

Pumpkin Winter Rye Weed Management Study.

Project Code: 04-17-W50 Location: Belleville, IL
 Investigator: Bryan Young

Investigator: Bryan Young, Associate Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA
 Trial Status: Final Updated: 11-24-04

Objective:

Evaluate crop response and weed control from herbicides with and without tillage and with or without a Wheeler winter rye covercrop in 'Appalachian' pumpkin.

Weed Code	Common Name	Scientific Name
1.	AMATA waterhemp, common	Amaranthus rudis Sauer
2.	XANST cocklebur, common	Xanthium strumarium L.

Crop 1:	CUUPE pumpkin	Variety:	Applachian
Planting Method:	Seeded	Planting Date:	6-16-04
Rate:	0.25 S/ROW-FT	Depth:	2.0 IN
Row Spacing:	48 IN		

Soil Moisture: ABOVE NORMAL

Plot Width, Unit: 4 FT Plot Length, Unit: 20 FT Reps: 3
 Tillage Type: See treatment list Study Design: Split-plot
 Previous Crop, Year: CUUPE, 2003

Field Prep./Maintenance: N 100 LB/A, P205 50 LB/A, K20 150 LB/A
 Split application of N as 50 lb N/A prior to planting and 4 weeks after planting.

Soil Name: Ebbert	% OM: 2.1	pH: 6.1	CEC: 11
Texture: Silt loam	Fert. Level: P1: 66 LB/A, K: 437 LB/A		

APPLICATION DESCRIPTION

	A
Application Date:	6-16-04
Time of Day:	16:00
Application Method:	Spray
Application Timing:	PRE
Applic. Placement:	BROSOI
Air Temp., Unit:	84 F
% Relative Humidity:	90
Wind Velocity, Unit:	6 MPH
Soil Moisture:	ABONOR

CROP STAGE AT EACH APPLICATION

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

APPLICATION EQUIPMENT

	A
Appl. Equipment:	CO2 sprayer
Operating Pressure:	40 PSI
Nozzle Type:	Flat fan
Nozzle Size:	8002
Boom Length, Unit:	5 FT
Spray Volume, Unit:	20 GPA

NOTES:

Target planting for June 15, PRE application for June 16.

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Weed Code
 Crop Code
 Rating Data Type
 Rating Unit
 Rating Date
 Trt-Eval Interval

CUUPE CUUPE CUUPE CUUPE CUUPE CUUPE CUUPE CUUPE AMATA AMATA AMATA XANST XANST XANST
 Fruit Fruit Injury Injury Injury Stunt Stunt Stunt Control Control Control Control Control Control
 lb/fruit No./A Percent Percent Percent Percent Percent Percent Percent Percent Percent Percent Percent Percent Percent
 6-30-04 7-14-04 8-11-04 6-30-04 7-14-04 8-11-04 6-30-04 7-14-04 8-11-04 6-30-04 7-14-04 8-11-04 6-30-04 7-14-04 8-11-04
 14 DAP 28 DAP 56 DAP 14 DAP 28 DAP 56 DAP 14 DAP 28 DAP 56 DAP 14 DAP 28 DAP 56 DAP

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	CUUPE Fruit lb/fruit	CUUPE Fruit No./A	CUUPE Injury Percent	CUUPE Injury Percent	CUUPE Injury Percent	CUUPE Stunt Percent	CUUPE Stunt Percent	CUUPE Stunt Percent	AMATA Control Percent	AMATA Control Percent	AMATA Control Percent	XANST Control Percent	XANST Control Percent	XANST Control Percent
1	TILLAGE AT PLANTING									3.8	1452	0	0	0	20	20	20	94	70	60	0	8	7
1	WHEELER WINTER RYE CC STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A														
2	TILLAGE AT PLANTING									3.3	182	0	0	0	20	28	25	95	77	70	0	3	0
2	WHEELER WINTER RYE CC STRATEGY	2.1	EC	1.575	LB A/A	3	QT/A	PRE	A														
3	TILLAGE AT PLANTING									2.1	908	0	0	0	23	37	30	94	70	65	87	83	70
3	WHEELER WINTER RYE CC STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A														
3	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A														
4	TILLAGE AT PLANTING									7.1	908	0	0	0	23	42	35	98	85	75	57	50	38
4	WHEELER WINTER RYE CC STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A														
4	RAPTOR	1	AS	0.036	LB A/A	4.6	OZ/A	PRE	A														
5	TILLAGE AT PLANTING									12.2	2541	0	0	0	22	28	23	0	99	99	0	99	99
5	WHEELER WINTER RYE CC HANDWEED																						
6	TILLAGE AT PLANTING									3.7	908	0	0	0	23	35	30	0	0	0	0	0	0
6	WHEELER WINTER RYE CC NONTREATED																						
7	TILLAGE AT PLANTING									4.5	545	0	0	0	18	10	10	90	62	55	8	3	0
7	NO COVER CROP STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A														
8	TILLAGE AT PLANTING									8.3	1089	0	0	0	18	0	0	92	70	63	3	0	0
8	NO COVER CROP STRATEGY	2.1	EC	1.575	LB A/A	3	QT/A	PRE	A														
9	TILLAGE AT PLANTING									9.6	2541	0	0	0	18	0	0	98	53	48	90	80	70
9	NO COVER CROP STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A														
9	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A														
10	TILLAGE AT PLANTING									3.0	545	0	0	0	20	12	12	98	73	63	50	13	10
10	NO COVER CROP STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A														
10	RAPTOR	1	AS	0.036	LB A/A	4.6	OZ/A	PRE	A														
11	TILLAGE AT PLANTING									14.9	2541	0	0	0	20	0	0	0	99	99	0	99	99
11	NO COVER CROP HANDWEED																						
12	TILLAGE AT PLANTING									0.0	0	0	0	0	18	17	17	0	0	0	0	0	0
12	NO COVER CROP NONTREATED																						

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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	CUUPE Fruit lb/fruit	CUUPE Fruit No./A	CUUPE Injury Percent	CUUPE Injury Percent	CUUPE Injury Percent	CUUPE Stunt Percent	CUUPE Stunt Percent	CUUPE Stunt Percent	AMATA Control Percent	AMATA Control Percent	AMATA Control Percent	XANST Control Percent	XANST Control Percent	XANST Control Percent
13	NO-TILL 13 WHEELER WINTER RYE CC 13 STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A	7.4	1634	0	0	0	0	0	0	99	88	83	96	88	78
14	NO-TILL 14 WHEELER WINTER RYE CC 14 STRATEGY	2.1	EC	1.575	LB A/A	3	QT/A	PRE	A	10.1	1997	0	0	0	7	7	99	94	87	89	84	77	
15	NO-TILL 15 WHEELER WINTER RYE CC 15 STRATEGY 15 SANDEA	2.1 75	EC WG	1.313 0.031	LB A/A LB A/A	2.5 0.66	QT/A OZ/A	PRE PRE	A A	12.4	2541	0	0	0	0	0	98	88	82	98	91	80	
16	NO-TILL 16 WHEELER WINTER RYE CC 16 STRATEGY 16 RAPTOR	2.1 1	EC AS	1.313 0.036	LB A/A LB A/A	2.5 4.6	QT/A OZ/A	PRE PRE	A A	11.9	3267	0	0	0	3	3	99	82	75	96	85	77	
17	NO-TILL 17 WHEELER WINTER RYE CC 17 HANDWEED									14.3	3267	0	0	0	0	0	99	99	99	99	99	99	
18	NO-TILL 18 WHEELER WINTER RYE CC 18 NONTREATED									9.5	1997	0	0	0	0	0	93	47	40	86	50	40	
19	NO-TILL 19 NO COVER CROP 19 STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A	7.8	1815	0	0	0	17	0	0	99	70	63	96	70	65
20	NO-TILL 20 NO COVER CROP 20 STRATEGY	2.1	EC	1.575	LB A/A	3	QT/A	PRE	A	10.8	2178	0	0	0	15	0	0	99	77	68	96	86	75
21	NO-TILL 21 NO COVER CROP 21 STRATEGY 21 SANDEA	2.1 75	EC WG	1.313 0.031	LB A/A LB A/A	2.5 0.66	QT/A OZ/A	PRE PRE	A A	12.1	1997	0	0	0	17	0	0	99	62	57	99	85	78
22	NO-TILL 22 NO COVER CROP 22 STRATEGY 22 RAPTOR	2.1 1	EC AS	1.313 0.036	LB A/A LB A/A	2.5 4.6	QT/A OZ/A	PRE PRE	A A	11.8	2723	0	0	0	13	0	0	99	67	60	99	80	73
23	NO-TILL 23 NO COVER CROP 23 HANDWEED									17.9	2904	0	0	0	13	0	0	81	99	99	81	99	99
24	NO-TILL 24 NO COVER CROP 24 NONTREATED									8.1	1815	0	0	0	12	3	3	40	7	33	40	25	15

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Weed Code										AMATA	AMATA	AMATA	XANST	XANST	XANST
Crop Code															
Rating Data Type	CUUPE	CUUPE	CUUPE	CUUPE	CUUPE	CUUPE	CUUPE	CUUPE	CUUPE						
Rating Unit	Fruit	Fruit	Injury	Injury	Injury	Stunt	Stunt	Stunt		Control	Control	Control	Control	Control	Control
Rating Date	lb/fruit	No./A	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Trt-Eval Interval			6-30-04	7-14-04	8-11-04	6-30-04	7-14-04	8-11-04	6-30-04	7-14-04	8-11-04	6-30-04	7-14-04	8-11-04	8-11-04
			14 DAP	28 DAP	56 DAP	14 DAP	28 DAP	56 DAP	14 DAP	28 DAP	56 DAP	14 DAP	28 DAP	56 DAP	56 DAP

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code														
LSD (P=.05)										5.94	1517.1	0.0	0.0	0.0	4.0	9.4	8.7	11.5	19.4	27.3	18.0	17.3	17.3
Replicate F										3.794	2.256	0.000	0.000	0.000	4.600	1.045	1.156	0.070	0.448	0.373	0.533	0.238	0.288
Replicate Prob(F)										0.0299	0.1163	1.0000	1.0000	1.0000	0.0151	0.3599	0.3238	0.9324	0.6414	0.6908	0.5902	0.7889	0.7514
Treatment F										4.770	3.218	0.000	0.000	0.000	39.471	18.042	15.165	86.965	18.682	7.857	46.699	41.851	39.257
Treatment Prob(F)										0.0001	0.0004	1.0000	1.0000	1.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Trial Comments

1. Protocol: SIU - SAW.
2. Ratings: CI, Stunt and WC at 14, 28 and 56 DAP as well as at first harvest; Yield, 2 harvests, count and weigh.
3. Spray all plots (glyphosate 2.0 %) on May 29, mow June 12, and till (disc+culti-mulcher) on June 15.
4. Fruit = Marketable pumpkins. DAP = Days after planting.
5. Study incomplete.