

Horticultural Crops

1-23-07 (06-HRC-PRE-Pumpkin)

Southern Illinois University

Pumpkin Weed Management Study.

Project Code: 06-HRC-PRE-Pumpkin Location: Horticulture Research Center

Investigator: Bryan Young

Investigator: Bryan Young, Associate Professor, Southern Illinois University

City State Zip Country: Carbondale IL 62901 USA
Trial Status: Final Updated: 1-22-07

Objective:

Compare the standard preemergence only weed control program to various preemergence only alternatives.

Weed Code	Common Name	Scientific Name
1. DIGIS	crabgrass, smooth	Digitaria ischaemum (Schreb. ex Schweig)
2. DIGSA	crabgrass, large	Digitaria sanguinalis (L.) Scop.
3. CHEAL	lambsquarters, common	Chenopodium album L.
4. AMATA	waterhemp, common	Amaranthus rudis Sauer
5. AMARE	pigweed, redroot	Amaranthus retroflexus L.
6. EPHMA	spurge, spotted	Euphorbia maculata L.

Crop 1: CUUPE pumpkin Variety: Appalachian
Planting Method: Seeded Planting Date: 6-12-06
Rate: 0.25 P/ROW-FT Depth: 2.0 IN
Row Spacing: 5 FT

Plot Width, Unit: 5 FT Plot Length, Unit: 20 FT Reps: 3
Tillage Type: No-Till Study Design: Randomized complete block
Previous Crop, Year: TRAZW, 2006

Texture: Silt loam % OM: 2.4 pH: 6.7 CEC: 13
Fert. Level: P1: 80 LB/A, K: 211 LB/A

APPLICATION DESCRIPTION

A
Application Date: 6-13-06
Time of Day: 10:00
Application Method: Spray
Application Timing: PRE
Applic. Placement: BROSOI
Air Temp., Unit: 85 F
% Relative Humidity: 80
Wind Velocity, Unit: 5 MPH
Dew Presence (Y/N): N
Soil Moisture: NORMAL
% Cloud Cover: 0

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: 8003
Boom Length, Unit: 5 FT
Spray Volume, Unit: 20 GPA

NOTES:

Pumpkin Weed Management Study.

Project Code: 06-HRC-PRE-Pumpkin Location: Horticulture Research Center
 Investigator: Bryan Young

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 Stunt Stunt
 lb/fruit No./A lb/fruit No./A Percent Percent Percent Percent
 6-27-06 7-6-06 7-11-06 8-8-06
 14 DA-A 23 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	CUUPE Fruit lb/fruit	CUUPE Fruit No./A	CUUPE Culls lb/fruit	CUUPE Culls No./A	CUUPE Stunt Percent 6-27-06	CUUPE Stunt Percent 7-6-06	CUUPE Stunt Percent 7-11-06	CUUPE Stunt Percent 8-8-06
1	NONTREATED									13.4	1162	3.9	290	0	0	0	0
2	HANDWEED									13.2	1888	1.2	145	0	0	0	0
3	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	11.8	2033	3.5	290	23	47	38	3
3	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A								
4	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	14.4	2759	1.3	145	2	2	0	0
5	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A	6.3	581	1.8	145	35	67	48	17
6	RAPTOR	1	AS	0.0312	lb ai/a	4	fl oz/a	PRE	A	10.7	1742	0.0	0	15	25	17	3
7	OUTLOOK	6	EC	1.12	lb ai/a	24	fl oz/a	PRE	A	13.7	1888	4.0	290	7	8	5	2
8	DUAL II MAGNUM	7.64	EC	1.91	lb ai/a	2	pt/a	PRE	A	14.0	2759	0.0	0	2	0	2	0
9	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	13.6	2759	1.3	145	2	5	5	5
9	RAPTOR	1	AS	0.0312	lb ai/a	4	fl oz/a	PRE	A								
10	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	11.9	2033	1.4	290	7	2	3	0
10	OUTLOOK	6	EC	1.12	lb ai/a	24	fl oz/a	PRE	A								
11	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	13.3	2468	1.4	145	7	10	3	0
11	DUAL II MAGNUM	7.64	EC	1.91	lb ai/a	2	pt/a	PRE	A								
12	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A	10.2	1452	4.6	290	30	75	47	5
12	RAPTOR	1	AS	0.0312	lb ai/a	4	fl oz/a	PRE	A								
13	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A	9.8	1742	1.5	290	33	67	65	17
13	OUTLOOK	6	EC	1.12	lb ai/a	24	fl oz/a	PRE	A								
14	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A	9.0	2033	3.6	290	17	60	47	13
14	DUAL II MAGNUM	7.64	EC	1.91	lb ai/a	2	pt/a	PRE	A								
15	OUTLOOK	6	EC	1.12	lb ai/a	24	fl oz/a	PRE	A	11.6	2033	0.0	0	12	22	23	5
15	RAPTOR	1	AS	0.0312	lb ai/a	4	fl oz/a	PRE	A								
16	DUAL II MAGNUM	7.64	EC	1.91	lb ai/a	2	pt/a	PRE	A	11.6	2323	1.3	145	15	55	40	3
16	RAPTOR	1	AS	0.0312	lb ai/a	4	fl oz/a	PRE	A								
17	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	9.6	2033	0.0	0	23	52	47	13
17	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A								
17	RAPTOR	1	AS	0.0312	lb ai/a	4	fl oz/a	PRE	A								
18	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	9.8	1742	0.0	0	17	45	42	13
18	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A								
18	OUTLOOK	6	EC	1.12	lb ai/a	24	fl oz/a	PRE	A								
19	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	12.9	2759	4.2	290	17	30	20	7
19	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A								
19	DUAL II MAGNUM	7.64	EC	1.91	lb ai/a	2	pt/a	PRE	A								
20	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	12.2	2178	0.0	0	7	13	7	0
20	OUTLOOK	6	EC	1.12	lb ai/a	24	fl oz/a	PRE	A								
20	RAPTOR	1	AS	0.0312	lb ai/a	4	fl oz/a	PRE	A								
21	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	13.4	2468	4.9	436	6	13	17	2
21	DUAL II MAGNUM	7.64	EC	1.91	lb ai/a	2	pt/a	PRE	A								
21	RAPTOR	1	AS	0.0312	lb ai/a	4	fl oz/a	PRE	A								
22	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A	9.6	2033	1.4	145	43	72	63	2
22	OUTLOOK	6	EC	1.12	lb ai/a	24	fl oz/a	PRE	A								
22	RAPTOR	1	AS	0.0312	lb ai/a	4	fl oz/a	PRE	A								
23	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A	10.3	2033	2.8	290	47	78	68	7
23	DUAL II MAGNUM	7.64	EC	1.91	lb ai/a	2	pt/a	PRE	A								
23	RAPTOR	1	AS	0.0312	lb ai/a	4	fl oz/a	PRE	A								
24	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	12.6	2614	3.6	145	43	70	62	3
24	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A								
24	HANDWEED																
LSD (P=.05)										3.62	1358.1	5.18	456.5	13.2	27.0	28.9	10.9
Replicate F										4.851	1.183	1.784	0.964	1.424	2.143	1.553	0.310
Replicate Prob(F)										0.0123	0.3156	0.1793	0.3889	0.2512	0.1289	0.2226	0.7346
Treatment F										2.476	1.234	0.840	0.645	10.167	9.204	5.693	2.110
Treatment Prob(F)										0.0044	0.2662	0.6679	0.8710	0.0001	0.0001	0.0001	0.0155

Pumpkin Weed Management Study.

Project Code: 06-HRC-PRE-Pumpkin Location: Horticulture Research Center
 Investigator: Bryan Young

Weed Code	Crop Code	Rating Data Type	Rating Unit	Rating Date	Trt-Eval Interval	CUUPE		CUUPE		DIGIS	DIGSA	DIGSA	CHEAL	CHEAL					
						Disco Percent	Disco Percent	Disco Percent	Disco Percent	Control Percent	Control Percent	Control Percent	Control Percent	Control Percent					
						6-27-06	7-6-06	7-11-06	8-8-06	8-8-06	7-11-06	8-8-06	7-11-06	8-8-06					
						14 DA-A	23 DA-A	28 DA-A	56 DA-A	56 DA-A	28 DA-A	56 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	NONTREATED									0	0	0	0	0	0	0	0	0	0
2	HANDWEED									0	0	0	0	99		99		99	
3	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	1	0	0	0	91	91	82	99	99	
3	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A										
4	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	1	0	0	0	92	65	77	60	91	
5	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A	2	0	0	0	0	53	0	73	99	
6	RAPTOR	1	AS	0.0312	lb ai/a	4	fl oz/a	PRE	A	8	2	0	0	67	60	5	93	82	
7	OUTLOOK	6	EC	1.12	lb ai/a	24	fl oz/a	PRE	A	1	0	0	0	71	77	91	91	99	
8	DUAL II MAGNUM	7.64	EC	1.91	lb ai/a	2	pt/a	PRE	A	1	0	0	0	99	96	91	88	99	
9	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	1	0	0	0	99	42	43	99	99	
9	RAPTOR	1	AS	0.0312	lb ai/a	4	fl oz/a	PRE	A										
10	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	1	0	0	0	62	68	60	91	99	
10	OUTLOOK	6	EC	1.12	lb ai/a	24	fl oz/a	PRE	A										
11	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	0	0	0	0	83	92	91	76	68	
11	DUAL II MAGNUM	7.64	EC	1.91	lb ai/a	2	pt/a	PRE	A										
12	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A	10	5	2	0	65	66	35	98	99	
12	RAPTOR	1	AS	0.0312	lb ai/a	4	fl oz/a	PRE	A										
13	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A	1	0	0	0	61	93	52	99	99	
13	OUTLOOK	6	EC	1.12	lb ai/a	24	fl oz/a	PRE	A										
14	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A	3	0	0	0	95	92	87	99	99	
14	DUAL II MAGNUM	7.64	EC	1.91	lb ai/a	2	pt/a	PRE	A										
15	OUTLOOK	6	EC	1.12	lb ai/a	24	fl oz/a	PRE	A	2	0	0	0	58	63	20	99	94	
15	RAPTOR	1	AS	0.0312	lb ai/a	4	fl oz/a	PRE	A										
16	DUAL II MAGNUM	7.64	EC	1.91	lb ai/a	2	pt/a	PRE	A	2	3	0	0	41	93	63	76	66	
16	RAPTOR	1	AS	0.0312	lb ai/a	4	fl oz/a	PRE	A										
17	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	4	0	0	0	46	85	50	90	99	
17	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A										
17	RAPTOR	1	AS	0.0312	lb ai/a	4	fl oz/a	PRE	A										
18	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	3	0	0	0	75	93	27	94	99	
18	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A										
18	OUTLOOK	6	EC	1.12	lb ai/a	24	fl oz/a	PRE	A										
19	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	0	0	0	0	97	96	92	98	99	
19	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A										
19	DUAL II MAGNUM	7.64	EC	1.91	lb ai/a	2	pt/a	PRE	A										
20	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	0	0	0	0	99	78	77	90	99	
20	OUTLOOK	6	EC	1.12	lb ai/a	24	fl oz/a	PRE	A										
20	RAPTOR	1	AS	0.0312	lb ai/a	4	fl oz/a	PRE	A										
21	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	2	0	0	0	69	91	94	99	98	
21	DUAL II MAGNUM	7.64	EC	1.91	lb ai/a	2	pt/a	PRE	A										
21	RAPTOR	1	AS	0.0312	lb ai/a	4	fl oz/a	PRE	A										
22	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A	0	3	0	0	93	79	86	99	99	
22	OUTLOOK	6	EC	1.12	lb ai/a	24	fl oz/a	PRE	A										
22	RAPTOR	1	AS	0.0312	lb ai/a	4	fl oz/a	PRE	A										
23	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A	3	5	3	0	66	97	53	99	99	
23	DUAL II MAGNUM	7.64	EC	1.91	lb ai/a	2	pt/a	PRE	A										
23	RAPTOR	1	AS	0.0312	lb ai/a	4	fl oz/a	PRE	A										
24	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	7	2	0	0	96	89	79	96	99	
24	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A										
24	HANDWEED																		
LSD (P=.05)										5.0	3.9	1.4	0.0	46.7	26.0	35.4	30.5	29.3	
Replicate F										0.887	1.331	1.533	0.000	3.596	5.115	2.481	0.631	0.223	
Replicate Prob(F)										0.4186	0.2743	0.2266	1.0000	0.0354	0.0101	0.0948	0.5372	0.8012	
Treatment F										2.396	1.455	2.467	0.000	3.010	6.308	6.621	4.154	4.407	
Treatment Prob(F)										0.0058	0.1381	0.0045	1.0000	0.0007	0.0001	0.0001	0.0001	0.0001	

Pumpkin Weed Management Study.

Project Code: 06-HRC-PRE-Pumpkin Location: Horticulture Research Center
 Investigator: Bryan Young

Weed Code	AMATA	AMATA	AMARE	AMARE	EPHMA
Crop Code					
Rating Data Type	Control	Control	Control	Control	Control
Rating Unit	Percent	Percent	Percent	Percent	Percent
Rating Date	7-11-06	8-8-06	7-11-06	8-8-06	7-11-06
Trt-Eval Interval	28 DA-A	56 DA-A	28 DA-A	56 DA-A	28 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	AMATA	AMATA	AMARE	AMARE	EPHMA
1	NONTREATED									0	0	0	0	0
2	HANDWEED										99		99	
3	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	99	99	99	99	98
3	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A					
4	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	70	99	70	91	92
5	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A	99	99	99	99	96
6	RAPTOR	1	AS	0.0312	lb ai/a	4	fl oz/a	PRE	A	99	99	99	99	99
7	OUTLOOK	6	EC	1.12	lb ai/a	24	fl oz/a	PRE	A	99	99	80	68	88
8	DUAL II MAGNUM	7.64	EC	1.91	lb ai/a	2	pt/a	PRE	A	99	99	98	98	95
9	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	99	98	83	77	95
9	RAPTOR	1	AS	0.0312	lb ai/a	4	fl oz/a	PRE	A					
10	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	83	86	47	57	95
10	OUTLOOK	6	EC	1.12	lb ai/a	24	fl oz/a	PRE	A					
11	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	99	99	94	99	89
11	DUAL II MAGNUM	7.64	EC	1.91	lb ai/a	2	pt/a	PRE	A					
12	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A	99	99	99	99	99
12	RAPTOR	1	AS	0.0312	lb ai/a	4	fl oz/a	PRE	A					
13	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A	99	99	99	99	95
13	OUTLOOK	6	EC	1.12	lb ai/a	24	fl oz/a	PRE	A					
14	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A	99	99	99	99	99
14	DUAL II MAGNUM	7.64	EC	1.91	lb ai/a	2	pt/a	PRE	A					
15	OUTLOOK	6	EC	1.12	lb ai/a	24	fl oz/a	PRE	A	98	99	99	96	91
15	RAPTOR	1	AS	0.0312	lb ai/a	4	fl oz/a	PRE	A					
16	DUAL II MAGNUM	7.64	EC	1.91	lb ai/a	2	pt/a	PRE	A	99	99	83	73	93
16	RAPTOR	1	AS	0.0312	lb ai/a	4	fl oz/a	PRE	A					
17	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	98	99	95	99	94
17	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A					
17	RAPTOR	1	AS	0.0312	lb ai/a	4	fl oz/a	PRE	A					
18	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	99	99	99	99	82
18	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A					
18	OUTLOOK	6	EC	1.12	lb ai/a	24	fl oz/a	PRE	A					
19	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	99	99	99	99	96
19	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A					
19	DUAL II MAGNUM	7.64	EC	1.91	lb ai/a	2	pt/a	PRE	A					
20	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	99	99	99	99	96
20	OUTLOOK	6	EC	1.12	lb ai/a	24	fl oz/a	PRE	A					
20	RAPTOR	1	AS	0.0312	lb ai/a	4	fl oz/a	PRE	A					
21	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	96	99	99	94	99
21	DUAL II MAGNUM	7.64	EC	1.91	lb ai/a	2	pt/a	PRE	A					
21	RAPTOR	1	AS	0.0312	lb ai/a	4	fl oz/a	PRE	A					
22	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A	99	99	99	99	99
22	OUTLOOK	6	EC	1.12	lb ai/a	24	fl oz/a	PRE	A					
22	RAPTOR	1	AS	0.0312	lb ai/a	4	fl oz/a	PRE	A					
23	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A	99	99	99	99	98
23	DUAL II MAGNUM	7.64	EC	1.91	lb ai/a	2	pt/a	PRE	A					
23	RAPTOR	1	AS	0.0312	lb ai/a	4	fl oz/a	PRE	A					
24	STRATEGY	2.1	EC	1.57	lb ai/a	3.0	qt/a	PRE	A	98	99	99	99	99
24	SANDEA	75	WG	0.0314	lb ai/a	0.67	oz/a	PRE	A					
24	HANDWEED													

LSD (P=.05)	15.5	7.6	20.7	25.4	10.4
Replicate F	2.095	1.050	1.414	0.257	1.425
Replicate Prob(F)	0.1351	0.3582	0.2540	0.7748	0.2516
Treatment F	15.447	58.094	10.205	6.297	30.613
Treatment Prob(F)	0.0001	0.0001	0.0001	0.0001	0.0001

Pumpkin Weed Management Study.

Project Code: 06-HRC-PRE-Pumpkin Location: Horticulture Research Center
Investigator: Bryan Young

Trial Comments

1. Protocol: SIU/SAW.
2. Ratings: Pumpkin response (injury and growth reduction) and WC 28 and 56 DAT and at first harvest.
3. Yield, 2 harvests.
4. Fruit = Marketable pumpkins. Culls = Non-marketable pumpkins. No./A = Pumpkins per acre.
DA-A = Days after PRE application. Stunt = Growth reduction. Disco = Discoloration and/or necrosis.
5. All treatments included a wheat covercrop which provided some weed suppression at the 28 DA-A rating.
Weed control ratings at 56 DA-A were influenced by crop canopy.
6. Handweeded plots were handweeded after the 28 DA-A rating.
7. At pumpkin ripening, plant vigor was reduced by hot weather and diseases.
8. Harvested 9-1-06 and 9-14-06, 5 by 20 ft.