

Rimsulfuron and Mesotrione Combinations in Corn.

Trial ID: 11-2B-W90 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: 6-4-11

Objectives: Determine the ratio of rimsulfuron and dry mesotrione for preemergence broad-spectrum weed control in corn.

Crop 1: ZEAMD Dent corn Variety: DKC 61-21 GENSS Description: RR2/LL  
 Planting Method: SEEDED Planting Date: 6-4-11  
 Rate, Unit: 28000 S/A Depth, Unit: 1.5 IN  
 Row Spacing, Unit: 30 IN

Pest 1 Type: W Code: GGGAN grasses, annual  
 Pest Description: Mixture of SETFA and PANDI  
 Pest 2 Type: W Code: AMBTR Ambrosia trifida L. ragweed, giant  
 Pest 3 Type: W Code: IPOHE Ipomoea hederacea (L.) Jacq. morningglory, ivyleaf  
 Pest 4 Type: W Code: ABUTH Abutilon theophrasti Medicus velvetleaf  
 Pest 5 Type: W Code: AMATA Amaranthus rudis Sauer waterhemp, common

Plot Width, Unit: 10 FT Site Type: FIELD  
 Plot Length, Unit: 28 FT Tillage Type: REDUCED-TILL  
 Replications: 4 Study Design: Randomized Complete Block

Prior Crops, Year  
 1. GLXMA 2010

Field Prep./Maintenance: N 150 LB/A, P205 50 LB/A, K20 150 LB/A

% OM: 1.6 Texture: SILT LOAM  
 pH: 6.8 Soil Name: PIERRON  
 CEC: 8 Fert. Level: P1: 77 LB/A, K: 252 LB/A

Application Description

	A	B
Application Date:	6-5-11	7-1-11
Time of Day:	18:00	7:30
Application Method:	Spray	Spray
Application Timing:	PRE	28DAP
Application Placement:	BROSOI	BROFOL
Applied By:	MJA	MJA
Air Temperature, Unit:	87 F	74 F
% Relative Humidity:	52	84
Wind Velocity, Unit:	4 MPH	0 MPH
Wind Direction:	S	
Dew Presence (Y/N):	N	N
Soil Temperature, Unit:	75 F	78 F
Soil Moisture:	ABONOR	NORMAL
% Cloud Cover:	0	0

5-6-11 1-7-11  
 Crop stage at application: NA V5-V6  
 Height Min, Max (inch): 10 17

Pest Stage At Each Application

	6-5-11	6-5-11
Application Date:	6-5-11	6-5-11
Weed Code:	GGGAN	GGGAN
Stage Majority (leaves):	NA	NA
Weed Code:	AMBTR	AMBTR
Stage Majority (leaves):	NA	3
Stage Min, Max:		coty 4
Height Majority:	2	IN
Height Min, Max:	1	3
Density, Unit:		0.01 FT2
Weed Code:	IPOHE	IPOHE
Stage Majority (leaves):	NA	NA
Weed Code:	ABUTH	ABUTH
Stage Majority (leaves):	NA	NA
Weed Code:	AMATA	AMATA
Stage Majority (leaves):	NA	NA

Application Equipment

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

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Pest Code		ZEAMD			GGGAN										
Crop Code		ZEAMD	ZEAMD	ZEAMD	GGGAN	GGGAN	GGGAN								
Rating Date		6-18-11	7-2-11	7-30-11	6-18-11	7-2-11	7-30-11								
Rating Data Type		Injury	Injury	Injury	Control	Control	Control								
Rating Unit		Percent	Percent	Percent	Percent	Percent	Percent								
Rating Timing															
Trt-Eval Interval		14 DAP	28 DAP	56 DAP	14 DAP	28 DAP	56 DAP								
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code						
1	RESOLVE SG	25	SG	0.0156	lb ai/a	1	oz/a	PRE	A	0 a	0 a	0 a	97 bc	97 f	90 abc
1	MESOTRIONE	50	WG	0.14	lb ai/a	4.5	oz/a	PRE	A						
2	RESOLVE SG	25	SG	0.0234	lb ai/a	1.5	oz/a	PRE	A	0 a	0 a	0 a	99 ab	98 cde	91 abc
2	MESOTRIONE	50	WG	0.14	lb ai/a	4.5	oz/a	PRE	A						
3	RESOLVE SG	25	SG	0.0156	lb ai/a	1	oz/a	PRE	A	0 a	0 a	0 a	98 abc	97 ef	79 c
3	HARMONY SG	50	SG	0.0156	lb ai/a	0.5	oz/a	PRE	A						
3	MESOTRIONE	50	WG	0.14	lb ai/a	4.5	oz/a	PRE	A						
4	RESOLVE SG	25	SG	0.0156	lb ai/a	1	oz/a	PRE	A	0 a	0 a	0 a	96 c	98 de	85 bc
4	MESOTRIONE	50	WG	0.14	lb ai/a	4.5	oz/a	PRE	A						
4	AATREX	4	SC	1	lb ai/a	1	qt/a	PRE	A						
5	RESOLVE SG	25	SG	0.0234	lb ai/a	1.5	oz/a	PRE	A	0 a	0 a	0 a	99 a	99 abc	91 abc
5	MESOTRIONE	50	WG	0.14	lb ai/a	4.5	oz/a	PRE	A						
5	AATREX	4	SC	1	lb ai/a	1	qt/a	PRE	A						
6	RESOLVE SG	25	SG	0.0156	lb ai/a	1	oz/a	PRE	A	0 a	0 a	0 a	99 a	99 ab	96 ab
6	HARMONY SG	50	SG	0.0156	lb ai/a	0.5	oz/a	PRE	A						
6	MESOTRIONE	50	WG	0.14	lb ai/a	4.5	oz/a	PRE	A						
6	AATREX	4	SC	1	lb ai/a	1	qt/a	PRE	A						
7	RESOLVE SG	25	SG	0.0156	lb ai/a	1	oz/a	PRE	A	0 a	0 a	0 a	99 ab	98 a-d	95 ab
7	MESOTRIONE	50	WG	0.14	lb ai/a	4.5	oz/a	PRE	A						
7	AATREX	4	SC	1	lb ai/a	1	qt/a	PRE	A						
7	ABUNDIT EXTRA	3	SL	0.75	lb ae/a	32	fl oz/a	28DAP	B						
7	N-PAK AMS	100	SL	3.9	% v/v	3.9	% v/v	28DAP	B						
8	RESOLVE SG	25	SG	0.0234	lb ai/a	1.5	oz/a	PRE	A	0 a	0 a	0 a	98 abc	98 bcd	94 ab
8	MESOTRIONE	50	WG	0.14	lb ai/a	4.5	oz/a	PRE	A						
8	AATREX	4	SC	1	lb ai/a	1	qt/a	PRE	A						
8	ABUNDIT EXTRA	3	SL	0.75	lb ae/a	32	fl oz/a	28DAP	B						
8	N-PAK AMS	100	SL	3.9	% v/v	3.9	% v/v	28DAP	B						
9	RESOLVE SG	25	SG	0.0156	lb ai/a	1	oz/a	PRE	A	0 a	0 a	0 a	99 ab	98 cde	98 ab
9	HARMONY SG	50	SG	0.0156	lb ai/a	0.5	oz/a	PRE	A						
9	MESOTRIONE	50	WG	0.14	lb ai/a	4.5	oz/a	PRE	A						
9	AATREX	4	SC	1	lb ai/a	1	qt/a	PRE	A						
9	ABUNDIT EXTRA	3	SL	0.75	lb ae/a	32	fl oz/a	28DAP	B						
9	N-PAK AMS	100	SL	3.9	% v/v	3.9	% v/v	28DAP	B						
10	LEXAR	3.7	SC	2.78	lb ai/a	3	qt/a	PRE	A	0 a	0 a	0 a	99 a	99 a	98 a
11	LEXAR	3.7	SC	2.78	lb ai/a	3	qt/a	PRE	A	0 a	0 a	0 a	99 ab	99 ab	99 a
11	ABUNDIT EXTRA	3	SL	0.75	lb ae/a	32	fl oz/a	28DAP	B						
11	N-PAK AMS	100	SL	3.9	% v/v	3.9	% v/v	28DAP	B						
12	NONTREATED									0 a	0 a	0 a	0 d	0 g	0 d
LSD (P=.05)										0.0	0.0	0.0	2.3	0.9	12.6
Replicate F										0.000	0.000	0.000	0.739	1.958	1.874
Replicate Prob(F)										1.0000	1.0000	1.0000	0.5366	0.1394	0.1532
Treatment F										0.000	0.000	0.000	1319.449	8439.350	39.337
Treatment Prob(F)										1.0000	1.0000	1.0000	0.0001	0.0001	0.0001

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

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Trial ID: 11-2B-W90

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Pest Code		AMBTR	AMBTR	AMBTR	IPOHE	IPOHE	IPOHE	ABUTH	ABUTH	ABUTH								
Crop Code																		
Rating Date		6-18-11	7-2-11	7-30-11	6-18-11	7-2-11	7-30-11	6-18-11	7-2-11	7-30-11								
Rating Data Type		Control	Control	Control	Control	Control	Control	Control	Control	Control								
Rating Unit		Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent								
Rating Timing																		
Trt-Eval Interval		14 DAP	28 DAP	56 DAP	14 DAP	28 DAP	56 DAP	14 DAP	28 DAP	56 DAP								
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code									
1	RESOLVE SG	25	SG	0.0156	lb ai/a	1	oz/a	PRE	A	39 e	96 c	91 b	61 e	83 c	74 c	97 a	99 a	99 a
1	MESOTRIONE	50	WG	0.14	lb ai/a	4.5	oz/a	PRE	A									
2	RESOLVE SG	25	SG	0.0234	lb ai/a	1.5	oz/a	PRE	A	46 d	97 bc	94 ab	61 e	87 bc	87 b	97 a	99 a	99 a
2	MESOTRIONE	50	WG	0.14	lb ai/a	4.5	oz/a	PRE	A									
3	RESOLVE SG	25	SG	0.0156	lb ai/a	1	oz/a	PRE	A	50 c	96 c	91 b	69 d	88 b	85 b	90 b	99 a	99 a
3	HARMONY SG	50	SG	0.0156	lb ai/a	0.5	oz/a	PRE	A									
3	MESOTRIONE	50	WG	0.14	lb ai/a	4.5	oz/a	PRE	A									
4	RESOLVE SG	25	SG	0.0156	lb ai/a	1	oz/a	PRE	A	94 b	99 a	98 a	73 bc	98 a	96 a	99 a	99 a	99 a
4	MESOTRIONE	50	WG	0.14	lb ai/a	4.5	oz/a	PRE	A									
4	AATREX	4	SC	1	lb ai/a	1	qt/a	PRE	A									
5	RESOLVE SG	25	SG	0.0234	lb ai/a	1.5	oz/a	PRE	A	96 ab	98 ab	98 a	71 cd	99 a	97 a	99 a	99 a	99 a
5	MESOTRIONE	50	WG	0.14	lb ai/a	4.5	oz/a	PRE	A									
5	AATREX	4	SC	1	lb ai/a	1	qt/a	PRE	A									
6	RESOLVE SG	25	SG	0.0156	lb ai/a	1	oz/a	PRE	A	97 a	99 a	97 a	73 bc	98 a	96 a	99 a	99 a	99 a
6	HARMONY SG	50	SG	0.0156	lb ai/a	0.5	oz/a	PRE	A									
6	MESOTRIONE	50	WG	0.14	lb ai/a	4.5	oz/a	PRE	A									
6	AATREX	4	SC	1	lb ai/a	1	qt/a	PRE	A									
7	RESOLVE SG	25	SG	0.0156	lb ai/a	1	oz/a	PRE	A	97 a	99 a	98 a	76 a	99 a	98 a	99 a	99 a	99 a
7	MESOTRIONE	50	WG	0.14	lb ai/a	4.5	oz/a	PRE	A									
7	AATREX	4	SC	1	lb ai/a	1	qt/a	PRE	A									
7	ABUNDIT EXTRA	3	SL	0.75	lb ae/a	32	fl oz/a	28DAP	B									
7	N-PAK AMS	100	SL	3.9	% v/v	3.9	% v/v	28DAP	B									
8	RESOLVE SG	25	SG	0.0234	lb ai/a	1.5	oz/a	PRE	A	96 ab	98 a	98 a	70 cd	99 a	98 a	98 a	99 a	98 a
8	MESOTRIONE	50	WG	0.14	lb ai/a	4.5	oz/a	PRE	A									
8	AATREX	4	SC	1	lb ai/a	1	qt/a	PRE	A									
8	ABUNDIT EXTRA	3	SL	0.75	lb ae/a	32	fl oz/a	28DAP	B									
8	N-PAK AMS	100	SL	3.9	% v/v	3.9	% v/v	28DAP	B									
9	RESOLVE SG	25	SG	0.0156	lb ai/a	1	oz/a	PRE	A	96 ab	98 a	98 a	70 cd	98 a	98 a	99 a	99 a	99 a
9	HARMONY SG	50	SG	0.0156	lb ai/a	0.5	oz/a	PRE	A									
9	MESOTRIONE	50	WG	0.14	lb ai/a	4.5	oz/a	PRE	A									
9	AATREX	4	SC	1	lb ai/a	1	qt/a	PRE	A									
9	ABUNDIT EXTRA	3	SL	0.75	lb ae/a	32	fl oz/a	28DAP	B									
9	N-PAK AMS	100	SL	3.9	% v/v	3.9	% v/v	28DAP	B									
10	LEXAR	3.7	SC	2.78	lb ai/a	3	qt/a	PRE	A	97 a	99 a	98 a	73 bc	99 a	98 a	98 a	99 a	99 a
11	LEXAR	3.7	SC	2.78	lb ai/a	3	qt/a	PRE	A	97 a	99 a	98 a	76 ab	99 a	99 a	99 a	99 a	99 a
11	ABUNDIT EXTRA	3	SL	0.75	lb ae/a	32	fl oz/a	28DAP	B									
11	N-PAK AMS	100	SL	3.9	% v/v	3.9	% v/v	28DAP	B									
12	NONTREATED									0 f	0 d	0 c	0 f	0 d	0 d	0 c	0 b	0 b
LSD (P=.05)										2.2	1.3	4.2	3.6	4.1	8.7	3.8	0.0	1.0
Replicate F										0.514	1.403	0.828	1.891	1.894	1.015	2.115	0.000	0.590
Replicate Prob(F)										0.6752	0.2594	0.4880	0.1503	0.1498	0.3983	0.1171	1.0000	0.6258
Treatment F										1889.748	4243.249	365.178	283.192	390.218	85.826	458.185	0.000	6282.601
Treatment Prob(F)										0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	1.0000	0.0001

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

## Rimsulfuron and Mesotrione Combinations in Corn.

Trial ID: 11-2B-W90

Location: Belleville Res. Center

Pest Code	AMATA	AMATA	AMATA
Crop Code			
Rating Date	6-18-11	7-2-11	7-30-11
Rating Data Type	Control	Control	Control
Rating Unit	Percent	Percent	Percent
Rating Timing			
Trt-Eval Interval	14 DAP	28 DAP	56 DAP

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code			
1	RESOLVE SG	25	SG	0.0156	lb ai/a	1	oz/a	PRE	A	99 a	98 b	96 a
1	MESOTRIONE	50	WG	0.14	lb ai/a	4.5	oz/a	PRE	A			
2	RESOLVE SG	25	SG	0.0234	lb ai/a	1.5	oz/a	PRE	A	99 a	99 a	98 a
2	MESOTRIONE	50	WG	0.14	lb ai/a	4.5	oz/a	PRE	A			
3	RESOLVE SG	25	SG	0.0156	lb ai/a	1	oz/a	PRE	A	99 a	99 a	97 a
3	HARMONY SG	50	SG	0.0156	lb ai/a	0.5	oz/a	PRE	A			
3	MESOTRIONE	50	WG	0.14	lb ai/a	4.5	oz/a	PRE	A			
4	RESOLVE SG	25	SG	0.0156	lb ai/a	1	oz/a	PRE	A	99 a	99 a	99 a
4	MESOTRIONE	50	WG	0.14	lb ai/a	4.5	oz/a	PRE	A			
4	AATREX	4	SC	1	lb ai/a	1	qt/a	PRE	A			
5	RESOLVE SG	25	SG	0.0234	lb ai/a	1.5	oz/a	PRE	A	99 a	99 a	97 a
5	MESOTRIONE	50	WG	0.14	lb ai/a	4.5	oz/a	PRE	A			
5	AATREX	4	SC	1	lb ai/a	1	qt/a	PRE	A			
6	RESOLVE SG	25	SG	0.0156	lb ai/a	1	oz/a	PRE	A	99 a	99 a	98 a
6	HARMONY SG	50	SG	0.0156	lb ai/a	0.5	oz/a	PRE	A			
6	MESOTRIONE	50	WG	0.14	lb ai/a	4.5	oz/a	PRE	A			
6	AATREX	4	SC	1	lb ai/a	1	qt/a	PRE	A			
7	RESOLVE SG	25	SG	0.0156	lb ai/a	1	oz/a	PRE	A	99 a	99 a	98 a
7	MESOTRIONE	50	WG	0.14	lb ai/a	4.5	oz/a	PRE	A			
7	AATREX	4	SC	1	lb ai/a	1	qt/a	PRE	A			
7	ABUNDIT EXTRA	3	SL	0.75	lb ae/a	32	fl oz/a	28DAP	B			
7	N-PAK AMS	100	SL	3.9	% v/v	3.9	% v/v	28DAP	B			
8	RESOLVE SG	25	SG	0.0234	lb ai/a	1.5	oz/a	PRE	A	99 a	99 a	96 a
8	MESOTRIONE	50	WG	0.14	lb ai/a	4.5	oz/a	PRE	A			
8	AATREX	4	SC	1	lb ai/a	1	qt/a	PRE	A			
8	ABUNDIT EXTRA	3	SL	0.75	lb ae/a	32	fl oz/a	28DAP	B			
8	N-PAK AMS	100	SL	3.9	% v/v	3.9	% v/v	28DAP	B			
9	RESOLVE SG	25	SG	0.0156	lb ai/a	1	oz/a	PRE	A	99 a	99 a	99 a
9	HARMONY SG	50	SG	0.0156	lb ai/a	0.5	oz/a	PRE	A			
9	MESOTRIONE	50	WG	0.14	lb ai/a	4.5	oz/a	PRE	A			
9	AATREX	4	SC	1	lb ai/a	1	qt/a	PRE	A			
9	ABUNDIT EXTRA	3	SL	0.75	lb ae/a	32	fl oz/a	28DAP	B			
9	N-PAK AMS	100	SL	3.9	% v/v	3.9	% v/v	28DAP	B			
10	LEXAR	3.7	SC	2.78	lb ai/a	3	qt/a	PRE	A	99 a	99 a	98 a
11	LEXAR	3.7	SC	2.78	lb ai/a	3	qt/a	PRE	A	99 a	99 a	98 a
11	ABUNDIT EXTRA	3	SL	0.75	lb ae/a	32	fl oz/a	28DAP	B			
11	N-PAK AMS	100	SL	3.9	% v/v	3.9	% v/v	28DAP	B			
12	NONTREATED									0 b	0 c	0 b
LSD (P=.05)										0.0	0.5	3.3
Replicate F										0.000	1.000	1.627
Replicate Prob(F)										1.0000	0.4051	0.2018
Treatment F										0.000	29352.003	614.102
Treatment Prob(F)										1.0000	0.0001	0.0001

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

## Trial Comments

1. Protocol: DuPont (006).

2. Ratings: CI/WC at 14, 28, and 56 DAP.

3. DAP = Days after planting.

GGGAN = Annual grasses including SETFA (giant foxtail) and PANDI (fall panicum).

Regarding GGGAN, in the nontreated plots SETFA emerged early to mid season while PANDI emerged mid to late season.

4. For GGGAN control on 7-30-11 (56 DAP) plots with ratings below 90% were due to stunted corn where water stood.