

MSU Weed Science Research Program

Adjuvant comparison for dry glyphosate/atrazine tank-mixes with dicamba in corn

Trial ID: C04-13 Study Dir.: Sprague, Powell
 Conducted: Campus C-25 Investigator: Christy Sprague

Date Planted: May/06/2013 **Row Spacing:** 30 IN
Variety: DKC 48-12 **No. of Reps:** 4
Population: 32,000 seeds/A **% OM:** 3.4
Soil Type: Clay loam **pH:** 7.0
Plot Size: 10 X 40 FT **Design:** RANDOMIZED COMPLETE BLOCK

Tillage: Fall chisel, spring soil finish x2
Fertilizer: 300 lb urea broadcast, 150 lb 19-19-19 starter

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1.	ANGR	mainly foxtail species	SETARIA SP.
2.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
3.	AMAPO	AMARANTH, POWELL	AMARANTHUS POWELLII S.WATS.
4.	AMBEL	RAGWEED, COMMON	AMBROSIA ARTEMISIIFOLIA L.
5.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
Crop	Code	Common Name	
1.	ZEAMX	CORN, FIELD	

Application Description

Application Timing: POST
Date Treated: Jun/15/2013
Time Treated: 12:40 PM
% Cloud Cover: 75
Air Temp., Unit: 78 F
% Relative Humidity: 59
Wind Speed/Unit/Dir: 3 mph SW
Soil Temp., Unit: 68 F
Soil/Leaf Surface M: 2 5
Soil Moist (1=w 5=d): 2

Crop Stage at Each Application

Crop Name: ZEAMX
Height (In.): 17"
Stage (L): V5

Weed Stage at Each Application

Weed 1 Name: ANGR
Height (In.): 12"
Stage (L): 7
Weed 2 Name: CHEAL
Height (In.): 8"
Stage (L): 12+
Weed 3 Name: AMAPO
Height (In.): 8"
Stage (L): 10+
Weed 4 Name: AMBEL
Height (In.): 4"
Stage (L): 10+
Weed 5 Name: ABUTH
Height (In.): 6"
Stage (L): 6

Weed Density (plants/sq. ft.)

	1	2	3	4	5
Date:	Jul/11/2013	Jul/11/2013	Jul/11/2013	Jul/11/2013	Jul/11/2013
Weed Name:	ANGR	CHEAL	AMAPO	AMBEL	ABUTH
Density:	3	3	5	2	<1

Application Equipment

Appl	Sprayer	Speed	Nozzle	Nozzle	Nozzle	Nozzle	Boom			
	Type	MPH	Type	Size	Height	Spacing	Width	GPA	Carrier	PSI
A	Cub	3.8	AIXR	11003	29"	20"	100"	19	water	30

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Trial ID: C04-13 Study Dir.: Sprague, Powell
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Weed Code	ZEAMX	ANGR	CHEAL	AMAPO	AMBEL
Crop Code					
Rating Data Type	injury	control	control	control	control
Rating Unit	percent	percent	percent	percent	percent
Rating Date	Jun/22/2013	Jun/22/2013	Jun/22/2013	Jun/22/2013	Jun/22/2013
Trt-Eval Interval	7 DA-B	7 DA-B	7 DA-B	7 DA-B	7 DA-B
# Subsamples, Dec.	0	0	0	0	0

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg	Appl Code	ZEAMX	ANGR	CHEAL	AMAPO	AMBEL
1	Glyphosate/Atrazine	79	WG	0.88 lb/a	POST	A	0	86	93	73	74
	Dicamba	77	WG	3 oz/a	POST	A					
	N-Tank		L	0.5 % v/v	POST	A					
2	Glyphosate/Atrazine	79	WG	0.88 lb/a	POST	A	1	89	84	69	78
	Dicamba	77	WG	3 oz/a	POST	A					
	N-Tense		L	0.5 % v/v	POST	A					
3	Glyphosate/Atrazine	79	WG	1.3 lb/a	POST	A	2	88	90	80	89
	Dicamba	77	WG	4.6 oz/a	POST	A					
	N-Tank		L	0.5 % v/v	POST	A					
4	Glyphosate/Atrazine	79	WG	1.3 lb/a	POST	A	0	87	93	79	85
	Dicamba	77	WG	4.6 oz/a	POST	A					
	N-Tense		L	0.5 % v/v	POST	A					
5	Glyphosate/Atrazine	79	WG	1.79 lb/a	POST	A	3	95	98	90	95
	Dicamba	77	WG	6 oz/a	POST	A					
	N-Tank		L	0.5 % v/v	POST	A					
6	Glyphosate/Atrazine	79	WG	1.79 lb/a	POST	A	4	87	94	86	91
	Dicamba	77	WG	6 oz/a	POST	A					
	N-Tense		L	0.5 % v/v	POST	A					
7	Untreated						0	0	0	0	0
8	Roundup PowerMax	4	SL	13 fl oz/a	POST	A	2	89	95	84	71
	AAtrex	4	L	0.6 pt/a	POST	A					
	Clarity	4	L	4.7 fl oz/a	POST	A					
	N-Tank		L	0.5 % v/v	POST	A					
9	Roundup PowerMax	4	SL	13 fl oz/a	POST	A	2	96	99	96	83
	AAtrex	4	L	0.6 pt/a	POST	A					
	Clarity	4	L	4.7 fl oz/a	POST	A					
	N-Tense		L	0.5 % v/v	POST	A					
10	Roundup PowerMax	4	SL	19 fl oz/a	POST	A	2	94	99	96	86
	AAtrex	4	L	0.9 pt/a	POST	A					
	Clarity	4	L	7 fl oz/a	POST	A					
	N-Tank		L	0.5 % v/v	POST	A					
11	Roundup PowerMax	4	SL	19 fl oz/a	POST	A	2	98	99	98	84
	AAtrex	4	L	0.9 pt/a	POST	A					
	Clarity	4	L	7 fl oz/a	POST	A					
	N-Tense		L	0.5 % v/v	POST	A					
12	Roundup PowerMax	4	SL	26 fl oz/a	POST	A	7	98	99	99	91
	AAtrex	4	L	1.2 pt/a	POST	A					
	Clarity	4	L	9 fl oz/a	POST	A					
	N-Tank		L	0.5 % v/v	POST	A					
13	Roundup PowerMax	4	SL	26 fl oz/a	POST	A	8	97	99	97	95
	AAtrex	4	L	1.2 pt/a	POST	A					
	Clarity	4	L	9 fl oz/a	POST	A					
	N-Tense		L	0.5 % v/v	POST	A					
14	Weed-free						0	99	99	99	99
LSD (P=.05)							3.1	9.1	7.5	9.5	7.6
CV							95.38	7.45	5.91	8.13	6.65

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

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Weed Code	ABUTH		ANGR	CHEAL	AMAPO
Crop Code		ZEAMX			
Rating Data Type	control	injury	control	control	control
Rating Unit	percent	percent	percent	percent	percent
Rating Date	Jun/22/2013	Jun/28/2013	Jun/28/2013	Jun/28/2013	Jun/28/2013
Trt-Eval Interval	7 DA-B	13 DA-B	13 DA-B	13 DA-B	13 DA-B
# Subsamples, Dec.	0	0	0	0	0

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	ABUTH	ZEAMX	ANGR	CHEAL	AMAPO
1	Glyphosate/Atrazine	79	WG	0.88	lb/a	POST	A	72	2	88	99	81
	Dicamba	77	WG	3	oz/a	POST	A					
	N-Tank		L	0.5	% v/v	POST	A					
2	Glyphosate/Atrazine	79	WG	0.88	lb/a	POST	A	66	1	89	99	82
	Dicamba	77	WG	3	oz/a	POST	A					
	N-Tense		L	0.5	% v/v	POST	A					
3	Glyphosate/Atrazine	79	WG	1.3	lb/a	POST	A	81	2	91	99	88
	Dicamba	77	WG	4.6	oz/a	POST	A					
	N-Tank		L	0.5	% v/v	POST	A					
4	Glyphosate/Atrazine	79	WG	1.3	lb/a	POST	A	85	3	87	97	81
	Dicamba	77	WG	4.6	oz/a	POST	A					
	N-Tense		L	0.5	% v/v	POST	A					
5	Glyphosate/Atrazine	79	WG	1.79	lb/a	POST	A	88	4	99	99	96
	Dicamba	77	WG	6	oz/a	POST	A					
	N-Tank		L	0.5	% v/v	POST	A					
6	Glyphosate/Atrazine	79	WG	1.79	lb/a	POST	A	93	3	93	99	98
	Dicamba	77	WG	6	oz/a	POST	A					
	N-Tense		L	0.5	% v/v	POST	A					
7	Untreated							0	0	0	0	0
8	Roundup PowerMax	4	SL	13	fl oz/a	POST	A	70	2	97	99	84
	AAtrex	4	L	0.6	pt/a	POST	A					
	Clarity	4	L	4.7	fl oz/a	POST	A					
	N-Tank		L	0.5	% v/v	POST	A					
9	Roundup PowerMax	4	SL	13	fl oz/a	POST	A	85	2	97	99	98
	AAtrex	4	L	0.6	pt/a	POST	A					
	Clarity	4	L	4.7	fl oz/a	POST	A					
	N-Tense		L	0.5	% v/v	POST	A					
10	Roundup PowerMax	4	SL	19	fl oz/a	POST	A	86	3	97	99	99
	AAtrex	4	L	0.9	pt/a	POST	A					
	Clarity	4	L	7	fl oz/a	POST	A					
	N-Tank		L	0.5	% v/v	POST	A					
11	Roundup PowerMax	4	SL	19	fl oz/a	POST	A	83	4	99	99	99
	AAtrex	4	L	0.9	pt/a	POST	A					
	Clarity	4	L	7	fl oz/a	POST	A					
	N-Tense		L	0.5	% v/v	POST	A					
12	Roundup PowerMax	4	SL	26	fl oz/a	POST	A	99	5	99	99	99
	AAtrex	4	L	1.2	pt/a	POST	A					
	Clarity	4	L	9	fl oz/a	POST	A					
	N-Tank		L	0.5	% v/v	POST	A					
13	Roundup PowerMax	4	SL	26	fl oz/a	POST	A	95	5	99	99	96
	AAtrex	4	L	1.2	pt/a	POST	A					
	Clarity	4	L	9	fl oz/a	POST	A					
	N-Tense		L	0.5	% v/v	POST	A					
14	Weed-free							99	0	99	99	99
LSD (P=.05)								8.0	1.6	8.8	1.7	9.4
CV								7.14	45.36	7.0	1.31	7.7

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

MSU Weed Science Research Program

Weed Code	AMBEL	ABUTH		ANGR	CHEAL
Crop Code			ZEAMX		
Rating Data Type	control	control	injury	control	control
Rating Unit	percent	percent	percent	percent	percent
Rating Date	Jun/28/2013	Jun/28/2013	Jul/12/2013	Jul/12/2013	Jul/12/2013
Trt-Eval Interval	13 DA-B	13 DA-B	27 DA-B	27 DA-B	27 DA-B
# Subsamples, Dec.	0	0	0	0	0

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code					
1	Glyphosate/Atrazine	79	WG	0.88	lb/a	POST	A	86	86	1	94	99
	Dicamba	77	WG	3	oz/a	POST	A					
	N-Tank		L	0.5	% v/v	POST	A					
2	Glyphosate/Atrazine	79	WG	0.88	lb/a	POST	A	87	79	0	97	99
	Dicamba	77	WG	3	oz/a	POST	A					
	N-Tense		L	0.5	% v/v	POST	A					
3	Glyphosate/Atrazine	79	WG	1.3	lb/a	POST	A	92	98	1	97	99
	Dicamba	77	WG	4.6	oz/a	POST	A					
	N-Tank		L	0.5	% v/v	POST	A					
4	Glyphosate/Atrazine	79	WG	1.3	lb/a	POST	A	91	91	3	94	99
	Dicamba	77	WG	4.6	oz/a	POST	A					
	N-Tense		L	0.5	% v/v	POST	A					
5	Glyphosate/Atrazine	79	WG	1.79	lb/a	POST	A	99	99	5	96	99
	Dicamba	77	WG	6	oz/a	POST	A					
	N-Tank		L	0.5	% v/v	POST	A					
6	Glyphosate/Atrazine	79	WG	1.79	lb/a	POST	A	98	99	5	96	99
	Dicamba	77	WG	6	oz/a	POST	A					
	N-Tense		L	0.5	% v/v	POST	A					
7	Untreated							0	0	0	0	0
8	Roundup PowerMax	4	SL	13	fl oz/a	POST	A	84	89	5	96	99
	AAtrex	4	L	0.6	pt/a	POST	A					
	Clarity	4	L	4.7	fl oz/a	POST	A					
	N-Tank		L	0.5	% v/v	POST	A					
9	Roundup PowerMax	4	SL	13	fl oz/a	POST	A	86	93	5	97	99
	AAtrex	4	L	0.6	pt/a	POST	A					
	Clarity	4	L	4.7	fl oz/a	POST	A					
	N-Tense		L	0.5	% v/v	POST	A					
10	Roundup PowerMax	4	SL	19	fl oz/a	POST	A	94	97	7	97	99
	AAtrex	4	L	0.9	pt/a	POST	A					
	Clarity	4	L	7	fl oz/a	POST	A					
	N-Tank		L	0.5	% v/v	POST	A					
11	Roundup PowerMax	4	SL	19	fl oz/a	POST	A	93	97	5	98	99
	AAtrex	4	L	0.9	pt/a	POST	A					
	Clarity	4	L	7	fl oz/a	POST	A					
	N-Tense		L	0.5	% v/v	POST	A					
12	Roundup PowerMax	4	SL	26	fl oz/a	POST	A	99	99	5	96	99
	AAtrex	4	L	1.2	pt/a	POST	A					
	Clarity	4	L	9	fl oz/a	POST	A					
	N-Tank		L	0.5	% v/v	POST	A					
13	Roundup PowerMax	4	SL	26	fl oz/a	POST	A	98	99	7	99	99
	AAtrex	4	L	1.2	pt/a	POST	A					
	Clarity	4	L	9	fl oz/a	POST	A					
	N-Tense		L	0.5	% v/v	POST	A					
14	Weed-free							99	99	0	99	99
LSD (P=.05)								7.9	6.9	1.6	3.2	0.0
CV								6.38	5.51	33.14	2.48	0.0

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

MSU Weed Science Research Program

Weed Code	AMAPO	AMBEL	ABUTH	ZEAMX	ZEAMX
Crop Code				moisture	yield
Rating Data Type	control	control	control	percent	bu/acre
Rating Unit	percent	percent	percent		
Rating Date	Jul/12/2013	Jul/12/2013	Jul/12/2013	Nov/23/2013	Nov/23/2013
Trt-Eval Interval	27 DA-B	27 DA-B	27 DA-B	161 DA-A	at 15% M
# Subsamples, Dec.	0	0	0	1	1

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	AMAPO	AMBEL	ABUTH	ZEAMX moisture	ZEAMX yield
1	Glyphosate/Atrazine	79	WG	0.88	lb/a	POST	A	96	99	99	17.9	223.7
	Dicamba	77	WG	3	oz/a	POST	A					
	N-Tank		L	0.5	% v/v	POST	A					
2	Glyphosate/Atrazine	79	WG	0.88	lb/a	POST	A	96	98	98	18.0	228.7
	Dicamba	77	WG	3	oz/a	POST	A					
	N-Tense		L	0.5	% v/v	POST	A					
3	Glyphosate/Atrazine	79	WG	1.3	lb/a	POST	A	98	99	99	17.8	232.2
	Dicamba	77	WG	4.6	oz/a	POST	A					
	N-Tank		L	0.5	% v/v	POST	A					
4	Glyphosate/Atrazine	79	WG	1.3	lb/a	POST	A	98	99	99	17.8	224.9
	Dicamba	77	WG	4.6	oz/a	POST	A					
	N-Tense		L	0.5	% v/v	POST	A					
5	Glyphosate/Atrazine	79	WG	1.79	lb/a	POST	A	98	99	99	17.8	229.3
	Dicamba	77	WG	6	oz/a	POST	A					
	N-Tank		L	0.5	% v/v	POST	A					
6	Glyphosate/Atrazine	79	WG	1.79	lb/a	POST	A	99	98	99	17.9	229.2
	Dicamba	77	WG	6	oz/a	POST	A					
	N-Tense		L	0.5	% v/v	POST	A					
7	Untreated							0	0	0	18.2	202.8
8	Roundup PowerMax	4	SL	13	fl oz/a	POST	A	97	99	99	18.0	224.1
	AAtrex	4	L	0.6	pt/a	POST	A					
	Clarity	4	L	4.7	fl oz/a	POST	A					
	N-Tank		L	0.5	% v/v	POST	A					
9	Roundup PowerMax	4	SL	13	fl oz/a	POST	A	99	99	99	17.8	218.4
	AAtrex	4	L	0.6	pt/a	POST	A					
	Clarity	4	L	4.7	fl oz/a	POST	A					
	N-Tense		L	0.5	% v/v	POST	A					
10	Roundup PowerMax	4	SL	19	fl oz/a	POST	A	99	99	99	17.8	228.7
	AAtrex	4	L	0.9	pt/a	POST	A					
	Clarity	4	L	7	fl oz/a	POST	A					
	N-Tank		L	0.5	% v/v	POST	A					
11	Roundup PowerMax	4	SL	19	fl oz/a	POST	A	99	98	99	17.9	230.1
	AAtrex	4	L	0.9	pt/a	POST	A					
	Clarity	4	L	7	fl oz/a	POST	A					
	N-Tense		L	0.5	% v/v	POST	A					
12	Roundup PowerMax	4	SL	26	fl oz/a	POST	A	99	99	99	17.8	225.7
	AAtrex	4	L	1.2	pt/a	POST	A					
	Clarity	4	L	9	fl oz/a	POST	A					
	N-Tank		L	0.5	% v/v	POST	A					
13	Roundup PowerMax	4	SL	26	fl oz/a	POST	A	99	99	99	17.5	223.9
	AAtrex	4	L	1.2	pt/a	POST	A					
	Clarity	4	L	9	fl oz/a	POST	A					
	N-Tense		L	0.5	% v/v	POST	A					
14	Weed-free							99	99	99	18.1	234.4
LSD (P=.05)								2.2	1.4	0.8	0.47	12.87
CV								1.7	1.06	0.64	1.83	4.0

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