

**Evaluation of ImpactZ and Impact programs for crop safety and weed control in corn**

Trial ID: C09-18\_Updated 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	C
<b>Application Timing:</b>	PRE	EPOS	POST
<b>Date Treated:</b>	Jun-1-2018	Jun-21-2018	Jul-2-2018
<b>Time Treated:</b>	8:00 AM	3:00 PM	8:30 AM
<b>% Cloud Cover:</b>	20	85	50
<b>Air Temp., Unit:</b>	76 F	77 F	77 F
<b>% Relative Humidity:</b>	68	49	68
<b>Wind Speed/Unit/Dir:</b>	2.1 MPH NE	7 MPH E	3 MPH NW
<b>Soil Temp, Unit:</b>	73 F	76 M	74 M
<b>Leaf Moist/Dew Presence (Y/N):</b>	4	4	5
<b>Soil Moist:</b>	2	4	5

**Crop Stage at Each Application**

	A	B	C
<b>Crop 1 Name:</b>	ZEAMX	ZEAMX	ZEAMX
<b>Height:</b>			
<b>Stage:</b>		V4	V6

**Weed Stage at Each Application**

	A	B	C
<b>Weed 1 Name:</b>	ANGR	ANGR	ANGR
<b>Height:</b>	2 IN	2 IN	6 IN
<b>Stage:</b>	4-6 L	4-6 L	7 L
<b>Weed 2 Name:</b>	CHEAL	CHEAL	CHEAL
<b>Height:</b>	1 IN	1 IN	5 IN
<b>Stage:</b>	6 L	6 L	21 L
<b>Weed 3 Name:</b>	AMAPO	AMAPO	AMAPO
<b>Height:</b>	2 IN	2 IN	8 IN
<b>Stage:</b>	8 L	8 L	22 L
<b>Weed 4 Name:</b>	AMBEL	AMBEL	AMBEL
<b>Height:</b>	1.5 IN	1.5 IN	6 IN
<b>Stage:</b>	5 L	5 L	18 L
<b>Weed 5 Name:</b>	ABUTH	ABUTH	ABUTH
<b>Height:</b>	1 IN	1 IN	10 IN
<b>Stage:</b>	6 L	6 L	10 L

**Weed Density**

	1	2	3	4	5
<b>Date:</b>	Jun-21-2018	Jun-21-2018	Jun-21-2018	Jun-21-2018	Jun-21-2018
<b>Weed Name:</b>	ANGR	CHEAL	AMAPO	AMBEL	ABUTH
<b>Density:</b>	3 FT2	1 FT2	1 FT2	1 FT2	2 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	AIXR	11003	22 "	20 "	100 "	19 GPA	WATER	30 PSI
B	CUB	3.8 MPH	AIXR	11003	24 "	20 "	100 "	19 GPA	WATER	30 PSI
C	CUB	3.8 MPH	AIXR	11003	30 "	20 "	100 "	19 GPA	WATER	30 PSI

**Comments:**

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Study Director: Burns, Stiles, Powell, Craft

Pest Code				ANGR	CHEAL	AMAPO	AMBEL	ABUTH		ANGR	
Crop Code											
Rating Date				Jun-28-2018	Jun-28-2018	Jun-28-2018	Jun-28-2018	Jun-28-2018	Jun-28-2018	Jul-3-2018	
Rating Type				injury	control	control	control	control	control	injury	
Rating Unit				percent	percent	percent	percent	percent	percent	percent	
Trt-Eval Interval				7 DA-B	7 DA-B	7 DA-B	7 DA-B	7 DA-B	7 DA-B	12 DA-B	
Trt No.	Treatment Name	Rate	Appl Code								
1	Harness Xtra 5.6	3.6 pt/a	A	0.0	100.0	100.0	99.5	96.5	97.8	0.0	100.0
2	Harness Xtra 5.6	3.6 pt/a	A	0.0	99.5	100.0	100.0	100.0	97.0	0.0	100.0
	2 ImpactZ	10.7 fl oz/a	C								
	2 MSO	1 % v/v	C								
	2 AMS	8.5 lb/100 gal	C								
3	Harness Xtra 5.6	3.6 pt/a	A	0.0	100.0	100.0	100.0	97.0	97.5	0.0	98.8
	3 ImpactZ	8 fl oz/a	C								
	3 Roundup PowerMax	32 fl oz/a	C								
	3 MSO	0.5 % v/v	C								
	3 AMS	8.5 lb/100 gal	C								
4	Harness Xtra 5.6	3.6 pt/a	A	0.0	99.5	100.0	100.0	98.5	96.3	0.0	100.0
	4 ImpactZ	8 fl oz/a	C								
	4 Liberty	22 fl oz/a	C								
	4 AMS	8.5 lb/100 gal	C								
5	Untreated			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Harness	1.87 pt/a	B	0.0	97.5	100.0	100.0	100.0	98.3	0.0	95.0
	6 Impact	1 fl oz/a	B								
	6 Atrazine	0.55 lb/a	B								
	6 MSO	0.25 % v/v	B								
	6 AMS	8.5 lb/100 gal	B								
7	Harness	1.87 pt/a	B	0.0	99.5	100.0	100.0	100.0	88.0	0.0	100.0
	7 Impact	0.75 fl oz/a	B								
	7 Roundup PowerMax	32 fl oz/a	B								
	7 Atrazine	0.55 lb/a	B								
	7 MSO	0.25 % v/v	B								
	7 AMS	8.5 lb/100 gal	B								
8	Halex GT	3.6 pt/a	B	0.0	99.5	100.0	100.0	76.3	92.5	0.0	99.5
	8 Atrazine	0.55 lb/a	B								
	8 Surfactant	0.25 % v/v	B								
	8 AMS	8.5 lb/100 gal	B								
LSD P=.05				.	1.85	.	0.52	13.76	4.88	.	2.50
Standard Deviation				0.00	1.26	0.00	0.35	9.36	3.32	0.00	1.70
CV				0.0	1.45	0.0	0.4	11.2	3.98	0.0	1.97

Could not calculate LSD (% mean diff) for columns 1,3,7,9,10,13,15,16,19,21,22,25,27,28 because error mean square = 0.

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Pest Code	CHEAL	AMAPO	AMBEL	ABUTH	ZEAMX	ANGR	CHEAL	AMAPO				
Crop Code												
Rating Date	Jul-3-2018	Jul-3-2018	Jul-3-2018	Jul-3-2018	Jul-18-2018	Jul-18-2018	Jul-18-2018	Jul-18-2018				
Rating Type	control	control	control	control	injury	control	control	control				
Rating Unit	percent	percent	percent	percent	percent	percent	percent	percent				
Trt-Eval Interval	12 DA-B	12 DA-B	12 DA-B	12 DA-B	16 DA-C	16 DA-C	16 DA-C	16 DA-C				
Trt No.	Treatment Name	Rate	Unit	Appl Code								
1	Harness Xtra 5.6	3.6 pt/a		A	100.0	100.0	97.8	95.3	0.0	100.0	100.0	100.0
2	Harness Xtra 5.6	3.6 pt/a		A	100.0	100.0	100.0	95.8	0.0	100.0	100.0	100.0
	2 ImpactZ	10.7 fl oz/a		C								
	2 MSO	1 % v/v		C								
	2 AMS	8.5 lb/100 gal		C								
3	Harness Xtra 5.6	3.6 pt/a		A	100.0	100.0	98.3	97.5	0.0	100.0	100.0	100.0
	3 ImpactZ	8 fl oz/a		C								
	3 Roundup PowerMax	32 fl oz/a		C								
	3 MSO	0.5 % v/v		C								
	3 AMS	8.5 lb/100 gal		C								
4	Harness Xtra 5.6	3.6 pt/a		A	100.0	100.0	99.5	97.0	0.0	100.0	100.0	100.0
	4 ImpactZ	8 fl oz/a		C								
	4 Liberty	22 fl oz/a		C								
	4 AMS	8.5 lb/100 gal		C								
5	Untreated				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Harness	1.87 pt/a		B	100.0	100.0	100.0	99.0	0.0	85.8	100.0	100.0
	6 Impact	1 fl oz/a		B								
	6 Atrazine	0.55 lb/a		B								
	6 MSO	0.25 % v/v		B								
	6 AMS	8.5 lb/100 gal		B								
7	Harness	1.87 pt/a		B	100.0	100.0	100.0	97.8	0.0	100.0	100.0	100.0
	7 Impact	0.75 fl oz/a		B								
	7 Roundup PowerMax	32 fl oz/a		B								
	7 Atrazine	0.55 lb/a		B								
	7 MSO	0.25 % v/v		B								
	7 AMS	8.5 lb/100 gal		B								
8	Halex GT	3.6 pt/a		B	100.0	100.0	86.3	98.8	0.0	100.0	100.0	100.0
	8 Atrazine	0.55 lb/a		B								
	8 Surfactant	0.25 % v/v		B								
	8 AMS	8.5 lb/100 gal		B								
LSD P=.05					.	.	5.81	4.05	.	6.82	.	.
Standard Deviation					0.00	0.00	3.95	2.75	0.00	4.64	0.00	0.00
CV					0.0	0.0	4.64	3.23	0.0	5.41	0.0	0.0

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Pest Code			AMBEL	ABUTH		ANGR	CHEAL	AMAPO	AMBEL	ABUTH	
Crop Code					ZEAMX						
Rating Date			Jul-18-2018	Jul-18-2018	Aug-1-2018	Aug-1-2018	Aug-1-2018	Aug-1-2018	Aug-1-2018	Aug-1-2018	
Rating Type			control	control	injury	control	control	control	control	control	
Rating Unit			percent	percent	percent	percent	percent	percent	percent	percent	
Trt-Eval Interval			16 DA-C	16 DA-C	30 DA-C	30 DA-C	30 DA-C	30 DA-C	30 DA-C	30 DA-C	
Trt No.	Treatment Name	Rate									
		Unit									
1	Harness Xtra 5.6	3.6 pt/a	A	98.3	97.8	0.0	100.0	100.0	100.0	97.5	99.0
2	Harness Xtra 5.6	3.6 pt/a	A	100.0	100.0	0.0	100.0	100.0	100.0	100.0	100.0
	2 ImpactZ	10.7 fl oz/a	C								
	2 MSO	1 % v/v	C								
	2 AMS	8.5 lb/100 gal	C								
3	Harness Xtra 5.6	3.6 pt/a	A	100.0	100.0	0.0	100.0	100.0	100.0	100.0	100.0
	3 ImpactZ	8 fl oz/a	C								
	3 Roundup PowerMax	32 fl oz/a	C								
	3 MSO	0.5 % v/v	C								
	3 AMS	8.5 lb/100 gal	C								
4	Harness Xtra 5.6	3.6 pt/a	A	98.8	100.0	0.0	100.0	100.0	100.0	99.5	100.0
	4 ImpactZ	8 fl oz/a	C								
	4 Liberty	22 fl oz/a	C								
	4 AMS	8.5 lb/100 gal	C								
5	Untreated			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Harness	1.87 pt/a	B	100.0	97.0	0.0	72.0	100.0	100.0	100.0	97.0
	6 Impact	1 fl oz/a	B								
	6 Atrazine	0.55 lb/a	B								
	6 MSO	0.25 % v/v	B								
	6 AMS	8.5 lb/100 gal	B								
7	Harness	1.87 pt/a	B	100.0	100.0	0.0	100.0	100.0	100.0	100.0	100.0
	7 Impact	0.75 fl oz/a	B								
	7 Roundup PowerMax	32 fl oz/a	B								
	7 Atrazine	0.55 lb/a	B								
	7 MSO	0.25 % v/v	B								
	7 AMS	8.5 lb/100 gal	B								
8	Halex GT	3.6 pt/a	B	78.3	98.8	0.0	100.0	100.0	100.0	83.3	99.5
	8 Atrazine	0.55 lb/a	B								
	8 Surfactant	0.25 % v/v	B								
	8 AMS	8.5 lb/100 gal	B								
LSD P=.05				9.51	2.65	.	10.04	.	.	8.64	1.55
Standard Deviation				6.47	1.80	0.00	6.83	0.00	0.00	5.87	1.06
CV				7.66	2.08	0.0	8.13	0.0	0.0	6.91	1.21

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Pest Code				ANGR	CHEAL	AMAPO	AMBEL	ABUTH	
Crop Code				ZEAMX					
Rating Date				Aug-13-2018	Aug-13-2018	Aug-13-2018	Aug-13-2018	Aug-13-2018	
Rating Type				injury	control	control	control	control	
Rating Unit				percent	percent	percent	percent	percent	
Trt-Eval Interval				42 DA-C	42 DA-C	42 DA-C	42 DA-C	42 DA-C	
Trt No.	Treatment Name	Rate	Appl Code						
		Rate Unit							
1	Harness Xtra 5.6	3.6 pt/a	A	0.0	100.0	100.0	100.0	97.5	98.3
2	Harness Xtra 5.6	3.6 pt/a	A	0.0	100.0	100.0	100.0	100.0	100.0
	2 ImpactZ	10.7 fl oz/a	C						
	2 MSO	1 % v/v	C						
	2 AMS	8.5 lb/100 gal	C						
3	Harness Xtra 5.6	3.6 pt/a	A	0.0	100.0	100.0	100.0	100.0	100.0
	3 ImpactZ	8 fl oz/a	C						
	3 Roundup PowerMax	32 fl oz/a	C						
	3 MSO	0.5 % v/v	C						
	3 AMS	8.5 lb/100 gal	C						
4	Harness Xtra 5.6	3.6 pt/a	A	0.0	100.0	100.0	100.0	99.5	100.0
	4 ImpactZ	8 fl oz/a	C						
	4 Liberty	22 fl oz/a	C						
	4 AMS	8.5 lb/100 gal	C						
5	Untreated			0.0	0.0	0.0	0.0	0.0	0.0
6	Harness	1.87 pt/a	B	0.0	77.0	100.0	100.0	100.0	97.8
	6 Impact	1 fl oz/a	B						
	6 Atrazine	0.55 lb/a	B						
	6 MSO	0.25 % v/v	B						
	6 AMS	8.5 lb/100 gal	B						
7	Harness	1.87 pt/a	B	0.0	100.0	100.0	100.0	100.0	99.5
	7 Impact	0.75 fl oz/a	B						
	7 Roundup PowerMax	32 fl oz/a	B						
	7 Atrazine	0.55 lb/a	B						
	7 MSO	0.25 % v/v	B						
	7 AMS	8.5 lb/100 gal	B						
8	Halex GT	3.6 pt/a	B	0.0	100.0	100.0	100.0	82.0	99.5
	8 Atrazine	0.55 lb/a	B						
	8 Surfactant	0.25 % v/v	B						
	8 AMS	8.5 lb/100 gal	B						
LSD P=.05				.	9.19	.	.	8.05	1.76
Standard Deviation				0.00	6.25	0.00	0.00	5.48	1.20
CV				0.0	7.39	0.0	0.0	6.45	1.38

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