

Postemergence Waterhemp Control in Corn.

01-51W-S110

OBJECTIVE: Evaluate various postemergence corn herbicides for control of common waterhemp.

SUMMARY: None of the herbicides caused corn injury. Buctril, Hornet, and Spirit provided no control of common waterhemp. Clarity, Distinct, Callisto, and Roundup Ultra provided 95 to 100% control of common waterhemp. Common waterhemp control increased as the rate of either Weedar 64 or Clarity was increased. Clarity and Weedar 64 at 0.5 lb ai/A provided 98% and 90% common waterhemp control, respectively.

Corn grain yield ranged from 174 to 209 bu/A. Common waterhemp competition the entire growing season reduced yield by approximately 10%.

HERBICIDES

AATREX 90 WG
 AIM 40 WG
 BASIS GOLD 90 WG
 BUCTRIL 2 EC
 CALLISTO 4 SC
 CELEBRITY PLUS 70 WG
 CLARITY 4 EC
 DISTINCT 70 WG
 HORNET 68.5 WG
 NORTHSTAR 47.4 WG
 RESOURCE 0.86 EC
 ROUNDUP ULTRA 3 SL
 SPIRIT 57 WG
 WEEDAR 64 3.8 EC

WEEDS

waterhemp, common

CROP

corn, field

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PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Postemergence Waterhemp Control in Corn.

Project Code: 01-51W-S110 Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

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

Objective:

Evaluate various postemergence corn herbicides for control of common waterhemp.

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

Crop 1:	ZEAMX corn, field	Variety:	DK 626 RR
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:	27 FT	Reps:	3
Tillage Type:	Reduced-Till	Study Design:	Randomized complete block		
Previous Crop, Year:	ZEAMX, 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

APPLICATION DESCRIPTION		A
Application Date:	6-15-01	
Time of Day:	10:30	
Application Method:	Spray	
Application Timing:	4"W	
Applic. Placement:	BROFOL	
Air Temp., Unit:	75 F	
% Relative Humidity:	72	
Wind Velocity, Unit:	7-10 MPH	
Soil Moisture:	NORMAL	
% Cloud Cover:	90	

CROP STAGE AT EACH APPLICATION

CROP STAGE AT EACH APPLICATION		A
Crop 1 Code, Stage:	ZEAMX v6	
Height, Unit:	21-23 IN	

WEED STAGE AT EACH APPLICATION

WEED STAGE AT EACH APPLICATION		A
Weed 1 Code:	AMATA	
Stage(leaves):	3-10+	
Height(inches):	1-8	
Density:	High	

APPLICATION EQUIPMENT

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

NOTES: HARVESTED 10-1-01, 2 ROWS X 24 FT.

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Weed Code		ZEAMX				AMATA										
Crop Code		Yield	Injury	Injury	Injury	Control	Control	Control								
Rating Data Type		bu/A	Percent	Percent	Percent	Percent	Percent	Percent								
Rating Unit		10-1-01	6-29-01	7-13-01	8-10-01	6-29-01	7-13-01	8-10-01								
Rating Date		14 DA-A	28 DA-A	56 DA-A	14 DA-A	28 DA-A	56 DA-A									
Trt-Eval Interval																
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code							
1	NONTREATED									189	0	0	0	0	0	0
2	AIM	40	WG	0.008	LB A/A	0.32	OZ/A	4"W	A	194	0	0	0	58	50	50
2	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	4"W	A							
2	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	4"W	A							
3	AATREX	90	WG	1.0	LB A/A	1.1	LB/A	4"W	A	207	0	0	0	77	77	77
3	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	4"W	A							
4	BUCTRIL	2	EC	0.25	LB A/A	1	PT/A	4"W	A	199	0	0	0	0	0	0
5	RESOURCE	0.86	EC	0.027	LB A/A	4	OZ/A	4"W	A	198	0	0	0	33	33	33
5	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	4"W	A							
6	WEEDAR 64	3.8	EC	0.475	LB A/A	16	OZ/A	4"W	A	179	0	0	0	83	90	90
7	WEEDAR 64	3.8	EC	0.2375	LB A/A	8	OZ/A	4"W	A	188	0	0	0	50	58	58
8	WEEDAR 64	3.8	EC	0.1188	LB A/A	4	OZ/A	4"W	A	195	0	0	0	0	0	0
9	CLARITY	4	EC	0.5	LB A/A	16	OZ/A	4"W	A	181	0	0	0	95	98	98
9	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	4"W	A							
10	CLARITY	4	EC	0.25	LB A/A	8	OZ/A	4"W	A	194	0	0	0	77	78	78
10	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	4"W	A							
11	CLARITY	4	EC	0.125	LB A/A	4	OZ/A	4"W	A	192	0	0	0	75	67	67
11	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	4"W	A							
12	DISTINCT	70	WG	0.2625	LB A/A	6	OZ/A	4"W	A	198	0	0	0	80	88	88
12	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	4"W	A							
12	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	4"W	A							
13	DISTINCT	70	WG	0.175	LB A/A	4	OZ/A	4"W	A	190	0	0	0	80	90	90
13	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	4"W	A							
13	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	4"W	A							
14	BASIS GOLD	90	WG	0.7875	LB A/A	14	OZ/A	4"W	A	191	0	0	0	73	67	67
14	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	4"W	A							
14	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	4"W	A							
15	NORTHSTAR	47.4	WG	0.1484	LB A/A	5	OZ/A	4"W	A	191	0	0	0	58	58	58
15	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	4"W	A							
15	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	4"W	A							
16	CELEBRITY PLUS	70	WG	0.206	LB A/A	4.7	OZ/A	4"W	A	198	0	0	0	80	90	90
16	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	4"W	A							
16	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	4"W	A							
17	HORNET	68.5	WG	0.128	LB A/A	3	OZ/A	4"W	A	174	0	0	0	0	0	0
17	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	4"W	A							
17	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	4"W	A							
18	ROUNDUP ULTRA	3	SL	0.75	LB AE/A	2	PT/A	4"W	A	209	0	0	0	100	100	100
18	AMS	100	DRY	1.0	% W/W	1	%W/W	4"W	A							
19	CALLISTO	4	SC	0.094	LB A/A	3	OZ/A	4"W	A	201	0	0	0	90	95	95
19	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	4"W	A							
19	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	4"W	A							
20	SPIRIT	57	WG	0.0356	LB A/A	1	OZ/A	4"W	A	183	0	0	0	0	0	0
20	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	4"W	A							
20	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	4"W	A							
21	DISTINCT	70	WG	0.0875	LB A/A	2	OZ/A	4"W	A	190	0	0	0	80	87	87
21	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	4"W	A							
21	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	4"W	A							
LSD (P=.05)										16.4	0.0	0.0	0.0	14.4	15.1	15.1
Replicate F										8.334	0.000	0.000	0.000	2.457	0.474	0.474
Replicate Prob(F)										0.0009	1.0000	1.0000	1.0000	0.0985	0.6262	0.6262
Treatment F										2.252	0.000	0.000	0.000	50.106	49.907	49.907
Treatment Prob(F)										0.0143	1.0000	1.0000	1.0000	0.0001	0.0001	0.0001

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Trial Comments

1. Protocol: SIU - RFK/JMY.
2. Blanket application: Accent + Basagran + NIS at 0.66 oz/A + 1.5 pt/A + 0.25 %v/v applied at 2-4 inch grass to all plots including the nontreated on 6-5-01.
3. DA-A = days after 4"W application.