

Pumpkin Winter Rye Weed Management Study.

Project Code: 03-17-W50 Location: Belleville, IL

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA
 Trial Status: Final Updated: 9-3-03

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. SETFA	foxtail, giant	Setaria faberi Herrm.
2. XANST	cocklebur, common	Xanthium strumarium L.
3. IPOHE	morningglory, ivyleaf	Ipomoea hederacea (L.) Jacq.
4. AMATA	waterhemp, common	Amaranthus rudis Sauer

Crop 1: CUUPE pumpkin Variety: Applachian
 Planting Method: Seeded Planting Date: 6-23-03
 Rate: 0.25 S/ROW-FT Depth: 2.0 IN
 Row Spacing: 48 IN

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, 2002

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: 1.6 pH: 6.1 CEC: 13
 Texture: Silt loam Fert. Level: P1: 53 LB/A, K: 259 LB/A

APPLICATION DESCRIPTION

A
 Application Date: 6-24-03
 Time of Day: 20:00
 Application Method: Spray
 Application Timing: PRE
 Applic. Placement: BROSUI
 Air Temp., Unit: 90 F
 % Relative Humidity: 38
 Wind Velocity, Unit: 3 MPH
 Soil Moisture: NORMAL

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.
 Harvested Sep-11-03 and Sep-25-03.

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

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Prod Rate	Prod Unit	Prod Stg	Grow Code	Appl Code	Fruit Lb/A	Fruit No./A	Weight Lb/fruit	Injury Percent 7-8-03	Injury Percent 7-22-03	Injury Percent 8-19-03	Stunt Percent 7-8-03	Stunt Percent 7-22-03	Stunt Percent 8-19-03	Control Percent 7-8-03	Control Percent 7-22-03	Control Percent 8-19-03
1	TILLAGE AT PLANTING									2940	726	4.0	0	0	0	0	0	0	99	99	99
1	WHEELER WINTER RYE CC																				
1	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A												
2	TILLAGE AT PLANTING									1978	545	3.6	0	0	0	0	0	0	99	99	99
2	WHEELER WINTER RYE CC																				
2	STRATEGY	2.1	EC	1.575	LB A/A	3	QT/A	PRE	A												
3	TILLAGE AT PLANTING									3920	908	4.3	0	0	0	0	0	0	99	98	97
3	WHEELER WINTER RYE CC																				
3	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									4011	726	2.9	0	0	0	0	0	0	99	99	99
4	WHEELER WINTER RYE CC																				
4	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									13594	1634	8.1	0	0	0	0	0	0	100	100	100
5	WHEELER WINTER RYE CC																				
5	HANDWEED																				
6	TILLAGE AT PLANTING									0	0	0.0	0	0	0	0	0	0	0	0	0
6	WHEELER WINTER RYE CC																				
6	NONTREATED																				
7	TILLAGE AT PLANTING									1470	545	1.6	0	0	0	0	0	0	99	99	99
7	NO COVER CROP																				
7	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A												
8	TILLAGE AT PLANTING									5155	908	5.9	0	0	0	0	0	0	99	99	99
8	NO COVER CROP																				
8	STRATEGY	2.1	EC	1.575	LB A/A	3	QT/A	PRE	A												
9	TILLAGE AT PLANTING									6625	1271	5.2	0	0	0	0	0	0	99	99	99
9	NO COVER CROP																				
9	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									5935	908	7.0	0	0	0	0	0	0	99	99	99
10	NO COVER CROP																				
10	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												

Weed Code												SETFA	SETFA	SETFA
Crop Code														
Rating Data Type												Control	Control	Control
Rating Unit												Percent	Percent	Percent
Rating Date												7-8-03	7-22-03	8-19-03
Trt-Eval Interval												14 DA-A	28 DA-A	56 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Prod Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	Fruit Lb/A	Fruit No./A	Weight Lb/fruit	Injury Percent 7-8-03	Injury Percent 7-22-03	Injury Percent 8-19-03	Stunt Percent 7-8-03	Stunt Percent 7-22-03	Stunt Percent 8-19-03	Control Percent 7-8-03	Control Percent 7-22-03	Control Percent 8-19-03
11	TILLAGE AT PLANTING NO COVER CROP HANDWEED									19166	1634	11.7	0	0	0	0	0	0	100	100	100
12	TILLAGE AT PLANTING NO COVER CROP NONTREATED									0	0	0.0	0	0	0	0	0	0	0	0	0
13	NO-TILL WHEELER WINTER RYE CC STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A	13195	1634	8.1	0	0	0	0	0	0	99	99	99
14	NO-TILL WHEELER WINTER RYE CC STRATEGY	2.1	EC	1.575	LB A/A	3	QT/A	PRE	A	8748	1089	8.0	0	0	0	0	0	0	99	99	99
15	NO-TILL WHEELER WINTER RYE CC STRATEGY 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	12632	1815	6.5	0	0	0	0	0	0	99	98	98
16	NO-TILL WHEELER WINTER RYE CC STRATEGY 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	16117	1634	9.9	0	0	0	0	0	0	99	98	98
17	NO-TILL WHEELER WINTER RYE CC HANDWEED									22143	2360	9.6	0	0	0	0	0	0	100	100	100
18	NO-TILL WHEELER WINTER RYE CC NONTREATED									2977	545	3.3	0	0	0	0	0	0	93	92	89
19	NO-TILL NO COVER CROP STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A	6607	908	7.2	0	0	0	0	0	0	99	99	99
20	NO-TILL NO COVER CROP STRATEGY	2.1	EC	1.575	LB A/A	3	QT/A	PRE	A	14992	1634	9.4	0	0	0	0	0	0	99	98	98
21	NO-TILL NO COVER CROP STRATEGY 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	17805	1634	10.8	0	0	0	0	0	0	99	99	99

Weed Code	CUUPE									SETFA		
Crop Code	Fruit	Fruit	Weight	Injury	Injury	Injury	Stunt	Stunt	Stunt	Control	Control	Control
Rating Data Type	Lb/A	No./A	Lb/fruit	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Unit				7-8-03	7-22-03	8-19-03	7-8-03	7-22-03	8-19-03	7-8-03	7-22-03	8-19-03
Rating Date				14 DA-A	28 DA-A	56 DA-A	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	Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	CUUPE Fruit Lb/A	CUUPE Fruit No./A	CUUPE Weight Lb/fruit	CUUPE Injury Percent 7-8-03	CUUPE Injury Percent 7-22-03	CUUPE Injury Percent 8-19-03	CUUPE Stunt Percent 7-8-03	CUUPE Stunt Percent 7-22-03	CUUPE Stunt Percent 8-19-03	SETFA Control Percent 7-8-03	SETFA Control Percent 7-22-03	SETFA Control Percent 8-19-03
22	NO-TILL									15155	1997	8.1	0	0	0	0	0	0	99	99	99
22	NO COVER CROP																				
22	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A												
22	RAPTOR	1	AS	0.036	LB A/A	4.6	OZ/A	PRE	A												
23	NO-TILL									23649	2541	8.9	0	0	0	0	0	0	100	100	100
23	NO COVER CROP																				
23	HANDWEED																				
24	NO-TILL									889	182	1.6	0	0	0	0	0	0	68	60	60
24	NO COVER CROP																				
24	NONTREATED																				
LSD (P=.05)										7240.7	792.1	3.27	0.0	0.0	0.0	0.0	0.0	0.0	12.8	17.6	17.6
Replicate F										4.182	4.021	2.612	0.000	0.000	0.000	0.000	0.000	0.000	0.720	1.109	1.077
Replicate Prob(F)										0.0214	0.0246	0.0842	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.4923	0.3387	0.3492
Treatment F										8.381	6.371	8.770	0.000	0.000	0.000	0.000	0.000	0.000	39.587	21.512	21.331
Treatment Prob(F)										0.0001	0.0001	0.0001	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0001	0.0001	0.0001

Weed Code	XANST	XANST	XANST	IPOHE	IPOHE	IPOHE	AMATA	AMATA	AMATA
Crop Code									
Rating Data Type	Control	Control	Control	Control	Control	Control	Control	Control	Control
Rating Unit	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Date	7-8-03	7-22-03	8-19-03	7-8-03	7-22-03	8-19-03	7-8-03	7-22-03	8-19-03
Trt-Eval Interval	14 DA-A	28 DA-A	56 DA-A	14 DA-A	28 DA-A	56 DA-A	14 DA-A	28 DA-A	56 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code									
1	TILLAGE AT PLANTING									23	18	15	63	0	0	73	33	32
1	WHEELER WINTER RYE CC																	
1	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A									
2	TILLAGE AT PLANTING									23	8	7	63	0	0	73	40	38
2	WHEELER WINTER RYE CC																	
2	STRATEGY	2.1	EC	1.575	LB A/A	3	QT/A	PRE	A									
3	TILLAGE AT PLANTING									90	65	55	63	25	23	97	58	55
3	WHEELER WINTER RYE CC																	
3	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									62	25	23	57	17	17	92	50	45
4	WHEELER WINTER RYE CC																	
4	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									100	100	100	100	100	100	100	100	100
5	WHEELER WINTER RYE CC																	
5	HANDWEED																	
6	TILLAGE AT PLANTING									0	0	0	0	0	0	0	0	0
6	WHEELER WINTER RYE CC																	
6	NONTREATED																	
7	TILLAGE AT PLANTING									7	0	0	50	17	17	68	42	38
7	NO COVER CROP																	
7	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A									
8	TILLAGE AT PLANTING									63	43	42	42	0	0	95	87	82
8	NO COVER CROP																	
8	STRATEGY	2.1	EC	1.575	LB A/A	3	QT/A	PRE	A									
9	TILLAGE AT PLANTING									90	90	87	78	0	0	90	78	77
9	NO COVER CROP																	
9	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									33	0	0	67	0	0	99	72	67
10	NO COVER CROP																	
10	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									100	100	100	100	100	100	100	100	100
11	NO COVER CROP																	
11	HANDWEED																	

Weed Code	XANST	XANST	XANST	IPOHE	IPOHE	IPOHE	AMATA	AMATA	AMATA
Crop Code									
Rating Data Type	Control	Control	Control	Control	Control	Control	Control	Control	Control
Rating Unit	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Date	7-8-03	7-22-03	8-19-03	7-8-03	7-22-03	8-19-03	7-8-03	7-22-03	8-19-03
Trt-Eval Interval	14 DA-A	28 DA-A	56 DA-A	14 DA-A	28 DA-A	56 DA-A	14 DA-A	28 DA-A	56 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	XANST 7-8-03	XANST 7-22-03	XANST 8-19-03	IPOHE 7-8-03	IPOHE 7-22-03	IPOHE 8-19-03	AMATA 7-8-03	AMATA 7-22-03	AMATA 8-19-03
12	TILLAGE AT PLANTING									0	0	0	0	0	0	0	0	0
12	NO COVER CROP																	
12	NONTREATED																	
13	NO-TILL									96	96	94	93	85	80	98	67	63
13	WHEELER WINTER RYE CC																	
13	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A									
14	NO-TILL									94	93	93	93	92	88	98	75	70
14	WHEELER WINTER RYE CC																	
14	STRATEGY	2.1	EC	1.575	LB A/A	3	QT/A	PRE	A									
15	NO-TILL									95	96	93	93	90	87	97	70	67
15	WHEELER WINTER RYE CC																	
15	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A									
15	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A									
16	NO-TILL									93	93	87	89	85	82	63	53	52
16	WHEELER WINTER RYE CC																	
16	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A									
16	RAPTOR	1	AS	0.036	LB A/A	4.6	OZ/A	PRE	A									
17	NO-TILL									100	100	100	100	100	100	100	100	100
17	WHEELER WINTER RYE CC																	
17	HANDWEED																	
18	NO-TILL									92	92	91	85	73	68	65	0	0
18	WHEELER WINTER RYE CC																	
18	NONTREATED																	
19	NO-TILL									90	90	88	80	17	15	98	75	72
19	NO COVER CROP																	
19	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A									
20	NO-TILL									94	96	93	90	70	65	98	80	77
20	NO COVER CROP																	
20	STRATEGY	2.1	EC	1.575	LB A/A	3	QT/A	PRE	A									
21	NO-TILL									93	94	90	93	75	73	98	83	80
21	NO COVER CROP																	
21	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A									
21	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A									
22	NO-TILL									92	92	90	88	73	68	97	80	77
22	NO COVER CROP																	
22	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A									
22	RAPTOR	1	AS	0.036	LB A/A	4.6	OZ/A	PRE	A									

Weed Code	XANST	XANST	XANST	IPOHE	IPOHE	IPOHE	AMATA	AMATA	AMATA
Crop Code									
Rating Data Type	Control	Control	Control	Control	Control	Control	Control	Control	Control
Rating Unit	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Date	7-8-03	7-22-03	8-19-03	7-8-03	7-22-03	8-19-03	7-8-03	7-22-03	8-19-03
Trt-Eval Interval	14 DA-A	28 DA-A	56 DA-A	14 DA-A	28 DA-A	56 DA-A	14 DA-A	28 DA-A	56 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code					
23	NO-TILL									100	100	100	100	100
23	NO COVER CROP													
23	HANDWEED													
24	NO-TILL									78	82	82	78	72
24	NO COVER CROP													
24	NONTREATED													
LSD (P=.05)										7.6	24.6	23.0	8.8	27.3
Replicate F										1.113	0.127	0.073	0.499	0.425
Replicate Prob(F)										0.3372	0.8811	0.9299	0.6102	0.6564
Treatment F										176.639	22.060	24.719	83.526	18.914
Treatment Prob(F)										0.0001	0.0001	0.0001	0.0001	0.0001

Pumpkin Winter Rye Weed Management Study.

Project Code: 03-17-W50 Location: Belleville, IL

Trial Comments

1. Protocol: SIU - SAW.
2. Ratings: Cl, 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 June 1, mow June 12, and till (disc+culti-mulcher) on June 15.
4. DA-A = days after PRE application. Ratings at 14, 28 and 56 DA-A were also 15, 29 and 57 days after planting.
5. Fruit = Marketable harvested pumpkins.