

## Zucchini No-Till Weed Management Study.

Project Code: 04-HRC-zuc      Location: Carbondale, IL  
 Investigator: Bryan Young

Investigator: Bryan Young, Associate Professor, Southern Illinois University

City State Zip Country:      Carbondale      IL 62901 USA  
 Trial Status: Final              Updated:          11-3-04

## Objective:

Evaluate crop response and weed control with herbicides with and without a Wheeler winter rye covercrop in no-till zucchini.

Weed Code	Common Name	Scientific Name
1.	GGGAN grasses, annual	
2.	AMARE pigweed, redroot	Amaranthus retroflexus L.
3.	DIGIS crabgrass, smooth	Digitaria ischaemum (Schreb. ex Schweig)

Crop 1:                      CUUPG squash, zucchini      Variety:              Independence II  
 Planting Method: Transplant                      Planting Date: 5-18-04  
 Rate:                      0.5      P/ROW-FT                      IN  
 Row Spacing:              36      IN

Plot Width, Unit: 6      FT                      Plot Length, Unit: 10      FT      Reps: 3  
 Tillage Type:              No-Till                      Study Design: Split-plot

Field Prep./Maintenance: N \_\_\_ LB/A, P205 \_\_\_ LB/A, K2O \_\_\_ LB/A

## APPLICATION DESCRIPTION

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Application Date:      5-9-04  
 Time of Day:              11:00  
 Application Method:      Spray  
 Application Timing:      PRE  
 Applic. Placement:      BROSIOI  
 Air Temp., Unit:          78      F  
 Wind Velocity, Unit:      3-7      MPH  
 Dew Presence (Y/N):      N  
 Soil Temp., Unit:          72      F  
 Soil Moisture:              BELNOR  
 % Cloud Cover:              25

## CROP STAGE AT EACH APPLICATION

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Crop 1 Code, Stage:      CUUPG NA  
 Height, Unit:              NA      NA

## APPLICATION EQUIPMENT

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Appl. Equipment:          CO2 sprayer  
 Operating Pressure:      20 PSI  
 Nozzle Type:              XR  
 Nozzle Size:              8003  
 Boom Length, Unit:      6.67 FT  
 Spray Volume, Unit:      20      GPA

## NOTES:

Target PRE application for May 2, transplant May 3.

Southern Illinois University

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Weed Code																GGGAN	GGGAN	GGGAN	GGGAN	GGGAN											
Crop Code	Rating Data Type	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	Control	Control	Control	Plants	Dry oz											
Rating Unit	Rating Date	Fruit	Fruit	Injury	Injury	Injury	Injury	Injury	Stunt	Stunt	Stunt	Stunt	Stunt	Stunt	Percent	Percent	Percent	1 sqft	1 sqft												
Trt-Eval Interval		No./A	Lb/A	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	5-31-04	6-14-04	7-6-04	7-5-04	7-5-04												
Trt	Treatment	Form	Form	Rate	Prod	Prod	Grow	Appl												13 DAP	@Harvest	13 DAP	@Harvest	EOS	EOS						
No.	Name	Conc	Type	Unit	Rate	Unit	Stg	Code												13 DAP	@Harvest	EOS	EOS	EOS	EOS						
1	WHEELER WINTER RYE CC STRATEGY	2.1	EC	1.57	LB A/A	3.0	QT/A	PRE A	31944	17134	0	0	28	0	0	92	87	98	2	0.10											
2	WHEELER WINTER RYE CC STRATEGY	2.1	EC	1.57	LB A/A	3.0	QT/A	PRE A	30250	16771	0	0	23	0	0	92	85	95	3	0.18											
2	RAPTOR	1	AS	0.036	LB A/A	4.6	OZ/A	PRE A																							
3	WHEELER WINTER RYE CC STRATEGY	2.1	EC	1.57	LB A/A	3.0	QT/A	PRE A	31944	17255	0	0	30	0	0	92	87	98	1	0.05											
3	FRONTIER 6.0	6	EC	2.0	LB A/A	1.33	QT/A	PRE A																							
4	WHEELER WINTER RYE CC NONTREATED																			24200	13939	0	0	32	0	0	86	65	76	5	0.27
5	WHEELER WINTER RYE CC HANDWEEDED																			27443	16045	0	0	35	0	0	99	70	100	0	0.00
6	NO COVER CROP STRATEGY	2.1	EC	1.57	LB A/A	3.0	QT/A	PRE A	41382	25289	0	0	0	0	0	99	72	92	1	0.14											
7	NO COVER CROP STRATEGY	2.1	EC	1.57	LB A/A	3.0	QT/A	PRE A	38236	21514	0	0	0	0	0	99	80	95	2	0.21											
7	RAPTOR	1	AS	0.036	LB A/A	4.6	OZ/A	PRE A																							
8	NO COVER CROP STRATEGY	2.1	EC	1.57	LB A/A	3.0	QT/A	PRE A	39688	21780	0	0	2	0	0	99	90	99	1	0.05											
8	FRONTIER 6.0	6	EC	2.0	LB A/A	1.33	QT/A	PRE A																							
9	NO COVER CROP NONTREATED																			12342	7011	0	0	78	0	0	0	0	0	7	1.32
10	NO COVER CROP HANDWEEDED																			46464	27961	0	0	0	0	0	66	99	100	0	0.00
LSD (P=.05)									8569.9	5442.5	0.0	0.0	15.2	0.0	0.0	35.1	10.8	16.4	2.5	0.222											
Replicate F									9.713	11.906	0.000	0.000	7.987	0.000	0.000	0.295	2.250	2.666	0.746	1.665											
Replicate Prob(F)									0.0014	0.0005	1.0000	1.0000	0.0033	1.0000	1.0000	0.7481	0.1342	0.0968	0.4883	0.2170											
Treatment F									11.551	10.620	0.000	0.000	22.791	0.000	0.000	6.753	57.781	31.196	6.533	27.715											
Treatment Prob(F)									0.0001	0.0001	1.0000	1.0000	0.0001	1.0000	1.0000	0.0003	0.0001	0.0001	0.0004	0.0001											

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Weed Code	AMARE	AMARE	AMARE	AMARE	AMARE
Crop Code	Control	Control	Control	Plants	Dry oz
Rating Data Type	Percent	Percent	Percent	1 sqft	1 sqft
Rating Unit	5-31-04	6-14-04	7-6-04	7-5-04	7-5-04
Rating Date	13 DAP	@Harvest	EOS	EOS	EOS
Trt-Eval Interval					

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code					
1	WHEELER WINTER RYE CC STRATEGY	2.1	EC	1.57	LB A/A	3.0	QT/A	PRE	A	99	78	92	2	0.24
2	WHEELER WINTER RYE CC STRATEGY	2.1	EC	1.57	LB A/A	3.0	QT/A	PRE	A	99	80	98	1	0.18
	2 RAPTOR	1	AS	0.036	LB A/A	4.6	OZ/A	PRE	A					
3	WHEELER WINTER RYE CC STRATEGY	2.1	EC	1.57	LB A/A	3.0	QT/A	PRE	A	99	85	92	3	0.40
	3 FRONTIER 6.0	6	EC	2.0	LB A/A	1.33	QT/A	PRE	A					
4	WHEELER WINTER RYE CC NONTREATED									99	67	92	3	0.31
5	WHEELER WINTER RYE CC HANDWEEDED									99	70	100	0	0.00
6	NO COVER CROP STRATEGY	2.1	EC	1.57	LB A/A	3.0	QT/A	PRE	A	96	68	60	8	0.84
7	NO COVER CROP STRATEGY	2.1	EC	1.57	LB A/A	3.0	QT/A	PRE	A	99	80	86	4	0.52
	7 RAPTOR	1	AS	0.036	LB A/A	4.6	OZ/A	PRE	A					
8	NO COVER CROP STRATEGY	2.1	EC	1.57	LB A/A	3.0	QT/A	PRE	A	99	85	89	5	0.30
	8 FRONTIER 6.0	6	EC	2.0	LB A/A	1.33	QT/A	PRE	A					
9	NO COVER CROP NONTREATED									0	0	0	3	1.19
10	NO COVER CROP HANDWEEDED									99	99	100	0	0.00
LSD (P=.05)										0.6	14.8	14.2	4.4	0.432
Replicate F										1.000	0.078	0.593	2.489	0.606
Replicate Prob(F)										0.3874	0.9249	0.5632	0.1111	0.5561
Treatment F										21912.250	28.957	40.937	2.742	6.534
Treatment Prob(F)										0.0001	0.0001	0.0001	0.0327	0.0004

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, 15 harvests, count and weigh marketable, oversize and cull.
3. Spray ryegrass with reduced select solution (April 20) mow (April 27), PRE (may 2), transplant (May 3).
4. Fruit = Marketable zucchini, does not include oversized. DAP = Days after planting. @Harvest = At harvest. EOS = End of season. GGGAN = Annual grasses including DIGIS.  
 1 sqft = 1.0 square foot. Dry oz = Oven dry weight of weeds harvested, in ounces.
5. Ratings on 6-14-04, @Harvest, were also 27 DAP. Ratings on 7-6-04, EOS, were also 49 DAP. Study ended at 49 DAP.