

**PRE and POST efficacy and crop safety of GF-4556 in corn**

Trial ID: C04-21 Study Dir.: Burns  
 Conducted: Campus C-28 Investigator: Burns

**Planting Date:** May-11-2021 **Row Spacing:** 30 IN  
**Variety:** DKC 49-44 **No. of Reps:** 4  
**Population:** 31500 S/A **% OM:** 2.9  
**Soil Type:** SL sandy loam **pH:** 5.9  
**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	C	D
<b>Application Timing:</b>	PRE	EPOS	POST	POST
<b>Date Treated:</b>	May-12-2021	Jun-2-2021	Jun-15-2021	Jun-22-2021
<b>Time Treated:</b>	12:33 PM	2:24 PM	9:38 AM	9:27 AM
<b>% Cloud Cover:</b>	15	95	10	3
<b>Air Temp., Unit:</b>	64.2 F	72.9 F	70 F	65.2 F
<b>% Relative Humidity:</b>	25.8	50.7	72.2	94.6
<b>Wind Speed/Unit/Dir:</b>	5.2 MPH NW	4.8 MPH N	4.5 MPH N	3.9 MPH N
<b>Soil Temp, Unit:</b>	70 F	80 F	73 F	70 F
<b>Leaf Moist/Dew Presence (Y/N):</b>				
<b>Soil Moist:</b>	4	5	4	2

**Crop Stage at Each Application**

	A	B	C	D
<b>Crop 1 Name:</b>	ZEAMX	ZEAMX	ZEAMX	ZEAMX
<b>Height:</b>		5 IN	7.5 IN	10.5 IN
<b>Stage:</b>		V1-2	V4-5	V6-7

**Weed Stage at Each Application**

	A	B	C	D
<b>Weed 1 Name:</b>	ANGR	ANGR	ANGR	ANGR
<b>Height:</b>		1 IN	4 IN	6 IN
<b>Stage:</b>		3 L	8 L	14 L
<b>Weed 2 Name:</b>	CHEAL	CHEAL	CHEAL	CHEAL
<b>Height:</b>		1 IN	3.5 IN	5 IN
<b>Stage:</b>		6 L	12 L	16 L
<b>Weed 3 Name:</b>	AMAPO	AMAPO	AMAPO	AMAPO
<b>Height:</b>		2 IN	3 IN	5 IN
<b>Stage:</b>		8 L	12 L	16 L
<b>Weed 4 Name:</b>	AMBEL	AMBEL	AMBEL	AMBEL
<b>Height:</b>		1 IN	4 IN	6 IN
<b>Stage:</b>		4 L	18 L	24 L
<b>Weed 5 Name:</b>	ABUTH	ABUTH	ABUTH	ABUTH
<b>Height:</b>		1 IN	3 IN	5 IN
<b>Stage:</b>		6 L	8 L	14 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
C	BKPK	3 MPH	AIXR	11003	24.0 "	20.0 "	100.0 "	19 GAL/AC	WATER	32 PSI
D	BKPK	3 MPH	AIXR	11003	26.0 "	20.0 "	100.0 "	19 GAL/AC	WATER	32 PSI

Comments:

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 Project ID:      Study Director: Burns  
                                  Sponsor Contact:

Pest Code		ANGR	CHEAL	AMAPO	AMBEL	ABUTH
Pest Name		annual grasses	common lambsquarters	Powell amaranth	Common ragweed	velvetleaf
Crop Type, Code	ZEAMX					
Crop Name	Corn					
Rating Date	Jun-4-2021	Jun-4-2021	Jun-4-2021	Jun-4-2021	Jun-4-2021	Jun-4-2021
Rating Type	Injury	Control	Control	Control	Control	Control
Rating Unit/Min/Max	%, 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

Trt No.	Treatment Name	Rate	Unit	Appl Code					
1	GF-4556	3 qt/a		A	0.0	99.0	100.0	100.0	100.0
1	Atrazine	1.1 lb/a		A					
2	GF-4556	3 qt/a		B					
2	Atrazine	1.1 lb/a		B					
2	Durango DMA	1 qt/a		B					
2	Surfactant	0.25 % v/v		B					
2	AMS	8.5 lb/100 gal		B					
3	Surestart II	2 pt/a		A					
3	GF-4556	3 qt/a		C					
3	Atrazine	1.1 lb/a		C					
3	Durango DMA	1 qt/a		C					
3	Surfactant	0.25 % v/v		C					
3	AMS	8.5 lb/100 gal		C					
4	Surestart II	2 pt/a		A					
4	GF-4556	3 qt/a		D					
4	Atrazine	1.1 lb/a		D					
4	Durango DMA	1 qt/a		D					
4	Surfactant	0.25 % v/v		D					
4	AMS	8.5 lb/100 gal		D					
5	Untreated				0.0	0.0	0.0	0.0	0.0
6	Acuron	3 qt/a		A	0.0	98.5	99.5	100.0	99.5
7	Surestart II	2 pt/a		A					
7	Harness Max	40 fl oz/a		C					
7	Atrazine	1.1 lb/a		C					
7	Durango DMA	1 qt/a		C					
7	Surfactant	0.25 % v/v		C					
7	AMS	8.5 lb/100 gal		C					
8	Bicep II Magnum	2 qt/a		A					
8	Acuron Flexi	1.5 qt/a		D					
8	Durango DMA	1 qt/a		D					
8	Surfactant	0.25 % v/v		D					
8	AMS	8.5 lb/100 gal		D					
LSD P=.05					.	1.29	1.00	.	1.00
Standard Deviation					0.00	0.75	0.58	0.00	0.58
CV					0.0	1.13	0.87	0.0	0.87

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 Protocol ID: C04-21 Investigator (Creator): Erin Burns  
 Project ID: Study Director: Burns  
 Sponsor Contact:

Pest Code	ZEAMX			ANGR	CHEAL	AMAPO
Pest Name	Corn			annual grasses	common lambsquarters	Powell amaranth
Crop Type, Code	ZEAMX	ZEAMX	ZEAMX			
Crop Name	Corn	Corn	Corn			
Rating Date	Jun-5-2021	Jun-9-2021	Jun-14-2021	Jun-14-2021	Jun-14-2021	Jun-14-2021
Rating Type	Injury	Injury	Injury	Control	Control	Control
Rating Unit/Min/Max	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
Trt-Eval Interval	3 DA-B	7 DA-B	-1 DA-C	-1 DA-C	-1 DA-C	-1 DA-C

Trt No.	Treatment Name	Rate	Unit	Appl Code				
1	GF-4556	3 qt/a		A				
1	Atrazine	1.1 lb/a		A	0.0	96.5	100.0	100.0
2	GF-4556	3 qt/a		B	0.0	99.5	100.0	100.0
2	Atrazine	1.1 lb/a		B				
2	Durango DMA	1 qt/a		B				
2	Surfactant	0.25 % v/v		B				
2	AMS	8.5 lb/100 gal		B				
3	Surestart II	2 pt/a		A	0.0	95.0	95.8	100.0
3	GF-4556	3 qt/a		C				
3	Atrazine	1.1 lb/a		C				
3	Durango DMA	1 qt/a		C				
3	Surfactant	0.25 % v/v		C				
3	AMS	8.5 lb/100 gal		C				
4	Surestart II	2 pt/a		A	0.0	99.5	94.5	99.0
4	GF-4556	3 qt/a		D				
4	Atrazine	1.1 lb/a		D				
4	Durango DMA	1 qt/a		D				
4	Surfactant	0.25 % v/v		D				
4	AMS	8.5 lb/100 gal		D				
5	Untreated				0.0	0.0	0.0	0.0
6	Acuron	3 qt/a		A	0.0	98.5	100.0	100.0
7	Surestart II	2 pt/a		A	0.0	97.0	95.8	100.0
7	Harness Max	40 fl oz/a		C				
7	Atrazine	1.1 lb/a		C				
7	Durango DMA	1 qt/a		C				
7	Surfactant	0.25 % v/v		C				
7	AMS	8.5 lb/100 gal		C				
8	Bicep II Magnum	2 qt/a		A	0.0	94.5	100.0	100.0
8	Acuron Flexi	1.5 qt/a		D				
8	Durango DMA	1 qt/a		D				
8	Surfactant	0.25 % v/v		D				
8	AMS	8.5 lb/100 gal		D				
LSD P=.05						2.31	2.13	0.60
Standard Deviation					0.00	1.57	1.45	0.41
CV					0.0	1.84	1.69	0.47

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Pest Code			AMBEL	ABUTH					
Pest Name			Common ragweed	velvetleaf					
Crop Type, Code					ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX
Crop Name					Corn	Corn	Corn	Corn	Corn
Rating Date			Jun-14-2021	Jun-14-2021	Jun-18-2021	Jun-22-2021	Jun-25-2021	Jun-29-2021	Jul-7-2021
Rating Type			Control	Control	Injury	Injury	Injury	Injury	Injury
Rating Unit/Min/Max			%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
Trt-Eval Interval			-1 DA-C	-1 DA-C	3 DA-C	7 DA-C	3 DA-D	7 DA-D	15 DA-D
Trt No.	Treatment Name	Rate Unit	Appl Code						
1	GF-4556	3 qt/a	A	100.0	100.0				0.0
1	Atrazine	1.1 lb/a	A						
2	GF-4556	3 qt/a	B	100.0	100.0				0.0
2	Atrazine	1.1 lb/a	B						
2	Durango DMA	1 qt/a	B						
2	Surfactant	0.25 % v/v	B						
2	AMS	8.5 lb/100 gal	B						
3	Surestart II	2 pt/a	A	100.0	99.5	0.0	0.0		0.0
3	GF-4556	3 qt/a	C						
3	Atrazine	1.1 lb/a	C						
3	Durango DMA	1 qt/a	C						
3	Surfactant	0.25 % v/v	C						
3	AMS	8.5 lb/100 gal	C						
4	Surestart II	2 pt/a	A	100.0	99.0			0.0	0.0
4	GF-4556	3 qt/a	D						
4	Atrazine	1.1 lb/a	D						
4	Durango DMA	1 qt/a	D						
4	Surfactant	0.25 % v/v	D						
4	AMS	8.5 lb/100 gal	D						
5	Untreated			0.0	0.0	0.0	0.0	0.0	0.0
6	Acuron	3 qt/a	A	100.0	100.0				0.0
7	Surestart II	2 pt/a	A	99.0	99.5	0.0	0.0		0.0
7	Harness Max	40 fl oz/a	C						
7	Atrazine	1.1 lb/a	C						
7	Durango DMA	1 qt/a	C						
7	Surfactant	0.25 % v/v	C						
7	AMS	8.5 lb/100 gal	C						
8	Bicep II Magnum	2 qt/a	A	99.0	99.0			0.0	0.0
8	Acuron Flexi	1.5 qt/a	D						
8	Durango DMA	1 qt/a	D						
8	Surfactant	0.25 % v/v	D						
8	AMS	8.5 lb/100 gal	D						
LSD P=.05				0.79	1.09				
Standard Deviation				0.53	0.74	0.00	0.00	0.00	0.00
CV				0.61	0.85	0.0	0.0	0.0	0.0

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Pest Code				ANGR	CHEAL	AMAPO	AMBEL	ABUTH		
Pest Name				annual grasses	common lambsquarters	Powell amaranth	Common ragweed	velvetleaf		
Crop Type, Code									ZEAMX	
Crop Name									Corn	
Rating Date				Jul-7-2021	Jul-7-2021	Jul-7-2021	Jul-7-2021	Jul-7-2021	Jul-21-2021	
Rating Type				Control	Control	Control	Control	Control	Injury	
Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	
Trt-Eval Interval				15 DA-D	15 DA-D	15 DA-D	15 DA-D	15 DA-D	29 DA-D	
Trt No.	Treatment Name	Rate	Unit	Appl Code						
1	GF-4556	3 qt/a		A	95.8	100.0	100.0	100.0	95.8	0.0
1	Atrazine	1.1 lb/a		A						
2	GF-4556	3 qt/a		B	100.0	100.0	100.0	100.0	100.0	0.0
2	Atrazine	1.1 lb/a		B						
2	Durango DMA	1 qt/a		B						
2	Surfactant	0.25 % v/v		B						
2	AMS	8.5 lb/100 gal		B						
3	Surestart II	2 pt/a		A	100.0	100.0	100.0	100.0	100.0	0.0
3	GF-4556	3 qt/a		C						
3	Atrazine	1.1 lb/a		C						
3	Durango DMA	1 qt/a		C						
3	Surfactant	0.25 % v/v		C						
3	AMS	8.5 lb/100 gal		C						
4	Surestart II	2 pt/a		A	100.0	100.0	100.0	100.0	100.0	0.0
4	GF-4556	3 qt/a		D						
4	Atrazine	1.1 lb/a		D						
4	Durango DMA	1 qt/a		D						
4	Surfactant	0.25 % v/v		D						
4	AMS	8.5 lb/100 gal		D						
5	Untreated				0.0	0.0	0.0	0.0	0.0	0.0
6	Acuron	3 qt/a		A	99.5	100.0	100.0	100.0	100.0	0.0
7	Surestart II	2 pt/a		A	100.0	100.0	100.0	100.0	100.0	0.0
7	Harness Max	40 fl oz/a		C						
7	Atrazine	1.1 lb/a		C						
7	Durango DMA	1 qt/a		C						
7	Surfactant	0.25 % v/v		C						
7	AMS	8.5 lb/100 gal		C						
8	Bicep II Magnum	2 qt/a		A	100.0	100.0	100.0	100.0	100.0	0.0
8	Acuron Flexi	1.5 qt/a		D						
8	Durango DMA	1 qt/a		D						
8	Surfactant	0.25 % v/v		D						
8	AMS	8.5 lb/100 gal		D						
LSD P=.05					1.00	.	.	.	0.78	.
Standard Deviation					0.68	0.00	0.00	0.00	0.53	0.00
CV					0.78	0.0	0.0	0.0	0.61	0.0

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Pest Code				ANGR	CHEAL	AMAPO	AMBEL	ABUTH		
Pest Name				annual grasses	common lambsquarters	Powell amaranth	Common ragweed	velvetleaf		
Crop Type, Code									ZEAMX	
Crop Name									Corn	
Rating Date				Jul-21-2021	Jul-21-2021	Jul-21-2021	Jul-21-2021	Jul-21-2021	Aug-21-2021	
Rating Type				Control	Control	Control	Control	Control	Injury	
Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	
Trt-Eval Interval				29 DA-D	29 DA-D	29 DA-D	29 DA-D	29 DA-D	60 DA-D	
Trt No.	Treatment Name	Rate	Unit	Appl Code						
1	GF-4556	3 qt/a		A	91.3	100.0	100.0	100.0	91.3	0.0
1	Atrazine	1.1 lb/a		A						
2	GF-4556	3 qt/a		B	99.0	100.0	100.0	100.0	100.0	0.0
2	Atrazine	1.1 lb/a		B						
2	Durango DMA	1 qt/a		B						
2	Surfactant	0.25 % v/v		B						
2	AMS	8.5 lb/100 gal		B						
3	Surestart II	2 pt/a		A	100.0	100.0	100.0	100.0	100.0	0.0
3	GF-4556	3 qt/a		C						
3	Atrazine	1.1 lb/a		C						
3	Durango DMA	1 qt/a		C						
3	Surfactant	0.25 % v/v		C						
3	AMS	8.5 lb/100 gal		C						
4	Surestart II	2 pt/a		A	100.0	100.0	100.0	100.0	100.0	0.0
4	GF-4556	3 qt/a		D						
4	Atrazine	1.1 lb/a		D						
4	Durango DMA	1 qt/a		D						
4	Surfactant	0.25 % v/v		D						
4	AMS	8.5 lb/100 gal		D						
5	Untreated				0.0	0.0	0.0	0.0	0.0	0.0
6	Acuron	3 qt/a		A	99.0	100.0	100.0	100.0	100.0	0.0
7	Surestart II	2 pt/a		A	100.0	100.0	100.0	100.0	100.0	0.0
7	Harness Max	40 fl oz/a		C						
7	Atrazine	1.1 lb/a		C						
7	Durango DMA	1 qt/a		C						
7	Surfactant	0.25 % v/v		C						
7	AMS	8.5 lb/100 gal		C						
8	Bicep II Magnum	2 qt/a		A	100.0	100.0	100.0	100.0	100.0	0.0
8	Acuron Flexi	1.5 qt/a		D						
8	Durango DMA	1 qt/a		D						
8	Surfactant	0.25 % v/v		D						
8	AMS	8.5 lb/100 gal		D						
LSD P=.05					1.55	.	.	.	1.30	.
Standard Deviation					1.06	0.00	0.00	0.00	0.88	0.00
CV					1.23	0.0	0.0	0.0	1.02	0.0

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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	Aug-21-2021	Aug-21-2021	Aug-21-2021	Aug-21-2021	Aug-21-2021
Rating Type	Control	Control	Control	Control	Control
Rating Unit/Min/Max	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
Trt-Eval Interval	60 DA-D	60 DA-D	60 DA-D	60 DA-D	60 DA-D

Trt No.	Treatment Name	Rate Unit	Appl Code					
1	GF-4556	3 qt/a	A	81.3	97.5	99.0	98.8	81.3
1	Atrazine	1.1 lb/a	A					
2	GF-4556	3 qt/a	B	91.3	97.5	98.8	98.3	98.8
2	Atrazine	1.1 lb/a	B					
2	Durango DMA	1 qt/a	B					
2	Surfactant	0.25 % v/v	B					
2	AMS	8.5 lb/100 gal	B					
3	Surestart II	2 pt/a	A	99.0	98.8	99.5	98.8	98.8
3	GF-4556	3 qt/a	C					
3	Atrazine	1.1 lb/a	C					
3	Durango DMA	1 qt/a	C					
3	Surfactant	0.25 % v/v	C					
3	AMS	8.5 lb/100 gal	C					
4	Surestart II	2 pt/a	A	99.0	97.5	98.8	99.0	99.5
4	GF-4556	3 qt/a	D					
4	Atrazine	1.1 lb/a	D					
4	Durango DMA	1 qt/a	D					
4	Surfactant	0.25 % v/v	D					
4	AMS	8.5 lb/100 gal	D					
5	Untreated			0.0	0.0	0.0	0.0	0.0
6	Acuron	3 qt/a	A	94.5	98.8	98.8	100.0	99.0
7	Surestart II	2 pt/a	A	98.3	97.5	99.5	98.3	96.3
7	Harness Max	40 fl oz/a	C					
7	Atrazine	1.1 lb/a	C					
7	Durango DMA	1 qt/a	C					
7	Surfactant	0.25 % v/v	C					
7	AMS	8.5 lb/100 gal	C					
8	Bicep II Magnum	2 qt/a	A	97.5	97.5	97.5	98.8	98.8
8	Acuron Flexi	1.5 qt/a	D					
8	Durango DMA	1 qt/a	D					
8	Surfactant	0.25 % v/v	D					
8	AMS	8.5 lb/100 gal	D					
LSD P=.05				3.87	3.85	2.81	3.08	3.63
Standard Deviation				2.63	2.62	1.91	2.09	2.47
CV				3.18	3.06	2.21	2.42	2.93

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