

The Ohio State University

TOUGH 5 EC for Marestalk Burndown in Soybean

Trial ID: 20TOUGH1 Location: Trial Year: 2020
 Protocol ID: 20TOUGH1 Investigator: Dr. Mark M. Loux
 Project ID: 20-126 Study Director: Anthony Dobbels
 Sponsor Contact: Dennis Long, Belchim

General Trial Information

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

Trial Status: E established

ARM Trial Created On: Mar-26-2020

Trial Location

City: South Charleston **Country:** USA United States
State/Prov.: Ohio
Postal Code: 45368

Latitude of LL Corner °: 39.85937 N
Longitude of LL Corner °: -83.71864 W
Altitude of LL Corner: 1060.00 FT

Conducted Under GLP: No
Conducted Under GEP: No

Contacts

Study Director: Anthony Dobbels

Investigator: Dr. Mark M. Loux

Pest Description

Pest 1 Type: W **Code:** ERICA Erigeron canadensis
Common Name: Canada horseweed **Entry Date:** Jun-10-2020

Pest 2 Type: W **Code:** STEME Stellaria media
Common Name: Common chickweed **Entry Date:** Jun-12-2020

Pest 3 Type: W **Code:** POAAN Poa annua
Common Name: Annual bluegrass **Entry Date:** Jun-12-2020

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:** 12 **Tillage Type:** NOTILL no-till
Replications: 3 **Study Design:** RACOB Randomized Complete Block (RCB)

Previous

No. Crop Year
 1. SOYBEAN 2019

Application Description

	A
Application Date	Jun-4-2020
Appl. Start Time	9:00 AM
Appl. Stop Time	9:30 AM
Application Method	SPRAY
Application Timing	EPP
Application Placement	BROFOL
Applied By	Dobbels
Appl. Entry Date	Jun-10-2020
Air Temperature Start, Stop	69 69 F
% Relative Humidity Start, Stop	70 70
Wind Velocity+Dir. Start	3 MPH SW
Wind Velocity+Dir. Stop	3 MPH SW
Wind Velocity+Dir. Max	5 MPH SW
Wet Leaves (Y/N)	N no
Soil Temperature	68 F
Soil Moisture	DRY
Soil Surface Condition	NORMAL
% Cloud Cover	50
Next Moisture Occurred On	Jun-4-2020
Time to Next Moisture	2.5 HR
Moisture 6 Hours after Appl.	0.01 IN
Moisture 1 Week after Appl.	0.31 IN

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Pest Stage At Each Application

A
Pest 1 Code, Type, Scale ERICA W
Stage Majority, Percent 19 100
Diameter 2 IN
Height Average 5 IN
Height Minimum, Maximum 2 6
Density Average 10 PLA/m2
Density Min, Max 1 20
Pest 2 Code, Type, Scale STEME W
Stage Majority, Percent 65 90
Stage Minimum, Percent 65 90
Stage Maximum, Percent 69 10
Diameter 8 IN
Height Average 2 IN
Height Minimum, Maximum 1 2
Density Average 3 PLA/M2
Density Min, Max 1 5
Pest 3 Code, Type, Scale POAAN W
Stage Majority, Percent 63 80
Stage Minimum, Percent 63 80
Stage Maximum, Percent 65 10
Diameter 4 IN
Height Average 4 IN
Height Minimum, Maximum 4 6
Density Average 3 PLA/m2
Density Min, Max 1 6

Application Equipment

A
Appl. Equipment 10' AIXR
Equipment Type BACCAI
Operation Pressure 44 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 GAL/AC
Mix Size 2 L
Propellant COMCO2

Context Date By Notes
 STATUS Mar-26-2020 Dr. Mark M. Loux Automatically added by ARM: Trial Status updated to 'S' during trial creation.
 STATUS Jun-10-2020 Dr. Mark M. Loux Automatically added by ARM: Trial Status updated to 'E' when Application Date entered.

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	ERICA	STEME	POAAN	ERICA	ERICA
Pest Name	Canada Common chickwe>	Annual bluegra>		Canada	Canada
	horsewe>			horsewe>	horsewe>
Rating Date	Jun-11-2020	Jun-11-2020	Jun-11-2020	Jun-18-2020	Jul-2-2020
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Data Entry Date	Jun-12-2020	Jun-12-2020	Jun-12-2020	Jun-22-2020	Jul-2-2020
Days After First/Last Applic.	7 7	7 7	7 7	14 14	28 28
Trt-Eval Interval	7 DA-A	7 DA-A	7 DA-A	14 DA-A	28 DA-A
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					0 e	0 f	0 f	0 e	0 d
2	Gramoxone 2	0.75 lb ai/a	3 pt/a		A	93 abc	100 a	100 a	85 bc	70 b
	2 2,4-D Ester	0.5 lb ai/a	1 pt/a		A					
	2 COC	1 % v/v	1 % v/v		A					

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Pest Code	ERICA	STEME	POAAN	ERICA	ERICA					
Pest Name	Canada	Common chickwe>	Annual bluegra>	Canada	Canada					
Rating Date	horsewe>	horsewe>	horsewe>	horsewe>	horsewe>					
Rating Type	Jun-11-2020	Jun-11-2020	Jun-11-2020	Jun-18-2020	Jul-2-2020					
Rating Unit	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO					
Number of Subsamples	%	%	%	%	%					
Data Entry Date	1	1	1	1	1					
Days After First/Last Applic.	Jun-12-2020	Jun-12-2020	Jun-12-2020	Jun-22-2020	Jul-2-2020					
Trt-Eval Interval	7 7	7 7	7 7	14 14	28 28					
Number of Decimals	7 DA-A	7 DA-A	7 DA-A	14 DA-A	28 DA-A					
	0	0	0	0	0					
Trt No.	Treatment Name	Rate	Other Rate	Other Rate	Appl Unit Code	1*	2*	3*	4*	5*
3	Gramoxone 2	0.75 lb ai/a	3 pt/a	A	A	93 abc	100 a	100 a	84 bc	72 b
	3 2,4-D Ester	0.5 lb ai/a	1 pt/a	A	A					
	3 Tough	0.157 lb ai/a	4 oz/a	A	A					
	3 COC	1 % v/v	1 % v/v	A	A					
4	Gramoxone 2	0.75 lb ai/a	3 pt/a	A	A	91 abc	100 e	100 e	83 cd	57 c
	4 2,4-D Ester	0.5 lb ai/a	1 pt/a	A	A					
	4 Tough	0.235 lb ai/a	6 oz/a	A	A					
	4 COC	1 % v/v	1 % v/v	A	A					
5	Gramoxone 2	0.75 lb ai/a	3 pt/a	A	A	97 a	100 d	100 d	84 bc	73 b
	5 2,4-D Ester	0.5 lb ai/a	1 pt/a	A	A					
	5 Tough	0.313 lb ai/a	8 oz/a	A	A					
	5 COC	1 % v/v	1 % v/v	A	A					
6	Gramoxone 2	0.75 lb ai/a	3 pt/a	A	A	94 ab	100	100	93 ab	95 a
	6 Callisto	0.094 lb ai/a	3 oz/a	A	A					
	6 COC	1 % v/v	1 % v/v	A	A					
7	Gramoxone 2	0.75 lb ai/a	3 pt/a	A	A	96 a	100 c	100 c	99 a	90 a
	7 Callisto	0.094 lb ai/a	3 oz/a	A	A					
	7 Tough	0.157 lb ai/a	4 oz/a	A	A					
	7 COC	1 % v/v	1 % v/v	A	A					
8	Gramoxone 2	0.75 lb ai/a	3 pt/a	A	A	90 a-d	100	100	92 abc	97 a
	8 Callisto	0.094 lb ai/a	3 oz/a	A	A					
	8 Tough	0.235 lb ai/a	6 oz/a	A	A					
	8 COC	1 % v/v	1 % v/v	A	A					
9	Gramoxone 2	0.75 lb ai/a	3 pt/a	A	A	93 abc	100	100	96 a	98 a
	9 Callisto	0.094 lb ai/a	3 oz/a	A	A					
	9 Tough	0.313 lb ai/a	8 oz/a	A	A					
	9 COC	1 % v/v	1 % v/v	A	A					
10	Gramoxone 2	0.75 lb ai/a	3 pt/a	A	A	87 bcd	100	100	75 d	57 c
	10 Tough	0.313 lb ai/a	8 oz/a	A	A					
	10 COC	1 % v/v	1 % v/v	A	A					
11	Gramoxone 2	0.75 lb ai/a	3 pt/a	A	A	85 cd	100 a	100 a	75 d	63 bc
	11 Tough	0.313 lb ai/a	8 oz/a	A	A					
	11 Sencor 75DF	0.248 lb ai/a	5.3 oz/a	A	A					
	11 COC	1 % v/v	1 % v/v	A	A					

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Rating Unit	%	%	%	%	%
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Trt-Eval Interval	7 DA-A	7 DA-A	7 DA-A	14 DA-A	28 DA-A
Number of Decimals	0	0	0	0	0
Trt Treatment No. Name	Rate	Other Rate	Other Rate	Appl Unit Code	
	Rate	Unit	Rate	Unit Code	
					1* 2* 3* 4* 5*
12 Gramoxone 2	0.75 lb ai/a	3 pt/a	A	A	82 d 100 a 100 a 75 d 73 b
12 Sencor 75DF	0.248 lb ai/a	5.3 oz/a	A	A	
12 COC	1 % v/v	1 % v/v	A	A	
LSD P=.05	8.6	.	.	.	9.0 12.0
Standard Deviation	5.1	0.0	0.0	0.0	5.3 7.1
CV	6.08	0.0	0.0	0.0	6.77 10.06
Grand Mean	83.5	91.7	91.7	91.7	78.5 70.4
Levene's F	0.465	0.00	0.00	0.00	0.66 0.265
Levene's Prob(F)	0.907	.	.	.	0.761 0.987
Rank X2
P(Rank X2)
Skewness	-2.85*	-3.1478*	-3.1478*	-3.1478*	-2.4538* -1.3493*
Kurtosis	7.1649*	8.3714*	8.3714*	8.3714*	5.7536* 2.0118*
Replicate F	0.999	0.000	0.000	0.000	1.394 4.275
Replicate Prob(F)	0.3844	1.0000	1.0000	1.0000	0.2692 0.0270
Treatment F	82.933	0.000	0.000	0.000	71.919 42.721
Treatment Prob(F)	0.0001	1.0000	1.0000	1.0000	0.0001 0.0001

Pest Type
 W, Weed = Weed or volunteer crop
Pest Code
 ERICA, Erigeron canadensis, Canada horseweed = US
 STEME, Stellaria media, Common chickweed = US
 POAAN, Poa annua, Annual bluegrass = US
Rating Type
 CONTRO = control / burndown or knockdown
Rating Unit
 % = percent