

2011 University Study - Preemergence Mixtures of Rimsulfuron and Dry Mesotrione Used in a Total Weed Control Program for Corn

Trial ID: 11 DUP CRN PRE 006 Protocol ID: 11 DUP CRN PRE 006
Location: Concord, NE
Project ID: USA 11-006 Investigator: Stevan Knezevic

General Trial Information

Investigator: Stevan Knezevic

Trial Location

City: Concord
State/Prov.: NE
Postal Code: 68728
Country: USA

Personnel

Investigator: Stevan Knezevic

Crop Description

Crop 1: ZEAMX Zea mays Corn
Variety: Pioneer Description: 35F40 RRLL
BBCH Scale: BCOR Planting Date: 06-05-2011
Planting Method: SEEDED seeded Rate, Unit: 25677 s/a
Depth, Unit: 2 in
Row Spacing, Unit: 30 in
Harvest Date: 10-21-2011 Harvest Equipment: Almaco SP40
Harvested Width, Unit: 5 ft Harvested Length, Unit: 22.5 ft
% Standard Moisture: 15.5

Pest Description

Pest 1 Type: W Code: SETVI Setaria viridis
Common Name: Green foxtail
Pest 2 Type: W Code: AMATU Amaranthus tuberculatus
Common Name: Tall waterhemp

Site and Design

Plot Width, Unit: 6.667 FT Site Type: FIELD field
Plot Length, Unit: 25 FT
Plot Area, Unit: 166.6667 FT2 Tillage Type: NOTILL no-till
Replications: 4 Study Design: RACOB L Randomized Complete Block (RCB)

Maintenance

No.	Date	Maintenance Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit	Tank Mix
1.	05-18-2011	glyphosate (Durango)	5.4	lb/gal	SL	44	oz/A	yes
2.	06-05-2011	Roundup Power MAX	5.5	lb/gal	SL	29	oz/A	yes
3.	06-05-2011	AMS	21.5	%	SG	2.5	lb/A	yes

Comment: On 5-18-11 glyphosate mixed in 20 gal/A 32% Nitrogen

Soil Description

% Sand: 10 % OM: 2.8 Texture: SICL silty clay loam
% Silt: 58 pH: 6.3
% Clay: 32 CEC: 19.7 Fert. Level: E excellent
Analyzed By:
Midwest Labs

Application Description

	A	B
Application Date:	06-08-2011	07-06-2011
Time of Day:	8:00 pm	10:00 am
Application Method:	spray	spray
Application Timing:	PRE	POST
Application Placement:	surface	foliar
Applied By:	js	js
Air Temperature, Unit:	79 F	79 F
% Relative Humidity:	47	71
Wind Velocity, Unit:	6 mph	1 mph
Wind Direction:	NE	SE
Dew Presence (Y/N):	N no	N no
Soil Temperature, Unit:	65 F	76 F
Soil Moisture:	SLIWET	SLIDRY
% Cloud Cover:	0	0

Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale:	ZEAMX BCOR	ZEAMX BCOR
Stage Scale Used:		BBCH
Stage Majority, Percent:		V6 50
Stage Maximum, Percent:		V7 50
Height, Unit:		14 in
Height Minimum, Maximum:		12 16

Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale:	SETVI W	SETVI W
Height, Unit:		4 in
Height Minimum, Maximum:		2 6
Density, Unit:		5 m2
Pest 2 Code, Type, Scale:	AMATU W	AMATU W
Height, Unit:		4 in
Height Minimum, Maximum:		2 6
Density, Unit:		5 m2

Application Equipment

	A	B
Appl. Equipment:	4 nozzle PRE	Backpack
Operating Pressure, Unit:	20 PSI	30 PSI
Nozzle Type:	Turbo Tee	AIXR
Nozzle Size:	11002	110015
Nozzle Spacing, Unit:	20 in	20 in
Boom Length, Unit:	6.67 ft	6.67 ft
Boom Height, Unit:	15 in	15 in
Ground Speed, Unit:	2.7 mph	2.7 mph
Carrier:	WATER	WATER
Spray Volume, Unit:	15 gal/ac	15 gal/ac
Mix Size, Unit:	.9 liters	.9 liters
Propellant:	COMCO2	COMCO2

Northeast Research & Extension Center

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Location: Concord, NE										
Project ID: USA 11-006 Investigator: Stevan Knezevic										
Description	Corn, field		Green foxtail		Green foxtail		Green foxtail		Waterhemp	
Rating Date	07-04-2011		07-04-2011		07-30-2011		08-29-2011		07-04-2011	
Rating Type	Injury		Control		Control		Control		Control	
Rating Unit	Percent		Percent		Percent		Percent		Percent	
Days After First/Last Applic.	26 26		26 26		52 24		82 54		26 26	
Trt-Eval Interval	26 DA-A		26 DA-A		24 DA-B		54 DA-B		26 DA-A	
Plant-Eval Interval	29 DP-1		29 DP-1		55 DP-1		85 DP-1		29 DP-1	
Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Other Rate	Other Unit	Other Rate	Growth Stage	Appl Code
1	Rimsulfuron Mesotrione	25 % 50 %	SG WG		1 oz/a 4.5 oz/a	0.25 oz ai/a 2.25 oz ai/a			PRE PRE	A A
									0.0 a	88.8 abc
									86.3 b	73.8 bc
									95.8 ab	96.3 a
2	Rimsulfuron Mesotrione	25 % 50 %	SG WG		1.5 oz/a 4.5 oz/a	0.375 oz ai/a 2.25 oz ai/a			PRE PRE	A A
									0.0 a	83.3 bc
									85.0 b	81.7 bc
									92.7 b	86.7 c
3	Rimsulfuron Thifensulfuron Mesotrione	25 % 50 % 50 %	SG SG WG		1 oz/a 0.5 oz/a 4.5 oz/a	0.25 oz ai/a 0.25 oz ai/a 2.25 oz ai/a			PRE PRE PRE	A A A
									0.0 a	78.8 c
									82.5 b	71.3 c
									96.8 ab	90.0 b
4	Rimsulfuron Mesotrione Atrazine	25 % 50 % 4 lb/gal	SG WG SL		1 oz/a 4.5 oz/a 32 oz/a	0.25 oz ai/a 2.25 oz ai/a 1 lb ai/a			PRE PRE PRE	A A A
									0.0 a	86.8 abc
									85.0 b	80.0 bc
									99.0 a	99.0 a
5	Rimsulfuron Mesotrione Atrazine	25 % 50 % 4 lb/gal	SG WG SL		1.5 oz/a 4.5 oz/a 32 oz/a	0.375 oz ai/a 2.25 oz ai/a 1 lb ai/a			PRE PRE PRE	A A A
									0.0 a	92.8 ab
									87.5 b	82.5 b
									99.0 a	99.0 a
6	Rimsulfuron Thifensulfuron Mesotrione Atrazine	25 % 50 % 50 % 4 lb/gal	SG SG WG SL		1 oz/a 0.5 oz/a 4.5 oz/a 32 oz/a	0.25 oz ai/a 0.25 oz ai/a 2.25 oz ai/a 1 lb ai/a			PRE PRE PRE PRE	A A A A
									0.0 a	91.0 abc
									83.8 b	81.3 bc
									99.0 a	99.0 a
7	Rimsulfuron Mesotrione Atrazine Abundit AMS	25 % 50 % 4 lb/gal 4 lb/gal 21 %	SG WG SL SL SG		1 oz/a 4.5 oz/a 32 oz/a 32 oz/a 2 lb/a	0.25 oz ai/a 2.25 oz ai/a 1 lb ai/a			PRE PRE PRE POST POST	A A A B B
									0.0 a	92.3 ab
									99.0 a	99.0 a
									99.0 a	99.0 a
8	Rimsulfuron Mesotrione Atrazine Abundit AMS	25 % 50 % 4 lb/gal 4 lb/gal 21 %	SG WG SL SL SG		1.5 oz/a 4.5 oz/a 32 oz/a 32 oz/a 2 lb/a	0.375 oz ai/a 2.25 oz ai/a 1 lb ai/a			PRE PRE PRE POST POST	A A A B B
									0.0 a	95.0 ab
									99.0 a	99.0 a
									99.0 a	99.0 a
9	Rimsulfuron Thifensulfuron Mesotrione Atrazine Abundit AMS	25 % 50 % 50 % 4 lb/gal 4 lb/gal 21 %	SG SG WG SL SL SG		1 oz/a 0.5 oz/a 4.5 oz/a 32 oz/a 32 oz/a 2 lb/a	0.25 oz ai/a 0.25 oz ai/a 2.25 oz ai/a 1 lb ai/a			PRE PRE PRE PRE POST POST	A A A A B B
									0.0 a	92.0 ab
									99.0 a	99.0 a
									99.0 a	99.0 a
10	LUMAX	3.95 lb/gal	SC		3 qt/a				PRE	A
									0.0 a	98.5 a
									98.0 a	97.0 a
									99.0 a	99.0 a
11	LUMAX Abundit AMS	3.95 lb/gal 4 lb/gal 21 %	SC SL SG		3 qt/a 32 oz/a 2 lb/a				PRE POST POST	A B B
									0.0 a	98.5 a
									99.0 a	99.0 a
									99.0 a	99.0 a

Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Description	Corn, field	Green foxtail	Green foxtail	Green foxtail	Waterhemp	Waterhemp		
Rating Date	07-04-2011	07-04-2011	07-30-2011	08-29-2011	07-04-2011	07-30-2011		
Rating Type	Injury	Control	Control	Control	Control	Control		
Rating Unit	Percent	Percent	Percent	Percent	Percent	Percent		
Days After First/Last Applic.	26 26	26 26	52 24	82 54	26 26	52 24		
Trt-Eval Interval	26 DA-A	26 DA-A	24 DA-B	54 DA-B	26 DA-A	24 DA-B		
Plant-Eval Interval	29 DP-1	29 DP-1	55 DP-1	85 DP-1	29 DP-1	55 DP-1		
Trt No.	Treatment	Form Conc	Form Unit	Form Type	Rate Rate	Other Other	Growth Unit	Appl Code
12	Nontreated Check							
		0.0 a	0.0 d	0.0 c	0.0 d	0.0 c	0.0 d	
LSD (P=.05)		0.00	11.60	5.68	10.01	4.58	2.71	
Standard Deviation		0.00	8.04	3.93	6.93	3.17	1.87	
CV		0.0	9.67	4.7	8.63	3.53	2.11	
Grand Mean		0.0	83.13	83.67	80.28	89.76	88.74	
Replicate F		0.000	0.258	2.071	0.884	1.130	0.858	
Replicate Prob(F)		1.0000	0.8549	0.1237	0.4599	0.3517	0.4730	
Treatment F		0.000	44.511	191.983	62.538	319.154	909.032	
Treatment Prob(F)		1.0000	0.0001	0.0001	0.0001	0.0001	0.0001	

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Description								Waterhemp	Corn, field	Corn, field	Corn, field		
Rating Date								08-29-2011	10-21-2011	10-21-2011	10-21-2011		
Rating Type								Control	Moisture	Test Weight	Yield@15.5%		
Rating Unit								Percent	%	lb/bu	bu/A		
Days After First/Last Applic.								82 54	135 107	135 107	135 107		
Trt-Eval Interval								54 DA-B					
Plant-Eval Interval								85 DP-1	138 DP-1	138 DP-1	138 DP-1		
Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate Rate	Other Rate	Other Unit	Growth Stage	Appl Code				
1	Rimsulfuron	25 %		SG	1 oz/a	0.25 oz ai/a		PRE	A	96.8 a	13.883 a	55.498 a	161.948 a
	Mesotrione	50 %		WG	4.5 oz/a	2.25 oz ai/a		PRE	A				
2	Rimsulfuron	25 %		SG	1.5 oz/a	0.375 oz ai/a		PRE	A	85.0 b	13.560 a	55.498 a	163.713 a
	Mesotrione	50 %		WG	4.5 oz/a	2.25 oz ai/a		PRE	A				
3	Rimsulfuron	25 %		SG	1 oz/a	0.25 oz ai/a		PRE	A	82.5 b	13.658 a	55.880 a	164.350 a
	Thifensulfuron	50 %		SG	0.5 oz/a	0.25 oz ai/a		PRE	A				
	Mesotrione	50 %		WG	4.5 oz/a	2.25 oz ai/a		PRE	A				
4	Rimsulfuron	25 %		SG	1 oz/a	0.25 oz ai/a		PRE	A	99.0 a	14.488 a	55.278 a	168.753 a
	Mesotrione	50 %		WG	4.5 oz/a	2.25 oz ai/a		PRE	A				
	Atrazine	4 lb/gal		SL	32 oz/a	1 lb ai/a		PRE	A				
5	Rimsulfuron	25 %		SG	1.5 oz/a	0.375 oz ai/a		PRE	A	99.0 a	14.063 a	55.360 a	168.385 a
	Mesotrione	50 %		WG	4.5 oz/a	2.25 oz ai/a		PRE	A				
	Atrazine	4 lb/gal		SL	32 oz/a	1 lb ai/a		PRE	A				
6	Rimsulfuron	25 %		SG	1 oz/a	0.25 oz ai/a		PRE	A	99.0 a	14.375 a	55.468 a	167.585 a
	Thifensulfuron	50 %		SG	0.5 oz/a	0.25 oz ai/a		PRE	A				
	Mesotrione	50 %		WG	4.5 oz/a	2.25 oz ai/a		PRE	A				
	Atrazine	4 lb/gal		SL	32 oz/a	1 lb ai/a		PRE	A				
7	Rimsulfuron	25 %		SG	1 oz/a	0.25 oz ai/a		PRE	A	99.0 a	14.060 a	55.253 a	167.435 a
	Mesotrione	50 %		WG	4.5 oz/a	2.25 oz ai/a		PRE	A				
	Atrazine	4 lb/gal		SL	32 oz/a	1 lb ai/a		PRE	A				
	Abundit	4 lb/gal		SL	32 oz/a			POST	B				
	AMS	21 %		SG	2 lb/a			POST	B				
8	Rimsulfuron	25 %		SG	1.5 oz/a	0.375 oz ai/a		PRE	A	99.0 a	13.968 a	56.178 a	164.675 a
	Mesotrione	50 %		WG	4.5 oz/a	2.25 oz ai/a		PRE	A				
	Atrazine	4 lb/gal		SL	32 oz/a	1 lb ai/a		PRE	A				
	Abundit	4 lb/gal		SL	32 oz/a			POST	B				
	AMS	21 %		SG	2 lb/a			POST	B				
9	Rimsulfuron	25 %		SG	1 oz/a	0.25 oz ai/a		PRE	A	99.0 a	14.108 a	56.150 a	172.230 a
	Thifensulfuron	50 %		SG	0.5 oz/a	0.25 oz ai/a		PRE	A				
	Mesotrione	50 %		WG	4.5 oz/a	2.25 oz ai/a		PRE	A				
	Atrazine	4 lb/gal		SL	32 oz/a	1 lb ai/a		PRE	A				
	Abundit	4 lb/gal		SL	32 oz/a			POST	B				
	AMS	21 %		SG	2 lb/a			POST	B				
10	LUMAX	3.95 lb/gal		SC	3 qt/a			PRE	A	99.0 a	14.210 a	55.038 a	164.138 a
11	LUMAX	3.95 lb/gal		SC	3 qt/a			PRE	A	99.0 a	14.568 a	55.688 a	166.225 a
	Abundit	4 lb/gal		SL	32 oz/a			POST	B				
	AMS	21 %		SG	2 lb/a			POST	B				

Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT)
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Description	Waterhemp	Corn, field	Corn, field	Corn, field
Rating Date	08-29-2011	10-21-2011	10-21-2011	10-21-2011
Rating Type	Control	Moisture	Test Weight	Yield@15.5%
Rating Unit	Percent	%	lb/bu	bu/A
Days After First/Last Applic.	82 54	135 107	135 107	135 107
Trt-Eval Interval	54 DA-B			
Plant-Eval Interval	85 DP-1	138 DP-1	138 DP-1	138 DP-1
Trt Treatment	Form Form Form	Rate Other Other	Growth Appl	
No. Name	Conc Unit Type Rate Unit Rate Rate Unit Stage Code			
12 Nontreated Check	0.0 c	14.440 a	55.713 a	151.295 b
LSD (P=.05)	3.38	0.9719	1.5606	9.5995
Standard Deviation	2.34	0.6731	1.0808	6.6483
CV	2.66	4.77	1.94	4.03
Grand Mean	88.02	14.11	55.58	165.06
Replicate F	0.665	0.533	0.288	0.332
Replicate Prob(F)	0.5799	0.6631	0.8336	0.8021
Treatment F	587.481	0.903	0.424	2.401
Treatment Prob(F)	0.0001	0.5477	0.9344	0.0256

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