

Evaluation of Various Winter Rye Cultivars for Weed Control in No-Till Squash.

Project Code: 03-HRC-nt-Squash Location: Carbondale, IL

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Carbondale IL 62901 USA
 Trial Status: Final Updated: 9-18-03

Objective:

Evaluate crop response and weed control with herbicides with three winter rye varieties as covercrops in no-till squash.

Weed Code	Common Name	Scientific Name
1.	DIGSA crabgrass, large	<i>Digitaria sanguinalis</i> (L.) Scop.
2.	AMARE pigweed, redroot	<i>Amaranthus retroflexus</i> 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: 4 FT Plot Length, Unit: 6 FT Reps: 4
 Tillage Type: See treatment list Study Design: Split-plot

Field Prep./Maintenance: N 80 LB/A, P205 __ LB/A, K20 __ LB/A

APPLICATION DESCRIPTION

A

Application Date: 5-12-03
 Time of Day: 13:30
 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: CUUPG 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 6, transplant May 7.
 Tillages are no-till and roto-tilled, see treatment list.
 Harvested Jun-17-03 to Jul-4-03.

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Weed Code														DIGSA	DIGSA	DIGSA	DIGSA
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	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	CUUPG Fruit No./A	CUUPG Fruit Lb/A	CUUPG Injury Percent 5-26-03	CUUPG Injury Percent 6-2-03	CUUPG Injury Percent 6-9-03	CUUPG Injury Percent 7-7-03	CUUPG Stunt Percent 5-26-03	CUUPG Stunt Percent 6-2-03	CUUPG Stunt Percent 6-9-03	CUUPG Stunt Percent 7-7-03	DIGSA Control Percent 5-26-03	DIGSA Control Percent 6-2-03	DIGSA Control Percent 6-9-03	DIGSA Control Percent 7-7-03
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	24200	11777	1	6	4	0	1	6	4	0	99	99	99	90
2	WHEELER WINTER RYE CC 2 NO-TILL 2 STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A	23595	11737	0	0	0	0	0	0	0	0	99	99	95	86
3	WHEELER WINTER RYE CC 3 NO-TILL 3 SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A	3630	1543	5	23	13	0	0	23	13	0	99	86	43	21
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	10588	5022	4	20	16	0	1	20	16	0	99	99	98	69
5	WHEELER WINTER RYE CC 5 NO-TILL 5 NONTREATED									15730	8531	0	1	0	0	0	1	0	0	97	71	38	25
6	WHEELER WINTER RYE CC 6 NO-TILL 6 HANDWEED									18150	8228	0	5	0	0	0	5	0	0	100	100	100	100
7	ELBON WINTER RYE CC 7 TILLAGE PRIOR TO SPRAY 7 STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A	16133	8591	0	3	0	0	0	3	0	0	99	99	95	91
8	ELBON WINTER RYE CC 8 NO-TILL 8 STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A	11495	5233	0	5	0	0	0	5	0	0	99	99	94	88
9	ELBON WINTER RYE CC 9 NO-TILL 9 SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A	5445	2602	1	11	3	0	1	11	3	0	99	93	79	66
10	ELBON WINTER RYE CC 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	9378	4628	0	8	0	0	0	8	0	0	99	99	90	79
11	ELBON WINTER RYE CC 11 NO-TILL 11 NONTREATED									16033	7895	0	1	0	0	0	1	0	0	99	87	73	61

Weed Code	Crop Code	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	DIGSA	DIGSA	DIGSA	DIGSA
Rating Data Type	Rating Unit	Fruit	Fruit	Injury	Injury	Injury	Injury	Stunt	Stunt	Stunt	Stunt	Control	Control	Control	Control
Rating Date	Trt-Eval Interval	No./A	Lb/A	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
				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
				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 Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	DIGSA	DIGSA	DIGSA	DIGSA		
12	ELBON WINTER RYE CC 12 NO-TILL 12 HANDWEED									13915	6504	0	3	0	0	0	3	0	0	100	100	100	100
13	MATON WINTER RYE CC 13 TILLAGE PRIOR TO SPRAY 13 STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A	9075	4023	0	9	3	0	0	9	3	0	99	99	98	94
14	MATON WINTER RYE CC 14 NO-TILL 14 STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A	15730	6897	0	3	0	0	0	3	0	0	99	99	90	84
15	MATON WINTER RYE CC 15 NO-TILL 15 SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A	10890	5748	1	6	3	0	0	6	3	0	99	99	91	79
16	MATON WINTER RYE CC 16 NO-TILL 16 STRATEGY 16 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	10588	5173	3	9	1	0	0	9	1	0	99	99	95	88
17	MATON WINTER RYE CC 17 NO-TILL 17 NONTREATED									13008	6322	0	0	0	0	0	0	0	0	99	84	71	65
18	MATON WINTER RYE CC 18 NO-TILL 18 HANDWEED									17545	8984	0	0	0	0	0	0	0	0	100	100	100	100
19	NO COVER CROP 19 TILLAGE PRIOR TO SPRAY 19 STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A	21780	10467	0	0	0	0	0	0	0	0	99	99	97	70
20	NO COVER CROP 20 NO-TILL 20 STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A	21175	10225	0	0	0	0	0	0	0	0	99	98	95	84
21	NO COVER CROP 21 NO-TILL 21 SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A	9378	4507	0	8	1	0	0	8	1	0	99	76	14	0
22	NO COVER CROP 22 NO-TILL 22 STRATEGY 22 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	14520	7472	0	6	0	0	0	6	0	0	99	99	97	69
23	NO COVER CROP 23 NO-TILL 23 NONTREATED									16033	7200	0	0	0	0	0	0	0	0	0	0	0	0

Weed Code												DIGSA	DIGSA	DIGSA	DIGSA				
Crop Code																			
Rating Data Type		CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	CUUPG	Control	Control	Control	Control				
Rating Unit		Fruit	Fruit	Injury	Injury	Injury	Injury	Stunt	Stunt	Stunt	Stunt	Percent	Percent	Percent	Percent				
Rating Date		No./A	Lb/A	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	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											
24	NO COVER CROP								23293	11586	0	0	0	0	0	100	100	100	100
24	NO-TILL																		
24	HANDWEED																		
LSD (P=.05)				1.9	6.1	4.6	0.0	1.2	6.1	4.6	0.0	1.3	7.9	13.1	19.3				
Replicate F		8.185	11.830	4.600	2.173	1.411	0.000	3.286	2.173	1.411	0.000	1.000	5.196	4.594	5.789				
Replicate Prob(F)		0.0001	0.0001	0.0054	0.0991	0.2470	1.0000	0.0258	0.0991	0.2470	1.0000	0.3982	0.0027	0.0054	0.0014				
Treatment F		3.809	3.689	3.900	7.847	6.261	0.000	1.000	7.847	6.261	0.000	1940.818	56.792	37.847	19.377				
Treatment Prob(F)		0.0001	0.0001	0.0001	0.0001	0.0001	1.0000	0.4773	0.0001	0.0001	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	Prod Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code				
1	WHEELER WINTER RYE CC									99	95	85	55
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	84	68
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	97	96	93
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									97	73	54	45
5	NO-TILL												
5	NONTREATED												
6	WHEELER WINTER RYE CC									100	100	100	100
6	NO-TILL												
6	HANDWEED												
7	ELBON WINTER RYE CC									99	95	86	74
7	TILLAGE PRIOR TO SPRAY												
7	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A				
8	ELBON WINTER RYE CC									99	98	93	80
8	NO-TILL												
8	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A				
9	ELBON WINTER RYE CC									99	98	94	90
9	NO-TILL												
9	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A				
10	ELBON WINTER RYE CC									99	99	97	91
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	ELBON WINTER RYE CC									99	89	76	65
11	NO-TILL												
11	NONTREATED												
12	ELBON WINTER RYE CC									100	100	100	100
12	NO-TILL												
12	HANDWEED												

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				
13	MATON WINTER RYE CC									99	97	86	49
13	TILLAGE PRIOR TO SPRAY												
13	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A				
14	MATON WINTER RYE CC									99	99	93	74
14	NO-TILL												
14	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A				
15	MATON WINTER RYE CC									99	98	95	88
15	NO-TILL												
15	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A				
16	MATON WINTER RYE CC									99	99	97	91
16	NO-TILL												
16	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A				
16	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A				
17	MATON WINTER RYE CC									99	86	73	64
17	NO-TILL												
17	NONTREATED												
18	MATON WINTER RYE CC									100	100	100	100
18	NO-TILL												
18	HANDWEED												
19	NO COVER CROP									99	93	85	76
19	TILLAGE PRIOR TO SPRAY												
19	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A				
20	NO COVER CROP									99	95	83	60
20	NO-TILL												
20	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A				
21	NO COVER CROP									99	90	96	91
21	NO-TILL												
21	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A				
22	NO COVER CROP									99	99	99	91
22	NO-TILL												
22	STRATEGY	2.1	EC	1.313	LB A/A	2.5	QT/A	PRE	A				
22	SANDEA	75	WG	0.031	LB A/A	0.66	OZ/A	PRE	A				
23	NO COVER CROP									0	0	0	0
23	NO-TILL												
23	NONTREATED												
24	NO COVER CROP									100	100	100	100
24	NO-TILL												
24	HANDWEED												

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 Rate	Prod Rate	Prod Unit	Grow Stg	Appl Code
LSD (P=.05)				1.3	5.9	10.8	11.7	
Replicate F				1.000	2.531	1.431	2.515	
Replicate Prob(F)				0.3982	0.0642	0.2412	0.0655	
Treatment F				1940.818	95.684	31.362	32.011	
Treatment Prob(F)				0.0001	0.0001	0.0001	0.0001	

Evaluation of Various Winter Rye Cultivars for Weed Control in No-Till Squash.

Project Code: 03-HRC-nt-Squash Location: Carbondale, IL

Trial Comments

1. Protocol: SIU (SAW).
2. Ratings: Cl, Stunt and WC at 14, 28 and 56 DAP;
Yield, 15 harvests, count and weigh #1's, #2's and culls.
3. All plots sprayed (glyphosate 2.0 %) on April 15.
4. 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.