

## Weed Control in Pumpkin with Herbicides and Wheat Cover Crop.

Project Code: 06-17      Location: Belleville Research Center  
 Investigator: Bryan Young

**Investigator:** Bryan Young, Associate Professor, Southern Illinois University

**City State Zip Country:**      Belleville      IL 62221 USA  
**Trial Status:** Final      **Updated:**      1-22-07

Weed Code	Common Name	Scientific Name
1.	IPOLA morningglory, pitted	Ipomoea lacunosa L.
2.	IPOHE morningglory, ivyleaf	Ipomoea hederacea (L.) Jacq.
3.	XANST cocklebur, common	Xanthium strumarium L.
4.	AMATA waterhemp, common	Amaranthus rudis Sauer
5.	AMARE pigweed, redroot	Amaranthus retroflexus L.

**Crop 1:** CUUPE pumpkin      **Variety:** Magic Lantern  
**Planting Method:** Transplant      **Planting Date:** 6-21-06  
**Rate:** 0.167 S/ROW-FT  
**Row Spacing:** 5 FT

**Plot Width, Unit:** 5 FT      **Plot Length, Unit:** 60 FT      **Reps:** 4  
**Tillage Type:** No-Till      **Study Design:** Split-block  
**Previous Crop, Year:** CUUPG, 2005

**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	B	C	D
<b>Application Date:</b>	6-21-06	7-18-06		
<b>Time of Day:</b>	6:00	10:00	NA	NA
<b>Application Method:</b>	Spray	Spray	Spray	Spray
<b>Application Timing:</b>	PRE	4WAP	ASNEED-1	ASNEED-2
<b>Applic. Placement:</b>	BROFOL	BROFOL	BROFOL	BROFOL
<b>Air Temp., Unit:</b>	75 F	85 F		
<b>% Relative Humidity:</b>	92	92		
<b>Dew Presence (Y/N):</b>	Y	N		

## CROP STAGE AT EACH APPLICATION

	A	B	C	D
<b>Crop 1 Code, Stage:</b>	CUUPE NA	CUUPE 6-15	CUUPE NA	CUUPE NA
<b>Height, Unit:</b>	NA NA	10-24 IN	NA NA	NA NA

## APPLICATION EQUIPMENT

	A	B	C	D
<b>Appl. Equipment:</b>	CO2 sprayer	CO2 sprayer		
<b>Operating Pressure:</b>	40 PSI	40 PSI		
<b>Nozzle Type:</b>	Flat fan	Flat fan		
<b>Nozzle Size:</b>	8003	8002		
<b>Boom Length, Unit:</b>	5 FT	5 FT		
<b>Spray Volume, Unit:</b>	20 GPA	20 GPA		

## NOTES:

Weed Control in Pumpkin with Herbicides and Wheat Cover Crop.

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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  
 Fruit Fruit Culls Culls Stunt Stunt Disco Disco  
 lb/fruit No./A lb/fruit No./A Percent Percent Percent Percent  
 7-18-06 8-14-06 7-18-06 8-14-06  
 27 DA-A 27 DA-B 27 DA-A 27 DA-B

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 Culls lb/fruit	CUUPE Culls No./A	CUUPE Stunt Percent 7-18-06	CUUPE Stunt Percent 8-14-06	CUUPE Disco Percent 7-18-06	CUUPE Disco Percent 8-14-06
1	WHEAT COVER CROP STRATEGY	2.1	EC	1.57	lb ai/a	3	qt/a	PRE	A	12.9	3884	0.0	0	13	1	0	0
2	WHEAT COVER CROP STRATEGY	2.1	EC	1.57	lb ai/a	3	qt/a	PRE	A	11.6	2868	0.9	36	38	0	11	0
	2 SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A								
3	WHEAT COVER CROP STRATEGY	2.1	EC	1.57	lb ai/a	3	qt/a	PRE	A	11.8	3485	0.0	0	8	0	3	0
	3 SANDEA	75	WG	0.0234	lb ai/a	0.5	oz/a	4WAP	B								
	3 ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	4WAP	B								
4	WHEAT COVER CROP STRATEGY	2.1	EC	1.57	lb ai/a	3	qt/a	PRE	A	13.2	3594	0.5	36	0	0	0	0
	4 SELECT	2	EC	0.125	lb ai/a	8	oz/a	4WAP	B								
	4 PRIME OIL COC	100	LIQ	1.0	% v/v	1	% v/v	4WAP	B								
5	WHEAT COVER CROP STRATEGY	2.1	EC	1.57	lb ai/a	3	qt/a	PRE	A	11.7	3158	1.4	73	30	1	2	0
	5 SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A								
	5 SELECT	2	EC	0.125	lb ai/a	8	oz/a	4WAP	B								
	5 PRIME OIL COC	100	LIQ	1.0	% v/v	1	% v/v	4WAP	B								
6	WHEAT COVER CROP STRATEGY	2.1	EC	1.57	lb ai/a	3	qt/a	PRE	A	11.7	3376	0.5	36	8	0	1	0
	6 SANDEA	75	WG	0.0234	lb ai/a	0.5	oz/a	4WAP	B								
	6 SELECT	2	EC	0.125	lb ai/a	8	oz/a	4WAP	B								
	6 ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	4WAP	B								
7	WHEAT COVER CROP NONTREATED									11.8	3594	4.7	109	0	0	0	0
8	WHEAT COVER CROP STRATEGY	2.1	EC	1.57	lb ai/a	3	qt/a	PRE	A	12.7	3848	0.0	0	10	0	0	0
	8 SELECT	2	EC	0.125	lb ai/a	8	oz/a	ASNEED-1	C								
	8 PRIME OIL COC	100	LIQ	1.0	% v/v	1	% v/v	ASNEED-1	C								
	8 SELECT	2	EC	0.125	lb ai/a	8	oz/a	ASNEED-2	D								
	8 PRIME OIL COC	100	LIQ	1.0	% v/v	1	% v/v	ASNEED-2	D								
	8 HANDWEED																
9	NO COVER CROP STRATEGY	2.1	EC	1.57	lb ai/a	3	qt/a	PRE	A	12.3	4937	2.2	36	1	0	0	0
10	NO COVER CROP STRATEGY	2.1	EC	1.57	lb ai/a	3	qt/a	PRE	A	12.4	3630	0.0	0	11	0	0	0
	10 SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A								
11	NO COVER CROP STRATEGY	2.1	EC	1.57	lb ai/a	3	qt/a	PRE	A	13.8	4138	2.5	73	0	1	0	0
	11 SANDEA	75	WG	0.0234	lb ai/a	0.5	oz/a	4WAP	B								
	11 ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	4WAP	B								
12	NO COVER CROP STRATEGY	2.1	EC	1.57	lb ai/a	3	qt/a	PRE	A	13.1	3957	0.6	36	0	0	0	0
	12 SELECT	2	EC	0.125	lb ai/a	8	oz/a	4WAP	B								
	12 PRIME OIL COC	100	LIQ	1.0	% v/v	1	% v/v	4WAP	B								
13	NO COVER CROP STRATEGY	2.1	EC	1.57	lb ai/a	3	qt/a	PRE	A	14.0	3703	3.1	109	14	0	3	0
	13 SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A								
	13 SELECT	2	EC	0.125	lb ai/a	8	oz/a	4WAP	B								
	13 PRIME OIL COC	100	LIQ	1.0	% v/v	1	% v/v	4WAP	B								
14	NO COVER CROP STRATEGY	2.1	EC	1.57	lb ai/a	3	qt/a	PRE	A	13.2	4828	0.0	0	0	0	0	0
	14 SANDEA	75	WG	0.0234	lb ai/a	0.5	oz/a	4WAP	B								
	14 SELECT	2	EC	0.125	lb ai/a	8	oz/a	4WAP	B								
	14 ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	4WAP	B								
15	NO COVER CROP NONTREATED									12.3	3303	1.2	73	0	0	0	0
16	NO COVER CROP STRATEGY	2.1	EC	1.57	lb ai/a	3	qt/a	PRE	A	13.8	4102	0.3	36	0	0	0	0
	16 SELECT	2	EC	0.125	lb ai/a	8	oz/a	ASNEED-1	C								
	16 PRIME OIL COC	100	LIQ	1.0	% v/v	1	% v/v	ASNEED-1	C								
	16 SELECT	2	EC	0.125	lb ai/a	8	oz/a	ASNEED-2	D								
	16 PRIME OIL COC	100	LIQ	1.0	% v/v	1	% v/v	ASNEED-2	D								
	16 HANDWEED																

LSD (P=.05)

2.17 1022.3 4.03 123.5 11.1 1.5 2.9 0.0

Replicate F  
 Replicate Prob(F)  
 Treatment F  
 Treatment Prob(F)

0.893 7.364 0.469 1.000 0.110 1.241 1.713 0.000  
 0.4522 0.0004 0.7051 0.4016 0.9536 0.3062 0.1781 1.0000  
 1.189 2.350 0.937 0.741 8.493 0.880 7.730 0.000  
 0.3147 0.0138 0.5326 0.7307 0.0001 0.5899 0.0001 1.0000

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Weed Code	IPOLA	IPOLA	IPOHE	IPOHE	XANST	XANST	AMATA	AMARE
Crop Code	Control	Control	Control	Control	Control	Control	Control	Control
Rating Data Type	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Unit	7-18-06	8-14-06	7-18-06	8-14-06	7-18-06	8-14-06	8-14-06	8-14-06
Rating Date	27 DA-A	27 DA-B	27 DA-A	27 DA-B	27 DA-A	27 DA-B	27 DA-B	27 DA-B
Trt-Eval Interval								

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	IPOLA 7-18-06 27 DA-A	IPOLA 8-14-06 27 DA-B	IPOHE 7-18-06 27 DA-A	IPOHE 8-14-06 27 DA-B	XANST 7-18-06 27 DA-A	XANST 8-14-06 27 DA-B	AMATA 8-14-06 27 DA-B	AMARE 8-14-06 27 DA-B
1	WHEAT COVER CROP STRATEGY	2.1	EC	1.57	lb ai/a	3	qt/a	PRE	A	46	33	46	33	89	40	30	48
2	WHEAT COVER CROP STRATEGY	2.1	EC	1.57	lb ai/a	3	qt/a	PRE	A	71	60	71	60	93	70	64	71
2	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A								
3	WHEAT COVER CROP STRATEGY	2.1	EC	1.57	lb ai/a	3	qt/a	PRE	A	54	45	54	45	93	77	43	70
3	SANDEA	75	WG	0.0234	lb ai/a	0.5	oz/a	4WAP	B								
3	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	4WAP	B								
4	WHEAT COVER CROP STRATEGY	2.1	EC	1.57	lb ai/a	3	qt/a	PRE	A	78	55	78	55	99	60	68	85
4	SELECT	2	EC	0.125	lb ai/a	8	oz/a	4WAP	B								
4	PRIME OIL COC	100	LIQ	1.0	% v/v	1	% v/v	4WAP	B								
5	WHEAT COVER CROP STRATEGY	2.1	EC	1.57	lb ai/a	3	qt/a	PRE	A	69	36	69	36	83	62	55	60
5	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A								
5	SELECT	2	EC	0.125	lb ai/a	8	oz/a	4WAP	B								
5	PRIME OIL COC	100	LIQ	1.0	% v/v	1	% v/v	4WAP	B								
6	WHEAT COVER CROP STRATEGY	2.1	EC	1.57	lb ai/a	3	qt/a	PRE	A	73	55	73	55	76	72	75	70
6	SANDEA	75	WG	0.0234	lb ai/a	0.5	oz/a	4WAP	B								
6	SELECT	2	EC	0.125	lb ai/a	8	oz/a	4WAP	B								
6	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	4WAP	B								
7	WHEAT COVER CROP STRATEGY	2.1	EC	1.57	lb ai/a	3	qt/a	PRE	A	0	0	0	0	0	0	0	0
7	NONTREATED																
8	WHEAT COVER CROP STRATEGY	2.1	EC	1.57	lb ai/a	3	qt/a	PRE	A	65	70	65	70	97	85	88	90
8	SELECT	2	EC	0.125	lb ai/a	8	oz/a	ASNEED-1	C								
8	PRIME OIL COC	100	LIQ	1.0	% v/v	1	% v/v	ASNEED-1	C								
8	SELECT	2	EC	0.125	lb ai/a	8	oz/a	ASNEED-2	D								
8	PRIME OIL COC	100	LIQ	1.0	% v/v	1	% v/v	ASNEED-2	D								
8	HANDWEED																
9	NO COVER CROP STRATEGY	2.1	EC	1.57	lb ai/a	3	qt/a	PRE	A	24	40	24	40	98	68	81	86
10	NO COVER CROP STRATEGY	2.1	EC	1.57	lb ai/a	3	qt/a	PRE	A	81	38	81	38	98	60	54	70
10	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A								
11	NO COVER CROP STRATEGY	2.1	EC	1.57	lb ai/a	3	qt/a	PRE	A	35	45	35	45	92	75	58	75
11	SANDEA	75	WG	0.0234	lb ai/a	0.5	oz/a	4WAP	B								
11	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	4WAP	B								
12	NO COVER CROP STRATEGY	2.1	EC	1.57	lb ai/a	3	qt/a	PRE	A	29	30	29	30	56	80	54	70
12	SELECT	2	EC	0.125	lb ai/a	8	oz/a	4WAP	B								
12	PRIME OIL COC	100	LIQ	1.0	% v/v	1	% v/v	4WAP	B								
13	NO COVER CROP STRATEGY	2.1	EC	1.57	lb ai/a	3	qt/a	PRE	A	90	55	90	55	96	73	63	75
13	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A								
13	SELECT	2	EC	0.125	lb ai/a	8	oz/a	4WAP	B								
13	PRIME OIL COC	100	LIQ	1.0	% v/v	1	% v/v	4WAP	B								
14	NO COVER CROP STRATEGY	2.1	EC	1.57	lb ai/a	3	qt/a	PRE	A	14	38	14	38	76	92	68	83
14	SANDEA	75	WG	0.0234	lb ai/a	0.5	oz/a	4WAP	B								
14	SELECT	2	EC	0.125	lb ai/a	8	oz/a	4WAP	B								
14	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	4WAP	B								
15	NO COVER CROP STRATEGY	2.1	EC	1.57	lb ai/a	3	qt/a	PRE	A	0	0	0	0	0	0	0	0
15	NONTREATED																
16	NO COVER CROP STRATEGY	2.1	EC	1.57	lb ai/a	3	qt/a	PRE	A	5	90	5	90	43	90	90	90
16	SELECT	2	EC	0.125	lb ai/a	8	oz/a	ASNEED-1	C								
16	PRIME OIL COC	100	LIQ	1.0	% v/v	1	% v/v	ASNEED-1	C								
16	SELECT	2	EC	0.125	lb ai/a	8	oz/a	ASNEED-2	D								
16	PRIME OIL COC	100	LIQ	1.0	% v/v	1	% v/v	ASNEED-2	D								
16	HANDWEED																
LSD (P=.05)										44.5	31.9	44.5	31.9	30.1	31.4	32.3	29.8
Replicate F										1.670	5.893	1.670	5.893	1.739	5.837	2.875	7.280
Replicate Prob(F)										0.1873	0.0018	0.1873	0.0018	0.1809	0.0024	0.0465	0.0004
Treatment F										3.962	4.144	3.962	4.144	10.079	6.418	5.559	7.052
Treatment Prob(F)										0.0002	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001

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Investigator: Bryan Young

Trial Comments

1. Protocol: SIU - SAW - CFAR-A.
2. Ratings: CIWC 28 + 56 days after transplant, and at first harvest.  
Weed biomass as (2) 0.25 square meter sample per plot at first harvest.  
Yield as marketable and culls for each of 2 to 3 harvests.
3. Wheat covercrop was harvested 6-19-06, (7) 7.5 inch rows by 169 ft.  
Average yield was 64.1 bu/A at 12.3% moisture and 53.9 lb/bu test weight.
4. Fruit = Marketable pumpkins. Culls = Non-marketable pumpkins. No./A = Pumpkins per acre.  
DA-A = Days after PRE application. DA-B = Days after 4WAP application.  
Stunt = Growth reduction. Disco = Discoloration and/or necrosis.  
Ratings at 27 DA-A were prior to the 4WAP application.
5. Handweeded plots were handweeded after the 27 DA-A rating.
6. Harvested 9-29-06 and 10-13-06, 5 by 60 ft.