

Miscellaneous, Including Alfalfa and Wheat

Southern Illinois University

Roundup Ready Alfalfa.

Trial ID: 10-7-N130

Location: Belleville Res. Center

Investigator: Bryan Young, Professor, Southern Illinois University, bgyoung@siu.edu
City State Zip Country: Belleville IL 62221 USA
Trial Status: FINAL **Initiation Date:** 12-07-09

Objectives: Evaluate tank-mixtures with Roundup for over the top of established, dormant Roundup Ready alfalfa for crop safety and weed control.

Crop 1: MEDSA Alfalfa
Planting Method: ESTABLISHED

Description: RR

Pest 1 Type: W **Code:** POAAN Poa annua L. bluegrass, annual
Pest 2 Type: W **Code:** STEME Stellaria media (L.) Vill. chickweed, common
Pest 3 Type: W **Code:** LAMPU Lamium purpureum L. deadnettle, purple

Plot Width, Unit: 10 FT **Site Type:** FIELD
Plot Length, Unit: 29 FT **Tillage Type:** NO-TILL
Replications: 4 **Study Design:** Randomized Complete Block

Prior Crops, Year
1. MEDSA 2009

Field Prep./Maintenance: N 0 LB/A, P2O5 50 LB/A, K2O 150 LB/A

% OM: 1.9 **Texture:** SILT LOAM
pH: 6.9 **Soil Name:** CASEYVILLE
CEC: 7 **Fert. Level:** P1: 71 LB/A, K: 287 LB/A

	Application Description			
	A	B	C	D
Application Date:	12-07-09	12-07-09	03-08-10	03-23-10
Time of Day:	10:00	10:00	23:00	10:00
Application Method:	Spray	Spray	Spray	Spray
Application Timing:	FALL1	FALL2	SPRG1	SPRG2
Application Placement:	BROFOL	BROFOL	BROFOL	BROFOL
Applied By:	RFK	RFK	RFK	RFK
Air Temperature, Unit:	40 F	40 F	46 F	59 F
% Relative Humidity:	92	92	92	48
Wind Velocity, Unit:	2 MPH	2 MPH	0 MPH	0 MPH
Wind Direction:	W	W		
Soil Temperature, Unit:	35 F	35 F	36 F	47 F
Soil Moisture:	ABONOR	ABONOR	NORMAL	ABONOR

	12-07-09	12-07-09	03-08-10	03-23-10
Crop stage at application:	Dorm	Dorm	Dorm	Regro
Height Min, Max (inch):	1 3	1 3	0 1	1 2

	Pest Stage At Each Application			
	12-07-09	12-07-09	03-08-10	03-23-10
Application Date:	12-07-09	12-07-09	03-08-10	03-23-10
Weed Code:	POAAN	POAAN	POAAN	POAAN
Stage Majority (leaves):	3	3	2	3
Stage Min, Max:	2 5	2 5	2 5	2 5
Height Majority:	2 IN	2 IN	2 IN	2 IN
Height Min, Max:	1 3	1 3	1 3	1 3
Density, Unit:	0.1 FT2	0.1 FT2	0.1 FT2	0.1 FT2
Weed Code:	STEME	STEME	STEME	STEME
Stage Majority (leaves):	10+	10+	10+	10+
Stage Min, Max:	4 10+	4 10+	4 10+	4 11
Height Majority:	1 IN	1 IN	1 IN	2 IN
Height Min, Max:	1 2	1 2	1 2	1 3
Density, Unit:	0.01 FT2	0.01 FT2	0.01 FT2	0.01 FT2
Weed Code:	LAMPU	LAMPU	LAMPU	LAMPU
Stage Majority (leaves):	6	6	6	6
Stage Min, Max:	4 10	4 10	4 6	4 6
Height Majority:	2 IN	2 IN	2 IN	2 IN
Height Min, Max:	1 3	1 3	1 2	1 2
Density, Unit:	0.01 FT2	0.01 FT2	0.01 FT2	0.01 FT2

	Application Equipment			
Appl. Equipment:	CO2 sprayer	CO2 sprayer	CO2 sprayer	CO2 sprayer
Operating Pressure:	30 PSI	30 PSI	30 PSI	30 PSI
Nozzle Type:	Flat fan	Flat fan	Flat fan	Flat fan
Nozzle Size:	XR 8002	XR 8002	XR 8002	XR 8002
Boom Length, Unit:	7.5 FT	7.5 FT	7.5 FT	7.5 FT
Spray Volume, Unit:	15 GPA	15 GPA	15 GPA	15 GPA

Means followed by same letter do not significantly differ (P=.05, LSD)

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Pest Code	Crop Code	Rating Date	Rating Data Type	Rating Unit	Rating Timing	Trt-Eval Interval							MEDSA 03-30-10 Necrosis Percent	MEDSA 04-06-10 Necrosis Percent	MEDSA 03-30-10 Chlorosis Percent	MEDSA 04-06-10 Chlorosis Percent	POAAN 03-30-10 Control Percent	POAAN 04-06-10 Control Percent							
Trt	Treatment	Form	Form	Rate	Other	Other	Growth	Appl										7 DA-D	14 DA-D	7 DA-D	14 DA-D	7 DA-D	14 DA-D		
No.	Name	Conc	Type	Unit	Rate	Rate	Unit	Stage	Code																
1	ROUNDUP WEATHERMAX	4.5	SL	1.5 lb ae/a	42.7 fl oz/a			FALL2	B				0 b	0 b	0 a	0 a	99 a	99 a							
2	ROUNDUP WEATHERMAX	4.5	SL	1.5 lb ae/a	42.7 fl oz/a			SPRG1	C				0 b	0 b	0 a	0 a	97 a	99 a							
3	ROUNDUP WEATHERMAX	4.5	SL	1.5 lb ae/a	42.7 fl oz/a			SPRG2	D				0 b	0 b	0 a	0 a	0 e	94 ab							
4	VELPAR	75	WG	1.5 lb ai/a	2 lb/a			SPRG1	C				0 b	0 b	0 a	0 a	95 a	99 a							
5	KERB	50	WP	2 lb ai/a	4 lb/a			FALL2	B				0 b	0 b	0 a	0 a	99 a	99 a							
6	GRAMOXONE INTEON	2	SL	0.5 lb ai/a	32 fl oz/a			SPRG2	D				33 a	5 a	0 a	0 a	80 b	86 b							
7	SENCOR	75	WG	1.25 lb ai/a	1.67 lb/a			SPRG1	C				0 b	0 b	0 a	0 a	95 a	96 ab							
8	SINBAR	80	WP	1.2 lb ai/a	1.5 lb/a			SPRG1	C				0 b	0 b	0 a	0 a	95 a	98 a							
9	KARMEX	80	WG	2.25 lb ai/a	2.8 lb/a			FALL1	A				0 b	0 b	0 a	0 a	65 c	65 c							
10	SENCOR	75	WG	1 lb ai/a	1.33 lb/a			SPRG1	C				0 b	0 b	0 a	0 a	91 a	97 a							
11	TREFLAN	4	EC	2 lb ai/a	4 pt/a			FALL1	A				0 b	0 b	0 a	0 a	13 d	13 d							
12	ROUNDUP WEATHERMAX	4.5	SL	1.5 lb ae/a	42.7 fl oz/a			SPRG1	C				0 b	0 b	0 a	0 a	99 a	99 a							
12	VELPAR	75	WG	1.5 lb ai/a	2 lb/a			SPRG1	C																
13	ROUNDUP WEATHERMAX	4.5	SL	1.5 lb ae/a	42.7 fl oz/a			FALL2	B				0 b	0 b	0 a	0 a	99 a	99 a							
13	KERB	50	WP	2 lb ai/a	4 lb/a			FALL2	B																
14	ROUNDUP WEATHERMAX	4.5	SL	1.5 lb ae/a	42.7 fl oz/a			SPRG1	C				0 b	0 b	0 a	0 a	96 a	99 a							
14	SENCOR	75	WG	1.25 lb ai/a	1.67 lb/a			SPRG1	C																
15	ROUNDUP WEATHERMAX	4.5	SL	1.5 lb ae/a	42.7 fl oz/a			SPRG1	C				0 b	0 b	0 a	0 a	97 a	99 a							
15	SINBAR	80	WP	1.2 lb ai/a	1.5 lb/a			SPRG1	C																
16	KARMEX	80	WG	2.25 lb ai/a	2.8 lb/a			FALL1	A				0 b	0 b	0 a	0 a	97 a	98 a							
16	ROUNDUP WEATHERMAX	4.5	SL	1.5 lb ae/a	42.7 fl oz/a			SPRG1	C																
17	ROUNDUP WEATHERMAX	4.5	SL	1.5 lb ae/a	42.7 fl oz/a			SPRG1	C				0 b	0 b	0 a	0 a	95 a	99 a							
17	SENCOR	75	WG	1 lb ai/a	1.33 lb/a			SPRG1	C																
18	NONTREATED												0 b	0 b	0 a	0 a	0 e	0 e							
LSD (P=.05)													1.7	0.0	0.0	0.0	10.1	10.2							
Replicate F													1.000	0.000	0.000	0.000	4.943	2.648							
Replicate Prob(F)													0.4005	1.0000	1.0000	1.0000	0.0043	0.0588							
Treatment F													169.000	0.000	0.000	0.000	98.124	69.833							
Treatment Prob(F)													0.0001	1.0000	1.0000	1.0000	0.0001	0.0001							

Means followed by same letter do not significantly differ (P=.05, LSD)

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Pest Code	STEME	STEME	LAMPU	LAMPU
Crop Code				
Rating Date	03-30-10	04-06-10	03-30-10	04-06-10
Rating Data Type	Control	Control	Control	Control
Rating Unit	Percent	Percent	Percent	Percent
Rating Timing				
Trt-Eval Interval	7 DA-D	14 DA-D	7 DA-D	14 DA-D

Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code				
1	ROUNDUP WEATHERMAX	4.5	SL	1.5 lb ae/a	42.7 fl oz/a		FALL2	B	99 a	99 a	99 a	99 a
2	ROUNDUP WEATHERMAX	4.5	SL	1.5 lb ae/a	42.7 fl oz/a		SPRG1	C	99 a	99 a	99 a	99 a
3	ROUNDUP WEATHERMAX	4.5	SL	1.5 lb ae/a	42.7 fl oz/a		SPRG2	D	0 c	99 a	0 d	99 a
4	VELPAR	75	WG	1.5 lb ai/a	2 lb/a		SPRG1	C	99 a	99 a	99 a	99 a
5	KERB	50	WP	2 lb ai/a	4 lb/a		FALL2	B	99 a	99 a	82 b	82 b
6	GRAMOXONE INTEON	2	SL	0.5 lb ai/a	32 fl oz/a		SPRG2	D	99 a	99 a	99 a	99 a
7	SENCOR	75	WG	1.25 lb ai/a	1.67 lb/a		SPRG1	C	99 a	99 a	99 a	99 a
8	SINBAR	80	WP	1.2 lb ai/a	1.5 lb/a		SPRG1	C	99 a	99 a	99 a	99 a
9	KARMEX	80	WG	2.25 lb ai/a	2.8 lb/a		FALL1	A	99 a	99 a	60 c	60 c
10	SENCOR	75	WG	1 lb ai/a	1.33 lb/a		SPRG1	C	99 a	99 a	99 a	99 a
11	TREFLAN	4	EC	2 lb ai/a	4 pt/a		FALL1	A	97 b	97 b	99 a	99 a
12	ROUNDUP WEATHERMAX	4.5	SL	1.5 lb ae/a	42.7 fl oz/a		SPRG1	C	99 a	99 a	99 a	99 a
12	VELPAR	75	WG	1.5 lb ai/a	2 lb/a		SPRG1	C				
13	ROUNDUP WEATHERMAX	4.5	SL	1.5 lb ae/a	42.7 fl oz/a		FALL2	B	99 a	99 a	99 a	99 a
13	KERB	50	WP	2 lb ai/a	4 lb/a		FALL2	B				
14	ROUNDUP WEATHERMAX	4.5	SL	1.5 lb ae/a	42.7 fl oz/a		SPRG1	C	99 a	99 a	99 a	99 a
14	SENCOR	75	WG	1.25 lb ai/a	1.67 lb/a		SPRG1	C				
15	ROUNDUP WEATHERMAX	4.5	SL	1.5 lb ae/a	42.7 fl oz/a		SPRG1	C	99 a	99 a	99 a	99 a
15	SINBAR	80	WP	1.2 lb ai/a	1.5 lb/a		SPRG1	C				
16	KARMEX	80	WG	2.25 lb ai/a	2.8 lb/a		FALL1	A	99 a	99 a	99 a	99 a
16	ROUNDUP WEATHERMAX	4.5	SL	1.5 lb ae/a	42.7 fl oz/a		SPRG1	C				
17	ROUNDUP WEATHERMAX	4.5	SL	1.5 lb ae/a	42.7 fl oz/a		SPRG1	C	99 a	99 a	99 a	99 a
17	SENCOR	75	WG	1 lb ai/a	1.33 lb/a		SPRG1	C				
18	NONTREATED								0 c	0 c	0 d	0 d
LSD (P=.05)									1.5	1.5	10.0	10.0
Replicate F									1.000	1.000	1.528	1.528
Replicate Prob(F)									0.4005	0.4005	0.2184	0.2184
Treatment F									3634.883	1931.824	83.095	47.898
Treatment Prob(F)									0.0001	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Trial Comments

1. Protocol: Monsanto (2009-01-77-06).
2. Ratings: CI as growth reduction, necrosis and chlorosis at 7 and 14 days after application D.
Weed control by species at 7 and 14 days after application D.
Yield, harvest all treatments when treatments 1, 2 or 3 (Roundup alone) are at late bud to 1/10th bloom stage.
Separate weeds from alfalfa and report oven dry weight for weeds (all weeds combined), alfalfa, and combined alfalfa and weeds on per acre basis.
Following first cutting evaluate alfalfa recovery and visual growth reduction and if differences, take a second cutting and report yield as pounds dry matter per acre.
3. Application timings: FALL1 = After crop is dormant. FALL2 = When soil temperature are below 55 degrees F.
SPRG1 = In the spring prior to regrowth. SPRG2 = After regrowth and up to 2 inch regrowth.
4. Maintain insect control over entire area as needed and record details of all applications.

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Blanket application of Warrior (0.16 lbai/A), to control alfalfa weevils, was applied on 4-15-10 to 18 inch alfalfa.

5. GRORED = Growth reduction. dw t/A = Ton per acre dry weight basis. TTTT = Weeds generally.

6. Calculations:

$(\text{g wet composite harvest per 78 sqft}) * (\text{alfalfa dry} / \text{alfalfa wet}) * (\text{alfalfa dry} / (\text{alfalfa dry} + \text{weeds dry})) * (43560 / 78 / 453.6 / 2000)$
= Alfalfa, ton/A dry weight basis.

$(\text{g wet composite harvest per 78 sqft}) * (\text{weed dry} / \text{weeds wet}) * (\text{weeds dry} / (\text{alfalfa dry} + \text{weeds dry})) * (43560 / 78 / 453.6 / 2000)$
= Weeds, ton/A dry weight basis.