

Weed Control in Glyphosate-Resistant Corn with MANA-282 and MANA-283.

Project Code: 04-21S-ME90 Location: Belleville Research Center
 Investigator: Bryan Young

Investigator: Bryan Young, Associate Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA
 Trial Status: Final Updated: 9-1-04

Objective:

To determine the efficacy of MANA-282 vs Dual II Magnum and MANA-283 vs Bicep II Magnum in glyphosate-resistant corn.

Weed Code	Common Name	Scientific Name
1. SETFA	foxtail, giant	Setaria faberi Herrm.
2. XANST	cocklebur, common	Xanthium strumarium L.
3. ABUTH	velvetleaf	Abutilon theophrasti Medicus
4. AMBEL	ragweed, common	Ambrosia artemisiifolia L.
5. IPOSS	morningglory, species	Ipomoea sp.

Crop 1: ZEAMX corn, field Variety: DKC 60-17 RR
 Planting Method: Seeded Planting Date: 5-11-04
 Rate: 28000 S/A Depth: 1.5 IN
 Row Spacing: 30 IN

Plot Width, Unit: 10 FT Plot Length, Unit: 30 FT Reps: 4
 Tillage Type: Reduced-Till Study Design: Randomized complete block
 Previous Crop, Year: GLXMA, 2003

Field Prep./Maintenance: N 150 LB/A, P205 50 LB/A, K20 100 LB/A

Soil Name: Ebbert % OM: 2.7 pH: 6.2 CEC: 14
 Texture: Silt loam Fert. Level: P1: 115 LB/A, K: 500 LB/A

APPLICATION DESCRIPTION

	A	B
Application Date:	5-12-04	6-3-04
Time of Day:	8:00	10:00
Application Method:	Spray	Spray
Application Timing:	PRE	2-4"W
Applic. Placement:	BROFOL	BROFOL
Air Temp., Unit:	73 F	64 F
% Relative Humidity:	88	65
Wind Velocity, Unit:	1 MPH	3 MPH
Soil Moisture:	NORMAL	ABONOR

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	ZEAMX NA	ZEAMX V4
Height, Unit:	NA NA	10-12 IN

WEED STAGE AT EACH APPLICATION

	A	B
Weed 2 Code:		XANST
Stage(leaves):		6-8
Height(inches):		3-5
Density:		Medium
Weed 3 Code:		ABUTH
Stage(leaves):		4-6
Height(inches):		2-4
Density:		Medium
Weed 4 Code:		AMBEL
Stage(leaves):		4-6
Height(inches):		2-4
Density:		Low
Weed 5 Code:		IPOSS
Stage(leaves):		4-8
Height(inches):		1-3
Density:		Medium

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	CO2 sprayer	CO2 sprayer
Operating Pressure:	40 PSI	40 PSI
Nozzle Type:	Flat fan	Flat fan
Nozzle Size:	8003	8002
Boom Length, Unit:	7.5 FT	7.5 FT
Spray Volume, Unit:	20 GPA	20 GPA

NOTES:

SETFA not present at 2-4"W application (controlled by PRE application).

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									SETFA	SETFA	SETFA	SETFA	XANST	XANST	XANST	XANST						
									ZEAMX	ZEAMX	ZEAMX	ZEAMX	Control	Control	Control	Control						
									Injury	Injury	Injury	Injury	Percent	Percent	Percent	Percent						
									6-1-04	6-15-04	6-29-04	7-13-04	6-1-04	6-15-04	6-29-04	7-13-04						
									14 DAE	28 DAE	42 DAE	56 DAE	14 DAE	28 DAE	42 DAE	56 DAE						
Trt	Treatment	Form	Form	Rate	Prod	Prod	Grow	Appl														
No.	Name	Conc	Type	Unit	Rate	Unit	Stg	Code														
1	NONTREATED								0	0	0	0	0	0	0	0	0					
2	DUAL II MAGNUM	7.64	EC	0.955	LB	A/A	1.0	PT/A	PRE	A	0	0	0	0	98	99	99	99	0	0	0	0
3	DUAL II MAGNUM	7.64	EC	1.91	LB	A/A	2.0	PT/A	PRE	A	0	0	0	0	99	99	99	99	0	0	0	0
4	MANA-282	7.88	L	0.985	LB	A/A	1.0	PT/A	PRE	A	0	0	0	0	99	99	99	99	0	0	0	0
5	MANA-282	7.88	L	1.97	LB	A/A	2.0	PT/A	PRE	A	0	0	0	0	99	99	99	99	0	0	0	0
6	MANA-282	7.88	L	2.96	LB	A/A	3.0	PT/A	PRE	A	0	0	0	0	99	99	99	99	0	0	0	0
7	MANA-282	7.88	L	0.985	LB	A/A	1.0	PT/A	PRE	A	0	0	0	0	99	99	99	99	0	98	97	97
7	ROUNDUP W-MAX	4.5	SL	0.77	LB	AE/A	22	FL	OZ/A	2-4"W	B											
8	MANA-282	7.88	L	1.97	LB	A/A	2.0	PT/A	PRE	A	0	0	0	0	99	99	99	99	0	98	98	98
8	ROUNDUP W-MAX	4.5	SL	0.77	LB	AE/A	22	FL	OZ/A	2-4"W	B											
9	MANA-282	7.88	L	2.96	LB	A/A	3.0	PT/A	PRE	A	0	0	0	0	99	99	99	99	0	99	98	97
9	ROUNDUP W-MAX	4.5	SL	0.77	LB	AE/A	22	FL	OZ/A	2-4"W	B											
10	DUAL II MAGNUM	7.64	EC	0.955	LB	A/A	1.0	PT/A	PRE	A	0	0	0	0	99	99	99	99	0	98	97	97
10	ROUNDUP W-MAX	4.5	SL	0.77	LB	AE/A	22	FL	OZ/A	2-4"W	B											
11	DUAL II MAGNUM	7.64	EC	1.91	LB	A/A	2.0	PT/A	PRE	A	0	0	0	0	99	99	99	99	0	98	98	98
11	ROUNDUP W-MAX	4.5	SL	0.77	LB	AE/A	22	FL	OZ/A	2-4"W	B											
12	MANA-283	5.97	L	1.94	LB	A/A	1.3	QT/A	PRE	A	0	0	0	0	99	99	99	99	92	89	74	68
13	MANA-283	5.97	L	2.9	LB	A/A	1.95	QT/A	PRE	A	0	0	0	0	99	99	99	99	91	90	74	68
14	MANA-283	5.97	L	3.58	LB	A/A	2.4	QT/A	PRE	A	0	0	0	0	99	99	99	99	95	90	76	71
15	MANA-283	5.97	L	1.94	LB	A/A	1.3	QT/A	PRE	A	0	0	0	0	99	99	99	99	91	98	98	98
15	ROUNDUP W-MAX	4.5	SL	0.77	LB	AE/A	22	FL	OZ/A	2-4"W	B											
16	MANA-283	5.97	L	2.9	LB	A/A	1.95	QT/A	PRE	A	0	0	0	0	99	99	99	99	94	98	97	97
16	ROUNDUP W-MAX	4.5	SL	0.77	LB	AE/A	22	FL	OZ/A	2-4"W	B											
17	MANA-283	5.97	L	3.58	LB	A/A	2.4	QT/A	PRE	A	0	0	0	0	99	99	99	99	95	98	99	98
17	ROUNDUP W-MAX	4.5	SL	0.77	LB	AE/A	22	FL	OZ/A	2-4"W	B											
18	BICEP II MAGNUM	5.5	L	1.79	LB	A/A	1.3	QT/A	PRE	A	0	0	0	0	99	99	99	99	94	98	98	97
18	ROUNDUP W-MAX	4.5	SL	0.77	LB	AE/A	22	FL	OZ/A	2-4"W	B											
19	BICEP II MAGNUM	5.5	L	2.68	LB	A/A	1.95	QT/A	PRE	A	0	0	0	0	99	99	99	99	92	98	98	97
19	ROUNDUP W-MAX	4.5	SL	0.77	LB	AE/A	22	FL	OZ/A	2-4"W	B											
20	BICEP II MAGNUM	5.5	L	3.57	LB	A/A	2.6	QT/A	PRE	A	0	0	0	0	99	99	99	99	95	98	98	98
20	ROUNDUP W-MAX	4.5	SL	0.77	LB	AE/A	22	FL	OZ/A	2-4"W	B											
LSD (P=.05)									0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	2.8	2.6	3.3	7.8		
Replicate F									0.000	0.000	0.000	0.000	2.111	0.000	0.000	0.000	1.084	0.928	1.695	0.863		
Replicate Prob(F)									1.0000	1.0000	1.0000	1.0000	0.1089	1.0000	1.0000	1.0000	0.3630	0.4334	0.1784	0.4654		
Treatment F									0.000	0.000	0.000	0.000	9182.333	0.000	0.000	0.000	2347.325	2428.751	1438.496	253.505		
Treatment Prob(F)									1.0000	1.0000	1.0000	1.0000	0.0001	1.0000	1.0000	1.0000	0.0001	0.0001	0.0001	0.0001		

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									ABUTH	ABUTH	ABUTH	ABUTH	AMBEL	AMBEL	AMBEL	AMBEL	IPOSS	IPOSS	IPOSS	IPOSS		
									Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control		
									Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent		
									6-1-04	6-15-04	6-29-04	7-13-04	6-1-04	6-15-04	6-29-04	7-13-04	6-1-04	6-15-04	6-29-04	7-13-04		
									14 DAE	28 DAE	42 DAE	56 DAE	14 DAE	28 DAE	42 DAE	56 DAE	14 DAE	28 DAE	42 DAE	56 DAE		
Trt	Treatment	Form	Form	Rate	Prod	Prod	Grow	Appl														
No.	Name	Conc	Type	Unit	Rate	Unit	Stg	Code														
1	NONTREATED								0	0	0	0	0	0	0	0	0	0	0	0	0	
2	DUAL II MAGNUM	7.64	EC	0.955	LB	A/A	1.0	PT/A	PRE	A	0	0	0	0	0	0	0	0	0	0	0	
3	DUAL II MAGNUM	7.64	EC	1.91	LB	A/A	2.0	PT/A	PRE	A	0	0	0	0	0	0	0	0	0	0	0	
4	MANA-282	7.88	L	0.985	LB	A/A	1.0	PT/A	PRE	A	0	0	0	0	0	0	0	0	0	0	0	
5	MANA-282	7.88	L	1.97	LB	A/A	2.0	PT/A	PRE	A	0	0	0	0	0	0	0	0	0	0	0	
6	MANA-282	7.88	L	2.96	LB	A/A	3.0	PT/A	PRE	A	0	0	0	0	0	0	0	0	0	0	0	
7	MANA-282	7.88	L	0.985	LB	A/A	1.0	PT/A	PRE	A	0	99	96	96	0	99	99	99	0	92	95	95
7	ROUNDUP W-MAX	4.5	SL	0.77	LB	AE/A	22	FL	OZ/A	2-4"W	B											
8	MANA-282	7.88	L	1.97	LB	A/A	2.0	PT/A	PRE	A	0	98	96	96	0	98	98	98	0	91	93	93
8	ROUNDUP W-MAX	4.5	SL	0.77	LB	AE/A	22	FL	OZ/A	2-4"W	B											
9	MANA-282	7.88	L	2.96	LB	A/A	3.0	PT/A	PRE	A	0	99	97	97	0	99	99	99	0	93	95	95
9	ROUNDUP W-MAX	4.5	SL	0.77	LB	AE/A	22	FL	OZ/A	2-4"W	B											
10	DUAL II MAGNUM	7.64	EC	0.955	LB	A/A	1.0	PT/A	PRE	A	0	97	96	96	0	99	99	99	0	92	94	94
10	ROUNDUP W-MAX	4.5	SL	0.77	LB	AE/A	22	FL	OZ/A	2-4"W	B											
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12	MANA-283	5.97	L	1.94	LB	A/A	1.3	QT/A	PRE	A	95	90	40	40	98	92	90	90	98	92	97	97
13	MANA-283	5.97	L	2.9	LB	A/A	1.95	QT/A	PRE	A	93	83	48	48	99	97	98	98	99	96	96	96
14	MANA-283	5.97	L	3.58	LB	A/A	2.4	QT/A	PRE	A	96	87	68	68	99	98	97	97	99	96	97	97
15	MANA-283	5.97	L	1.94	LB	A/A	1.3	QT/A	PRE	A	95	99	96	96	99	99	99	99	99	98	98	98
15	ROUNDUP W-MAX	4.5	SL	0.77	LB	AE/A	22	FL	OZ/A	2-4"W	B											
16	MANA-283	5.97	L	2.9	LB	A/A	1.95	QT/A	PRE	A	97	99	96	96	99	99	99	99	98	98	96	96
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18	BICEP II MAGNUM	5.5	L	1.79	LB	A/A	1.3	QT/A	PRE	A	97	99	97	97	99	99	99	99	98	98	98	98
18	ROUNDUP W-MAX	4.5	SL	0.77	LB	AE/A	22	FL	OZ/A	2-4"W	B											
19	BICEP II MAGNUM	5.5	L	2.68	LB	A/A	1.95	QT/A	PRE	A	98	99	98	98	99	99	99	99	99	99	98	98
19	ROUNDUP W-MAX	4.5	SL	0.77	LB	AE/A	22	FL	OZ/A	2-4"W	B											
20	BICEP II MAGNUM	5.5	L	3.57	LB	A/A	2.6	QT/A	PRE	A	98	99	97	97	99	99	99	99	99	98	98	98
20	ROUNDUP W-MAX	4.5	SL	0.77	LB	AE/A	22	FL	OZ/A	2-4"W	B											
LSD (P=.05)									2.2	3.8	6.4	6.4	0.7	3.2	3.8	3.8	1.1	2.1	3.0	3.0		
Replicate F									5.957	3.301	3.360	3.360	0.388	0.650	1.679	1.679	1.189	1.168	3.845	3.845		
Replicate Prob(F)									0.0013	0.0266	0.0250	0.0250	0.7622	0.5860	0.1816	0.1816	0.3220	0.3301	0.0141	0.0141		
Treatment F									4127.590	1146.972	375.895	375.895	39427.102	1707.499	1185.920	1185.920	16778.432	3647.856	1762.456	1762.456		
Treatment Prob(F)									0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001		

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Trial Comments

1. Protocol: Makhteshim-Agan.
2. Ratings: CI and WC 14, 28, 42 and 56 DAE. Rate PRE application at least once prior to POST.
3. DAE = Days after emergence.
4. Ratings on 6-1-04 were prior to the 2-4"W application.