

MSU Weed Science Research Program

One-pass early postemergence (EPOS) strategies for weed control in corn

Trial ID: C02-15 Study Dir.: Sprague and Powell
 Conducted: Campus C-27 Investigator: Christy Sprague

Date Planted: Apr/28/2015 Row Spacing: 30 IN
 Variety: Pioneer P9807 No. of Reps: 4
 Population: 32,000 seeds/A % OM: 2.8
 Soil Type: Sandy loam pH: 6.5
 Plot Size: 10 X 35 FT Design: RANDOMIZED COMPLETE BLOCK

Tillage: Fall chisel plow; spring soil finish
 Fertilizer: 300lb/A Urea broadcasted and incorporated; 150lb/A 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

A
 Application Timing: EPOS
 Date Treated: May/28/2015
 Time Treated: 11:10 AM
 % Cloud Cover: 0
 Air Temp., Unit: 77 F
 % Relative Humidity: 48
 Wind Speed/Unit/Dir: 3 mph SW
 Soil Temp., Unit: 61 F
 Soil/Leaf Surface M: 4 5
 Soil Moist (1=w 5=d): 4

Crop Stage at Each Application

A
 Crop Name: ZEAMX
 Height (In.): 5"
 Stage (L): V3

Weed Stage at Each Application

A
 Weed 1 Name: ANGR
 Height (In.): 2"
 Stage (L): 2
 Weed 2 Name: CHEAL
 Height (In.): 1"
 Stage (L): 4
 Weed 3 Name: AMAPO
 Height (In.): 0.75"
 Stage (L): 4-6
 Weed 4 Name: AMBEL
 Height (In.): 0.75"
 Stage (L): 4
 Weed 5 Name: ABUTH
 Height (In.): 1"
 Stage (L): 2

Weed Density (plants/sq. ft.)

Date:	1	2	3	4	5
Jun/09/2015	Jun/09/2015	Jun/09/2015	Jun/09/2015	Jun/09/2015	Jun/09/2015
Weed Name:	ANGR	CHEAL	AMAPO	AMBEL	ABUTH
Density:	14	15	4	6	3

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	26"	20"	100"	19	Water	28

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Weed Code								ZEAMX	ANGR	CHEAL	AMAPO
Crop Code								injury	control	control	control
Rating Data Type								percent	percent	percent	percent
Rating Unit								Jun/04/2015	Jun/04/2015	Jun/04/2015	Jun/04/2015
Rating Date								7 DA-A	7 DA-A	7 DA-A	7 DA-A
Trt-Eval Interval								0	0	0	0
# Subsamples, Dec.											
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
1	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A	0	94	99	99
1	AMS		WG	17	lb/100 gal	EPOS	A				
2	Atrazine	90	WG	1.1	lb/a	EPOS	A	0	99	99	99
2	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A				
2	AMS		WG	17	lb/100 gal	EPOS	A				
3	Impact	2.8	L	1	fl oz/a	EPOS	A	1	99	99	99
3	Atrazine	90	WG	1.1	lb/a	EPOS	A				
3	MSO		L	1	% v/v	EPOS	A				
3	AMS		WG	17	lb/100 gal	EPOS	A				
4	Impact	2.8	L	1	fl oz/a	EPOS	A	15	99	99	99
4	Harness Xtra	5.6	L	1.6	qt/a	EPOS	A				
4	MSO		L	0.5	% v/v	EPOS	A				
4	AMS		WG	17	lb/100 gal	EPOS	A				
5	Untreated							0	0	0	0
6	Capreno	3.54	L	3	fl oz/a	EPOS	A	4	99	99	99
6	Atrazine	90	WG	1.1	lb/a	EPOS	A				
6	COC		L	1	% v/v	EPOS	A				
6	AMS		WG	17	lb/100 gal	EPOS	A				
7	Capreno	3.54	L	3	fl oz/a	EPOS	A	3	99	99	99
7	Atrazine	90	WG	1.1	lb/a	EPOS	A				
7	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A				
7	AMS		WG	17	lb/100 gal	EPOS	A				
8	Capreno	3.54	L	3	fl oz/a	EPOS	A	8	98	99	99
8	DiFlexx	4.2	L	8	fl oz/a	EPOS	A				
8	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A				
8	AMS		WG	17	lb/100 gal	EPOS	A				
9	Halex GT	4.38	L	3.6	pt/a	EPOS	A	4	99	99	99
9	Atrazine	90	WG	1.1	lb/a	EPOS	A				
9	Surfactant		L	0.25	% v/v	EPOS	A				
9	AMS		WG	17	lb/100 gal	EPOS	A				
10	TripleFLEX II	4.16	L	2	pt/a	EPOS	A	3	93	99	99
10	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A				
10	AMS		WG	17	lb/100 gal	EPOS	A				
LSD (P=.05)								2.3	1.8	0.5	0.0
CV								42.92	1.39	0.36	0.0

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

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Weed Code								AMBEL	ABUTH	ZEAMX	ANGR	CHEAL
Crop Code								control	control	injury	control	control
Rating Data Type								percent	percent	percent	percent	percent
Rating Unit								Jun/04/2015	Jun/04/2015	Jun/11/2015	Jun/11/2015	Jun/11/2015
Rating Date								7 DA-A	7 DA-A	14 DA-A	14 DA-A	14 DA-A
Trt-Eval Interval								0	0	0	0	0
# Subsamples, Dec.												
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code					
1	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A	81	99	0	93	92
1	AMS		WG	17	lb/100 gal	EPOS	A					
2	Atrazine	90	WG	1.1	lb/a	EPOS	A	97	98	0	99	99
2	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A					
2	AMS		WG	17	lb/100 gal	EPOS	A					
3	Impact	2.8	L	1	fl oz/a	EPOS	A	99	99	3	99	99
3	Atrazine	90	WG	1.1	lb/a	EPOS	A					
3	MSO		L	1	% v/v	EPOS	A					
3	AMS		WG	17	lb/100 gal	EPOS	A					
4	Impact	2.8	L	1	fl oz/a	EPOS	A	99	99	13	99	99
4	Harness Xtra	5.6	L	1.6	qt/a	EPOS	A					
4	MSO		L	0.5	% v/v	EPOS	A					
4	AMS		WG	17	lb/100 gal	EPOS	A					
5	Untreated							0	0	0	0	0
6	Capreno	3.54	L	3	fl oz/a	EPOS	A	99	99	6	98	99
6	Atrazine	90	WG	1.1	lb/a	EPOS	A					
6	COC		L	1	% v/v	EPOS	A					
6	AMS		WG	17	lb/100 gal	EPOS	A					
7	Capreno	3.54	L	3	fl oz/a	EPOS	A	99	99	0	99	99
7	Atrazine	90	WG	1.1	lb/a	EPOS	A					
7	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A					
7	AMS		WG	17	lb/100 gal	EPOS	A					
8	Capreno	3.54	L	3	fl oz/a	EPOS	A	95	99	0	99	99
8	DiFlexx	4.2	L	8	fl oz/a	EPOS	A					
8	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A					
8	AMS		WG	17	lb/100 gal	EPOS	A					
9	Halex GT	4.38	L	3.6	pt/a	EPOS	A	99	99	3	99	99
9	Atrazine	90	WG	1.1	lb/a	EPOS	A					
9	Surfactant		L	0.25	% v/v	EPOS	A					
9	AMS		WG	17	lb/100 gal	EPOS	A					
10	TripleFLEX II	4.16	L	2	pt/a	EPOS	A	86	99	5	99	99
10	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A					
10	AMS		WG	17	lb/100 gal	EPOS	A					
LSD (P=.05)								1.8	0.5	1.5	1.4	0.8
CV								1.48	0.41	35.0	1.05	0.62

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Weed Code								AMAPO	AMBEL	ABUTH	ZEAMX	ANGR
Crop Code								control	control	control	injury	control
Rating Data Type								percent	percent	percent	percent	percent
Rating Unit								Jun/11/2015	Jun/11/2015	Jun/11/2015	Jun/25/2015	Jun/25/2015
Rating Date								14 DA-A	14 DA-A	14 DA-A	28 DA-A	28 DA-A
Trt-Eval Interval								0	0	0	0	0
# Subsamples, Dec.												
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code					
1	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A	97	90	96	0	85
1	AMS		WG	17	lb/100 gal	EPOS	A					
2	Atrazine	90	WG	1.1	lb/a	EPOS	A	99	99	99	0	99
2	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A					
2	AMS		WG	17	lb/100 gal	EPOS	A					
3	Impact	2.8	L	1	fl oz/a	EPOS	A	99	99	99	2	99
3	Atrazine	90	WG	1.1	lb/a	EPOS	A					
3	MSO		L	1	% v/v	EPOS	A					
3	AMS		WG	17	lb/100 gal	EPOS	A					
4	Impact	2.8	L	1	fl oz/a	EPOS	A	99	99	99	11	99
4	Harness Xtra	5.6	L	1.6	qt/a	EPOS	A					
4	MSO		L	0.5	% v/v	EPOS	A					
4	AMS		WG	17	lb/100 gal	EPOS	A					
5	Untreated							0	0	0	0	0
6	Capreno	3.54	L	3	fl oz/a	EPOS	A	99	99	99	4	99
6	Atrazine	90	WG	1.1	lb/a	EPOS	A					
6	COC		L	1	% v/v	EPOS	A					
6	AMS		WG	17	lb/100 gal	EPOS	A					
7	Capreno	3.54	L	3	fl oz/a	EPOS	A	99	99	99	0	99
7	Atrazine	90	WG	1.1	lb/a	EPOS	A					
7	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A					
7	AMS		WG	17	lb/100 gal	EPOS	A					
8	Capreno	3.54	L	3	fl oz/a	EPOS	A	99	99	99	0	99
8	DiFlexx	4.2	L	8	fl oz/a	EPOS	A					
8	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A					
8	AMS		WG	17	lb/100 gal	EPOS	A					
9	Halex GT	4.38	L	3.6	pt/a	EPOS	A	99	99	99	0	99
9	Atrazine	90	WG	1.1	lb/a	EPOS	A					
9	Surfactant		L	0.25	% v/v	EPOS	A					
9	AMS		WG	17	lb/100 gal	EPOS	A					
10	TripleFLEX II	4.16	L	2	pt/a	EPOS	A	99	97	99	2	99
10	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A					
10	AMS		WG	17	lb/100 gal	EPOS	A					
LSD (P=.05)								0.9	3.1	1.2	2.7	0.3
CV								0.68	2.44	0.91	102.33	0.24

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Weed Code								CHEAL	AMAPO	AMBEL	ABUTH
Crop Code											
Rating Data Type								control	control	control	control
Rating Unit								percent	percent	percent	percent
Rating Date								Jun/25/2015	Jun/25/2015	Jun/25/2015	Jun/25/2015
Trt-Eval Interval								28 DA-A	28 DA-A	28 DA-A	28 DA-A
# Subsamples, Dec.								0	0	0	0
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
1	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A	91	89	89	92
1	AMS		WG	17	lb/100 gal	EPOS	A				
2	Atrazine	90	WG	1.1	lb/a	EPOS	A	99	99	98	99
2	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A				
2	AMS		WG	17	lb/100 gal	EPOS	A				
3	Impact	2.8	L	1	fl oz/a	EPOS	A	99	99	99	99
3	Atrazine	90	WG	1.1	lb/a	EPOS	A				
3	MSO		L	1	% v/v	EPOS	A				
3	AMS		WG	17	lb/100 gal	EPOS	A				
4	Impact	2.8	L	1	fl oz/a	EPOS	A	99	99	99	99
4	Harness Xtra	5.6	L	1.6	qt/a	EPOS	A				
4	MSO		L	0.5	% v/v	EPOS	A				
4	AMS		WG	17	lb/100 gal	EPOS	A				
5	Untreated							0	0	0	0
6	Capreno	3.54	L	3	fl oz/a	EPOS	A	99	99	99	99
6	Atrazine	90	WG	1.1	lb/a	EPOS	A				
6	COC		L	1	% v/v	EPOS	A				
6	AMS		WG	17	lb/100 gal	EPOS	A				
7	Capreno	3.54	L	3	fl oz/a	EPOS	A	99	99	99	99
7	Atrazine	90	WG	1.1	lb/a	EPOS	A				
7	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A				
7	AMS		WG	17	lb/100 gal	EPOS	A				
8	Capreno	3.54	L	3	fl oz/a	EPOS	A	99	99	99	99
8	DiFlexx	4.2	L	8	fl oz/a	EPOS	A				
8	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A				
8	AMS		WG	17	lb/100 gal	EPOS	A				
9	Halex GT	4.38	L	3.6	pt/a	EPOS	A	99	99	99	99
9	Atrazine	90	WG	1.1	lb/a	EPOS	A				
9	Surfactant		L	0.25	% v/v	EPOS	A				
9	AMS		WG	17	lb/100 gal	EPOS	A				
10	TripleFLEX II	4.16	L	2	pt/a	EPOS	A	99	99	99	99
10	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A				
10	AMS		WG	17	lb/100 gal	EPOS	A				
LSD (P=.05)								2.2	2.6	3.5	2.7
CV								1.71	2.04	2.75	2.13

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Weed Code
 Crop Code
 Rating Data Type
 Rating Unit
 Rating Date
 Trt-Eval Interval
 # Subsamples, Dec.

ZEAMX
 moisture
 percent
 Oct/16/2015
 141 DA-A
 1

ZEAMX
 yield
 bu/acre
 Oct/16/2015
 at 15% M
 0

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code		
1	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A	17.2	222
1	AMS		WG	17	lb/100 gal	EPOS	A		
2	Atrazine	90	WG	1.1	lb/a	EPOS	A	17.8	232
2	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A		
2	AMS		WG	17	lb/100 gal	EPOS	A		
3	Impact	2.8	L	1	fl oz/a	EPOS	A	18.0	232
3	Atrazine	90	WG	1.1	lb/a	EPOS	A		
3	MSO		L	1	% v/v	EPOS	A		
3	AMS		WG	17	lb/100 gal	EPOS	A		
4	Impact	2.8	L	1	fl oz/a	EPOS	A	18.7	231
4	Harness Xtra	5.6	L	1.6	qt/a	EPOS	A		
4	MSO		L	0.5	% v/v	EPOS	A		
4	AMS		WG	17	lb/100 gal	EPOS	A		
5	Untreated							17.5	80
6	Capreno	3.54	L	3	fl oz/a	EPOS	A	18.0	226
6	Atrazine	90	WG	1.1	lb/a	EPOS	A		
6	COC		L	1	% v/v	EPOS	A		
6	AMS		WG	17	lb/100 gal	EPOS	A		
7	Capreno	3.54	L	3	fl oz/a	EPOS	A	17.6	231
7	Atrazine	90	WG	1.1	lb/a	EPOS	A		
7	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A		
7	AMS		WG	17	lb/100 gal	EPOS	A		
8	Capreno	3.54	L	3	fl oz/a	EPOS	A	17.8	231
8	DiFlexx	4.2	L	8	fl oz/a	EPOS	A		
8	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A		
8	AMS		WG	17	lb/100 gal	EPOS	A		
9	Halex GT	4.38	L	3.6	pt/a	EPOS	A	17.7	237
9	Atrazine	90	WG	1.1	lb/a	EPOS	A		
9	Surfactant		L	0.25	% v/v	EPOS	A		
9	AMS		WG	17	lb/100 gal	EPOS	A		
10	TripleFLEX II	4.16	L	2	pt/a	EPOS	A	17.4	232
10	Roundup PowerMax	4.5	SL	32	fl oz/a	EPOS	A		
10	AMS		WG	17	lb/100 gal	EPOS	A		

LSD (P=.05)

1.28

19.5

CV

4.98

6.24

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