Control of Volunteer Horseradish in Corn.

02-17-E80

OBJECTIVE: Determine weed management strategies for control of volunteer horseradish using corn as a rotational crop.

SUMMARY: This study was conducted to evaluate postemergence herbicides for control of volunteer horseradish in corn. Horseradish control was greatest with Salvo applied at either 6 or 12 inch horseradish height, which resulted in corn yields that were not different from the handweeded control. Beacon provided greater control when applied to 6 inch horseradish compared to 12 inch horseradish, but yields were not different. Control of horseradish with Permit was better than with Beacon, but less than with 2,4-D. By 56 days after treatment some regrowth had occurred from horseradish rhizomes in plots treated with Salvo or Beacon but not with Permit.

HERBICIDES	WEEDS	CROP
BEACON 75 WG PERMIT 75 WG SALVO 5 EC	horseradish	corn, field

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PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Control of Volunteer Horseradish in Corn.

Project Code: 02-17-E80 Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA
Trial Status: Final **Updated:** 10-24-02

Objective:
Determine weed management strategies for control of voluteer horseradish using corn as a rotational crop.

Weed	Code	Common Name	Scientific Name
1.	ARWLA	horseradish	Armoracia rusticana Gaertn.,May.&Schreb.

Crop 1: ZEAMX corn, field **Variety:** Pioneer 33P69LL
Planting Method: Seeded **Planting Date:** 5-27-02
Rate: 28000 S/A **Depth:** 1.5 IN
Row Spacing: 30 IN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 30 FT **Reps:** 4
Tillage Type: Reduced-Till **Study Design:** Randomized complete block
Previous Crop, Year: GLXMA, 2001

Field Prep./Maintenance: N 150 LB/A, P2O5 50 LB/A, K2O 150 LB/A

Soil Name: Ebbert **% OM:** 1.6 **pH:** 6.1 **CEC:** 13
Texture: Silt loam **Fert. Level:** P1: 53 LB/A, K: 259 LB/A

APPLICATION DESCRIPTION

	A	B
Application Date:	6-24-02	7-1-02
Time of Day:	9:00	10:15
Application Method:	Spray	Spray
Application Timing:	6"HR	12"HR
Applic. Placement:	BROFOL	BROFOL
Air Temp., Unit:	80 F	92 F
% Relative Humidity:	78	36
Wind Velocity, Unit:	2 MPH	4 MPH
Soil Moisture:	NORMAL	BELNOR

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	ZEAMX V6-V7	ZEAMX V8-V10
Height, Unit:	20-24 IN	36-40 IN

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code:	ARWLA	ARWLA
Stage(leaves):	4-5	7-9
Height(inches):	6-8	10-12
Density:	Low	Low

APPLICATION EQUIPMENT

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

NOTES:
Harvested Oct-14-02, (2) 30 inch rows by 30 ft.

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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	ZEAMX Yield bu/A	ARWLA Control Percent 7 DAT	ARWLA Control Percent 14 DAT	ARWLA Control Percent 21 DAT	ARWLA Control Percent 28 DAT	ARWLA Control Percent 56 DAT	ARWLA Discolor Percent 7 DAT	ARWLA Discolor Percent 14 DAT	ARWLA Discolor Percent 21 DAT	ARWLA Discolor Percent 28 DAT	ARWLA Discolor Percent 56 DAT
	Rating Date									10-14-02										
1	SALVO	5	EC	0.5	LB AE/A	12.8	OZ/A	6"HR	A	160	73	90	97	95	84	73	88	96	94	81
2	SALVO	5	EC	0.5	LB AE/A	12.8	OZ/A	12"HR	B	166	54	70	85	89	78	45	58	75	78	65
3	BEACON	75	WG	0.036	LB A/A	0.77	OZ/A	6"HR	A	136	55	61	71	71	63	48	53	64	64	54
3	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	6"HR	A											
3	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	6"HR	A											
4	BEACON	75	WG	0.036	LB A/A	0.77	OZ/A	12"HR	B	144	45	53	56	53	45	40	44	46	43	38
4	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	12"HR	B											
4	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	12"HR	B											
5	PERMIT	75	WG	0.063	LB A/A	1.34	OZ/A	6"HR	A	151	69	83	90	93	85	63	79	84	88	80
5	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	6"HR	A											
5	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	6"HR	A											
6	PERMIT	75	WG	0.063	LB A/A	1.34	OZ/A	12"HR	B	133	46	56	60	54	51	40	48	53	46	44
6	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	12"HR	B											
6	28% UAN	100	LIQ	2.5	% V/V	2.5	%V/V	12"HR	B											
7	NONTREATED									121	0	0	0	0	0	0	0	0	0	0
8	HANDWEED									171	99	99	99	99	99	99	99	99	99	99
LSD (P=.05)										24.9	7.6	8.0	6.2	7.2	7.2	8.8	10.6	7.7	7.2	7.1
Replicate F										0.442	0.264	1.955	3.306	2.000	1.925	2.607	3.128	7.813	4.547	3.551
Replicate Prob(F)										0.7251	0.8508	0.1517	0.0401	0.1448	0.1565	0.0786	0.0474	0.0011	0.0132	0.0319
Treatment F										4.311	120.704	125.595	240.190	185.489	164.451	93.019	73.559	150.823	183.785	167.159
Treatment Prob(F)										0.0042	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

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Trial Comments

1. Protocol: SIU (MFR+SAW).
2. Blanket PRE application of Dual II Magnum at 1.27 lbai/A applied 10 ft wide to all plots including the handweed and the nontreated on 5-30-02.
3. Plant '1722' horseradish sets (6 inch pieces) 3 inch deep, every 2 ft, 3 rows per plot.
4. Discolor = discoloration of horseradish. DAT = days after 6"HR or 12"HR application. ARWLA = "volunteer" horseradish.
5. Rating dates:
   7, 14, 21, 28, and 56 days after 6"HR application was on 7-1-02, 7-8-02, 7-15-02, 7-22-02, and 8-19-02, respectively.
   7, 14, 21, 28, and 56 days after 12"HR application was on 7-8-02, 7-15-02, 7-22-02, 7-29-02, and 8-26-02, respectively.