

## Control of Volunteer Horseradish in Corn.

Project Code: 03-17-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:            11-4-03

**Objective:**

Determine weed management strategies for control of volunteer 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:	6-5-03
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:	ZEAMX, 2002				

Field Prep./Maintenance: N 150 LB/A, P205 50 LB/A, K20 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:	7-3-03	7-11-03
Time of Day:	6:30	7:00
Application Method:	Spray	Spray
Application Timing:	6"HR	12"HR
Applic. Placement:	BROFOL	BROFOL
Air Temp., Unit:	80 F	76 F
% Relative Humidity:	74	36
Wind Velocity, Unit:	0 MPH	0 MPH

**CROP STAGE AT EACH APPLICATION**

	A	B
Crop 1 Code, Stage:	ZEAMX V7-V9	ZEAMX V10-12
Height, Unit:	20 IN	30-34 IN

**WEED STAGE AT EACH APPLICATION**

	A	B
Weed 1 Code:	ARWLA	ARWLA
Stage(leaves):	3	3-4
Height(inches):	5-7	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:	11002	11002
Boom Length, Unit:	10 FT	10 FT
Spray Volume, Unit:	20 GPA	20 GPA

**NOTES:**

Harvested Oct-27-03, (2) 30 inch rows by 30 ft.

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									ARWLA	ARWLA	ARWLA	ARWLA	ARWLA	ARWLA	ARWLA	ARWLA	ARWLA	ARWLA	
									Control	Control	Control	Control	Control	Discolor	Discolor	Discolor	Discolor	Discolor	
									Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	
									7 DAT	14 DAT	21 DAT	28 DAT	56 DAT	7 DAT	14 DAT	21 DAT	28 DAT	56 DAT	
Trt	Treatment	Form	Form	Rate	Prod	Prod	Grow	Appl											
No.	Name	Conc	Type	Rate	Rate	Unit	Stg	Code											
1	SALVO	5	EC	0.5	12.8	LB AE/A	OZ/A	6"HR	A	45	55	74	76	76	36	41	59	70	69
2	SALVO	5	EC	0.5	12.8	LB AE/A	OZ/A	12"HR	B	43	74	88	94	95	33	70	84	90	95
3	BEACON	75	WG	0.036	0.77	LB A/A	OZ/A	6"HR	A	34	40	45	44	41	24	33	36	34	33
3	ACTIVATOR 90	100	LIQ	0.25	0.25	% V/V	%V/V	6"HR	A										
3	28% UAN	100	LIQ	2.5	2.5	% V/V	%V/V	6"HR	A										
4	BEACON	75	WG	0.036	0.77	LB A/A	OZ/A	12"HR	B	25	33	40	44	38	15	24	33	36	33
4	ACTIVATOR 90	100	LIQ	0.25	0.25	% V/V	%V/V	12"HR	B										
4	28% UAN	100	LIQ	2.5	2.5	% V/V	%V/V	12"HR	B										
5	PERMIT	75	WG	0.063	1.34	LB A/A	OZ/A	6"HR	A	43	49	61	75	80	36	43	54	69	69
5	ACTIVATOR 90	100	LIQ	0.25	0.25	% V/V	%V/V	6"HR	A										
5	28% UAN	100	LIQ	2.5	2.5	% V/V	%V/V	6"HR	A										
6	PERMIT	75	WG	0.063	1.34	LB A/A	OZ/A	12"HR	B	34	43	49	60	54	28	35	40	49	44
6	ACTIVATOR 90	100	LIQ	0.25	0.25	% V/V	%V/V	12"HR	B										
6	28% UAN	100	LIQ	2.5	2.5	% V/V	%V/V	12"HR	B										
7	NONTREATED									0	0	0	0	0	0	0	0	0	0
8	HANDWEED									100	100	100	100	100	100	100	100	100	100
LSD (P=.05)									4.9	6.7	8.2	9.5	9.2	8.0	4.9	7.5	11.7	11.1	
Replicate F									3.080	0.050	1.284	0.717	0.924	1.020	0.189	2.011	1.262	1.850	
Replicate Prob(F)									0.0496	0.9846	0.3058	0.5527	0.4464	0.4036	0.9026	0.1432	0.3128	0.1691	
Treatment F									283.640	167.029	124.115	99.551	116.464	117.441	330.811	150.552	67.665	82.259	
Treatment Prob(F)									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. Ratings: Horseradish emergence every 2 weeks until corn canopy closure; Horseradish injury 7, 14, and 28 DAT; corn yield; horseradish rhizome biomass following corn harvest, as fresh and dry weights of 10 roots per plot.
3. 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 6-6-03.
4. Plant '1722' horseradish sets (6 inch pieces) 3 inch deep, every 2 ft, 3 rows per plot.
5. Handweeded plots must be maintained weed-free (except horseradish) all season.
6. DAT = days after treatment.  
7 days after 6"HR and 12"HR application was on 7-10-03 and 7-18-03, respectively.  
14 days after 6"HR and 12"HR application was on 7-17-03 and 7-25-03, respectively.  
28 days after 6"HR and 12"HR application was on 7-31-03 and 8-8-03, respectively.  
56 days after 6"HR and 12"HR application was on 8-28-03 and 9-5-03, respectively.