

## Zucchini No-Till Weed Management Study.

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

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country:            Carbondale            IL 62901 USA  
 Trial Status: Established            Updated:            9-17-03

**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.	DIGSA crabgrass, large	Digitaria sanguinalis (L.) Scop.
2.	AMARE pigweed, redroot	Amaranthus retroflexus L.

Crop 1:            CUUPG squash, zucchini            Variety:            Independence II  
 Planting Method: Transplant            Planting Date: 5-13-03  
 Rate:            0.5    P/ROW-FT  
 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 75 LB/A, P205 \_\_ LB/A, K20 \_\_ LB/A

**APPLICATION DESCRIPTION**

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Application Date:            5-12-03  
 Time of Day:            14:00  
 Application Method:            Spray  
 Application Timing:            PRE  
 Applic. Placement:            BROSOI  
 Air Temp., Unit:            71    F  
 % Relative Humidity:            35  
 Wind Velocity, Unit:            3-10 MPH  
 Dew Presence (Y/N):            N  
 Soil Temp., Unit:            69    F  
 Soil Moisture:            ABONOR  
 % Cloud Cover:            0

**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.  
 Harvested Jun-17-03 to Jul-09-03.

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Weed Code											DIGSA	DIGSA	DIGSA	DIGSA
Crop Code	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG				
Rating Data Type	Fruit	Fruit	Injury	Injury	Injury	Injury	Stunt	Stunt	Stunt	Stunt	Control	Control	Control	Control
Rating Unit	No./A	Lb/A	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Date			5-26-03	6-2-03	6-9-03	7-7-03	5-26-03	6-2-03	6-9-03	7-7-03	5-26-03	6-2-03	6-9-03	7-7-03
Trt-Eval Interval			14 DA-A	21 DA-A	28 DA-A	56 DA-A	14 DA-A	21 DA-A	28 DA-A	56 DA-A	14 DA-A	21 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	WHEELER WINTER RYE CC									13552	5905	0	0	0	0	0	0
1	TILLAGE PRIOR TO SPRAY																
1	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A								
2	WHEELER WINTER RYE CC									15730	7357	2	0	0	0	0	0
2	NO-TILL																
2	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A								
3	WHEELER WINTER RYE CC									7502	3049	2	0	0	0	0	0
3	NO-TILL																
3	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A								
4	WHEELER WINTER RYE CC									2904	1113	8	0	0	0	0	0
4	NO-TILL																
4	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A								
4	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A								
5	WHEELER WINTER RYE CC									13552	5663	3	0	0	0	0	0
5	NO-TILL																
5	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A								
5	RAPTOR	1	AS	0.036	LB A/A	4.6	OZ/A	PRE	A								
6	WHEELER WINTER RYE CC									19118	9801	2	0	0	0	0	0
6	NO-TILL																
6	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A								
6	FRONTIER 6.0	6	EC	2.0	LB A/A	1.33	QT/A	PRE	A								
7	WHEELER WINTER RYE CC									18392	8543	0	0	0	0	0	0
7	NO-TILL																
7	NONTREATED																
8	WHEELER WINTER RYE CC									17666	7986	0	0	0	0	0	0
8	NO-TILL																
8	HANDWEED																
9	NO COVER CROP									20086	8833	0	0	0	0	0	0
9	TILLAGE PRIOR TO SPRAY																
9	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A								
10	NO COVER CROP									18150	7986	0	0	0	0	0	0
10	NO-TILL																
10	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A								

Weed Code												DIGSA	DIGSA	DIGSA	DIGSA							
Crop Code	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG											
Rating Data Type	Fruit	Fruit	Injury	Injury	Injury	Injury	Stunt	Stunt	Stunt	Stunt		Control	Control	Control	Control							
Rating Unit	No./A	Lb/A	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent		Percent	Percent	Percent	Percent							
Rating Date			5-26-03	6-2-03	6-9-03	7-7-03	5-26-03	6-2-03	6-9-03	7-7-03		5-26-03	6-2-03	6-9-03	7-7-03							
Trt-Eval Interval			14 DA-A	21 DA-A	28 DA-A	56 DA-A	14 DA-A	21 DA-A	28 DA-A	56 DA-A		14 DA-A	21 DA-A	28 DA-A	56 DA-A							
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Prod Rate	Prod Unit	Grow Stg	Appl Code														
11	NO COVER CROP								4356	2009	5	0	0	0	0	0	0	0	99	99	20	0
11	NO-TILL																					
11	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE A														
12	NO COVER CROP								7018	2831	3	0	0	0	0	0	0	0	99	99	99	75
12	NO-TILL																					
12	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE A														
12	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE A														
13	NO COVER CROP								11616	5421	2	0	0	0	0	0	0	0	99	99	89	72
13	NO-TILL																					
13	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE A														
13	RAPTOR	1	AS	0.036	LB A/A	4.6	OZ/A	PRE A														
14	NO COVER CROP								18392	8857	0	0	0	0	0	0	0	0	99	99	97	85
14	NO-TILL																					
14	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE A														
14	FRONTIER 6.0	6	EC	2.0	LB A/A	1.33	QT/A	PRE A														
15	NO COVER CROP								18392	8301	0	0	0	0	0	0	0	0	0	0	0	0
15	NO-TILL																					
15	NONTREATED																					
16	NO COVER CROP								17424	7986	0	0	0	0	0	0	0	0	100	100	100	100
16	NO-TILL																					
16	HANDWEED																					
LSD (P=.05)									16051.6	7915.3	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	3.0	8.1	5.4
Replicate F									1.324	1.561	0.072	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.965	0.081	0.104
Replicate Prob(F)									0.2811	0.2266	0.9303	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.3798	0.3924	0.9225	0.9015
Treatment F									1.035	1.004	2.319	0.000	0.000	0.000	0.000	0.000	0.000	0.000	88419.203	573.948	116.214	267.797
Treatment Prob(F)									0.4498	0.4769	0.0243	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0001	0.0001	0.0001	0.0001

Weed Code	AMARE	AMARE	AMARE	AMARE
Crop Code				
Rating Data Type	Control	Control	Control	Control
Rating Unit	Percent	Percent	Percent	Percent
Rating Date	5-26-03	6-2-03	6-9-03	7-7-03
Trt-Eval Interval	14 DA-A	21 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	WHEELER WINTER RYE CC									99	94	65	52
1	TILLAGE PRIOR TO SPRAY												
1	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A				
2	WHEELER WINTER RYE CC									99	99	87	72
2	NO-TILL												
2	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A				
3	WHEELER WINTER RYE CC									99	99	93	89
3	NO-TILL												
3	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A				
4	WHEELER WINTER RYE CC									99	99	99	87
4	NO-TILL												
4	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A				
4	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A				
5	WHEELER WINTER RYE CC									99	99	98	87
5	NO-TILL												
5	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A				
5	RAPTOR	1	AS	0.036	LB A/A	4.6	OZ/A	PRE	A				
6	WHEELER WINTER RYE CC									99	99	93	81
6	NO-TILL												
6	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A				
6	FRONTIER 6.0	6	EC	2.0	LB A/A	1.33	QT/A	PRE	A				
7	WHEELER WINTER RYE CC									99	91	75	72
7	NO-TILL												
7	NONTREATED												
8	WHEELER WINTER RYE CC									100	100	100	100
8	NO-TILL												
8	HANDWEED												
9	NO COVER CROP									99	99	85	72
9	TILLAGE PRIOR TO SPRAY												
9	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A				
10	NO COVER CROP									99	99	85	73
10	NO-TILL												
10	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A				
11	NO COVER CROP									99	99	98	93
11	NO-TILL												
11	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A				

Weed Code	AMARE	AMARE	AMARE	AMARE
Crop Code				
Rating Data Type	Control	Control	Control	Control
Rating Unit	Percent	Percent	Percent	Percent
Rating Date	5-26-03	6-2-03	6-9-03	7-7-03
Trt-Eval Interval	14 DA-A	21 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				
12	NO COVER CROP									99	99	99	80
12	NO-TILL												
12	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A				
12	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A				
13	NO COVER CROP									99	99	92	65
13	NO-TILL												
13	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A				
13	RAPTOR	1	AS	0.036	LB A/A	4.6	OZ/A	PRE	A				
14	NO COVER CROP									99	99	93	78
14	NO-TILL												
14	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A				
14	FRONTIER 6.0	6	EC	2.0	LB A/A	1.33	QT/A	PRE	A				
15	NO COVER CROP									0	0	0	0
15	NO-TILL												
15	NONTREATED												
16	NO COVER CROP									100	100	100	100
16	NO-TILL												
16	HANDWEED												
LSD (P=.05)										0.2	4.4	12.8	11.1
Replicate F										1.000	1.887	1.704	0.009
Replicate Prob(F)										0.3798	0.1691	0.1991	0.9914
Treatment F										88419.203	264.954	31.196	38.345
Treatment Prob(F)										0.0001	0.0001	0.0001	0.0001

Zucchini No-Till Weed Management Study.

Project Code: 03-HRC-zuc      Location: Carbondale, 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, 12 harvests, count and weigh #1's, #2's and culls.
3. Mow and spray (glyphosate 2.0 %) all plots on April 8.
4. Mix size and amount to measure are calculated for 3 plots plus 0.01 (0.02/2) gallon  
overage, thus double mix size and amount to mix and spray each treatment in the  
rye and no rye plots from 1 bottle (6 plots).
5. Fruit = marketable harvested squash. DA-A = days after PRE application; 14, 28, and 56 DA-A was also 13, 27, and 55 days after planting, respectively.