

Cucumber No-Till Weed Management Study.

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

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

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

Objective:

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

Weed Code	Common Name	Scientific Name
1.	DIGSA crabgrass, large	Digitaria sanguinalis (L.) Scop.
2.	AMARE pigweed, redroot	Amaranthus retroflexus L.

Crop 1: CUMSA cucumber Variety: Daytona
 Planting Method: Transplant Planting Date: 5-14-03
 Rate: 2.0 P/ROW-FT
 Row Spacing: 48 IN

Plot Width, Unit: 5 FT Plot Length, Unit: 10 FT Reps: 4
 Tillage Type: No-Till Study Design: Split-plot

Field Prep./Maintenance: N 75 LB/A, P205 __ LB/A, K20 __ LB/A

APPLICATION DESCRIPTION**A**

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: 3-13 MPH
 Dew Presence (Y/N): N
 Soil Temp., Unit: 69 F
 Soil Moisture: ABONOR
 % Cloud Cover: 0

CROP STAGE AT EACH APPLICATION**A**

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

APPLICATION EQUIPMENT**A**

Appl. Equipment: CO2 sprayer
 Operating Pressure: 20 PSI
 Nozzle Type: XR
 Nozzle Size: 8003
 Boom Length, Unit: 3.33 FT
 Spray Volume, Unit: 20 GPA

NOTES:

Target PRE application for May 2, transplant May 3.
 Harvested Jun-24-03 to Jul-10-03.

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Weed Code	CUMSA	CUMSA	CUMSA	CUMSA	CUMSA	CUMSA	CUMSA	CUMSA	CUMSA	CUMSA	CUMSA	DIGSA	DIGSA	DIGSA	DIGSA
Crop Code	Fruit	Fruit	Injury	Injury	Injury	Injury	Stunt	Stunt	Stunt	Stunt	Stunt	Control	Control	Control	Control
Rating Data Type	No./A	Lb/A	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Unit			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	
Rating Date			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-Eval Interval															

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	CUMSA	CUMSA	CUMSA	CUMSA	CUMSA	CUMSA	CUMSA	CUMSA	DIGSA	DIGSA	DIGSA	DIGSA
1	WHEELER WINTER RYE CC 1 TILLAGE PRIOR TO SPRAY 1 STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A	15609	10817	0	0	0	0	0	0	99	99	99	86
2	WHEELER WINTER RYE CC 2 NO-TILL 2 STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A	15791	11816	0	0	0	0	0	0	99	99	99	87
3	WHEELER WINTER RYE CC 3 NO-TILL 3 SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A	13068	9075	0	0	0	0	0	0	99	99	99	85
4	WHEELER WINTER RYE CC 4 NO-TILL 4 STRATEGY 4 SANDEA	2.1 75	EC WG	1.313 0.031	LB A/A LB A/A	2.5 0.66	QT/A OZ/A	PRE PRE	A A	16335	10781	0	0	0	0	0	0	99	99	99	88
5	WHEELER WINTER RYE CC 5 NO-TILL 5 NONTREATED									12705	9002	0	0	0	0	0	0	99	90	99	81
6	WHEELER WINTER RYE CC 6 NO-TILL 6 HANDWEED									14883	11798	0	0	0	0	0	0	100	100	100	100
7	NO COVER CROP 7 TILLAGE PRIOR TO SPRAY 7 STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A	20691	16498	0	0	0	0	0	0	99	99	99	89
8	NO COVER CROP 8 NO-TILL 8 STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A	23595	20038	0	0	0	0	0	0	99	99	98	70
9	NO COVER CROP 9 NO-TILL 9 SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A	19330	14456	0	0	0	0	0	0	99	93	18	0
10	NO COVER CROP 10 NO-TILL 10 STRATEGY 10 SANDEA	2.1 75	EC WG	1.313 0.031	LB A/A LB A/A	2.5 0.66	QT/A OZ/A	PRE PRE	A A	31581	22406	0	0	0	0	0	0	99	99	96	90
11	NO COVER CROP 11 NO-TILL 11 NONTREATED									11162	8685	0	0	0	0	0	0	0	0	0	0

Weed Code												DIGSA	DIGSA	DIGSA	DIGSA
Crop Code															
Rating Data Type												Control	Control	Control	Control
Rating Unit												Percent	Percent	Percent	Percent
Rating Date												Percent	Percent	Percent	Percent
Trt-Eval Interval												Percent	Percent	Percent	Percent
												14 DA-A	21 DA-A	28 DA-A	56 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code						
12	NO COVER CROP	26408	21018	0	0	0	0	0	0	0	0	100	100	100	100
12	NO-TILL														
12	HANDWEED														
LSD (P=.05)		11549.4	9150.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.3	2.5	9.2
Replicate F		3.005	2.763	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.545	2.366	2.972
Replicate Prob(F)		0.0502	0.0640	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.2214	0.0893	0.0459
Treatment F		2.412	2.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	172.118	1725.572	119.281
Treatment Prob(F)		0.0346	0.0294	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	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	99	95	80
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	99	85
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	99	90
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	91
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	89	95	82
5	NO-TILL												
5	NONTREATED												
6	WHEELER WINTER RYE CC									100	100	100	100
6	NO-TILL												
6	HANDWEED												
7	NO COVER CROP									99	98	85	73
7	TILLAGE PRIOR TO SPRAY												
7	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A				
8	NO COVER CROP									99	99	84	48
8	NO-TILL												
8	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A				
9	NO COVER CROP									99	99	99	91
9	NO-TILL												
9	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A				
10	NO COVER CROP									99	99	99	90
10	NO-TILL												
10	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A				
10	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A				
11	NO COVER CROP									0	0	0	0
11	NO-TILL												
11	NONTREATED												
12	NO COVER CROP									100	100	100	100
12	NO-TILL												
12	HANDWEED												

Weed Code	AMARE	AMARE	AMARE	AMARE
Crop Code				
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LSD (P=.05)			0.0	8.2	4.3	8.9			
Replicate F			0.000	0.927	1.351	1.802			
Replicate Prob(F)			1.0000	0.4388	0.2754	0.1660			
Treatment F			0.000	100.809	350.979	83.966			
Treatment Prob(F)			1.0000	0.0001	0.0001	0.0001			

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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. All plots mowed and sprayed (glyphosate 2.0 %) on April 8.
4. Mix size and amount to measure are calculated for 4 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 (8 plots).
5. Fruit = marketable harvested cucumbers. DA-A = days after PRE application; 14, 28, and 56 DA-A was also 12, 26, and 54 days after planting, respectively. Ratings on 7-7-03 at 56 DA-A were also at first harvest.