

Mesotrione Premixes in No-Till Corn Burndown.

02-2A-M110

OBJECTIVE: Evaluate mesotrione premixes with Gramoxone Max and Touchdown for one-pass weed control in no-till corn.

SUMMARY: A12909 plus Salvo and A12854 plus Salvo provided no control of Carolina foxtail or little barley. Adding Gramoxone Max or Touchdown to A12909 or A12854 increased Carolina foxtail and little barley control to 100% at 28 days after treatment (DAT). All herbicide treatments controlled at least 90% of smallflower buttercup, mouseear chickweed, and giant foxtail at 14 or 28 DAT. A12909 plus Salvo and A12854 plus Salvo controlled 50% of wild garlic at 14 DAT. Wild garlic control was increased to at least 93% when Gramoxone Max was added to either A12909 or A12854. Common cocklebur and common ragweed control 28 DAT ranged from 82 to 99% with few significant differences between treatments.

HERBICIDES

A12854 3.93 SE
 A12909 3.67 SE
 AATREX 90 WG
 BICEP II MAGNUM 5.5 L
 FIELDMASTER 4.25 L
 GF688 3.5 CS
 GLYPHOMAX PLUS 3 SL
 GRAMOXONE MAX 3 SL
 SALVO 5 EC
 TOUCHDOWN 3 SL

WEEDS

barley, little
 buttercup, smallflower
 chickweed, mouseear
 cocklebur, common
 foxtail, Carolina
 foxtail, giant
 garlic, wild
 ragweed, common

CROP

corn, field

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Mesotrione Premixes in No-Till Corn Burndown.

Project Code: 02-2A-M110 Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA
 Trial Status: Final Updated: 8-23-02

Objective:

Evaluate mesotrione premixes with Gramoxone Max and Touchdown for one-pass weed control in no-till corn.

Weed Code	Common Name	Scientific Name
1.	ALOCA foxtail, Carolina	Alopecurus carolinianus Walt.
2.	HORPU barley, little	Hordeum pusillum Nutt.
3.	RANAB buttercup, smallflower	Ranunculus abortivus L.
4.	ALLVI garlic, wild	Allium vineale L.
5.	CERVU chickweed, mouseear	Cerastium vulgatum L.
6.	SETFA foxtail, giant	Setaria faberi Herrm.
7.	XANST cocklebur, common	Xanthium strumarium L.
8.	AMBEL ragweed, common	Ambrosia artemisiifolia L.

Crop 1: ZEAMX corn, field Variety: Pioneer 33P69LL
 Planting Method: Seeded Planting Date: 5-27-02
 Rate: 28000 S/A Depth: 1.5 IN
 Row Spacing: 30 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, 2001

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

Soil Name: Weir % OM: 1.5 pH: 6.4 CEC: 10
 Texture: Silt loam Fert. Level: P1: 81 LB/A, K: 274 LB/A

APPLICATION DESCRIPTION

A

Application Date: 4-26-02
 Time of Day: 10:00
 Application Method: Spray
 Application Timing: 15EPP
 Applic. Placement: BROFOL
 Air Temp., Unit: 56 F
 % Relative Humidity: 32
 Wind Velocity, Unit: 0 MPH
 Soil Moisture: ABONOR

CROP STAGE AT EACH APPLICATION

A

Crop 1 Code, Stage: ZEAMX NA
 Height, Unit: NA NA

WEED STAGE AT EACH APPLICATION

A

Weed 1 Code: ALOCA
 Stage(leaves): 5-6
 Height(inches): 4-6
 Density: Medium

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

Weed 3 Code: RANAB
 Stage(leaves): 10+
 Height(inches): 6-18
 Density: High

Weed 4 Code: ALLVI
 Stage(leaves): 3-4
 Height(inches): 8-18
 Density: Medium

Weed 5 Code: CERVU
 Stage(leaves): 10+
 Height(inches): 4-6
 Density: Medium

Weed 6 Code: SETFA
 Stage(leaves): 1-2
 Height(inches): 0-1
 Density: Medium

Weed 8 Code: AMBEL
 Stage(leaves): 3-4
 Height(inches): 0-2
 Density: Medium

APPLICATION EQUIPMENT

A

Appl. Equipment: CO2 sprayer
 Operating Pressure: 40 PSI
 Nozzle Type: Flat fan
 Nozzle Size: 8003
 Boom Length, Unit: 7.5 FT
 Spray Volume, Unit: 20 GPA

NOTES:

This study was not harvested.

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										ALOCA	ALOCA	HORPU	HORPU	RANAB	RANAB	ALLVI	ALLVI	CERVU	SETFA	XANST	AMBEL		
										ZEAMX	ZEAMX												
										Injury	Injury	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
										Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
										6-7-02	6-14-02	5-10-02	5-24-02	5-10-02	5-24-02	5-10-02	5-24-02	5-10-02	5-24-02	5-10-02	5-24-02	5-24-02	
										7 DAE	14 DAE	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	28 DA-A	28 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code															
1	NONTREATED								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	A12909	3.67	SE	1.84 LB A/A	2	QT/A		15EPP A	0	0	100	100	100	100	100	100	93	100	100	100	88	85	
	GRAMOXONE MAX	3	SL	0.62 LB A/A	0.83	QT/A		15EPP A															
	ACTIVATOR 90	100	LIQ	0.25 % V/V	0.25	%V/V		15EPP A															
3	A12909	3.67	SE	2.2 LB A/A	2.4	QT/A		15EPP A	0	0	100	100	100	100	100	100	95	100	100	100	93	93	
	GRAMOXONE MAX	3	SL	0.62 LB A/A	0.83	QT/A		15EPP A															
	ACTIVATOR 90	100	LIQ	0.25 % V/V	0.25	%V/V		15EPP A															
4	A12909	3.67	SE	1.84 LB A/A	2	QT/A		15EPP A	0	0	90	100	90	100	90	100	63	87	100	100	96	83	
	TOUCHDOWN	3	SL	0.56 LB AE/A	0.75	QT/A		15EPP A															
	AMS	100	DRY	1.0 % W/W	8.5	LB/100 GAL		15EPP A															
5	A12909	3.67	SE	2.2 LB A/A	2.4	QT/A		15EPP A	0	0	90	100	90	100	90	100	72	67	100	100	96	83	
	TOUCHDOWN	3	SL	0.56 LB AE/A	0.75	QT/A		15EPP A															
	AMS	100	DRY	1.0 % W/W	8.5	LB/100 GAL		15EPP A															
6	A12909	3.67	SE	1.84 LB A/A	2	QT/A		15EPP A	0	0	100	100	100	100	100	100	93	100	100	100	92	82	
	GRAMOXONE MAX	3	SL	0.62 LB A/A	0.83	QT/A		15EPP A															
	SALVO	5	EC	0.5 LB AE/A	12.8	OZ/A		15EPP A															
	ACTIVATOR 90	100	LIQ	0.25 % V/V	0.25	%V/V		15EPP A															
7	A12909	3.67	SE	2.2 LB A/A	2.4	QT/A		15EPP A	0	0	100	100	100	100	100	100	93	100	100	100	91	89	
	GRAMOXONE MAX	3	SL	0.62 LB A/A	0.83	QT/A		15EPP A															
	SALVO	5	EC	0.5 LB AE/A	12.8	OZ/A		15EPP A															
	ACTIVATOR 90	100	LIQ	0.25 % V/V	0.25	%V/V		15EPP A															
8	A12854	3.93	SE	2.46 LB A/A	2.5	QT/A		15EPP A	0	0	100	100	100	100	100	100	93	100	100	100	82	88	
	GRAMOXONE MAX	3	SL	0.62 LB A/A	0.83	QT/A		15EPP A															
	ACTIVATOR 90	100	LIQ	0.25 % V/V	0.25	%V/V		15EPP A															
9	A12854	3.93	SE	2.95 LB A/A	3	QT/A		15EPP A	0	0	100	100	100	100	100	100	98	100	100	100	88	90	
	GRAMOXONE MAX	3	SL	0.62 LB A/A	0.83	QT/A		15EPP A															
	ACTIVATOR 90	100	LIQ	0.25 % V/V	0.25	%V/V		15EPP A															
10	A12854	3.93	SE	2.46 LB A/A	2.5	QT/A		15EPP A	0	0	50	100	50	100	100	100	50	93	100	100	99	97	
	TOUCHDOWN	3	SL	0.56 LB AE/A	0.75	QT/A		15EPP A															
	AMS	100	DRY	1.0 % W/W	8.5	LB/100 GAL		15EPP A															
11	A12854	3.93	SE	2.95 LB A/A	3	QT/A		15EPP A	0	0	68	100	68	100	90	100	50	63	100	100	92	88	
	TOUCHDOWN	3	SL	0.56 LB AE/A	0.75	QT/A		15EPP A															
	AMS	100	DRY	1.0 % W/W	8.5	LB/100 GAL		15EPP A															

Weed Code	ALOCA ALOCA HORPU HORPU RANAB RANAB ALLVI ALLVI CERVU SETFA XANST AMBEL																			
Crop Code	ZEAMX ZEAMX																			
Rating Data Type	Injury	Injury	Control	Control	Control	Control	Control	Control	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	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Date	6-7-02	6-14-02	5-10-02	5-24-02	5-10-02	5-24-02	5-10-02	5-24-02	5-10-02	5-24-02	5-10-02	5-24-02	5-10-02	5-24-02	5-10-02	5-24-02	5-10-02	5-24-02	5-10-02	5-24-02
Trt-Eval Interval	7 DAE	14 DAE	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code														
12	A12854	3.93	SE	2.46	LB A/A	2.5	QT/A	15EPP	A	0	0	100	100	100	100	100	100	93	100	100	100	92	91
12	GRAMOXONE MAX	3	SL	0.62	LB A/A	0.83	QT/A	15EPP	A														
12	SALVO	5	EC	0.5	LB AE/A	12.8	OZ/A	15EPP	A														
12	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	15EPP	A														
13	A12854	3.93	SE	2.95	LB A/A	3	QT/A	15EPP	A	0	0	100	100	100	100	100	100	93	97	100	100	92	95
13	GRAMOXONE MAX	3	SL	0.62	LB A/A	0.83	QT/A	15EPP	A														
13	SALVO	5	EC	0.5	LB AE/A	12.8	OZ/A	15EPP	A														
13	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	15EPP	A														
14	GF688	3.5	CS	2.19	LB A/A	2.5	QT/A	15EPP	A	0	0	90	83	90	100	100	100	50	67	100	100	99	91
14	GLYPHOMAX PLUS	3	SL	0.56	LB AE/A	0.75	QT/A	15EPP	A														
14	AMS	100	DRY	1.0	% W/W	8.5	LB/100 GAL	15EPP	A														
15	FIELDMASTER	4.25	L	4.25	LB A/A	4	QT/A	15EPP	A	0	0	90	100	90	100	100	100	50	100	100	100	93	88
15	AMS	100	DRY	1.0	% W/W	8.5	LB/100 GAL	15EPP	A														
16	BICEP II MAGNUM	5.5	L	2.89	LB A/A	2.1	QT/A	15EPP	A	0	0	100	100	100	100	100	100	93	100	100	100	99	87
16	GRAMOXONE MAX	3	SL	0.62	LB A/A	0.83	QT/A	15EPP	A														
16	SALVO	5	EC	0.5	LB AE/A	12.8	OZ/A	15EPP	A														
16	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	15EPP	A														
17	A12909	3.67	SE	1.84	LB A/A	2	QT/A	15EPP	A	0	0	100	100	100	100	100	100	93	100	100	100	96	82
17	GRAMOXONE MAX	3	SL	0.62	LB A/A	0.83	QT/A	15EPP	A														
17	AATREX	90	WG	1.5	LB A/A	1.67	LB/A	15EPP	A														
17	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	15EPP	A														
18	A12909	3.67	SE	2.2	LB A/A	2.4	QT/A	15EPP	A	0	0	100	100	100	100	100	100	93	100	100	100	93	90
18	GRAMOXONE MAX	3	SL	0.62	LB A/A	0.83	QT/A	15EPP	A														
18	AATREX	90	WG	1.5	LB A/A	1.67	LB/A	15EPP	A														
18	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	15EPP	A														
19	A12909	3.67	SE	1.84	LB A/A	2	QT/A	15EPP	A	0	0	0	0	0	0	100	100	50	17	100	100	93	93
19	SALVO	5	EC	0.5	LB AE/A	12.8	OZ/A	15EPP	A														
19	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	15EPP	A														
20	A12909	3.67	SE	2.2	LB A/A	2.4	QT/A	15EPP	A	0	0	0	0	0	0	100	100	50	17	100	100	96	85
20	SALVO	5	EC	0.5	LB AE/A	12.8	OZ/A	15EPP	A														
20	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	15EPP	A														
21	A12854	3.93	SE	2.46	LB A/A	2.5	QT/A	15EPP	A	0	0	0	0	0	0	100	100	50	50	100	100	93	95
21	SALVO	5	EC	0.5	LB AE/A	12.8	OZ/A	15EPP	A														
21	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	15EPP	A														
22	A12854	3.93	SE	2.95	LB A/A	3	QT/A	15EPP	A	0	0	0	0	0	0	100	100	50	60	100	100	99	94
22	SALVO	5	EC	0.5	LB AE/A	12.8	OZ/A	15EPP	A														
22	PRIME OIL COC	100	LIQ	1.0	% V/V	1	%V/V	15EPP	A														
LSD (P=.05)										0.0	0.0	5.7	10.2	5.7	0.0	0.0	0.0	10.4	21.1	0.0	0.0	14.0	14.2

Weed Code	ALOCA ALOCA HORPU HORPU RANAB RANAB ALLVI ALLVI CERVU SETFA XANST AMBEL															
Crop Code	ZEAMX ZEAMX															
Rating Data Type	Injury	Injury	Control	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	Percent	Percent	Percent	
Rating Date	6-7-02	6-14-02	5-10-02	5-24-02	5-10-02	5-24-02	5-10-02	5-24-02	5-10-02	5-24-02	5-10-02	5-24-02	5-10-02	5-24-02	5-24-02	
Trt-Eval Interval	7 DAE	14 DAE	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	28 DA-A	

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code															
Replicate F				0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000	7.885	6.248	0.000	0.000	1.655	3.429							
Replicate Prob(F)				1.0000	1.0000	0.3765	0.3765	0.3765	1.0000	1.0000	1.0000	0.0012	0.0042	1.0000	1.0000	0.2033	0.0418							
Treatment F				0.000	0.000	442.060	143.857	442.060	0.000	0.000	0.000	50.640	18.449	0.000	0.000	17.236	15.323							
Treatment Prob(F)				1.0000	1.0000	0.0001	0.0001	0.0001	1.0000	1.0000	1.0000	0.0001	0.0001	1.0000	1.0000	0.0001	0.0001							

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Trial Comments

1. Protocol: Syngenta.
2. DAE = days after emergence. DA-A = days after 15EPP application.
3. The study was terminated prior to the planned 28 DAE crop injury and 56 DA-A weed control ratings.
4. A blanket application of Callisto and Accent was applied as a rescue.