

MSU Weed Science Research Program

POSTEMERGENCE TIMING IN HERBICIDE RESISTANT CORN, 2009

Trial ID: C0309
 Conducted: CAMPUS

Study Dir.: Andy Chomas
 Investigator: Wesley Everman

Date Planted: 5/7/09 **Row Spacing:** 30 IN
Variety: PIONEER 37Y14 **No. of Reps:** 3
Population: 29,000 S/A **% OM:** 3.4
Soil Type: Loam **pH:** 6.4
Plot Size: 10 X 35 FT **Design:** RANDOMIZED COMPLETE BLOCK

Tillage: Fall Chisel, Spring Field Cultivated X2
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 Grass species	
2.	CHEAL	LAMBSQUARTERS, COMMON	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	D
Application Timing:	PRE	4" IN WDS	6" IN WDS	9" IN WDS
Date Treated:	5/7/09	6/5/09	6/11/09	6/15/09
Time Treated:	7:25 PM	11:10 AM	9:15 AM	2:20 PM
% Cloud Cover:	60	0	100	20
Air Temp., Unit:	70 F	76 F	60 F	89 F
% Relative Humidity:	54	36	80	25
Wind Speed/Unit/Dir:	3 mph W	6 mph W	4 mph E	3 mph N
Soil Temp., Unit:	60 F	65 F	61 F	80 F
Soil/Leaf Surface M:		5	4	5
Soil Moist (1=w 5=d):	3	4	2	4

Crop Stage at Each Application

	A	B	C	D
Crop Name:	ZEAMX	ZEAMX	ZEAMX	ZEAMX
Height (In.):		7-8(7)	10-16(12)	12-19(17)
Stage (L):		6:V3-4(3)	6:V5	7:V5-6(5)

Weed Stage at Each Application

	A	B	C	D
Weed 1 Name:	ANGR	ANGR	ANGR	ANGR
Height (In.):		.3-6(3)	.3-12(8)	1-12(9)
Stage (L):		1-5(3)	1-6(5)	1-6(5)
Weed 2 Name:	CHEAL	CHEAL	CHEAL	CHEAL
Height (In.):		.3-2(.5)	.3-6(2)	4-6(5)
Stage (L):		cot-2(1)	cot-4(3)	4-11(7)
Weed 3 Name:	AMARE	AMARE	AMARE	AMARE
Height (In.):		.3-2(.5)	.5-8(6)	7-11(9)
Stage (L):		cot-3(2)	cot-8(6)	6-10(8)
Weed 4 Name:	ABUTH	ABUTH	ABUTH	ABUTH
Height (In.):		.3-2(1)	.5-4(2)	6
Stage (L):		cot-2(2)	cot-3(3)	4

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Weed Density (plants/sq. ft.)

	1	2	3	4
Date:	5/7/09	6/5/09	6/11/09	6/15/09
Weed Name:	ANGR	ANGR	ANGR	
Density:		63	46	
Date:	5/7/09	6/5/09	6/11/09	
Weed Name:	CHEAL	CHEAL	CHEAL	
Density:		25	38	
Date:	5/7/09	6/5/09	6/11/09	
Weed Name:	AMARE	AMARE	AMARE	
Density:		10	4	
Date:	5/7/09	6/5/09	6/11/09	
Weed Name:	AMBEL	AMBEL	AMBEL	
Date:	5/7/09	6/5/09	6/11/09	
Weed Name:	ABUTH	ABUTH	ABUTH	
Density:		<1	<1	

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	19"	20"	100"	20	H2O	30
B	CUB	3.5	FF	8003	22"	20"	100"	20	H2O	30
C	CUB	3.5	FF	8003	25"	20"	100"	20	H2O	30
D	CUB	3.5	FF	8003	28"	20"	100"	20	H2O	30

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Weed Code	ANGR	CHEAL	AMARE	ABUTH	ANGR	CHEAL	AMARE	ABUTH
Crop Code								
Rating Data Type	control	control	control	control	control	control	control	control
Rating Unit	percent	percent	percent	percent	percent	percent	percent	percent
Rating Date	6/25/09	6/25/09	6/25/09	6/25/09	7/15/09	7/15/09	7/15/09	7/15/09
Trt-Eval Interval	10 DALP	10 DALP	10 DALP	10 DALP	30 DALP	30 DALP	30 DALP	30 DALP
ARM Action Codes								

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	1	2	3	4	5	6	7	8
18	Harness Xtra 5.6	5.6	L	1.0	qt/a	PRE	90	95	92	93	73	76	87	89
18	Liberty	1.67	L	0.42	lb ae/a	4 IN WDS								
18	Ammonium Sulfate		DF	8.5	lb/100 gal	4 IN WDS								
19	Harness Xtra 5.6	5.6	L	1.0	qt/a	PRE	95	99	96	93	76	76	91	87
19	Liberty	1.67	L	0.42	lb ae/a	6 IN WDS								
19	Ammonium Sulfate		DF	8.5	lb/100 gal	6 IN WDS								
20	Harness Xtra 5.6	5.6	L	1.0	qt/a	PRE	96	100	99	93	79	82	91	89
20	Liberty	1.67	L	0.42	lb ae/a	9 IN WD								
20	Ammonium Sulfate		DF	8.5	lb/100 gal	9 IN WD								
21	Lexar	3.7	L	3	qt/a	PRE	86	100	98	100	73	97	96	100
22	Lexar	3.7	L	3	qt/a	4 IN WDS	57	100	99	100	51	100	100	100
22	Herbimax		L	1	% v/v	4 IN WDS								
23	Lexar	3.7	L	3	qt/a	6 IN WDS	64	100	99	100	57	100	100	100
23	Herbimax		L	1	% v/v	6 IN WDS								
24	Lexar	3.7	L	3	qt/a	9 IN WD	50	96	95	99	47	100	100	100
24	Herbimax		L	1	% v/v	9 IN WD								
25	Touchdown Total	4.17	L	0.75	lb ae/a	4 IN WDS	98	99	98	97	83	83	94	90
25	Ammonium Sulfate		DF	2	% w/w	4 IN WDS								
25	Touchdown Total	4.17	L	0.75	lb ae/a	9 IN WD								
25	Ammonium Sulfate		DF	2	% w/w	9 IN WD								
26	Liberty	1.67	L	0.42	lb ae/a	4 IN WDS	96	100	99	98	73	78	92	85
26	Ammonium Sulfate		DF	8.5	lb/100 gal	4 IN WDS								
26	Liberty	1.67	L	0.42	lb ae/a	9 IN WD								
26	Ammonium Sulfate		DF	8.5	lb/100 gal	9 IN WD								
LSD (P=.05)							9.3	6.3	5.0	5.4	9.7	8.1	7.6	9.1
Standard Deviation							5.6	3.8	3.0	3.3	5.9	4.9	4.6	5.5
CV							6.42	4.05	3.29	3.52	7.61	5.79	5.18	6.16

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Rating Data Type
Rating Unit
Rating Date
Trt-Eval Interval
ARM Action CodesZEAMX
yield
bu/ac
11/4/09
HARVEST

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	
1	Weed Free						231
2	Touchdown Total	4.17	L	0.75	lb ae/a	4 IN WDS	221
2	Ammonium Sulfate		DF	2	% w/w	4 IN WDS	
3	Touchdown Total	4.17	L	0.75	lb ae/a	6 IN WDS	218
3	Ammonium Sulfate		DF	2	% w/w	6 IN WDS	
4	Touchdown Total	4.17	L	0.75	lb ae/a	9 IN WD	211
4	Ammonium Sulfate		DF	2	% w/w	9 IN WD	
5	Touchdown Total	4.17	L	0.75	lb ae/a	4 IN WDS	224
5	Harness Xtra 5.6	5.6	L	1.0	qt/a	4 IN WDS	
5	Ammonium Sulfate		DF	2	% w/w	4 IN WDS	
6	Touchdown Total	4.17	L	0.75	lb ae/a	6 IN WDS	217
6	Harness Xtra 5.6	5.6	L	1.0	qt/a	6 IN WDS	
6	Ammonium Sulfate		DF	2	% w/w	6 IN WDS	
7	Touchdown Total	4.17	L	0.75	lb ae/a	9 IN WD	188
7	Harness Xtra 5.6	5.6	L	1.0	qt/a	9 IN WD	
7	Ammonium Sulfate		DF	2	% w/w	9 IN WD	
8	Harness Xtra 5.6	5.6	L	1.0	qt/a	PRE	230
8	Touchdown Total	4.17	L	0.75	lb ae/a	4 IN WDS	
8	Ammonium Sulfate		DF	2	% w/w	4 IN WDS	
9	Harness Xtra 5.6	5.6	L	1.0	qt/a	PRE	227
9	Touchdown Total	4.17	L	0.75	lb ae/a	6 IN WDS	
9	Ammonium Sulfate		DF	2	% w/w	6 IN WDS	
10	Harness Xtra 5.6	5.6	L	1.0	qt/a	PRE	227
10	Touchdown Total	4.17	L	0.75	lb ae/a	9 IN WD	
10	Ammonium Sulfate		DF	2	% w/w	9 IN WD	
11	Weedy						152
12	Liberty	1.67	L	0.42	lb ae/a	4 IN WDS	213
12	Ammonium Sulfate		DF	8.5	lb/100 gal	4 IN WDS	
13	Liberty	1.67	L	0.42	lb ae/a	6 IN WDS	227
13	Ammonium Sulfate		DF	8.5	lb/100 gal	6 IN WDS	
14	Liberty	1.67	L	0.42	lb ae/a	9 IN WD	227
14	Ammonium Sulfate		DF	8.5	lb/100 gal	9 IN WD	
15	Liberty	1.67	L	0.42	lb ae/a	4 IN WDS	219
15	Harness Xtra 5.6	5.6	L	1.0	qt/a	4 IN WDS	
15	Ammonium Sulfate		DF	8.5	lb/100 gal	4 IN WDS	
16	Liberty	1.67	L	0.42	lb ae/a	6 IN WDS	220
16	Harness Xtra 5.6	5.6	L	1.0	qt/a	6 IN WDS	
16	Ammonium Sulfate		DF	8.5	lb/100 gal	6 IN WDS	
17	Liberty	1.67	L	0.42	lb ae/a	9 IN WD	213
17	Harness Xtra 5.6	5.6	L	1.0	qt/a	9 IN WD	
17	Ammonium Sulfate		DF	8.5	lb/100 gal	9 IN WD	

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 Trt-Eval Interval
 ARM Action Codes

ZEAMX
 yield
 bu/ac
 11/4/09
 HARVEST

Trt No.	Treatment Name	Form Conc	Form Type	Form Rate	Rate Unit	Grow Stg	
18	Harness Xtra 5.6	5.6	L	1.0	qt/a	PRE	226
18	Liberty	1.67	L	0.42	lb ae/a	4 IN WDS	
18	Ammonium Sulfate		DF	8.5	lb/100 gal	4 IN WDS	
19	Harness Xtra 5.6	5.6	L	1.0	qt/a	PRE	228
19	Liberty	1.67	L	0.42	lb ae/a	6 IN WDS	
19	Ammonium Sulfate		DF	8.5	lb/100 gal	6 IN WDS	
20	Harness Xtra 5.6	5.6	L	1.0	qt/a	PRE	230
20	Liberty	1.67	L	0.42	lb ae/a	9 IN WD	
20	Ammonium Sulfate		DF	8.5	lb/100 gal	9 IN WD	
21	Lexar	3.7	L	3	qt/a	PRE	223
22	Lexar	3.7	L	3	qt/a	4 IN WDS	213
22	Herbimax		L	1	% v/v	4 IN WDS	
23	Lexar	3.7	L	3	qt/a	6 IN WDS	205
23	Herbimax		L	1	% v/v	6 IN WDS	
24	Lexar	3.7	L	3	qt/a	9 IN WD	199
24	Herbimax		L	1	% v/v	9 IN WD	
25	Touchdown Total	4.17	L	0.75	lb ae/a	4 IN WDS	212
25	Ammonium Sulfate		DF	2	% w/w	4 IN WDS	
25	Touchdown Total	4.17	L	0.75	lb ae/a	9 IN WD	
25	Ammonium Sulfate		DF	2	% w/w	9 IN WD	
26	Liberty	1.67	L	0.42	lb ae/a	4 IN WDS	214
26	Ammonium Sulfate		DF	8.5	lb/100 gal	4 IN WDS	
26	Liberty	1.67	L	0.42	lb ae/a	9 IN WD	
26	Ammonium Sulfate		DF	8.5	lb/100 gal	9 IN WD	
LSD (P=.05)							27.3
Standard Deviation							16.6
CV							7.66