

Efficacy of 3lb Gramoxone Formulation

Trial ID: 19GRAM\_2 Location: Western Branch F-9 West Trial Year: 2019  
Protocol ID: 19GRAM Investigator: Dr. Mark M. Loux  
Project ID: HPQ250A4-2019US Study Director: Anthony Dobbels  
Sponsor Contact: Dain Bruns, Syngenta

General Trial Information

Study Director: Anthony Dobbels  
Investigator: Dr. Mark M. Loux

Trial Status: E established  
ARM Trial Created On: May-15-2019

Trial Location

City: South Charleston Country: USA United States  
State/Prov.: Ohio  
Postal Code: 45368 Climate Zone: USWARM US Warm Continental  
Latitude of LL Corner °: 39.85873 N  
Longitude of LL Corner °: 83.67145 W  
Altitude of LL Corner: 1142.00 FT

Conducted Under GLP: No  
Conducted Under GEP: No

Contacts

Study Director: Anthony Dobbels

Investigator: Dr. Mark M. Loux

Crop Description

C

Pest Description

Pest 1 Type: W Code: ERICA Erigeron canadensis  
Common Name: Canada horseweed Entry Date: May-21-2019

Pest 2 Type: W Code: AMBTR Ambrosia trifida  
Common Name: Giant ragweed Entry Date: May-21-2019

Pest 3 Type: W Code: VERAR Veronica arvensis  
Common Name: Corn speedwell Entry Date: May-21-2019

Site and Design

Treated Plot Width: 10 FT Site Type: FIELD field  
Treated Plot Length: 30 FT Experimental Unit: 1 PLOT plot  
Treated Plot Area: 300 FT2 Treatments: 6 Tillage Type: CONTIL conventional-till  
Replications: 3 Study Design: RACOBL Randomized Complete Block (RCB)

Previous

No. Crop Year  
1. SOYBEAN 2018

Soil Description

Description Name: F-9 West  
% Sand: 32 % OM: 1.6 Texture: SICL silty clay loam  
% Silt: 53 pH: 6 Soil Name: Crosby  
% Clay: 15 CEC: 8.6 Fert. Level: G good  
Soil Drainage: G good

**Application Description**

**A**

**Application Date** May-15-2019  
**Appl. Start Time** 1:30 PM  
**Appl. Stop Time** 2:30 PM  
**Application Method** SPRAY  
**Application Timing** PRE  
**Application Placement** BROFOL  
**Applied By** REEB  
**Appl. Entry Date** May-21-2019  
**Air Temperature Start, Stop** 68 70 F  
**% Relative Humidity Start, Stop** 36 34  
**Wind Velocity+Dir. Start** 9 MPH WNW  
**Wind Velocity+Dir. Stop** 9 MPH W  
**Wind Velocity+Dir. Max** 9 MPH WNW  
**Wet Leaves (Y/N)** N no  
**Soil Temperature** 68 F  
**Soil Moisture** MOIST  
**Soil Surface Condition** SMOOTH  
**% Cloud Cover** 40  
**Next Moisture Occurred On** May-16-2019  
**Time to Next Moisture** 2 DAY  
**Moisture 6 Hours after Appl.** 0 IN  
**Moisture 1 Week after Appl.** 2.16 IN

**Pest Stage At Each Application**

**A**

**Pest 1 Code, Type, Scale** ERICA W  
**Stage Majority, Percent** 29 100  
**Height Average** 3 IN  
**Height Minimum, Maximum** 2 4  
**Density Average** 15 PLA/m2  
**Density Min, Max** 3 20  
**Pest 2 Code, Type, Scale** AMBTR W  
**Stage Majority, Percent** 16 100  
**Height Average** 4 IN  
**Height Minimum, Maximum** 4 6  
**Density Average** 6 PLA/m2  
**Density Min, Max** 2 8  
**Pest 3 Code, Type, Scale** VERAR W  
**Stage Majority, Percent** 65 100  
**Height Average** 6 IN  
**Height Minimum, Maximum** 4 6  
**Density Average** 3 PLA/m2  
**Density Min, Max** 0 5

**Application Equipment**

**A**

**Appl. Equipment** 6 foot AIXR  
**Equipment Type** SPRBAC  
**Operation Pressure** 42 PSI  
**Nozzle Type** AIXR  
**Nozzle Size** 110015  
**Nozzle Spacing** 18 IN  
**Boom Length** 6.67 FT  
**Boom Height** 20 IN  
**Ground Speed** 3 MPH  
**Carrier** WATER  
**Application Amount** 15 GPA  
**Mix Size** 1 Liters  
**Propellant** COMCO2

Date	By	Context	Notes
May-15-2019	Dr. Mark M. Loux	STATUS	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
May-28-2019	Dr. Mark M. Loux	STATUS	Automatically added by ARM: Trial Status updated to 'E' when Rating Date entered.

**SE Definitions**

1. Crop Type, Code C

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Pest Type	W Weed ERICA	W Weed CAPBP	W Weed AMBTR	W Weed ERICA	W Weed CAPBP
Pest Code	ERICA	CAPBP	AMBTR	ERICA	CAPBP
Pest Name	Canada horsewe>	Shepherd's pur>	Giant ragweed	Canada horsewe>	Shepherd's pur>
Crop Type, Code	C -	C -	C -	C -	C -
Rating Date	May-22-2019	May-22-2019	May-22-2019	May-28-2019	May-28-2019
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Data Entry Date	May-23-2019	May-23-2019	May-23-2019	May-28-2019	May-28-2019
Days After First/Last Applic.	7 7	7 7	7 7	13 13	13 13
Trt-Eval Interval	7 DA-A	7 DA-A	7 DA-A	13 DA-A	13 DA-A
ARM Action Codes	ET3 0	0	0	EC 0	0
Number of Decimals	0	0	0	0	0

Trt No.	Treatment Name	Rate	Other Rate	Other Rate	Appl Unit Code	1*	2*	3*	4*	5*
1	UTC				A	0 c	0 b	0 b	0	0 -
2	NIS	0.25 % v/v	0.25 % v/v	2 pt/a	A	63 b	92 a	95 a	57 c	100 -
2	Gramoxone 3 LB	840 g ai/ha			A					
3	NIS	0.25 % v/v	0.25 % v/v	2.71 pt/a	A	60	90 a	100 a	75 b	100 -
3	Gramoxone 3 LB	1140 g ai/ha			A					
4	NIS	0.25 % v/v	0.25 % v/v	1.8 pt/a	A	92 a	92 a	98 a	100 a	100 -
4	Boundary	1640 g ai/ha			A					
4	Gramoxone 3 LB	840 g ai/ha			A					
5	NIS	0.25 % v/v	0.25 % v/v	8 oz/a	A	83 a	92 a	100 a	100 a	100 -
5	Metribuzin	420 g ai/ha			A					
5	Gramoxone 3 LB	840 g ai/ha			A					
6	NIS	0.25 % v/v	0.25 % v/v	3 pt/a	A	67 b	93 a	98 a	75 b	100 -
6	Gramoxone	840 g ai/ha			A					
LSD P=.05						13.8	4.2	6.1	14.6	.
Standard Deviation						7.3	2.3	3.4	7.8	0.0
CV						11.97	3.02	4.12	9.56	0.0
Levene's F						1.094	0.615	0.745	2.143	0.00
Levene's Prob(F)						0.411	0.691	0.605	0.15	.
Skewness						-1.1387	-1.8511*	-1.9167*	-0.295	-1.8662*
Kurtosis						0.0707	1.6353	1.9427	-1.511	1.6653
Replicate F						0.375	1.527	3.049	0.690	0.000
Replicate Prob(F)						0.6988	0.2686	0.0925	0.5293	1.0000
Treatment F						73.094	796.925	425.390	17.200	0.000
Treatment Prob(F)						0.0001	0.0001	0.0001	0.0005	1.0000

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).  
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.  
 Due to missing data, the effective replicates used for mean comparisons are: col. 1,3,4,6,7=3; 2,5=2.8  
 \* Adjusted means  
 Could not calculate LSD (% mean diff) for columns 5,6 because error mean square = 0.

Pest Type	W Weed	W Weed
Pest Code	AMBTR	ERICA
Pest Name	Giant ragweed	Canada horsewe>
Crop Type, Code	C -	C -
Rating Date	May-28-2019	Jun-11-2019
Rating Type	CONTRO	CONTRO
Rating Unit	%	%
Number of Subsamples	1	1
Data Entry Date	May-28-2019	Jun-11-2019
Days After First/Last Applic.	13 13	27 27
Trt-Eval Interval	13 DA-A	27 DA-A
ARM Action Codes	0	EC 0
Number of Decimals	0	0

Trt No.	Treatment Name	Rate	Other Rate	Other Rate	Appl Unit Code	6*	7*
1	UTC					0 -	0
2	NIS	0.25 % v/v	0.25 % v/v		A	0 -	70 -
2	Gramoxone 3 LB	840 g ai/ha	2 pt/a		A		
3	NIS	0.25 % v/v	0.25 % v/v		A	0 -	87 -
3	Gramoxone 3 LB	1140 g ai/ha	2.71 pt/a		A		
4	NIS	0.25 % v/v	0.25 % v/v		A	0 -	100 -
4	Boundary	1640 g ai/ha	1.8 pt/a		A		
4	Gramoxone 3 LB	840 g ai/ha	2 pt/a		A		
5	NIS	0.25 % v/v	0.25 % v/v		A	0 -	100 -
5	Metribuzin	420 g ai/ha	8 oz/a		A		
5	Gramoxone 3 LB	840 g ai/ha	2 pt/a		A		
6	NIS	0.25 % v/v	0.25 % v/v		A	0 -	80 -
6	Gramoxone	840 g ai/ha	3 pt/a		A		
	LSD P=.05					.	21.2
	Standard Deviation					0.0	11.3
	CV					0.0	12.89
	Levene's F					0.00	1.556
	Levene's Prob(F)					.	0.26
	Skewness					.	-0.7166
	Kurtosis					.	-0.9412
	Replicate F					0.000	1.000
	Replicate Prob(F)					1.0000	0.4096
	Treatment F					0.000	4.000
	Treatment Prob(F)					1.0000	0.0453

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Pest Type

W, Weed, G-BYRW7, G-WedStg = Weed or volunteer crop

Pest Code

ERICA, Erigeron canadensis, Canada horseweed = US  
CAPBP, Capsella bursa-pastoris, Shepherd's purse = US  
AMBTR, Ambrosia trifida, Giant ragweed = US

Crop Type, Code

C, G-ByrC7 = EPPO species (Bayer) codes

Rating Type

CONTRO = control / burndown or knockdown

Rating Unit

% = percent

ARM Action Codes

ET3 = Excluded treatment 3

EC = Do not analyze untreated check, while still reporting treatment mean on AOV Means Table