial Comments

1. Protocol: SIU/BGY.
2. Blanket application of Accent + COC at 0.023 lbai/A + 1.0% v/v applied at 2 inch grass to all plots on 6-7-01.
3. DA-A = days after PRE application.