

Marestail Burndown with Tough in LLGT27 Soybean

Trial ID: 19TOUGHBD Location: Trial Year: 2019
 Protocol ID: 19TOUGHBD Investigator: Dr. Mark M. Loux
 Project ID: Study Director:
 Sponsor Contact: Dennis Long, BELCHIM

General Trial Information

Investigator: Dr. Mark M. Loux

Trial Status: E established

ARM Trial Created On: Apr-9-2019

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 °: 39.85879 N
 Longitude of LL Corner °: 83.67226 W
 Altitude of LL Corner: 1149.00 FT

Conducted Under GLP: No

Conducted Under GEP: No

Investigator: Dr. Mark M. Loux

Crop Description

Crop 1: C GLXMA Glycine max Soybean
 Entry Date: May-23-2019
 Variety: CRENDENZ 3309 GTLL
 Attributes: RR LL HPPD Tolerant
 Planting Date: May-22-2019 Planting Rate: 145000 S/A
 Depth: 1.75 IN
 Rows per Plot: 8 Planting Method: PLANTD planted
 Row Spacing: 15 IN Planting Equipment: PP plot planter
 Seed Bed: MEDTRA medium/trashy
 Soil Temperature: 70 F Soil Moisture: SLIWET slightly wet, moist
 Emergence Date: Jun-7-2019

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
 Pest 4 Type: W Code: RANAS Ranunculus asiaticus
 Common Name: Garden crowfoot 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: 10 Tillage Type: NOTILL no-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

Crop Stage At Each Application

A

Crop 1 Code, BBCH Scale GLXMA BSOY
Days after Emergence -23

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 12 PLA/m2
Density Min, Max 6 23
Pest 2 Code, Type, Scale AMBTR W
Stage Majority, Percent 16 100
Height Average 4 IN
Height Minimum, Maximum 4 6
Density Average 8 PLA/m2
Density Min, Max 4 8
Pest 3 Code, Type, Scale VERAR W
Stage Majority, Percent 65 100
Height Average 6 IN
Height Minimum, Maximum 4 6
Density Average 6 PLA/m2
Density Min, Max 4 8
Pest 4 Code, Type, Scale RANAS W
Stage Majority, Percent 67 100
Height Average 12 IN
Height Minimum, Maximum 12 14
Density Average 2 PLA/m2
Density Min, Max 1 4

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
Apr-9-2019	Dr. Mark M. Loux	STATUS	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
May-21-2019	Dr. Mark M. Loux	STATUS	Automatically added by ARM: Trial Status updated to 'E' when Application Date entered.

SE Definitions

1.
Crop Type, Code C

The Ohio State University

Marestail Burndown with Tough in LLGT27 Soybean

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Location:

Trial Year: 2019

Protocol ID: 19TOUGHBD

Investigator: Dr. Mark M. Loux

Project ID:

Study Director:

Sponsor Contact: Dennis Long, BELCHIM

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	ERICA	AMBTR	VERAR	ERICA	AMBTR
Pest Name	Canada horsewe>	Giant ragweed	Corn speedwell	Canada horsewe>	Giant ragweed
Crop Type, Code	C -	C -	C -	C -	C -
Crop Name					
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
Days After Emergence	-16 DE-1	-16 DE-1	-16 DE-1	-10 DE-1	-10 DE-1
ARM Action Codes	ET3	AA			
Number of Decimals	0	0	0	0	0

Trt Treatment No. Name	Rate	Other Rate	Other Rate	Appl Unit Code	1*	2*	3*	4*	5*
1 UTC					0 f	0 b	0 c	0 d	0 b
2 Gramoxone	0.75 lb ai/a		3 pt/a	A	57 c	100 a	83 a	87 a	100 a
2 COC	1 % v/v		1 % v/v	A					
3 Gramoxone	0.75 lb ai/a		3 pt/a	A	63	100 a	93 a	93 a	100 a
3 Tough	0.313 lb ai/a		8 oz/a	A					
3 COC	1 % v/v		1 % v/v	A					
4 Gramoxone	0.75 lb ai/a		3 pt/a	A	67 b	99 a	88 a	100 a	100 a
4 Callisto	0.094 lb ai/a		3 oz/a	A					
4 COC	1 % v/v		1 % v/v	A					
5 Gramoxone	0.75 lb ai/a		3 pt/a	A	93 a	100 a	100 a	100 a	100 a
5 Callisto	0.094 lb ai/a		3 oz/a	A					
5 Tough	0.313 lb ai/a		8 oz/a	A					
5 COC	1 % v/v		1 % v/v	A					
6 Liberty	0.585 lb ai/a		32 oz/a	A	95 a	99 a	97 a	100 a	100 a
6 Callisto	0.094 lb ai/a		3 oz/a	A					
6 N Pak AMS	2.5 % v/v		2.5 % v/v	A					
7 Liberty	0.585 lb ai/a		32 oz/a	A	95 a	92 a	93 a	100 a	100 a
7 Callisto	0.094 lb ai/a		3 oz/a	A					
7 Tough	0.313 lb ai/a		8 oz/a	A					
7 N Pak AMS	2.5 % v/v		2.5 % v/v	A					
8 Roundup Powermax	1.13 lb ae/a		32 oz/a	A	30 e	69 a	40 b	70 b	92 a
8 Callisto	0.094 lb ai/a		3 oz/a	A					
8 N Pak AMS	2.5 % v/v		2.5 % v/v	A					
9 Roundup Powermax	1.13 lb ae/a		32 oz/a	A	42 d	68 a	30 b	93 a	92 a
9 Callisto	0.094 lb ai/a		3 oz/a	A					
9 Tough	0.313 lb ai/a		8 oz/a	A					
9 N Pak AMS	2.5 % v/v		2.5 % v/v	A					

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
t=Mean descriptions are reported in transformed data units, and are not de-transformed.
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 6,7 because error mean square = 0.

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	ERICA	AMBTR	VERAR	ERICA	AMBTR
Pest Name	Canada horsewe>	Giant ragweed	Corn speedwell	Canada horsewe>	Giant ragweed
Crop Type, Code	C -	C -	C -	C -	C -
Crop Name					
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
Days After Emergence	-16 DE-1	-16 DE-1	-16 DE-1	-10 DE-1	-10 DE-1
ARM Action Codes	ET3	AA			
Number of Decimals	0	0	0	0	0
Trt Treatment	Rate	Other	Other	Appl	
No. Name	Rate Unit	Rate	Rate Unit	Code	1* 2* 3* 4* 5*
10 Roundup Powermax	1.13 lb ae/a	32 oz/a		A	32 e 57 a 27 b 23 c 87 a
10 Tough	0.313 lb ai/a	8 oz/a		A	
10 N Pak AMS	2.5 % v/v	2.5 % v/v		A	
LSD P=.05	9.3	18.2 - 35.8			19.9 12.7 16.6
Standard Deviation	5.4	14.7t			11.6 7.4 9.7
CV	9.53	21.81t			17.79 9.62 11.12
Levene's F	0.843	1.069			0.69 0.637 0.795
Levene's Prob(F)	0.579	0.426			0.71 0.753 0.625
Skewness	-0.1817	-1.2421*			-0.6208 -1.3615* -2.4249*
Kurtosis	-1.1497	0.3419			-1.3363 0.3377 4.6659*
Replicate F	2.000	0.288			2.723 2.633 1.148
Replicate Prob(F)	0.1678	0.7528			0.0927 0.0993 0.3393
Treatment F	117.714	11.344			30.413 71.020 30.718
Treatment Prob(F)	0.0001	0.0001			0.0001 0.0001 0.0001

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Pest Type	W Weed	W Weed	W Weed	W Weed					
Pest Code	VERAR	ERICA	SETFA	AMBTR					
Pest Name	Corn speedwell	Canada horsewe>	Giant foxtail	Giant ragweed					
Crop Type, Code	C - C	GLXMA	C -	C -					
Crop Name	Soybean								
Rating Date	May-28-2019	Jun-11-2019	Jun-11-2019	Jun-11-2019					
Rating Type	CONTRO	PHYGEN	CONTRO	CONTRO					
Rating Unit	%	%	%	%					
Number of Subsamples	1	1	1	1					
Data Entry Date	May-28-2019	Jun-11-2019	Jun-11-2019	Jun-11-2019					
Days After First/Last Applic.	13 13	27 27	27 27	27 27					
Trt-Eval Interval	13 DA-A	27 DA-A	27 DA-A	27 DA-A					
Days After Emergence	-10 DE-1	4 DE-1	4 DE-1	4 DE-1					
ARM Action Codes									
Number of Decimals	0	0	0	0					
Trt Treatment	Rate	Other	Other	Appl	6*	7*	8*	9*	10*
No. Name	Rate Unit	Rate	Rate Unit	Code					
1 UTC					0 -	0 -	0 d	0 -	0 -
2 Gramoxone	0.75 lb ai/a	3 pt/a	A		100 -	0 -	80 ab	30 -	0 -
2 COC	1 % v/v	1 % v/v	A						
3 Gramoxone	0.75 lb ai/a	3 pt/a	A		100 -	0 -	75 ab	20 -	0 -
3 Tough	0.313 lb ai/a	8 oz/a	A						
3 COC	1 % v/v	1 % v/v	A						
4 Gramoxone	0.75 lb ai/a	3 pt/a	A		100 -	0 -	95 a	37 -	37 -
4 Callisto	0.094 lb ai/a	3 oz/a	A						
4 COC	1 % v/v	1 % v/v	A						
5 Gramoxone	0.75 lb ai/a	3 pt/a	A		100 -	0 -	100 a	13 -	7 -
5 Callisto	0.094 lb ai/a	3 oz/a	A						
5 Tough	0.313 lb ai/a	8 oz/a	A						
5 COC	1 % v/v	1 % v/v	A						
6 Liberty	0.585 lb ai/a	32 oz/a	A		100 -	0 -	100 a	13 -	7 -
6 Callisto	0.094 lb ai/a	3 oz/a	A						
6 N Pak AMS	2.5 % v/v	2.5 % v/v	A						
7 Liberty	0.585 lb ai/a	32 oz/a	A		100 -	0 -	100 a	20 -	33 -
7 Callisto	0.094 lb ai/a	3 oz/a	A						
7 Tough	0.313 lb ai/a	8 oz/a	A						
7 N Pak AMS	2.5 % v/v	2.5 % v/v	A						
8 Roundup Powermax	1.13 lb ae/a	32 oz/a	A		100 -	0 -	67 b	40 -	37 -
8 Callisto	0.094 lb ai/a	3 oz/a	A						
8 N Pak AMS	2.5 % v/v	2.5 % v/v	A						
9 Roundup Powermax	1.13 lb ae/a	32 oz/a	A		100 -	0 -	87 ab	17 -	27 -
9 Callisto	0.094 lb ai/a	3 oz/a	A						
9 Tough	0.313 lb ai/a	8 oz/a	A						
9 N Pak AMS	2.5 % v/v	2.5 % v/v	A						

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Pest Type	W Weed	W Weed	W Weed	W Weed
Pest Code	VERAR	ERICA	SETFA	AMBTR
Pest Name	Corn speedwell	Canada horsewe>	Giant foxtail	Giant ragweed
Crop Type, Code	C - C	GLXMA	C -	C -
Crop Name	Soybean			
Rating Date	May-28-2019	Jun-11-2019	Jun-11-2019	Jun-11-2019
Rating Type	CONTRO	PHYGEN	CONTRO	CONTRO
Rating Unit	%	%	%	%
Number of Subsamples	1	1	1	1
Data Entry Date	May-28-2019	Jun-11-2019	Jun-11-2019	Jun-11-2019
Days After First/Last Applic.	13 13	27 27	27 27	27 27
Trt-Eval Interval	13 DA-A	27 DA-A	27 DA-A	27 DA-A
Days After Emergence	-10 DE-1	4 DE-1	4 DE-1	4 DE-1
ARM Action Codes				
Number of Decimals	0	0	0	0
Trt Treatment	Rate	Other	Other	Appl
No. Name	Rate Unit	Rate	Rate Unit	Code
10 Roundup Powermax	1.13 lb ae/a	32 oz/a	A	100 -
10 Tough	0.313 lb ai/a	8 oz/a	A	0 -
10 N Pak AMS	2.5 % v/v	2.5 % v/v	A	23 c
LSD P=.05	.	.		17.9
Standard Deviation	0.0	0.0		47.6
CV	0.0	0.0		27.8
Levene's F	0.00	0.00		14.35
Levene's Prob(F)	.	.		146.19
Skewness	-2.8091*	.		0.297
Kurtosis	6.3081*	.		0.967
Replicate F	0.000	0.000		0.747
Replicate Prob(F)	1.0000	1.0000		1.4089*
Treatment F	0.000	0.000		-0.0823
Treatment Prob(F)	1.0000	1.0000		-1.3782
				2.489
				0.635
				0.1111
				0.5413
				0.0001
				0.6847
				0.592
				0.5636
				1.450
				0.2396

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* Adjusted means

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(19TOUGHBD)

The Ohio State University

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Marestail Burndown with Tough in LLGT27 Soybean

Trial ID: 19TOUGHBD

Location:

Trial Year: 2019

Protocol ID: 19TOUGHBD

Investigator: Dr. Mark M. Loux

Project ID:

Study Director:

Sponsor Contact: Dennis Long, BELCHIM

Pest Type

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

Pest Code

ERICA, Erigeron canadensis, Canada horseweed = US

AMBTR, Ambrosia trifida, Giant ragweed = US

VERAR, Veronica arvensis, Corn speedwell = US

SETFA, Setaria faberi, Giant foxtail = US

Crop Type, Code

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

GLXMA, BSOY, Glycine max, Soybean = US

Rating Type

CONTRO = control / burndown or knockdown

PHYGEN = phytotoxicity - general / injury

Rating Unit

% = percent

ARM Action Codes

ET3 = Excluded treatment 3

AA = Automatic arcsine square root % transformation