

Weed Suppression with a Wheat Cover Crop.

Project Code: 03-2B-ME80 Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA
 Trial Status: Final Updated: 9-3-03

Objective:

Evaluate the value of wheat as a cover crop for suppression of winter annual weeds compared to fall applied herbicide applications.

Weed Code	Common Name	Scientific Name
1.	ALLVI garlic, wild	Allium vineale L.
2.	STEME chickweed, common	Stellaria media (L.) Vill.
3.	LAMAM henbit	Lamium amplexicaule L.
4.	HORPU barley, little	Hordeum pusillum Nutt.

Crop 1: GLXMA soybean Variety: Pioneer 94M41 RR
 Planting Method: Seeded Planting Date: 6-21-03
 Rate: 75 lb/A Depth: 1.0 IN
 Row Spacing: 15 IN

Plot Width, Unit: 10 FT Plot Length, Unit: 28 FT Reps: 3
 Tillage Type: No-Till Study Design: Randomized complete block
 Previous Crop, Year: GLXMA, 2003

Field Prep./Maintenance: N 0 LB/A, P205 50 LB/A, K2O 200 LB/A

Soil Name: Weir % OM: 1.5 pH: 6.4 CEC: 9
 Texture: Silt loam Fert. Level: P1: 87 LB/A, K: 259 LB/A

APPLICATION DESCRIPTION

	A	B	C	D	E	F
Application Date:	11-14-02	3-4-03	3-17-03	4-2-03	4-14-03	5-1-03
Time of Day:	16:00	9:00	10:00	7:00	7:00	15:00
Application Method:	Spray	Spray	Spray	Spray	Spray	Spray
Application Timing:	NOV15	MAR1	MAR15	APR2	APR15	MAY1
Applic. Placement:	BROFOL	BROFOL	BROFOL	BROFOL	BROFOL	BROFOL
Air Temp., Unit:	60 F	45 F	57 F	55 F	50 F	70 F
% Relative Humidity:	50	77	84	78	85	67
Wind Velocity, Unit:	2 MPH	3 MPH	0 MPH	3 MPH	0 MPH	0 MPH
Soil Moisture:	NORMAL	ABONOR	ABONOR	ABONOR	NORMAL	ABONOR

CROP STAGE AT EACH APPLICATION

	A	B	C	D	E	F
Crop 1 Code, Stage:	GLXMA NA	GLXMA NA	GLXMA NA	GLXMA NA	GLXMA NA	GLXMA NA
Height, Unit:	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA

WEED STAGE AT EACH APPLICATION

	A	B	C	D	E	F
Weed 1 Code:	ALLVI	ALLVI	ALLVI	ALLVI	ALLVI	
Stage(leaves):	3-4	3-4	3-4	3-4	3-4	
Height(inches):	3-8	2-6	2-6	3-6	4-8	
Density:	Low	Low	Low	Low	Low	
Weed 2 Code:	STEME	STEME	STEME	STEME	STEME	STEME
Stage(leaves):	10+	10+	10+	10+	10+	10+
Height(inches):	0-2	0-2	0-3	0-3	2-4	2-3
Density:	Low	Low	Low	Low	Low	Low
Weed 3 Code:	LAMAM	LAMAM	LAMAM	LAMAM	LAMAM	
Stage(leaves):	10+	10+	10+	10+	10+	
Height(inches):	0-2	0-2	2-4	2-4	4-6	
Density:	Medium	Medium	Medium	Medium	Medium	

Weed 4 Code:	HORPU	HORPU	HORPU	HORPU	HORPU	HORPU
Stage(leaves):	3-4	3-4	3-5	3-5	5-6	5-6
Height(inches):	2-3	2-3	3-4	3-5	4-6	4-8
Density:	Medium	Medium	Medium	Medium	Medium	Medium

APPLICATION EQUIPMENT

	A	B	C	D	E	F
Appl. Equipment:	CO2 sprayer	CO2 sprayer	CO2 sprayer	CO2 sprayer	CO2 sprayer	CO2 sprayer
Operating Pressure:	40 PSI	40 PSI	40 PSI	40 PSI	40 PSI	40 PSI
Nozzle Type:	Flat fan	Flat fan	Flat fan	Flat fan	Flat fan	Flat fan
Nozzle Size:	8002	8002	8002	8002	8002	8002
Boom Length, Unit:	7.5 FT	7.5 FT	7.5 FT	7.5 FT	7.5 FT	7.5 FT
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA	20 GPA	20 GPA	20 GPA

NOTES:

Not harvested.

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Weed Code	ALLVI	ALLVI	ALLVI	STEME	STEME	STEME	LAMAM	LAMAM	LAMAM	HORPU	HORPU	HORPU
Crop Code												
Rating Data Type	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
Rating Unit	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Date	12-12-02	4-1-03	5-1-03	12-12-02	4-1-03	5-1-03	12-12-02	4-1-03	5-1-03	12-12-02	4-1-03	5-1-03
Trt-Eval Interval	28 DA-A	15 DA-C	17 DA-E	28 DA-A	15 DA-C	17 DA-E	28 DA-A	15 DA-C	17 DA-E	28 DA-A	15 DA-C	17 DA-E

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			
2	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	OZ/A	NOV15	A	0	30	30	0	100	100	0	88	88	96	92	63
3	GRAMOXONE MAX	3	SL	0.312	LB A/A	13.3	OZ/A	NOV15	A	80	90	87	90	100	100	85	83	83	90	93	93
3	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	% V/V	NOV15	A												
4	PRINCEP	90	WG	1.0	LB A/A	1.11	LB/A	NOV15	A	0	60	55	0	100	100	0	100	100	0	65	33
5	CANOPY XL	56.3	WG			4.5	OZ/A	NOV15	A	0	90	88	0	100	100	0	100	100	0	30	0
5	->CLASSIC	25	WG	0.0264	LB A/A			NOV15	A												
5	->AUTHORITY	75	WG	0.132	LB A/A			NOV15	A												
5	EXPRESS	75	WG	0.0078	LB A/A	0.166	OZ/A	NOV15	A												
5	PRIME OIL COC	100	LIQ	1.0	% V/V	1	% V/V	NOV15	A												
6	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	OZ/A	NOV15	A	0	30	28	0	100	100	0	100	100	99	97	97
6	PRINCEP	90	WG	1.0	LB A/A	1.11	LB/A	NOV15	A												
7	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	OZ/A	NOV15	A	0	96	97	0	100	100	0	100	100	99	99	99
7	CANOPY XL	56.3	WG			4.5	OZ/A	NOV15	A												
7	->CLASSIC	25	WG	0.0264	LB A/A			NOV15	A												
7	->AUTHORITY	75	WG	0.132	LB A/A			NOV15	A												
7	EXPRESS	75	WG	0.0078	LB A/A	0.166	OZ/A	NOV15	A												
8	WHEAT COVER CROP										87	87		87	87		90	90		80	80
8	NONTREATED																				
9	WHEAT COVER CROP										90	90		100	100		100	100		100	93
9	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	OZ/A	MAR1	B												
10	WHEAT COVER CROP										90	92		100	100		100	100		100	100
10	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	OZ/A	MAR15	C												
11	WHEAT COVER CROP										0	85		0	100		0	100		0	100
11	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	OZ/A	APR2	D												
12	WHEAT COVER CROP										0	93		0	100		0	100		0	100
12	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	OZ/A	APR15	E												
13	WHEAT COVER CROP										0			0			0			0	
13	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	OZ/A	MAY1	F												
14	WHEAT COVER CROP										50	98		50	98		50	98		50	53
14	HARMONY EXTRA	75	WG	0.0234	LB A/A	0.5	OZ/A	MAR15	C												
14	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	% V/V	MAR15	C												

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Crop Code															
Rating Data Type				Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
Rating Unit				Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Date				12-12-02	4-1-03	5-1-03	12-12-02	4-1-03	5-1-03	12-12-02	4-1-03	5-1-03	12-12-02	4-1-03	5-1-03
Trt-Eval Interval				28 DA-A	15 DA-C	17 DA-E	28 DA-A	15 DA-C	17 DA-E	28 DA-A	15 DA-C	17 DA-E	28 DA-A	15 DA-C	17 DA-E

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code																	
LSD (P=.05)				0.0		37.9		37.1		0.0		2.6		2.7		3.4		6.7		7.0		3.8		35.0		44.6
Replicate F				0.000		3.010		3.813		0.000		1.000		1.000		1.000		0.598		0.596		0.803		1.421		0.249
Replicate Prob(F)				1.0000		0.0667		0.0365		1.0000		0.3816		0.3827		0.3966		0.5575		0.5588		0.4707		0.2597		0.7813
Treatment F				0.000		9.393		6.430		0.000		2650.231		892.960		867.000		376.267		130.851		1751.817		12.698		6.067
Treatment Prob(F)				1.0000		0.0001		0.0001		1.0000		0.0001		0.0001		0.0001		0.0001		0.0001		0.0001		0.0001		0.0001

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Trial Comments

1. Protocol: SIU.
2. Ratings: WC 28 DA "A"; all plots on April 1 and May 1; evaluate CI and WC in soybean if appropriate.
3. Pioneer P25R78 winter wheat planted at 90 lb seed/A on 10-22-02 as a cover crop, no nitrogen applied.
4. DA-A = days after NOV15 application. DA-C = days after MAR15 application. DA-E = days after APR15 application.
5. 15 DA-C was also 28 and 138 days after MAR1 and NOV15 applications, respectively.
6. 17 DA-E was prior to MAY1 application, and 29, 45, 58, and 168 days after APR2, MAR15, MAR1, and NOV15 applications, respectively.