

Influence of Pigweed Management on Pumpkin Farm-Gate Revenues.

Project Code: 03-HRC-pumpkins Location: Carbondale, IL

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Carbondale IL 62901 USA
 Trial Status: Final Updated: 10-21-03

Objective:

Evaluate crop response and weed control with herbicides with and without tillage and with and without either a 'Maton' winter rye or 'Golden Eagle' winter wheat cover crop in pumpkin.

Weed Code	Common Name	Scientific Name
1.	DIGSA crabgrass, large	Digitaria sanguinalis (L.) Scop.
2.	AMARE pigweed, redroot	Amaranthus retroflexus L.
3.	GGGAN grasses, annual	
4.	ANNBR broadleaf, annual	

Crop 1:	CUUPE pumpkin	Variety:	Aspen - semi-bush type
Planting Method:	Seeded	Planting Date:	6-23-03
Rate:	0.25 S/ROW-FT	Depth:	2.0 IN
Row Spacing:	40 IN	Soil Moisture:	BELOW NORMAL
Soil Temperature:	85 F		

Plot Width, Unit:	3.3 FT	Plot Length, Unit:	8 FT	Reps:	3
Tillage Type:	See treatment list	Study Design:	Split-plot		
Previous Crop, Year:	NONE , 2002				

Field Prep./Maintenance: N 73 LB/A, P205 26 LB/A, K2O 26 LB/A

% OM: 5.4

Fert. Level: P1: 200 LB/A, K: 200 LB/A

APPLICATION DESCRIPTION

	A	B
Application Date:	6-23-03	7-11-03
Time of Day:	14:30	11:00
Application Method:	Spray	Spray
Application Timing:	PRE	POST
Applic. Placement:	BROFOL	BROFOL
Air Temp., Unit:	88 F	83 F
% Relative Humidity:	32	53
Wind Velocity, Unit:	2-6 MPH	2-5 MPH
Dew Presence (Y/N):	N	N
Soil Temp., Unit:	85 F	80 F
Soil Moisture:	BELNOR	NORMAL
% Cloud Cover:	0	0

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	CUUPE NA	CUUPE 5 LVS
Height, Unit:	NA NA	14 IN

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code:		DIGSA
Stage(leaves):		5-8
Height(inches):		5-10
Density:		High
Weed 2 Code:		AMARE
Stage(leaves):		4-10
Height(inches):		4-8
Density:		Medium

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:	3.3 FT	3.3 FT
Spray Volume, Unit:	20 GPA	20 GPA

NOTES:

Influence of Pigweed Management on Pumpkin Farm-Gate Revenues.

Project Code: 03-HRC-pumpkins Location: Carbondale, IL

Weed Code														DIGSA	DIGSA	DIGSA
Crop Code																
Rating Data Type														Control	Control	Control
Rating Unit														Percent	Percent	Percent
Rating Date														7-7-03	7-21-03	8-18-03
Trt-Eval Interval														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	Fruit Lb/A	Fruit No./A	Fruit Lb/fruit	Injury Percent	Injury Percent	Injury Percent	Stunt Percent	Stunt Percent	Stunt Percent	Control Percent	Control Percent	Control Percent
													7-7-03	7-21-03	8-18-03	7-7-03	7-21-03	8-18-03	7-7-03	7-21-03	8-18-03
													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
1	NO COVER CROP									30652	3267	9.4	0	0	0	0	0	0	99	99	91
1	TILLAGE AT PLANTING																				
1	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A												
2	NO COVER CROP									29073	3811	7.3	0	0	0	0	0	0	96	91	90
2	TILLAGE AT PLANTING																				
2	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A												
3	NO COVER CROP									26568	3267	8.1		0	0		0	0		85	87
3	TILLAGE AT PLANTING																				
3	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	POST	B												
4	NO COVER CROP									26677	3267	8.2	0	0	0	0	0	0	99	93	82
4	NO-TILL																				
4	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A												
5	NO COVER CROP									16986	2178	8.8	0	2	0	0	2	0	30	0	82
5	NO-TILL																				
5	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A												
6	NO COVER CROP									22812	3267	7.0		0	0		0	0		0	90
6	NO-TILL																				
6	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	POST	B												
7	NO COVER CROP									21505	3267	6.6	0	10	0	0	10	0	99	99	95
7	NO-TILL																				
7	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A												
7	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A												
8	NO COVER CROP									33156	3811	8.7	0	2	0	0	2	0	99	94	87
8	NO-TILL																				
8	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A												
8	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	POST	B												
9	NO COVER CROP									12141	1633	7.4	0	0	0	0	0	0	0	0	0
9	NO-TILL																				
9	NONTREATED																				
10	NO COVER CROP									32993	3811	8.5	0	0	0	0	0	0	100	100	100
10	NO-TILL																				
10	HANDWEEDED																				
11	MATON WINTER RYE CC									46930	4356	10.6	0	0	0	0	0	0	99	99	82
11	TILLAGE AT PLANTING																				
11	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A												

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

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	CUUPE Fruit Lb/A	CUUPE Fruit No./A	CUUPE Fruit Lb/fruit	CUUPE Injury Percent 7-7-03	CUUPE Injury Percent 7-21-03	CUUPE Injury Percent 8-18-03	CUUPE Stunt Percent 7-7-03	CUUPE Stunt Percent 7-21-03	CUUPE Stunt Percent 8-18-03	DIGSA Control Percent 7-7-03	DIGSA Control Percent 7-21-03	DIGSA Control Percent 8-18-03
12	MATON WINTER RYE CC									23901	3267	6.7	0	0	0	0	0	0	99	87	85
12	TILLAGE AT PLANTING																				
12	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A												
13	MATON WINTER RYE CC									19872	2178	9.1		7	0		7	0		84	85
13	TILLAGE AT PLANTING																				
13	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	POST	B												
14	MATON WINTER RYE CC									26677	2722	6.6	0	0	0	0	0	0	98	93	90
14	NO-TILL																				
14	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A												
15	MATON WINTER RYE CC									24282	2178	12.5	0	7	0	0	7	0	96	94	92
15	NO-TILL																				
15	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A												
16	MATON WINTER RYE CC									23792	3267	7.3		0	0		0	0		47	78
16	NO-TILL																				
16	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	POST	B												
17	MATON WINTER RYE CC									27004	2722	9.7	0	0	0	0	0	0	98	93	28
17	NO-TILL																				
17	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A												
17	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A												
18	MATON WINTER RYE CC									17966	2178	8.5	0	3	0	0	3	0	99	98	80
18	NO-TILL																				
18	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A												
18	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	POST	B												
19	MATON WINTER RYE CC									19872	2178	4.8	0	0	0	0	0	0	94	71	30
19	NO-TILL																				
19	NONTREATED																				
20	MATON WINTER RYE CC									18783	2178	5.8	0	0	0	0	0	0	100	100	100
20	NO-TILL																				
20	HANDWEEDDED																				
21	GOLDEN EAGLE WHEAT CC									20852	2178	9.8	0	0	0	0	0	0	99	97	85
21	TILLAGE AT PLANTING																				
21	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A												
22	GOLDEN EAGLE WHEAT CC									26732	2722	9.4	0	0	0	0	0	0	99	87	90
22	TILLAGE AT PLANTING																				
22	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A												
23	GOLDEN EAGLE WHEAT CC									23683	3267	7.3		3	0		0	0		88	88
23	TILLAGE AT PLANTING																				
23	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	POST	B												

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

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	CUUPE Fruit Lb/A	CUUPE Fruit No./A	CUUPE Fruit Lb/fruit	CUUPE Injury Percent 7-7-03	CUUPE Injury Percent 7-21-03	CUUPE Injury Percent 8-18-03	CUUPE Stunt Percent 7-7-03	CUUPE Stunt Percent 7-21-03	CUUPE Stunt Percent 8-18-03	DIGSA Control Percent 7-7-03	DIGSA Control Percent 7-21-03	DIGSA Control Percent 8-18-03
24	GOLDEN EAGLE WHEAT CC									18511	2722	6.0	0	0	0	0	0	0	99	92	88
24	NO-TILL																				
24	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A												
24	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A												
25	GOLDEN EAGLE WHEAT CC									19273	2722	6.3	0	7	0	0	7	0	92	87	90
25	NO-TILL																				
25	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A												
26	GOLDEN EAGLE WHEAT CC									7731	1633	3.5		23	0		23	0		77	93
26	NO-TILL																				
26	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	POST	B												
27	GOLDEN EAGLE WHEAT CC									21070	3267	6.5	0	3	0	0	3	0	99	99	95
27	NO-TILL																				
27	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A												
27	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A												
28	GOLDEN EAGLE WHEAT CC									18837	3267	4.2	0	7	0	0	7	0	99	98	91
28	NO-TILL																				
28	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A												
28	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	POST	B												
29	GOLDEN EAGLE WHEAT CC									9310	1633	4.8	0	5	0	0	5	0	94	78	33
29	NO-TILL																				
29	NONTREATED																				
30	GOLDEN EAGLE WHEAT CC									36477	3811	9.2	0	0	0	0	0	0	100	100	100
30	NO-TILL																				
30	HANDWEEDED																				
LSD (P=.05)										22629.3	2096.9	6.28	0.0	9.0	0.0	0.0	9.0	0.0	18.1	20.9	25.4
Replicate F										0.661	1.204	0.492	0.000	0.064	0.000	0.000	0.111	0.000	0.862	1.013	0.665
Replicate Prob(F)										0.5204	0.3075	0.6138	1.0000	0.9381	1.0000	1.0000	0.8952	1.0000	0.4289	0.3694	0.5180
Treatment F										0.980	0.965	0.799	0.000	2.320	0.000	0.000	2.366	0.000	14.322	15.965	7.137
Treatment Prob(F)										0.5109	0.5297	0.7417	1.0000	0.0032	1.0000	1.0000	0.0026	1.0000	0.0001	0.0001	0.0001

Weed Code	AMARE	AMARE	AMARE	GGGAN	GGGAN	ANNBR	ANNBR
Crop Code							
Rating Data Type	Control	Control	Control	Plants	Dry wt	Plants	Dry wt
Rating Unit	Percent	Percent	Percent	0.5m2	Lb/0.5m2	0.5m2	Lb/0.5m2
Rating Date	7-7-03	7-21-03	8-18-03	9-15-03	9-15-03	9-15-03	9-15-03
Trt-Eval Interval	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							
1	NO COVER CROP									99	99	95	0.3	0.00	0.0	0.00
1	TILLAGE AT PLANTING															
1	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A							
2	NO COVER CROP									99	99	95	4.7	0.05	2.0	0.05
2	TILLAGE AT PLANTING															
2	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A							
3	NO COVER CROP										99	93	4.3	0.10	2.7	0.10
3	TILLAGE AT PLANTING															
3	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	POST	B							
4	NO COVER CROP									99	98	87	8.0	0.10	1.3	0.47
4	NO-TILL															
4	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A							
5	NO COVER CROP									99	99	92	16.0	0.20	0.0	0.00
5	NO-TILL															
5	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A							
6	NO COVER CROP										98	95	12.7	0.22	0.7	0.02
6	NO-TILL															
6	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	POST	B							
7	NO COVER CROP									99	99	95	0.7	0.02	0.3	0.02
7	NO-TILL															
7	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A							
7	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A							
8	NO COVER CROP									99	99	95	3.3	0.13	0.3	0.00
8	NO-TILL															
8	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A							
8	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	POST	B							
9	NO COVER CROP									0	0	0	19.3	0.20	2.7	0.37
9	NO-TILL															
9	NONTREATED															
10	NO COVER CROP									100	100	100	3.3	0.05	1.3	0.02
10	NO-TILL															
10	HANDWEEDED															
11	MATON WINTER RYE CC									98	96	82	4.0	0.07	1.3	0.10
11	TILLAGE AT PLANTING															
11	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A							
12	MATON WINTER RYE CC									99	99	93	5.3	0.12	1.3	0.12
12	TILLAGE AT PLANTING															
12	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A							

Weed Code	AMARE	AMARE	AMARE	GGGAN	GGGAN	ANNBR	ANNBR
Crop Code							
Rating Data Type	Control	Control	Control	Plants	Dry wt	Plants	Dry wt
Rating Unit	Percent	Percent	Percent	0.5m2	Lb/0.5m2	0.5m2	Lb/0.5m2
Rating Date	7-7-03	7-21-03	8-18-03	9-15-03	9-15-03	9-15-03	9-15-03
Trt-Eval Interval	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								
13	MATON WINTER RYE CC										96	93	2.0	0.05	2.7	0.15	
13	TILLAGE AT PLANTING																
13	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	POST	B								
14	MATON WINTER RYE CC										96	88	2.3	0.10	2.3	1.03	
14	NO-TILL																
14	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A								
15	MATON WINTER RYE CC										99	96	1.7	0.07	1.7	0.20	
15	NO-TILL																
15	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A								
16	MATON WINTER RYE CC										98	87	4.3	0.20	0.3	0.07	
16	NO-TILL																
16	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	POST	B								
17	MATON WINTER RYE CC										99	98	30	7.7	0.18	0.7	0.02
17	NO-TILL																
17	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A								
17	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A								
18	MATON WINTER RYE CC										99	99	92	4.0	0.13	1.0	0.17
18	NO-TILL																
18	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A								
18	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	POST	B								
19	MATON WINTER RYE CC										95	90	43	5.0	0.13	1.0	0.13
19	NO-TILL																
19	NONTREATED																
20	MATON WINTER RYE CC										100	100	100	3.7	0.17	1.7	0.23
20	NO-TILL																
20	HANDWEEDDED																
21	GOLDEN EAGLE WHEAT CC										97	93	87	2.3	0.10	4.3	0.67
21	TILLAGE AT PLANTING																
21	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A								
22	GOLDEN EAGLE WHEAT CC										99	96	93	2.0	0.07	1.3	0.13
22	TILLAGE AT PLANTING																
22	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A								
23	GOLDEN EAGLE WHEAT CC										95	93	4.0	0.10	1.7	0.17	
23	TILLAGE AT PLANTING																
23	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	POST	B								
24	GOLDEN EAGLE WHEAT CC										95	91	92	5.3	0.23	2.7	0.13
24	NO-TILL																
24	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A								

Weed Code	AMARE	AMARE	AMARE	GGGAN	GGGAN	ANNBR	ANNBR
Crop Code							
Rating Data Type	Control	Control	Control	Plants	Dry wt	Plants	Dry wt
Rating Unit	Percent	Percent	Percent	0.5m2	Lb/0.5m2	0.5m2	Lb/0.5m2
Rating Date	7-7-03	7-21-03	8-18-03	9-15-03	9-15-03	9-15-03	9-15-03
Trt-Eval Interval	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							
25	GOLDEN EAGLE WHEAT CC									99	98	95	2.0	0.10	1.0	0.20
25	NO-TILL															
25	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A							
26	GOLDEN EAGLE WHEAT CC										98	93	0.7	0.03	1.0	0.13
26	NO-TILL															
26	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	POST	B							
27	GOLDEN EAGLE WHEAT CC									99	99	94	1.0	0.03	1.0	0.23
27	NO-TILL															
27	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A							
27	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A							
28	GOLDEN EAGLE WHEAT CC									98	96	93	2.7	0.05	1.7	0.15
28	NO-TILL															
28	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A							
28	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	POST	B							
29	GOLDEN EAGLE WHEAT CC									91	78	42	4.3	0.17	4.7	0.70
29	NO-TILL															
29	NONTREATED															
30	GOLDEN EAGLE WHEAT CC									100	100	100	3.7	0.08	0.7	0.08
30	NO-TILL															
30	HANDWEDED															
LSD (P=.05)										3.5	10.0	24.0	6.42	0.144	2.97	0.509
Replicate F										1.426	3.013	1.742	2.009	0.517	2.543	2.724
Replicate Prob(F)										0.2507	0.0569	0.1842	0.1433	0.5990	0.0874	0.0740
Treatment F										262.913	26.461	7.652	3.647	1.581	1.145	1.730
Treatment Prob(F)										0.0001	0.0001	0.0001	0.0001	0.0692	0.3238	0.0381

Influence of Pigweed Management on Pumpkin Farm-Gate Revenues.

Project Code: 03-HRC-pumpkins Location: Carbondale, IL

Trial Comments

1. Protocol: SIU - SAW.
2. Burndown rye and wheat with 2% glyphosate solution (June 8), roll rye and wheat (June 15), plant pumpkin seed (June 18), and spray PRE herbicides (June 20). Asana and Bravo as needed.
3. Ratings: CI, growth reduction and WC at 14, 28 and 56 DAT and at first harvest.
4. Yield, 2 harvests.
5. Mix size and amount to measure are calculated for 3 plots plus 0.0067 (0.02/3) gallon overage, thus triple mix size and amount to mix and spray each treatment in the wheat, rye and no cover crop from 1 bottle (9 plots per bottle).
6. DA-A = days after PRE application. 28 and 56 DA-A were also 10 and 38 days after POST application, respectively.
7. Fruit = Marketable harvested pumpkins. Dry wt = oven dry weight of weeds. 0.5m² = 0.5 square meter.
8. GGGAN = annual grasses, including; goosegrass, large crabgrass, stinkgrass and fall panicum.
9. ANNBR = annual broadleaves, including; redroot pigweed, spurge, groundcherry, carpetweed, morningglory, common cocklebur, common lambsquarters, and common pokeweed.