

MSU Weed Science Research Program

WEED CONTROL IN CORN WITH HPPD INHIBITORS, 2007

Trial ID: C0307
 Conducted: CAMPUS

Study Dir.:
 Investigator: James Kells

Date Planted: 5/7/07 **Row Spacing:** 30 IN
Variety: Pioneer 38B86 **No. of Reps:** 3
Population: 29,500 S/A **% OM:** 3.3
Soil Type: Sandy Loam **pH:** 6.5
Plot Size: 10 X 35 FT **Design:** RANDOMIZED COMPLETE BLOCK

Tillage: Fall Chisel, Spring Field Cultivated X 2
Fertilizer: 300 lbs/A 46-0-0 Broadcast. 125 lbs/A 19-19-19 in Row at Planting

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1.	ANGR	Annual Grasses	
2.	CHEAL	Common lambsquarters	Chenopodium album L.
3.	AMARE	PIGWEEED, REDROOT	AMARANTHUS RETROFLEXUS L.
4.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
Crop	Code	Common Name	
1.	ZEAMX	CORN, FIELD	

Application Description

	A	B	C
Application Timing:	PRE	EP	MP
Date Treated:	5/7/07	5/29/07	5/31/07
Time Treated:	9:10 PM	9:40AM	12:00PM
% Cloud Cover:	30	60	90
Air Temp., Unit:	60 F	76 F	82 F
% Relative Humidity:	45	53	39
Wind Speed/Unit/Dir:	0 mph	3 mph SE	3 mph SW
Soil Temp., Unit:	62 F	62 F	73.6 F
Soil/Leaf Surface M:	5 5	5 5	5 5
Soil Moist (1=w 5=d):	5	2-3	4

Crop Stage at Each Application

	A	B	C
Crop Name:	ZEAMX	ZEAMX	ZEAMX
Height (In.):		4-6(5)	8-12(10)
Stage (L):		V3 5L	V4 6L

Weed Stage at Each Application

	A	B	C
Weed 1 Name:	ANGR	ANGR	ANGR
Height (In.):		.25-1(.5)	1-6(3)
Stage (L):		1-4(2)	2-6(4)
Weed 2 Name:	CHEAL	CHEAL	CHEAL
Height (In.):		.5-1.5(1)	.5-2(1.5)
Stage (L):		Cot-4(2)	Cot-6(4)
Weed 3 Name:	AMARE	AMARE	AMARE
Height (In.):		.5-1(.5)	.5-2(1)
Stage (L):		Cot-5(3)	Cot-7(5)
Weed 4 Name:	ABUTH	ABUTH	ABUTH
Height (In.):		.5-1(.75)	.5-2(1.5)
Stage (L):		Cot-4(2)	Cot-4(3)

Weed Density (plants/sq. ft.)

	1	2	3
Date:	5/7/07	5/29/07	5/31/07
Weed Name:	ANGR	ANGR	ANGR
Density:		19	
Date:	5/7/07	5/31/07	5/31/07
Weed Name:	CHEAL	CHEAL	CHEAL
Density:		53	
Date:	5/7/07	5/31/07	5/31/07
Weed Name:	AMARE	AMARE	AMARE
Density:		1	
Date:	5/7/07	5/31/07	5/31/07
Weed Name:	ABUTH	ABUTH	ABUTH
Density:		1	

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Application Equipment

Appl	Sprayer	Speed	Nozzle	Nozzle	Nozzle	Nozzle	Boom				
	Type	MPH	Type	Size	Height	Spacing	Width	GPA	Carrier	PSI	
A	CUB	3.5	FF	8003	18"	20"	100"	20	H20	30	
B	CUB	3.5	FF	8003	23"	20"	100"	20	H20	30	
C	CUB	3.5	FF	8003	23"	20"	100"	20	H20	30	

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Weed Code								ANGR	CHEAL	AMARE	ABUTH		ANGR	CHEAL	AMARE	
Crop Code						ZEAMX						ZEAMX				
Rating Data Type						injury	control	control	control	control	control	injury	control	control	control	
Rating Unit						percent	percent	percent	percent	percent	percent	percent	percent	percent	percent	
Rating Date						5/31/07	5/31/07	5/31/07	5/31/07	5/31/07	5/31/07	6/7/07	6/7/07	6/7/07	6/7/07	
Trt-Eval Interval						AT MP	AT MP	AT MP	AT MP	AT MP	AT MP	7 DAMP	7 DAMP	7 DAMP	7 DAMP	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	1	2	3	4	5	6	7	8	9	
15	Balance Pro	4	SC	1.5	fl oz/a	PRE	0	92	100	100	99	0	99	100	100	
15	Atrazine	4	L	1	qt/a	PRE										
15	Laudis	3.5	SC	3	fl oz/a	MP										
15	MSO		L	1	% v/v	MP										
15	28% Nitrogen		L	1.5	qt/a	MP										
16	Laudis	3.5	SC	3	fl oz/a	MP						0	97	98	100	
16	Roundup OriginalMax	4.5	L	22	fl oz/a	MP										
16	Ammonium Sulfate		DF	8.5	lb/100 gal	MP										
17	Laudis	3.5	SC	3	fl oz/a	EP						0	94	100	100	
17	Accent	75	DF	0.33	oz wt/a	EP										
17	MSO		L	1	% v/v	EP										
17	28% Nitrogen		L	1.5	qt/a	EP										
18	Liberty	1.67	L	32	fl oz/a	MP						0	99	100	100	
18	Atrazine	4	L	1	qt/a	MP										
18	Ammonium Sulfate		DF	8.5	lb/100 gal	MP										
LSD (P=.05)							0.0	15.1	2.4	0.0	2.1	2.5	7.8	1.0	0.5	
Standard Deviation							0.0	6.7	1.1	0.0	0.9	1.5	4.7	0.6	0.3	
CV							0.0	9.76	1.42	0.0	1.26	95.51	5.3	0.63	0.29	

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Weed Code							ABUTH	ZEAMX	ANGR	CHEAL	AMARE	ABUTH	ZEAMX
Crop Code							control	injury	control	control	control	control	control
Rating Data Type							percent	percent	percent	percent	percent	percent	percent
Rating Unit							6/7/07	6/14/07	6/14/07	6/14/07	6/14/07	6/14/07	6/29/07
Rating Date							7 DAMP	14 DAMP	14 DAMP	14 DAMP	14 DAMP	14 DAMP	28 DAMP
Trt-Eval Interval													
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	10	11	12	13	14	15	16
1	Untreated						0	0	0	0	0	0	0
2	Impact	2.8	SC	0.75	fl oz/a	EP	93	0	85	83	95	97	0
2	MSO		L	1	% v/v	EP							
2	28% Nitrogen		L	2.5	% v/v	EP							
3	Callisto	4	SC	3	fl oz/a	EP	94	0	44	100	100	100	0
3	Herbimax		L	1	% v/v	EP							
3	28% Nitrogen		L	2.5	% v/v	EP							
4	Laudis	3.5	SC	3	fl oz/a	EP	92	0	78	94	100	100	0
4	MSO		L	1	% v/v	EP							
4	28% Nitrogen		L	2.5	% v/v	EP							
5	Impact	2.8	SC	0.5	fl oz/a	EP	86	0	89	87	95	97	0
5	MSO		L	1	% v/v	EP							
5	28% Nitrogen		L	2.5	% v/v	EP							
6	Balance Pro	4	SC	1.5	fl oz/a	PRE	100	0	99	100	100	100	0
6	Laudis	3.5	SC	3	fl oz/a	MP							
6	Herbimax		L	1	% v/v	MP							
6	Atrazine	4	L	1	pt/a	MP							
6	28% Nitrogen		L	1.5	qt/a	MP							
7	Laudis	3.5	SC	2	fl oz/a	MP	100	0	99	100	100	100	0
7	Liberty	1.67	L	32	fl oz/a	MP							
7	Ammonium Sulfate		DF	8.5	lb/100 gal	MP							
8	Laudis	3.5	SC	3	fl oz/a	EP	100	0	97	100	100	100	0
8	Atrazine	4	L	1	pt/a	EP							
8	Ammonium Sulfate		DF	8.5	lb/100 gal	EP							
8	Roundup OriginalMax	4.5	L	22	fl oz/a	EP							
9	Bicep II Magnum	5.5	L	2.1	qt/a	PRE	100	0	99	100	100	100	0
9	Callisto	4	SC	3	fl oz/a	MP							
9	Herbimax		L	1	% v/v	MP							
9	Atrazine	4	L	1	pt/a	MP							
9	28% Nitrogen		L	2.5	% v/v	MP							
10	Weed Free						100	0	100	100	100	100	0
11	Impact	2.8	SC	0.75	fl oz/a	EP	99	0	97	100	100	100	0
11	MSO		L	1	% v/v	EP							
11	Atrazine	4	L	1	pt/a	EP							
11	28% Nitrogen		L	2.5	% v/v	EP							
12	Callisto	4	SC	3	fl oz/a	EP	100	0	77	100	100	100	0
12	Herbimax		L	1	% v/v	EP							
12	Atrazine	4	L	1	pt/a	EP							
12	28% Nitrogen		L	2.5	% v/v	EP							
13	Laudis	3.5	SC	3	fl oz/a	EP	100	0	89	100	100	100	0
13	MSO		L	1	% v/v	EP							
13	Atrazine	4	L	1	pt/a	EP							
13	28% Nitrogen		L	2.5	% v/v	EP							
14	Impact	2.8	SC	0.5	fl oz/a	EP	100	0	92	98	100	97	0
14	MSO		L	1	% v/v	EP							
14	Atrazine	4	L	1	pt/a	EP							
14	28% Nitrogen		L	2.5	% v/v	EP							

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Weed Code							ABUTH	ZEAMX	ANGR	CHEAL	AMARE	ABUTH	ZEAMX
Crop Code							control	injury	control	control	control	control	injury
Rating Data Type							percent	percent	percent	percent	percent	percent	percent
Rating Unit							6/7/07	6/14/07	6/14/07	6/14/07	6/14/07	6/14/07	6/29/07
Rating Date							7 DAMP	14 DAMP	14 DAMP	14 DAMP	14 DAMP	14 DAMP	28 DAMP
Trt-Eval Interval													
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	10	11	12	13	14	15	16
15	Balance Pro	4	SC	1.5	fl oz/a	PRE	100	0	98	100	100	100	0
15	Atrazine	4	L	1	qt/a	PRE							
15	Laudis	3.5	SC	3	fl oz/a	MP							
15	MSO		L	1	% v/v	MP							
15	28% Nitrogen		L	1.5	qt/a	MP							
16	Laudis	3.5	SC	3	fl oz/a	MP	99	0	98	100	100	100	0
16	Roundup OriginalMax	4.5	L	22	fl oz/a	MP							
16	Ammonium Sulfate		DF	8.5	lb/100 gal	MP							
17	Laudis	3.5	SC	3	fl oz/a	EP	87	0	93	95	100	100	0
17	Accent	75	DF	0.33	oz wt/a	EP							
17	MSO		L	1	% v/v	EP							
17	28% Nitrogen		L	1.5	qt/a	EP							
18	Liberty	1.67	L	32	fl oz/a	MP	100	0	98	100	100	100	0
18	Atrazine	4	L	1	qt/a	MP							
18	Ammonium Sulfate		DF	8.5	lb/100 gal	MP							
LSD (P=.05)							7.1	0.0	11.1	4.0	3.9	3.9	0.0
Standard Deviation							4.3	0.0	6.7	2.4	2.4	2.4	0.0
CV							4.65	0.0	7.84	2.61	2.51	2.51	0.0

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							ANGR	CHEAL	AMARE	AB UTH	ANGR	CHEAL	AMARE
							control	control	control	control	control	control	control
							percent	percent	percent	percent	percent	percent	percent
							6/29/07	6/29/07	6/29/07	6/29/07	7/24/07	7/24/07	7/24/07
							29 DAMP	29 DAMP	29 DAMP	29 DAMP	54 DAMP	54 DAMP	54 DAMP
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	17	18	19	20	21	22	23
1	Untreated						0	0	0	0	0	0	0
2	Impact	2.8	SC	0.75	fl oz/a	EP	67	68	92	96	63	65	87
2	MSO		L	1	% v/v	EP							
2	28% Nitrogen		L	2.5	% v/v	EP							
3	Callisto	4	SC	3	fl oz/a	EP	27	97	100	100	25	100	100
3	Herbimax		L	1	% v/v	EP							
3	28% Nitrogen		L	2.5	% v/v	EP							
4	Laudis	3.5	SC	3	fl oz/a	EP	65	74	97	100	60	73	100
4	MSO		L	1	% v/v	EP							
4	28% Nitrogen		L	2.5	% v/v	EP							
5	Impact	2.8	SC	0.5	fl oz/a	EP	71	68	82	85	70	62	83
5	MSO		L	1	% v/v	EP							
5	28% Nitrogen		L	2.5	% v/v	EP							
6	Balance Pro	4	SC	1.5	fl oz/a	PRE	95	100	100	100	85	100	100
6	Laudis	3.5	SC	3	fl oz/a	MP							
6	Herbimax		L	1	% v/v	MP							
6	Atrazine	4	L	1	pt/a	MP							
6	28% Nitrogen		L	1.5	qt/a	MP							
7	Laudis	3.5	SC	2	fl oz/a	MP	82	85	100	100	74	80	100
7	Liberty	1.67	L	32	fl oz/a	MP							
7	Ammonium Sulfate		DF	8.5	lb/100 gal	MP							
8	Laudis	3.5	SC	3	fl oz/a	EP	82	95	100	95	76	97	100
8	Atrazine	4	L	1	pt/a	EP							
8	Ammonium Sulfate		DF	8.5	lb/100 gal	EP							
8	Roundup OriginalMax	4.5	L	22	fl oz/a	EP							
9	Bicep II Magnum	5.5	L	2.1	qt/a	PRE	95	100	100	100	87	100	100
9	Callisto	4	SC	3	fl oz/a	MP							
9	Herbimax		L	1	% v/v	MP							
9	Atrazine	4	L	1	pt/a	MP							
9	28% Nitrogen		L	2.5	% v/v	MP							
10	Weed Free						100	100	100	100	100	100	100
11	Impact	2.8	SC	0.75	fl oz/a	EP	85	93	100	100	78	90	100
11	MSO		L	1	% v/v	EP							
11	Atrazine	4	L	1	pt/a	EP							
11	28% Nitrogen		L	2.5	% v/v	EP							
12	Callisto	4	SC	3	fl oz/a	EP	66	100	100	100	60	100	100
12	Herbimax		L	1	% v/v	EP							
12	Atrazine	4	L	1	pt/a	EP							
12	28% Nitrogen		L	2.5	% v/v	EP							
13	Laudis	3.5	SC	3	fl oz/a	EP	79	98	100	97	70	93	100
13	MSO		L	1	% v/v	EP							
13	Atrazine	4	L	1	pt/a	EP							
13	28% Nitrogen		L	2.5	% v/v	EP							
14	Impact	2.8	SC	0.5	fl oz/a	EP	79	91	100	96	70	87	100
14	MSO		L	1	% v/v	EP							
14	Atrazine	4	L	1	pt/a	EP							
14	28% Nitrogen		L	2.5	% v/v	EP							

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							ANGR	CHEAL	AMARE	AB UTH	ANGR	CHEAL	AMARE
							control	control	control	control	control	control	control
							percent	percent	percent	percent	percent	percent	percent
							6/29/07	6/29/07	6/29/07	6/29/07	7/24/07	7/24/07	7/24/07
							29 DAMP	29 DAMP	29 DAMP	29 DAMP	54 DAMP	54 DAMP	54 DAMP
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	17	18	19	20	21	22	23
15	Balance Pro	4	SC	1.5	fl oz/a	PRE	96	100	100	100	88	100	100
15	Atrazine	4	L	1	qt/a	PRE							
15	Laudis	3.5	SC	3	fl oz/a	MP							
15	MSO		L	1	% v/v	MP							
15	28% Nitrogen		L	1.5	qt/a	MP							
16	Laudis	3.5	SC	3	fl oz/a	MP	89	97	100	100	78	93	100
16	Roundup OriginalMax	4.5	L	22	fl oz/a	MP							
16	Ammonium Sulfate		DF	8.5	lb/100 gal	MP							
17	Laudis	3.5	SC	3	fl oz/a	EP	78	75	93	93	72	72	97
17	Accent	75	DF	0.33	oz wt/a	EP							
17	MSO		L	1	% v/v	EP							
17	28% Nitrogen		L	1.5	qt/a	EP							
18	Liberty	1.67	L	32	fl oz/a	MP	85	93	100	97	78	93	100
18	Atrazine	4	L	1	qt/a	MP							
18	Ammonium Sulfate		DF	8.5	lb/100 gal	MP							
LSD (P=.05)							14.5	6.6	7.8	6.5	14.1	9.0	8.1
Standard Deviation							8.7	4.0	4.7	3.9	8.5	5.4	4.8
CV							11.67	4.65	5.05	4.22	12.33	6.45	5.23

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Weed Code	ABUTH
Crop Code	Zeamx
Rating Data Type	control
Rating Unit	percent
Rating Date	7/24/07
Trt-Eval Interval	54 DAMP HARVEST

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	24	25
1	Untreated						0	127
2	Impact	2.8	SC	0.75	fl oz/a	EP	97	199
2	MSO		L	1	% v/v	EP		
2	28% Nitrogen		L	2.5	% v/v	EP		
3	Callisto	4	SC	3	fl oz/a	EP	100	166
3	Herbimax		L	1	% v/v	EP		
3	28% Nitrogen		L	2.5	% v/v	EP		
4	Laudis	3.5	SC	3	fl oz/a	EP	100	196
4	MSO		L	1	% v/v	EP		
4	28% Nitrogen		L	2.5	% v/v	EP		
5	Impact	2.8	SC	0.5	fl oz/a	EP	79	207
5	MSO		L	1	% v/v	EP		
5	28% Nitrogen		L	2.5	% v/v	EP		
6	Balance Pro	4	SC	1.5	fl oz/a	PRE	100	189
6	Laudis	3.5	SC	3	fl oz/a	MP		
6	Herbimax		L	1	% v/v	MP		
6	Atrazine	4	L	1	pt/a	MP		
6	28% Nitrogen		L	1.5	qt/a	MP		
7	Laudis	3.5	SC	2	fl oz/a	MP	96	197
7	Liberty	1.67	L	32	fl oz/a	MP		
7	Ammonium Sulfate		DF	8.5	lb/100 gal	MP		
8	Laudis	3.5	SC	3	fl oz/a	EP	97	200
8	Atrazine	4	L	1	pt/a	EP		
8	Ammonium Sulfate		DF	8.5	lb/100 gal	EP		
8	Roundup OriginalMax	4.5	L	22	fl oz/a	EP		
9	Bicep II Magnum	5.5	L	2.1	qt/a	PRE	100	195
9	Callisto	4	SC	3	fl oz/a	MP		
9	Herbimax		L	1	% v/v	MP		
9	Atrazine	4	L	1	pt/a	MP		
9	28% Nitrogen		L	2.5	% v/v	MP		
10	Weed Free						100	203
11	Impact	2.8	SC	0.75	fl oz/a	EP	100	200
11	MSO		L	1	% v/v	EP		
11	Atrazine	4	L	1	pt/a	EP		
11	28% Nitrogen		L	2.5	% v/v	EP		
12	Callisto	4	SC	3	fl oz/a	EP	100	201
12	Herbimax		L	1	% v/v	EP		
12	Atrazine	4	L	1	pt/a	EP		
12	28% Nitrogen		L	2.5	% v/v	EP		
13	Laudis	3.5	SC	3	fl oz/a	EP	95	193
13	MSO		L	1	% v/v	EP		
13	Atrazine	4	L	1	pt/a	EP		
13	28% Nitrogen		L	2.5	% v/v	EP		
14	Impact	2.8	SC	0.5	fl oz/a	EP	100	200
14	MSO		L	1	% v/v	EP		
14	Atrazine	4	L	1	pt/a	EP		
14	28% Nitrogen		L	2.5	% v/v	EP		

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Weed Code	ABUTH
Crop Code	Zeamx
Rating Data Type	control
Rating Unit	percent
Rating Date	7/24/07
Trt-Eval Interval	54 DAMP
	HARVEST

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	24	25
15	Balance Pro	4	SC	1.5	fl oz/a	PRE	100	202
15	Atrazine	4	L	1	qt/a	PRE		
15	Laudis	3.5	SC	3	fl oz/a	MP		
15	MSO		L	1	% v/v	MP		
15	28% Nitrogen		L	1.5	qt/a	MP		
16	Laudis	3.5	SC	3	fl oz/a	MP	100	203
16	Roundup OriginalMax	4.5	L	22	fl oz/a	MP		
16	Ammonium Sulfate		DF	8.5	lb/100 gal	MP		
17	Laudis	3.5	SC	3	fl oz/a	EP	100	203
17	Accent	75	DF	0.33	oz wt/a	EP		
17	MSO		L	1	% v/v	EP		
17	28% Nitrogen		L	1.5	qt/a	EP		
18	Liberty	1.67	L	32	fl oz/a	MP	97	203
18	Atrazine	4	L	1	qt/a	MP		
18	Ammonium Sulfate		DF	8.5	lb/100 gal	MP		

LSD (P=.05)	6.3	25.4
Standard Deviation	3.8	15.2
CV	4.11	7.86