

MSU Weed Science Research Program

**Sequential weed control programs in corn**

Trial ID: C07-18 Study Dir.: Burns, Stiles, Powell, Craft  
 Conducted: Campus T-17 Investigator: Erin Burns

**Planting Date:** May-29-2018 **Row Spacing:** 30 IN  
**Variety:** DKC 48-56 SS **No. of Reps:** 4  
**Population:** 34600 seeds/A **% OM:** 2.7  
**Soil Type:** LOAM **pH:** 5.8  
**Plot Size:** 10 X 35 FT **Study Design:** Randomized Complete Block (RCB)

**Tillage/Previous Crops:** Fall chisel plowed; spring soil finished twice  
**Fertilizer:** 300lbs/A urea incorporated  
 150lbs/A 19-19-19 starter

**Crop and Weed Description**

Weed	Code	Common Name	Scientific Name
1	ANGR	mainly foxtail species	Annual grass
2	CHEAL	lambsquarters, common	Chenopodium album
3	AMAPO	amaranth, Powell	Amaranthus powellii
4	AMBEL	ragweed, common	Ambrosia artemisiifolia
5	ABUTH	velvetleaf	Abutilon theophrasti
Crop	Code	Common Name	
1	ZEAMX	Corn	

**Application Description**

	A	B
<b>Application Timing:</b>	PRE	POST
<b>Date Treated:</b>	Jun-1-2018	Jun-18-2018
<b>Time Treated:</b>	4:20 PM	9:30 AM
<b>% Cloud Cover:</b>	70	70
<b>Air Temp., Unit:</b>	83 F	87 F
<b>% Relative Humidity:</b>	51	69
<b>Wind Speed/Unit/Dir:</b>	2.4 MPH NE	9 MPH SW
<b>Soil Temp, Unit:</b>	74 F	77 F
<b>Leaf Moist/Dew Presence (Y/N):</b>	4	4
<b>Soil Moist:</b>	4	4

**Crop Stage at Each Application**

	A	B
<b>Crop 1 Name:</b>	ZEAMX	ZEAMX
<b>Height:</b>		
<b>Stage:</b>		V3

**Weed Stage at Each Application**

	A	B
<b>Weed 1 Name:</b>	ANGR	ANGR
<b>Height:</b>		1.5 IN
<b>Stage:</b>		5 L
<b>Weed 2 Name:</b>	CHEAL	CHEAL
<b>Height:</b>		1 IN
<b>Stage:</b>		6 L
<b>Weed 3 Name:</b>	AMAPO	AMAPO
<b>Height:</b>		1 IN
<b>Stage:</b>		4 L
<b>Weed 4 Name:</b>	AMBEL	AMBEL
<b>Height:</b>		1.5 IN
<b>Stage:</b>		6 L
<b>Weed 5 Name:</b>	ABUTH	ABUTH
<b>Height:</b>		1.5 IN
<b>Stage:</b>		5 L

**Weed Density**

	1	2	3	4	5
<b>Date:</b>	Jun-18-2018	Jun-18-2018	Jun-18-2018	Jun-18-2018	Jun-18-2018
<b>Weed Name:</b>	ANGR	CHEAL	AMAPO	AMBEL	ABUTH
<b>Density:</b>	1 FT2	1 FT2	1 FT2	1 FT2	3 FT2

**Application Equipment**

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	CUB	3.8 MPH	AIRX	11003	22 "	20 "	100 "	19 GPA	WATER	30 PSI
B	CUB	3.8 MPH	AIRX	11003	24 "	20 "	100 "	19 GPA	WATER	30 PSI

**Comments:**

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Pest Code		ANGR	CHEAL	AMAPO	AMBEL	ABUTH	
Crop Code	ZEAMX						ZEAMX
Rating Date	Jun-12-2018	Jun-12-2018	Jun-12-2018	Jun-12-2018	Jun-12-2018	Jun-12-2018	Jun-22-2018
Rating Type	injury	control	control	control	control	control	injury
Rating Unit	percent	percent	percent	percent	percent	percent	percent
Trt-Eval Interval	11 DA-A	11 DA-A	11 DA-A	11 DA-A	11 DA-A	11 DA-A	21 DA-A

Trt No.	Treatment Name	Rate	Unit	Appl Code							
1	Verdict	10 fl oz/a		A	0	100	100	100	100	100	0
1	Armezon PRO	16 fl oz/a		B							
1	Atrazine	0.55 lb/a		B							
1	Roundup PowerMax	32 fl oz/a		B							
1	Surfactant	0.25 % v/v		B							
1	AMS	8.5 lb/100 gal		B							
2	Verdict	13 fl oz/a		A	0	100	100	100	100	100	0
2	Status	3 oz/a		B							
2	Callisto	3 fl oz/a		B							
2	Roundup PowerMax	32 fl oz/a		B							
2	Surfactant	0.25 % v/v		B							
2	AMS	8.5 lb/100 gal		B							
3	Acuron	1.75 qt/a		A	0	100	100	100	99	100	0
3	Callisto	3 fl oz/a		B							
3	Atrazine	0.55 lb/a		B							
3	Roundup PowerMax	32 fl oz/a		B							
3	Surfactant	0.25 % v/v		B							
3	AMS	8.5 lb/100 gal		B							
4	Resicore	1.25 qt/a		A	0	97	100	100	98	100	4
4	Resicore	1.25 qt/a		B							
4	Atrazine	0.55 lb/a		B							
4	Roundup PowerMax	32 fl oz/a		B							
4	Surfactant	0.25 % v/v		B							
4	AMS	8.5 lb/100 gal		B							
5	Untreated				0	0	0	0	0	0	0
6	Harness MAX	40 fl oz/a		A	0	96	100	100	96	100	4
6	Harness MAX	40 fl oz/a		B							
6	Atrazine	0.55 lb/a		B							
6	Roundup PowerMax	32 fl oz/a		B							
6	Surfactant	0.25 % v/v		B							
6	AMS	8.5 lb/100 gal		B							
7	Verdict	10 fl oz/a		A	0	100	100	100	100	100	0
7	Atrazine	1.1 lb/a		A							
7	Status	3 oz/a		B							
7	Roundup PowerMax	32 fl oz/a		B							
7	Surfactant	0.25 % v/v		B							
7	AMS	8.5 lb/100 gal		B							
8	Armezon PRO	16 fl oz/a		A	0	100	100	100	99	100	0
8	Callisto	3 fl oz/a		A							
8	Atrazine	0.55 lb/a		A							
8	Roundup PowerMax	32 fl oz/a		B							
8	Surfactant	0.25 % v/v		B							
8	AMS	8.5 lb/100 gal		B							
9	Zidua SC	3.2 fl oz/a		A	0	98	100	100	99	100	0
9	Callisto	3 fl oz/a		A							
9	Atrazine	1.1 lb/a		A							
9	Roundup PowerMax	32 fl oz/a		B							
9	Surfactant	0.25 % v/v		B							
9	AMS	8.5 lb/100 gal		B							
LSD P=.05						4.8			2.9		1.4
Standard Deviation					0.0	3.3	0.0	0.0	2.0	0.0	0.9
CV					0.0	3.71	0.0	0.0	2.28	0.0	109.49

Could not calculate LSD (% mean diff) for columns 1,3,4,6,9,10,12,13,14,15,16,17,18,19,21,22,23,24,25,26,27,28,29 because error mean square = 0.

# Michigan State University

## Sequential weed control programs in corn

Trial ID: C07-18      Location: Campus T-17  
 Investigator: Erin Burns  
 Study Director: Burns, Stiles, Powell, Craft

Pest Code	ANGR	CHEAL	AMAPO	AMBEL	ABUTH	ZEAMX	ANGR	CHEAL
Crop Code								
Rating Date	Jun-22-2018	Jun-22-2018	Jun-22-2018	Jun-22-2018	Jun-22-2018	Jul-3-2018	Jul-3-2018	Jul-3-2018
Rating Type	control	control	control	control	control	injury	control	control
Rating Unit	percent	percent	percent	percent	percent	percent	percent	percent
Trt-Eval Interval	21 DA-A	21 DA-A	21 DA-A	21 DA-A	21 DA-A	15 DA-B	15 DA-B	15 DA-B

Trt No.	Treatment Name	Rate	Unit	Appl Code	ANGR	CHEAL	AMAPO	AMBEL	ABUTH	ZEAMX	ANGR	CHEAL
1	Verdict	10 fl oz/a		A	100	100	100	100	100	0	100	100
1	Armezon PRO	16 fl oz/a		B								
1	Atrazine	0.55 lb/a		B								
1	Roundup PowerMax	32 fl oz/a		B								
1	Surfactant	0.25 % v/v		B								
1	AMS	8.5 lb/100 gal		B								
2	Verdict	13 fl oz/a		A	100	100	100	100	100	0	100	100
2	Status	3 oz/a		B								
2	Callisto	3 fl oz/a		B								
2	Roundup PowerMax	32 fl oz/a		B								
2	Surfactant	0.25 % v/v		B								
2	AMS	8.5 lb/100 gal		B								
3	Acuron	1.75 qt/a		A	100	100	100	100	100	0	100	100
3	Callisto	3 fl oz/a		B								
3	Atrazine	0.55 lb/a		B								
3	Roundup PowerMax	32 fl oz/a		B								
3	Surfactant	0.25 % v/v		B								
3	AMS	8.5 lb/100 gal		B								
4	Resicore	1.25 qt/a		A	100	100	100	100	100	0	100	100
4	Resicore	1.25 qt/a		B								
4	Atrazine	0.55 lb/a		B								
4	Roundup PowerMax	32 fl oz/a		B								
4	Surfactant	0.25 % v/v		B								
4	AMS	8.5 lb/100 gal		B								
5	Untreated				0	0	0	0	0	0	0	0
6	Harness MAX	40 fl oz/a		A	100	100	100	100	100	0	100	100
6	Harness MAX	40 fl oz/a		B								
6	Atrazine	0.55 lb/a		B								
6	Roundup PowerMax	32 fl oz/a		B								
6	Surfactant	0.25 % v/v		B								
6	AMS	8.5 lb/100 gal		B								
7	Verdict	10 fl oz/a		A	100	100	100	100	100	0	100	100
7	Atrazine	1.1 lb/a		A								
7	Status	3 oz/a		B								
7	Roundup PowerMax	32 fl oz/a		B								
7	Surfactant	0.25 % v/v		B								
7	AMS	8.5 lb/100 gal		B								
8	Armezon PRO	16 fl oz/a		A	100	100	100	100	100	0	100	100
8	Callisto	3 fl oz/a		A								
8	Atrazine	0.55 lb/a		A								
8	Roundup PowerMax	32 fl oz/a		B								
8	Surfactant	0.25 % v/v		B								
8	AMS	8.5 lb/100 gal		B								
9	Zidua SC	3.2 fl oz/a		A	100	100	100	100	100	0	100	100
9	Callisto	3 fl oz/a		A								
9	Atrazine	1.1 lb/a		A								
9	Roundup PowerMax	32 fl oz/a		B								
9	Surfactant	0.25 % v/v		B								
9	AMS	8.5 lb/100 gal		B								
LSD P=.05					0.5			0.5				
Standard Deviation					0.3	0.0	0.0	0.3	0.0	0.0	0.0	0.0
CV					0.38	0.0	0.0	0.38	0.0	0.0	0.0	0.0

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Pest Code		AMAPO	AMBEL	ABUTH		ANGR	CHEAL	AMAPO	AMBEL			
Crop Code					ZEAMX							
Rating Date		Jul-3-2018	Jul-3-2018	Jul-3-2018	Jul-16-2018	Jul-16-2018	Jul-16-2018	Jul-16-2018	Jul-16-2018			
Rating Type		control	control	control	injury	control	control	control	control			
Rating Unit		percent	percent	percent	percent	percent	percent	percent	percent			
Trt-Eval Interval		15 DA-B	15 DA-B	15 DA-B	28 DA-B	28 DA-B	28 DA-B	28 DA-B	28 DA-B			
Trt No.	Treatment Name	Rate	Rate Unit	Appl Code								
1	Verdict	10 fl oz/a		A	100	100	100	0	100	100	100	100
1	Armezon PRO	16 fl oz/a		B								
1	Atrazine	0.55 lb/a		B								
1	Roundup PowerMax	32 fl oz/a		B								
1	Surfactant	0.25 % v/v		B								
1	AMS	8.5 lb/100 gal		B								
2	Verdict	13 fl oz/a		A	100	100	100	0	100	100	100	100
2	Status	3 oz/a		B								
2	Callisto	3 fl oz/a		B								
2	Roundup PowerMax	32 fl oz/a		B								
2	Surfactant	0.25 % v/v		B								
2	AMS	8.5 lb/100 gal		B								
3	Acuron	1.75 qt/a		A	100	100	100	0	100	100	100	100
3	Callisto	3 fl oz/a		B								
3	Atrazine	0.55 lb/a		B								
3	Roundup PowerMax	32 fl oz/a		B								
3	Surfactant	0.25 % v/v		B								
3	AMS	8.5 lb/100 gal		B								
4	Resicore	1.25 qt/a		A	100	100	100	0	100	100	100	100
4	Resicore	1.25 qt/a		B								
4	Atrazine	0.55 lb/a		B								
4	Roundup PowerMax	32 fl oz/a		B								
4	Surfactant	0.25 % v/v		B								
4	AMS	8.5 lb/100 gal		B								
5	Untreated				0	0	0	0	0	0	0	0
6	Harness MAX	40 fl oz/a		A	100	100	100	0	100	100	100	100
6	Harness MAX	40 fl oz/a		B								
6	Atrazine	0.55 lb/a		B								
6	Roundup PowerMax	32 fl oz/a		B								
6	Surfactant	0.25 % v/v		B								
6	AMS	8.5 lb/100 gal		B								
7	Verdict	10 fl oz/a		A	100	100	100	0	100	100	100	100
7	Atrazine	1.1 lb/a		A								
7	Status	3 oz/a		B								
7	Roundup PowerMax	32 fl oz/a		B								
7	Surfactant	0.25 % v/v		B								
7	AMS	8.5 lb/100 gal		B								
8	Armezon PRO	16 fl oz/a		A	100	100	100	0	100	100	100	100
8	Callisto	3 fl oz/a		A								
8	Atrazine	0.55 lb/a		A								
8	Roundup PowerMax	32 fl oz/a		B								
8	Surfactant	0.25 % v/v		B								
8	AMS	8.5 lb/100 gal		B								
9	Zidua SC	3.2 fl oz/a		A	100	100	100	0	100	100	100	100
9	Callisto	3 fl oz/a		A								
9	Atrazine	1.1 lb/a		A								
9	Roundup PowerMax	32 fl oz/a		B								
9	Surfactant	0.25 % v/v		B								
9	AMS	8.5 lb/100 gal		B								
LSD P=.05								0.5				
Standard Deviation								0.3				
CV		0.0	0.0	0.0	0.0	0.0	0.38	0.0	0.0	0.0	0.0	0.0

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Pest Code	ABUTH	ZEAMX	ANGR	CHEAL	AMAPO	AMBEL	ABUTH	ZEAMX
Crop Code								
Rating Date	Jul-16-2018	Jul-30-2018	Jul-30-2018	Jul-30-2018	Jul-30-2018	Jul-30-2018	Jul-30-2018	Oct-25-2018
Rating Type	control	injury	control	control	control	control	control	test wieght
Rating Unit	percent	percent	percent	percent	percent	percent	percent	lbs/bu
Trt-Eval Interval	28 DA-B	42 DA-B	42 DA-B	42 DA-B	42 DA-B	42 DA-B	42 DA-B	129 DA-B

Trt No.	Treatment Name	Rate	Unit	Appl Code	ABUTH	ZEAMX	ANGR	CHEAL	AMAPO	AMBEL	ABUTH	ZEAMX
1	Verdict	10 fl oz/a		A	100	0	100	100	100	100	100	52.0
1	Armezon PRO	16 fl oz/a		B								
1	Atrazine	0.55 lb/a		B								
1	Roundup PowerMax	32 fl oz/a		B								
1	Surfactant	0.25 % v/v		B								
1	AMS	8.5 lb/100 gal		B								
2	Verdict	13 fl oz/a		A	100	0	100	100	100	100	100	52.7
2	Status	3 oz/a		B								
2	Callisto	3 fl oz/a		B								
2	Roundup PowerMax	32 fl oz/a		B								
2	Surfactant	0.25 % v/v		B								
2	AMS	8.5 lb/100 gal		B								
3	Acuron	1.75 qt/a		A	100	0	100	100	100	100	100	52.4
3	Callisto	3 fl oz/a		B								
3	Atrazine	0.55 lb/a		B								
3	Roundup PowerMax	32 fl oz/a		B								
3	Surfactant	0.25 % v/v		B								
3	AMS	8.5 lb/100 gal		B								
4	Resicore	1.25 qt/a		A	100	0	100	100	100	100	100	52.6
4	Resicore	1.25 qt/a		B								
4	Atrazine	0.55 lb/a		B								
4	Roundup PowerMax	32 fl oz/a		B								
4	Surfactant	0.25 % v/v		B								
4	AMS	8.5 lb/100 gal		B								
5	Untreated				0	0	0	0	0	0	0	52.0
6	Harness MAX	40 fl oz/a		A	100	0	100	100	100	100	100	52.3
6	Harness MAX	40 fl oz/a		B								
6	Atrazine	0.55 lb/a		B								
6	Roundup PowerMax	32 fl oz/a		B								
6	Surfactant	0.25 % v/v		B								
6	AMS	8.5 lb/100 gal		B								
7	Verdict	10 fl oz/a		A	100	0	100	100	100	100	99	52.6
7	Atrazine	1.1 lb/a		A								
7	Status	3 oz/a		B								
7	Roundup PowerMax	32 fl oz/a		B								
7	Surfactant	0.25 % v/v		B								
7	AMS	8.5 lb/100 gal		B								
8	Armezon PRO	16 fl oz/a		A	100	0	100	100	100	100	100	52.3
8	Callisto	3 fl oz/a		A								
8	Atrazine	0.55 lb/a		A								
8	Roundup PowerMax	32 fl oz/a		B								
8	Surfactant	0.25 % v/v		B								
8	AMS	8.5 lb/100 gal		B								
9	Zidua SC	3.2 fl oz/a		A	100	0	100	100	100	100	100	52.1
9	Callisto	3 fl oz/a		A								
9	Atrazine	1.1 lb/a		A								
9	Roundup PowerMax	32 fl oz/a		B								
9	Surfactant	0.25 % v/v		B								
9	AMS	8.5 lb/100 gal		B								
LSD P=.05					0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.86
Standard Deviation					0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.59
CV					0.0	0.0	0.0	0.0	0.0	0.0	0.59	1.13

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Pest Code			
Crop Code		ZEAMX	ZEAMX
Rating Date		Oct-25-2018	Oct-25-2018
Rating Type		moisture	YIELD
Rating Unit		percent	BU
Trt-Eval Interval		129 DA-B	at 15% M

Trt No.	Treatment Name	Rate	Unit	Appl Code		
1	Verdict	10 fl oz/a		A	22.3	251.8
1	Armezon PRO	16 fl oz/a		B		
1	Atrazine	0.55 lb/a		B		
1	Roundup PowerMax	32 fl oz/a		B		
1	Surfactant	0.25 % v/v		B		
1	AMS	8.5 lb/100 gal		B		
2	Verdict	13 fl oz/a		A	22.0	247.1
2	Status	3 oz/a		B		
2	Callisto	3 fl oz/a		B		
2	Roundup PowerMax	32 fl oz/a		B		
2	Surfactant	0.25 % v/v		B		
2	AMS	8.5 lb/100 gal		B		
3	Acuron	1.75 qt/a		A	22.0	243.6
3	Callisto	3 fl oz/a		B		
3	Atrazine	0.55 lb/a		B		
3	Roundup PowerMax	32 fl oz/a		B		
3	Surfactant	0.25 % v/v		B		
3	AMS	8.5 lb/100 gal		B		
4	Resicore	1.25 qt/a		A	22.3	244.2
4	Resicore	1.25 qt/a		B		
4	Atrazine	0.55 lb/a		B		
4	Roundup PowerMax	32 fl oz/a		B		
4	Surfactant	0.25 % v/v		B		
4	AMS	8.5 lb/100 gal		B		
5	Untreated				22.2	231.2
6	Harness MAX	40 fl oz/a		A	23.7	238.4
6	Harness MAX	40 fl oz/a		B		
6	Atrazine	0.55 lb/a		B		
6	Roundup PowerMax	32 fl oz/a		B		
6	Surfactant	0.25 % v/v		B		
6	AMS	8.5 lb/100 gal		B		
7	Verdict	10 fl oz/a		A	22.2	241.2
7	Atrazine	1.1 lb/a		A		
7	Status	3 oz/a		B		
7	Roundup PowerMax	32 fl oz/a		B		
7	Surfactant	0.25 % v/v		B		
7	AMS	8.5 lb/100 gal		B		
8	Armezon PRO	16 fl oz/a		A	22.9	245.4
8	Callisto	3 fl oz/a		A		
8	Atrazine	0.55 lb/a		A		
8	Roundup PowerMax	32 fl oz/a		B		
8	Surfactant	0.25 % v/v		B		
8	AMS	8.5 lb/100 gal		B		
9	Zidua SC	3.2 fl oz/a		A	22.2	248.7
9	Callisto	3 fl oz/a		A		
9	Atrazine	1.1 lb/a		A		
9	Roundup PowerMax	32 fl oz/a		B		
9	Surfactant	0.25 % v/v		B		
9	AMS	8.5 lb/100 gal		B		
LSD P=.05					1.26	12.84
Standard Deviation					0.86	8.80
CV					3.85	3.61

Could not calculate LSD (% mean diff) for columns 1,3,4,6,9,10,12,13,14,15,16,17,18,19,21,22,23,24,25,26,27,28,29 because error mean square = 0.