

**Weed control programs with Restraint in corn**

Trial ID: C07-21 Study Dir.: Burns  
 Conducted: Campus C-27 Investigator: Burns

**Planting Date:** May-11-2021 **Row Spacing:** 30 IN  
**Variety:** DKC 49-44 **No. of Reps:** 4  
**Population:** 31500 S/A **% OM:** 2.5  
**Soil Type:** SL sandy loam **pH:** 6.1  
**Plot Size:** 10 X 35 FT **Study Design:** Randomized Complete Block (RCB)

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

**Crop and Weed Description**

Weed	Code	Common Name	Scientific Name
1	ANGR	mainly foxtail species	Annual grasses
2	CHEAL	Common lambsquarters	Chenopodium album
3	AMAPO	Powell amaranth	Amaranthus powellii
4	AMBEL	Common ragweed	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>	May-12-2021	Jun-15-2021
<b>Time Treated:</b>	3:35 PM	11:40 AM
<b>% Cloud Cover:</b>	30	10
<b>Air Temp., Unit:</b>	70.2 F	69.5 F
<b>% Relative Humidity:</b>	21.2	47.5
<b>Wind Speed/Unit/Dir:</b>	3.5 MPH NW	3.9 MPH N
<b>Soil Temp, Unit:</b>	65 F	73 F
<b>Leaf Moist/Dew Presence (Y/N):</b>		
<b>Soil Moist:</b>	4	4

**Crop Stage at Each Application**

	A	B
<b>Crop 1 Name:</b>	ZEAMX	ZEAMX
<b>Height:</b>		7.5 IN
<b>Stage:</b>		V4-5

**Weed Stage at Each Application**

	A	B
<b>Weed 1 Name:</b>	ANGR	ANGR
<b>Height:</b>		4 IN
<b>Stage:</b>		8 L
<b>Weed 2 Name:</b>	CHEAL	CHEAL
<b>Height:</b>		3.5 IN
<b>Stage:</b>		12 L
<b>Weed 3 Name:</b>	AMAPO	AMAPO
<b>Height:</b>		3 IN
<b>Stage:</b>		12 L
<b>Weed 4 Name:</b>	AMBEL	AMBEL
<b>Height:</b>		4 IN
<b>Stage:</b>		18 L
<b>Weed 5 Name:</b>	ABUTH	ABUTH
<b>Height:</b>		3 IN
<b>Stage:</b>		8 L

**Application Equipment**

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	BKPK	3 MPH	AIXR	11003	22.0 "	20.0 "	100.0 "	19 GAL/AC	WATER	32 PSI
B	BKPK	3 MPH	AIXR	11003	24.0 "	20.0 "	100.0 "	19 GAL/AC	WATER	32 PSI

**Comments:**

# Michigan State University

## Weed control programs with Restraint in corn

Trial ID: C07-21      Location: Campus C-27      Trial Year: 2021  
 Protocol ID: C07-21      Investigator (Creator): Erin Burns  
 Project ID:      Study Director: Burns  
                                  Sponsor Contact:

Pest Type		ANGR	CHEAL	AMAPO	AMBEL	ABUTH					
Pest Code		annual grasses	common lambsquarters	Powell amaranth	Common ragweed	velvetleaf					
Pest Name											
Crop Type, Code	ZEAMX							ZEAMX			
Crop Name	Corn							Corn			
Rating Date	Jun-4-2021	Jun-4-2021	Jun-4-2021	Jun-4-2021	Jun-4-2021	Jun-4-2021	Jun-4-2021	Jun-15-2021			
Rating Type	Injury	Control	Control	Control	Control	Control	Control	Injury			
Rating Unit/Min/Max	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100			
Trt-Eval Interval	23 DA-A	23 DA-A	23 DA-A	23 DA-A	23 DA-A	23 DA-A	23 DA-A	0 DA-B			
Trt No.	Treatment Name	Rate	Appl Unit	Code							
1	Restraint	36 fl oz/a	A		0.0	99.5	99.5	100.0	99.0	98.5	0.0
1	Atrazine	1.1 lb/a	A								
1	Shieldex	1 fl oz/a	B								
1	Atrazine	1.1 lb/a	B								
1	COC	1 % v/v	B								
2	Restraint	18 fl oz/a	A		0.0	97.0	100.0	100.0	99.0	98.8	0.0
2	Atrazine	1.1 lb/a	A								
2	Restraint	18 fl oz/a	B								
2	Atrazine	1.1 lb/a	B								
2	COC	1 % v/v	B								
3	Untreated				0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Resicore	40 fl oz/a	A		0.0	98.5	100.0	100.0	100.0	99.5	0.0
4	Atrazine	1.1 lb/a	A								
4	Restraint	30 fl oz/a	B								
4	Atrazine	1.1 lb/a	B								
4	COC	1 % v/v	B								
5	Resicore	40 fl oz/a	A		0.0	97.8	100.0	100.0	99.5	100.0	0.0
5	Atrazine	1.1 lb/a	A								
5	Resicore	40 fl oz/a	B								
5	Atrazine	1.1 lb/a	B								
5	COC	1 % v/v	B								
LSD P=.05		.				1.79	0.69	.	1.43	1.75	.
Standard Deviation		0.00				1.16	0.45	0.00	0.93	1.13	0.00
CV		0.0				1.48	0.56	0.0	1.17	1.43	0.0

Could not calculate LSD (% mean diff) for columns 1,4,7,9,10,14,16,17,18,19,20,22,23,25 because error mean square = 0.  
 ^Calculated from residual.

# Michigan State University

## Weed control programs with Restraint in corn

Trial ID: C07-21      Location: Campus C-27      Trial Year: 2021  
 Protocol ID: C07-21      Investigator (Creator): Erin Burns  
 Project ID:      Study Director: Burns  
                                  Sponsor Contact:

Pest Type											
Pest Code	ANGR	CHEAL	AMAPO	AMBEL	ABUTH						
Pest Name	annual grasses	common lambsquarters	Powell amaranth	Common ragweed	velvetleaf						
Crop Type, Code											
Crop Name											
Rating Date	Jun-15-2021	Jun-15-2021	Jun-15-2021	Jun-15-2021	Jun-15-2021	Jun-25-2021	Jun-25-2021	Jun-25-2021	Jul-2-2021		
Rating Type	Control	Control	Control	Control	Control	Injury	Injury	Injury	Injury		
Rating Unit/Min/Max	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100		
Trt-Eval Interval	0 DA-B	0 DA-B	0 DA-B	0 DA-B	0 DA-B	10 DA-B	10 DA-B	10 DA-B	17 DA-B		
Trt No.	Treatment Name	Rate	Appl Unit	Code							
1	Restraint	36 fl oz/a	A		98.5	100.0	100.0	97.8	99.0	3.5	0.0
1	Atrazine	1.1 lb/a	A								
1	Shieldex	1 fl oz/a	B								
1	Atrazine	1.1 lb/a	B								
1	COC	1 % v/v	B								
2	Restraint	18 fl oz/a	A		92.5	100.0	100.0	98.3	97.8	3.0	0.0
2	Atrazine	1.1 lb/a	A								
2	Restraint	18 fl oz/a	B								
2	Atrazine	1.1 lb/a	B								
2	COC	1 % v/v	B								
3	Untreated				0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Resicore	40 fl oz/a	A		95.0	100.0	100.0	98.8	98.8	4.0	0.0
4	Atrazine	1.1 lb/a	A								
4	Restraint	30 fl oz/a	B								
4	Atrazine	1.1 lb/a	B								
4	COC	1 % v/v	B								
5	Resicore	40 fl oz/a	A		95.3	100.0	100.0	100.0	99.5	4.5	0.0
5	Atrazine	1.1 lb/a	A								
5	Resicore	40 fl oz/a	B								
5	Atrazine	1.1 lb/a	B								
5	COC	1 % v/v	B								
LSD P=.05		2.86						2.98	2.22	1.35	
Standard Deviation		1.86			0.00	0.00	0.00	1.93	1.44	0.88	0.00
CV		2.44			0.0	0.0	0.0	2.45	1.82	29.19	0.0

Could not calculate LSD (% mean diff) for columns 1,4,7,9,10,14,16,17,18,19,20,22,23,25 because error mean square = 0.  
 ^Calculated from residual.

# Michigan State University

## Weed control programs with Restraint in corn

Trial ID: C07-21      Location: Campus C-27      Trial Year: 2021  
 Protocol ID: C07-21      Investigator (Creator): Erin Burns  
 Project ID:      Study Director: Burns  
                                  Sponsor Contact:

Pest Type											
Pest Code	ANGR	CHEAL	AMAPO	AMBEL	ABUTH			ANGR			
Pest Name	annual grasses	common lambsquarters	Powell amaranth	Common ragweed	velvetleaf			annual grasses			
Crop Type, Code											
Crop Name							ZEAMX				
Rating Date	Jul-2-2021	Jul-2-2021	Jul-2-2021	Jul-2-2021	Jul-2-2021	Jul-2-2021	Jul-30-2021	Jul-30-2021			
Rating Type	Control	Control	Control	Control	Control	Control	Injury	Control			
Rating Unit/Min/Max	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100			
Trt-Eval Interval	17 DA-B	17 DA-B	17 DA-B	17 DA-B	17 DA-B	17 DA-B	45 DA-B	45 DA-B			
Trt No.	Treatment Name	Rate	Appl Unit	Code							
1	Restraint	36 fl oz/a	A		100.0	100.0	100.0	100.0	100.0	0.0	100.0
1	Atrazine	1.1 lb/a	A								
1	Shieldex	1 fl oz/a	B								
1	Atrazine	1.1 lb/a	B								
1	COC	1 % v/v	B								
2	Restraint	18 fl oz/a	A		99.5	100.0	100.0	100.0	100.0	0.0	97.0
2	Atrazine	1.1 lb/a	A								
2	Restraint	18 fl oz/a	B								
2	Atrazine	1.1 lb/a	B								
2	COC	1 % v/v	B								
3	Untreated				0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Resicore	40 fl oz/a	A		100.0	100.0	100.0	100.0	100.0	0.0	100.0
4	Atrazine	1.1 lb/a	A								
4	Restraint	30 fl oz/a	B								
4	Atrazine	1.1 lb/a	B								
4	COC	1 % v/v	B								
5	Resicore	40 fl oz/a	A		92.5	100.0	100.0	100.0	100.0	0.0	83.8
5	Atrazine	1.1 lb/a	A								
5	Resicore	40 fl oz/a	B								
5	Atrazine	1.1 lb/a	B								
5	COC	1 % v/v	B								
LSD P=.05		2.01									2.24
Standard Deviation		1.30			0.00	0.00	0.00	0.00	0.00	0.00	1.45
CV		1.66			0.0	0.0	0.0	0.0	0.0	0.0	1.91

Could not calculate LSD (% mean diff) for columns 1,4,7,9,10,14,16,17,18,19,20,22,23,25 because error mean square = 0.  
 ^Calculated from residual.

# Michigan State University

## Weed control programs with Restraint in corn

Trial ID: C07-21      Location: Campus C-27      Trial Year: 2021  
 Protocol ID: C07-21      Investigator (Creator): Erin Burns  
 Project ID:      Study Director: Burns  
                                  Sponsor Contact:

Pest Type		CHEAL	AMAPO	AMBEL	ABUTH	
Pest Code						
Pest Name		Common lambsquarters	Powell amaranth	Common ragweed	velvetleaf	
Crop Type, Code						
Crop Name						
Rating Date		Jul-30-2021	Jul-30-2021	Jul-30-2021	Jul-30-2021	
Rating Type		Control	Control	Control	Control	
Rating Unit/Min/Max		%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	
Trt-Eval Interval		45 DA-B	45 DA-B	45 DA-B	45 DA-B	
Trt Treatment	Rate	Appl				
No. Name	Rate Unit	Code				
1 Restraint	36 fl oz/a	A	100.0	100.0	100.0	100.0
1 Atrazine	1.1 lb/a	A				
1 Shieldex	1 fl oz/a	B				
1 Atrazine	1.1 lb/a	B				
1 COC	1 % v/v	B				
2 Restraint	18 fl oz/a	A	100.0	100.0	99.0	100.0
2 Atrazine	1.1 lb/a	A				
2 Restraint	18 fl oz/a	B				
2 Atrazine	1.1 lb/a	B				
2 COC	1 % v/v	B				
3 Untreated			0.0	0.0	0.0	0.0
4 Resicore	40 fl oz/a	A	100.0	100.0	100.0	100.0
4 Atrazine	1.1 lb/a	A				
4 Restraint	30 fl oz/a	B				
4 Atrazine	1.1 lb/a	B				
4 COC	1 % v/v	B				
5 Resicore	40 fl oz/a	A	100.0	100.0	100.0	100.0
5 Atrazine	1.1 lb/a	A				
5 Resicore	40 fl oz/a	B				
5 Atrazine	1.1 lb/a	B				
5 COC	1 % v/v	B				
LSD P=.05			.	.	0.80	.
Standard Deviation			0.00	0.00	0.52	0.00
CV			0.0	0.0	0.65	0.0

Could not calculate LSD (% mean diff) for columns 1,4,7,9,10,14,16,17,18,19,20,22,23,25 because error mean square = 0.  
 ^Calculated from residual.