

The Ohio State University

Panther MTZ No-Till Glufosinate Tolerant Soybeans

Trial ID: 20PANTHERNT Location: Western Branch F-10 East Trial Year: 2020
 Protocol ID: 20PANTHERNT Investigator: Dr. Mark M. Loux
 Project ID: H 2020 201 OH Study Director: Anthony Dobbels
 Sponsor Contact: Dan Beran, NuFarm

General Trial Information

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

Trial Status: E established

ARM Trial Created On: Mar-17-2020

Initiation Date: Apr-1-2020

Trial Location

Address (Location): 7721 South Charleston Pike
City: South Charleston **Country:** USA United States
State/Prov.: Ohio
Postal Code: 45368

Latitude of LL Corner °: 39.85878 N
Longitude of LL Corner °: -83.67329 W
Altitude of LL Corner: 1091.00 FT

Conducted Under GLP: No
Conducted Under GEP: No

Contacts

Study Director: Anthony Dobbels

Investigator: Dr. Mark M. Loux

Crop Description

Crop 1: C GLXMA Glycine max Soybean **BBCH Scale:** BSOY
Entry Date: May-8-2020 **Stage Scale:** BBCH
Variety: Pioneer P30T99E **Maturity Group:** 3.0
Attributes: 2,4-D Choline, Glyphosate, Glufosinate Tol
Seed Lot No: B3WOO13049-00-0597 **Seed Source:** Pioneer
% Germination: 90
Seed Treatment Products: Lumigen, Lumisena, llevo
Planting Date: May-7-2020 **Planting Rate:** 155000 S/A
Depth: 1.5 m
Rows per Plot: 8 **Planting Method:** PLANTD planted
Row Spacing: 15 IN **Planting Equipment:** FE field equipment
Seed Bed: MEDTRA medium/trashy
Soil Temperature: 60 F **Soil Moisture:** NORMAL normal, adequate
Emergence Date: May-25-2020

Pest Description

Pest 1 Type: W **Code:** VERAG Veronica agrestis
Common Name: Field speedwell **Entry Date:** Apr-28-2020

Pest 2 Type: W **Code:** LAMPU Lamium purpureum
Common Name: Purple deadnettle **Entry Date:** Apr-28-2020

Pest 3 Type: W **Code:** AMBTR Ambrosia trifida
Common Name: Giant ragweed **Entry Date:** Apr-28-2020

Pest 4 Type: W **Code:** ERICA Erigeron canadensis
Common Name: Canada horseweed **Entry Date:** Jun-22-2020

Pest 5 Type: W **Code:** AMARE Amaranthus retroflexus
Common Name: Redroot pigweed **Entry Date:** Jun-22-2020

Pest 6 Type: W **Code:** CHEAL Chenopodium album
Common Name: common lambsquarters **Entry Date:** Jun-22-2020

Pest 7 Type: W **Code:** SIDSP Sida spinosa
Common Name: Prickly sida **Entry Date:** Jun-22-2020

Site and Design

Treated Plot Width: 6.67 FT **Site Type:** FIELD field
Treated Plot Length: 30 FT **Experimental Unit:** 1 PLOT plot
Treated Plot Area: 200.1 FT2 **Treatments:** 8 **Tillage Type:** NOTILL no-till
Replications: 3 **Study Design:** RACOB L Randomized Complete Block (RCB)

Previous

No. Crop Year
 1. SOYBEAN 2019

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Maintenance

No.	Date	Type	Maintenance Form Product Name	Form Conc	Form Unit	Form Type	Rate	Tank	Tank	
							Unit	Mix Code	Mix	
1.	Apr-3-2020	HERB	Credit Xtreme	4.5	LBAE/GAL	SL	32	OZ/A	N	no

Soil Description

Description Name: F-10 W
 % Sand: 31 % OM: 1.6 Texture: L loam
 % Silt: 54 pH: 6.5 Soil Name: Crosby
 % Clay: 15 CEC: 11.8 Fert. Level: G good
 Soil Drainage: G good

Application Description

	A	B	C
Application Date	Apr-24-2020	May-7-2020	Jun-18-2020
Appl. Start Time	2:00 PM	8:00 PM	8:00 AM
Appl. Stop Time	2:15 PM	8:30 PM	8:15 AM
Interval to Prev. Appl.		13 DAYS	42 DAYS
Application Method	SPRAY	SPRAY	SPRAY
Application Timing	14 EPP	PRE	POST
Application Placement	BROFOL	BROSOI	BROFOL
Applied By	Dobbels	Dobbels	Kimmet
Appl. Entry Date	Apr-28-2020	May-8-2020	Jun-22-2020
Air Temperature Start, Stop	62 62 F	60 59 F	65 65 F
% Relative Humidity Start, Stop	66 66	48 48	79 79
Wind Velocity+Dir. Start	10 MPH N 8	MPH WSW 3	MPH NE
Wind Velocity+Dir. Stop	10 MPH N 8	MPH WSW 3	MPH NE
Wind Velocity+Dir. Max	11 MPH N 9	MPH WSW 3	MPH NE
Wet Leaves (Y/N)	N no	N no	N no
Soil Temperature	58 F	60 F	68 F
Soil Moisture	NORMAL	NORMAL	DRY
Soil Surface Condition	MEDTRA	MEDTRA	MEDTRA
% Cloud Cover	25	30	70
Next Moisture Occurred On	Apr-25-2020	May-8-2020	Jun-18-2020
Time to Next Moisture	1 DAY	13 HR	5 HR
Moisture 6 Hours after Appl.	0 IN	0 IN	0.05 IN
Moisture 1 Week after Appl.	1.14 IN	0.65 IN	0.90 IN

Crop Stage At Each Application

	A	B	C
Crop 1 Code, BBCH Scale	GLXMA	BSOY GLXMA	BSOY GLXMA
Days after Emergence	-31	-18	24
Stage Scale Used	BBCH	BBCH	BBCH
Stage Majority, Percent			13 100
Height Average			6 IN

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Pest Stage At Each Application

	A		B		C	
Pest 1 Code, Type, Scale	VERAG	W	VERAG	W	VERAG	W
Stage Majority, Percent	69	90				
Stage Minimum, Percent	68	10				
Stage Maximum, Percent	69	90				
Diameter	4	IN				
Height Average	0.5	IN				
Height Minimum, Maximum	0.25	0.5				
Density Average	1	M2				
Density Min, Max	0	3				
Pest 2 Code, Type, Scale	LAMPU	W	LAMPU	W	LAMPU	W
Stage Majority, Percent	65	90				
Stage Minimum, Percent	69	10				
Stage Maximum, Percent	69	10				
Height Average	3	IN				
Height Minimum, Maximum	2	4				
Density Average	2	M2				
Density Min, Max	0	3				
Pest 3 Code, Type, Scale	AMBTR	W	AMBTR	W	AMBTR	W
Stage Majority, Percent	10	90	10	90	19	80
Stage Minimum, Percent	12	10	12	10	14	10
Stage Maximum, Percent	12	10	12	10	19	80
Height Average	1	IN	1	IN	8	IN
Height Minimum, Maximum	0.5	1	0.5	1	2	12
Density Average	2	PLA/m2	0.33	PLA/m2	5	PLA/m2
Density Min, Max	0	4	0	1	1	7
Pest 4 Code, Type, Scale	ERICA	W	ERICA	W	ERICA	W
Stage Majority, Percent					19	100
Diameter					2	IN
Height Average					3	IN
Height Minimum, Maximum					2	6
Density Average					3	PLA/m2
Density Min, Max					1	5
Pest 5 Code, Type, Scale	AMARE	W	AMARE	W	AMARE	W
Stage Majority, Percent					14	90
Stage Minimum, Percent					14	90
Stage Maximum, Percent					16	10
Height Average					3	IN
Height Minimum, Maximum					2	4
Density Average					6	PLA/m2
Density Min, Max					3	8
Pest 6 Code, Type, Scale	CHEAL	W	CHEAL	W	CHEAL	W
Stage Majority, Percent					18	80
Stage Minimum, Percent					14	10
Stage Maximum, Percent					18	80
Height Average					3	IN
Height Minimum, Maximum					1	4
Density Average					2	PLA/m2
Density Min, Max					1	5
Pest 7 Code, Type, Scale	SIDSP	W	SIDSP	W	SIDSP	W
Stage Majority, Percent					18	80
Stage Minimum, Percent					13	10
Stage Maximum, Percent					18	80
Height Average					3	IN
Height Minimum, Maximum					2	4

Application Equipment

	A		B		C	
Appl. Equipment	6 Foot AI XR		6 Foot AI XR		10' AIXR	
Equipment Type	BACCAI		BACCAI		BACCAI	
Operation Pressure	48 PSI		48 PSI		44 PSI	
Nozzle Type	AI XR		AI XR		AIXR	
Nozzle Size	110015		110015		110015	
Nozzle Spacing	18 IN		18 IN		18 IN	
Boom Length	6.67 FT		6.67 FT		6.67 FT	
Boom Height	20 IN		20 IN		20 IN	
Ground Speed	3 MPH		3 MPH		3 MPH	
Carrier	WATER		WATER		WATER	
Application Amount	15 GAL/AC		15 GAL/AC		15 GAL/AC	
Mix Size	2 L		2 L		3 GAL	
Propellant	COMCO2		COMCO2		COMCO2	

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Context	Date	By	Notes
STATUS	Mar-17-2020	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	Apr-28-2020	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'E' when Date entered.

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	ERICA	AMBTR	ERICA	SETFA	AMBTR
Pest Scientific Name	Erigeron canad>	Ambrosia trifi>	Erigeron canad>	Setaria faberi	Ambrosia trifi>
Pest Name	Canada horsewe>	Giant ragweed	Canada horsewe>	Giant foxtail	Giant ragweed

Rating Date	May-21-2020	May-21-2020	Jun-5-2020	Jun-5-2020	Jun-5-2020
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Assessed By	Dobbels	Dobbels	Dobbels	Dobbels	Dobbels
Data Entry Date	May-28-2020	May-28-2020	Jun-5-2020	Jun-5-2020	Jun-5-2020
Rating Timing	14 DAPL	14 DAPL			
Days After First/Last Applic.	27 14	27 14	42 29	42 29	42 29
Trt-Eval Interval	14 DA-B	14 DA-B	29 DA-B	29 DA-B	29 DA-B
Plant-Eval Interval	14 DP-1	14 DP-1	29 DP-1	29 DP-1	29 DP-1
Days After Emergence	-4 DE-1	-4 DE-1	11 DE-1	11 DE-1	11 DE-1
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 b	0 b	0 b	0 c	0 b
2	NUP-19070	0.516 lb ai/a	11 oz/a		A	100 a	100 a	100 a	100 a	67 a
	NIS	0.25 % v/v	4.8 oz/a		A					
	Panther MTZ	0.344 lb ai/a	12 oz/a		B					
	Credit Xtreme	1.13 lb ae/a	32 oz/a		B					
	HC MSO	0.5 % v/v	0.5 % v/v		B					
	Cheetah	0.53 lb ai/a	29 oz/a		C					
	N Pak AMS	2.5 % v/v	2.5 % v/v		C					
3	Spitfire	0.56 lb ai/a	20 oz/a		A	100 a	100 a	100 a	95 b	80 a
	NIS	0.25 % v/v	0.25 % v/v		A					
	Panther MTZ	0.344 lb ai/a	12 oz/a		B					
	Credit Xtreme	1.13 lb ae/a	32 oz/a		B					
	HC MSO	0.5 % v/v	0.5 % v/v		B					
	Cheetah	0.53 lb ai/a	29 oz/a		C					
	N Pak AMS	2.5 % v/v	2.5 % v/v		C					
4	NUP-19070	0.504 lb ai/a	11 oz/a		A	100 a	100 a	100 a	100 a	70 a
	Panther MTZ	0.344 lb ai/a	12 oz/a		A					
	Credit Xtreme	1.13 lb ae/a	32 oz/a		A					
	HC MSO	0.5 % v/v	0.5 % v/v		A					
	Cheetah	0.53 lb ai/a	29 oz/a		C					
	N Pak AMS	2.5 % v/v	2.5 % v/v		C					
5	NUP-19070	0.516 lb ai/a	11 oz/a		A	100 a	100 a	100 a	100 a	61 a
	NIS	0.25 % v/v	4.8 oz/a		A					
	Panther Pro	0.397 lb ai/a	12 oz/a		B					
	Credit Xtreme	1.13 lb ae/a	32 oz/a		B					
	HC MSO	0.5 % v/v	0.5 % v/v		B					
	Cheetah	0.53 lb ai/a	29 oz/a		C					
	N Pak AMS	2.5 % v/v	2.5 % v/v		C					
6	Spitfire	0.56 lb ai/a	20 oz/a		A	100 a	100 a	100 a	100 a	70 a
	NIS	0.25 % v/v	4.8 oz/a		A					
	Panther Pro	0.397 lb ai/a	12 oz/a		B					
	Credit Xtreme	1.13 lb ai/a	32 oz/a		B					
	HC MSO	0.5 % v/v	0.5 % v/v		B					
	Cheetah	0.53 lb ai/a	29 oz/a		C					
	N Pak AMS	2.5 % v/v	2.5 % v/v		C					

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Pest Code	ERICA	AMBTR	ERICA	SETFA	AMBTR
Pest Scientific Name	Erigeron canad>	Ambrosia trifi>	Erigeron canad>	Setaria faberi	Ambrosia trifi>
Pest Name	Canada horsewe>	Giant ragweed	Canada horsewe>	Giant foxtail	Giant ragweed
Rating Date	May-21-2020	May-21-2020	Jun-5-2020	Jun-5-2020	Jun-5-2020
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Assessed By	Dobbels	Dobbels	Dobbels	Dobbels	Dobbels
Data Entry Date	May-28-2020	May-28-2020	Jun-5-2020	Jun-5-2020	Jun-5-2020
Rating Timing	14 DAPL	14 DAPL			
Days After First/Last Applic.	27 14	27 14	42 29	42 29	42 29
Trt-Eval Interval	14 DA-B	14 DA-B	29 DA-B	29 DA-B	29 DA-B
Plant-Eval Interval	14 DP-1	14 DP-1	29 DP-1	29 DP-1	29 DP-1
Days After Emergence	-4 DE-1	-4 DE-1	11 DE-1	11 DE-1	11 DE-1
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*
7	NUP-19070	0.516 lb ai/a	11 oz/a		A	100 a	100 a	100 a	100 a	75 a
7	Panther Pro	0.397 lb ai/a	12 oz/a		A					
7	Credit Xtreme	1.13 lb ae/a	32 oz/a		A					
7	HC MSO	0.5 % v/v	0.5 % v/v		A					
7	Cheetah	0.53 lb ai/a	29 oz/a		C					
7	N Pak AMS	2.5 % v/v	2.5 % v/v		C					
8	NUP-19070	0.516 lb ai/a	11 oz/a		A	100 a	100 a	100 a	99 ab	63 a
8	NIS	0.25 % v/v	4.8 oz/a		A					
8	Authority MTZ	0.394 lb ai/a	14 oz/a		B					
8	Credit Xtreme	1.13 lb ai/a	32 oz/a		B					
8	HC MSO	0.5 % v/v	0.5 % v/v		B					
8	Cheetah	0.53 lb ai/a	29 oz/a		C					
8	N Pak AMS	2.5 % v/v	2.5 % v/v		C					
LSD P=.05						.	.	.	5.3	20.0
Standard Deviation						0.0	0.0	0.0	3.0	11.4
CV						0.0	0.0	0.0	3.48	18.79
Grand Mean						87.5	87.5	87.5	86.8	60.8
Levene's F						0.00	0.00	0.00	1.179	0.931
Levene's Prob(F)						.	.	.	0.368	0.51
Rank X2						.	.	.	.	.
P(Rank X2)						.	.	.	.	.
Skewness						-2.4219*	-2.4219*	-2.4219*	-2.3855*	-1.6616*
Kurtosis						4.2103*	4.2103*	4.2103*	4.089*	1.9405*
Replicate F						0.000	0.000	0.000	0.864	0.374
Replicate Prob(F)						1.0000	1.0000	1.0000	0.4427	0.6946
Treatment F						0.000	0.000	0.000	405.589	14.709
Treatment Prob(F)						1.0000	1.0000	1.0000	0.0001	0.0001

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	CHEAL	SETFA	ECHCG	ERICA	AMBTR
Pest Scientific Name	Chenopodium al>	Setaria faberi	Echinochloa cr>	Erigeron canad>	Ambrosia trifi>
Pest Name	common lambsqu>	Giant foxtail	Common barnyar>	Canada horsewe>	Giant ragweed
Rating Date	Jun-5-2020	Jun-18-2020	Jun-18-2020	Jun-18-2020	Jun-18-2020
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Assessed By	Dobbels				
Data Entry Date	Jun-5-2020	Jun-22-2020	Jun-22-2020	Jun-22-2020	Jun-22-2020
Rating Timing					
Days After First/Last Applic.	42 29	55 42	55 42	55 42	55 42
Trt-Eval Interval	29 DA-B	0 DA-C	0 DA-C	0 DA-C	0 DA-C
Plant-Eval Interval	29 DP-1	42 DP-1	42 DP-1	42 DP-1	42 DP-1
Days After Emergence	11 DE-1	24 DE-1	24 DE-1	24 DE-1	24 DE-1
Number of Decimals	0	0	0	0	0

Trt No.	Treatment Name	Rate	Other Rate	Other Rate	Appl Unit Code	6*	7*	8*	9*	10*
1	UTC					0 b	0 b	0 d	0 b	0 d
2	NUP-19070	0.516 lb ai/a	11 oz/a		A	100 a	94 a	68 bc	100 a	63 abc
2	NIS	0.25 % v/v	4.8 oz/a		A					
2	Panther MTZ	0.344 lb ai/a	12 oz/a		B					
2	Credit Xtreme	1.13 lb ae/a	32 oz/a		B					
2	HC MSO	0.5 % v/v	0.5 % v/v		B					
2	Cheetah	0.53 lb ai/a	29 oz/a		C					
2	N Pak AMS	2.5 % v/v	2.5 % v/v		C					
3	Spitfire	0.56 lb ai/a	20 oz/a		A	100 a	90 a	65 c	97 a	63 abc
3	NIS	0.25 % v/v	0.25 % v/v		A					
3	Panther MTZ	0.344 lb ai/a	12 oz/a		B					
3	Credit Xtreme	1.13 lb ae/a	32 oz/a		B					
3	HC MSO	0.5 % v/v	0.5 % v/v		B					
3	Cheetah	0.53 lb ai/a	29 oz/a		C					
3	N Pak AMS	2.5 % v/v	2.5 % v/v		C					
4	NUP-19070	0.504 lb ai/a	11 oz/a		A	100 a	93 a	73 abc	100 a	62 abc
4	Panther MTZ	0.344 lb ai/a	12 oz/a		A					
4	Credit Xtreme	1.13 lb ae/a	32 oz/a		A					
4	HC MSO	0.5 % v/v	0.5 % v/v		A					
4	Cheetah	0.53 lb ai/a	29 oz/a		C					
4	N Pak AMS	2.5 % v/v	2.5 % v/v		C					
5	NUP-19070	0.516 lb ai/a	11 oz/a		A	100 a	93 a	78 abc	100 a	50 c
5	NIS	0.25 % v/v	4.8 oz/a		A					
5	Panther Pro	0.397 lb ai/a	12 oz/a		B					
5	Credit Xtreme	1.13 lb ae/a	32 oz/a		B					
5	HC MSO	0.5 % v/v	0.5 % v/v		B					
5	Cheetah	0.53 lb ai/a	29 oz/a		C					
5	N Pak AMS	2.5 % v/v	2.5 % v/v		C					
6	Spitfire	0.56 lb ai/a	20 oz/a		A	100 a	98 a	92 a	100 a	67 ab
6	NIS	0.25 % v/v	4.8 oz/a		A					
6	Panther Pro	0.397 lb ai/a	12 oz/a		B					
6	Credit Xtreme	1.13 lb ai/a	32 oz/a		B					
6	HC MSO	0.5 % v/v	0.5 % v/v		B					
6	Cheetah	0.53 lb ai/a	29 oz/a		C					
6	N Pak AMS	2.5 % v/v	2.5 % v/v		C					

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Pest Name	common lambsqu>	Giant foxtail	Common barnyar>	Canada horsewe>	Giant ragweed
Rating Date	Jun-5-2020	Jun-18-2020	Jun-18-2020	Jun-18-2020	Jun-18-2020
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Assessed By	Dobbels				
Data Entry Date	Jun-5-2020	Jun-22-2020	Jun-22-2020	Jun-22-2020	Jun-22-2020
Rating Timing					
Days After First/Last Applic.	42 29	55 42	55 42	55 42	55 42
Trt-Eval Interval	29 DA-B	0 DA-C	0 DA-C	0 DA-C	0 DA-C
Plant-Eval Interval	29 DP-1	42 DP-1	42 DP-1	42 DP-1	42 DP-1
Days After Emergence	11 DE-1	24 DE-1	24 DE-1	24 DE-1	24 DE-1
Number of Decimals	0	0	0	0	0

Trt No.	Treatment Name	Rate	Other Rate	Other Rate	Appl Unit Code	6*	7*	8*	9*	10*
7	NUP-19070	0.516 lb ai/a	11 oz/a		A	100 a	93 a	85 ab	100 a	73 a
7	Panther Pro	0.397 lb ai/a	12 oz/a		A					
7	Credit Xtreme	1.13 lb ae/a	32 oz/a		A					
7	HC MSO	0.5 % v/v	0.5 % v/v		A					
7	Cheetah	0.53 lb ai/a	29 oz/a		C					
7	N Pak AMS	2.5 % v/v	2.5 % v/v		C					
8	NUP-19070	0.516 lb ai/a	11 oz/a		A	100 a	96 a	80 abc	100 a	57 bc
8	NIS	0.25 % v/v	4.8 oz/a		A					
8	Authority MTZ	0.394 lb ai/a	14 oz/a		B					
8	Credit Xtreme	1.13 lb ai/a	32 oz/a		B					
8	HC MSO	0.5 % v/v	0.5 % v/v		B					
8	Cheetah	0.53 lb ai/a	29 oz/a		C					
8	N Pak AMS	2.5 % v/v	2.5 % v/v		C					
LSD P=.05							9.4	19.6	3.6	13.8
Standard Deviation						0.0	5.4	11.2	2.0	7.9
CV						0.0	6.56	16.55	2.34	14.49
Grand Mean						87.5	82.3	67.7	87.1	54.4
Levene's F						0.00	0.466	0.328	1.00	0.683
Levene's Prob(F)						.	0.845	0.93	0.466	0.685
Rank X2						.	.	.	.	.
P(Rank X2)						.	.	.	.	.
Skewness						-2.4219*	-2.3111*	-1.6147*	-2.4053*	-1.6826*
Kurtosis						4.2103*	3.8793*	1.8833*	4.1569*	2.1701*
Replicate F						0.000	0.417	0.829	1.000	0.655
Replicate Prob(F)						1.0000	0.6669	0.4567	0.3927	0.5348
Treatment F						0.000	114.567	19.658	892.429	25.590
Treatment Prob(F)						1.0000	0.0001	0.0001	0.0001	0.0001

The Ohio State University

Panther MTZ No-Till Glufosinate Tolerant Soybeans

Trial ID: 20PANTHERNT
 Protocol ID: 20PANTHERNT
 Project ID: H 2020 201 OH

Location: Western Branch F-10 East Trial Year: 2020
 Investigator: Dr. Mark M. Loux
 Study Director: Anthony Dobbels
 Sponsor Contact: Dan Beran, NuFarm

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	CHEAL	AMARE	SETFA	ECHCG	AMBTR
Pest Scientific Name	Chenopodium al>	Amaranthus ret>	Setaria faberi	Echinochloa cr>	Ambrosia trifi>
Pest Name	common lambsqu>	Redroot pigweed	foxtail, giant	barnyardgrass	ragweed, giant
Rating Date	Jun-18-2020	Jun-18-2020	Jul-14-2020	Jul-14-2020	Jul-14-2020
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Assessed By					
Data Entry Date	Jun-22-2020	Jun-22-2020	Jul-15-2020	Jul-15-2020	Jul-15-2020
Rating Timing					
Days After First/Last Applic.	55 42	55 42	81 26	81 26	81 26
Trt-Eval Interval	0 DA-C	0 DA-C	26 DA-C	26 DA-C	26 DA-C
Plant-Eval Interval	42 DP-1	42 DP-1	68 DP-1	68 DP-1	68 DP-1
Days After Emergence	24 DE-1	24 DE-1	50 DE-1	50 DE-1	50 DE-1
Number of Decimals	0	0	0	0	0

Trt Treatment	Rate	Other	Other	Appl	11*	12*	13*	14*	15*
No. Name	Rate Unit	Rate	Rate	Unit Code					
1 UTC					0 b	0 d	0 b	0 c	0 c
2 NUP-19070	0.516 lb ai/a	11 oz/a		A	95 a	73 bc	95 a	81 b	88 a
2 NIS	0.25 % v/v	4.8 oz/a		A					
2 Panther MTZ	0.344 lb ai/a	12 oz/a		B					
2 Credit Xtreme	1.13 lb ae/a	32 oz/a		B					
2 HC MSO	0.5 % v/v	0.5 % v/v		B					
2 Cheetah	0.53 lb ai/a	29 oz/a		C					
2 N Pak AMS	2.5 % v/v	2.5 % v/v		C					
3 Spitfire	0.56 lb ai/a	20 oz/a		A	98 a	63 c	99 a	82 b	84 ab
3 NIS	0.25 % v/v	0.25 % v/v		A					
3 Panther MTZ	0.344 lb ai/a	12 oz/a		B					
3 Credit Xtreme	1.13 lb ae/a	32 oz/a		B					
3 HC MSO	0.5 % v/v	0.5 % v/v		B					
3 Cheetah	0.53 lb ai/a	29 oz/a		C					
3 N Pak AMS	2.5 % v/v	2.5 % v/v		C					
4 NUP-19070	0.504 lb ai/a	11 oz/a		A	100 a	68 c	98 a	83 b	83 ab
4 Panther MTZ	0.344 lb ai/a	12 oz/a		A					
4 Credit Xtreme	1.13 lb ae/a	32 oz/a		A					
4 HC MSO	0.5 % v/v	0.5 % v/v		A					
4 Cheetah	0.53 lb ai/a	29 oz/a		C					
4 N Pak AMS	2.5 % v/v	2.5 % v/v		C					
5 NUP-19070	0.516 lb ai/a	11 oz/a		A	100 a	93 ab	95 a	84 b	82 ab
5 NIS	0.25 % v/v	4.8 oz/a		A					
5 Panther Pro	0.397 lb ai/a	12 oz/a		B					
5 Credit Xtreme	1.13 lb ae/a	32 oz/a		B					
5 HC MSO	0.5 % v/v	0.5 % v/v		B					
5 Cheetah	0.53 lb ai/a	29 oz/a		C					
5 N Pak AMS	2.5 % v/v	2.5 % v/v		C					
6 Spitfire	0.56 lb ai/a	20 oz/a		A	100 a	100 a	98 a	89 a	82 ab
6 NIS	0.25 % v/v	4.8 oz/a		A					
6 Panther Pro	0.397 lb ai/a	12 oz/a		B					
6 Credit Xtreme	1.13 lb ai/a	32 oz/a		B					
6 HC MSO	0.5 % v/v	0.5 % v/v		B					
6 Cheetah	0.53 lb ai/a	29 oz/a		C					
6 N Pak AMS	2.5 % v/v	2.5 % v/v		C					

The Ohio State University

Panther MTZ No-Till Glufosinate Tolerant Soybeans

Trial ID: 20PANTHERNT
 Protocol ID: 20PANTHERNT
 Project ID: H 2020 201 OH

Location: Western Branch F-10 East Trial Year: 2020
 Investigator: Dr. Mark M. Loux
 Study Director: Anthony Dobbels
 Sponsor Contact: Dan Beran, NuFarm

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	CHEAL	AMARE	SETFA	ECHCG	AMBTR
Pest Scientific Name	Chenopodium al>	Amaranthus ret>	Setaria faberi	Echinochloa cr>	Ambrosia trifi>
Pest Name	common lambsqu>	Redroot pigweed	foxtail, giant	barnyardgrass	ragweed, giant
Rating Date	Jun-18-2020	Jun-18-2020	Jul-14-2020	Jul-14-2020	Jul-14-2020
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Number of Subsamples	1	1	1	1	1
Assessed By					
Data Entry Date	Jun-22-2020	Jun-22-2020	Jul-15-2020	Jul-15-2020	Jul-15-2020
Rating Timing					
Days After First/Last Applic.	55 42	55 42	81 26	81 26	81 26
Trt-Eval Interval	0 DA-C	0 DA-C	26 DA-C	26 DA-C	26 DA-C
Plant-Eval Interval	42 DP-1	42 DP-1	68 DP-1	68 DP-1	68 DP-1
Days After Emergence	24 DE-1	24 DE-1	50 DE-1	50 DE-1	50 DE-1
Number of Decimals	0	0	0	0	0

Trt No.	Treatment Name	Rate	Other Rate	Other Unit	Appl Unit Code	11*	12*	13*	14*	15*
7	NUP-19070	0.516 lb ai/a	11 oz/a		A	100 a	100 a	96 a	83 b	88 a
7	Panther Pro	0.397 lb ai/a	12 oz/a		A					
7	Credit Xtreme	1.13 lb ae/a	32 oz/a		A					
7	HC MSO	0.5 % v/v	0.5 % v/v		A					
7	Cheetah	0.53 lb ai/a	29 oz/a		C					
7	N Pak AMS	2.5 % v/v	2.5 % v/v		C					
8	NUP-19070	0.516 lb ai/a	11 oz/a		A	100 a	100 a	99 a	86 ab	73 b
8	NIS	0.25 % v/v	4.8 oz/a		A					
8	Authority MTZ	0.394 lb ai/a	14 oz/a		B					
8	Credit Xtreme	1.13 lb ai/a	32 oz/a		B					
8	HC MSO	0.5 % v/v	0.5 % v/v		B					
8	Cheetah	0.53 lb ai/a	29 oz/a		C					
8	N Pak AMS	2.5 % v/v	2.5 % v/v		C					
LSD P=.05						5.4	21.6	4.9	5.2	11.4
Standard Deviation						3.1	12.3	2.8	3.0	6.5
CV						3.56	16.48	3.3	4.02	8.97
Grand Mean						86.7	74.8	85.0	73.5	72.6
Levene's F						0.914	0.809	1.164	1.164	0.657
Levene's Prob(F)						0.52	0.592	0.375	0.375	0.704
Rank X2						.	.	.	.	.
P(Rank X2)						.	.	.	.	.
Skewness						-2.3825*	-1.3469*	-2.3846*	-2.3505*	-2.1738*
Kurtosis						4.0799*	0.8428	4.0976*	4.0164*	3.4688*
Replicate F						1.750	0.624	1.194	0.434	0.154
Replicate Prob(F)						0.2097	0.5501	0.3320	0.6566	0.8583
Treatment F						387.250	22.620	451.967	305.187	62.389
Treatment Prob(F)						0.0001	0.0001	0.0001	0.0001	0.0001

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 Investigator: Dr. Mark M. Loux
 Study Director: Anthony Dobbels
 Sponsor Contact: Dan Beran, NuFarm

Pest Type	W Weed	W Weed
Pest Code	CHEAL	AMARE
Pest Scientific Name	Chenopodium al>	Amaranthus ret>
Pest Name	lambsquarters,>	pigweed, redro>
Rating Date	Jul-14-2020	Jul-14-2020
Rating Type	CONTRO	CONTRO
Rating Unit	%	%
Number of Subsamples	1	1 1
Assessed By		
Data Entry Date	Jul-15-2020	Jul-15-2020
Rating Timing		
Days After First/Last Applic.	81 26	81 26
Trt-Eval Interval	26 DA-C	26 DA-C
Plant-Eval Interval	68 DP-1	68 DP-1
Days After Emergence	50 DE-1	50 DE-1
Number of Decimals	0	0

Trt No.	Treatment Name	Rate	Unit	Other Rate	Other Unit	Appl Code	16*	17*	18
1	UTC						0 c	0 c	
2	NUP-19070	0.516 lb ai/a		11 oz/a		A	87 b	80 b	
2	NIS	0.25 % v/v		4.8 oz/a		A			
2	Panther MTZ	0.344 lb ai/a		12 oz/a		B			
2	Credit Xtreme	1.13 lb ae/a		32 oz/a		B			
2	HC MSO	0.5 % v/v		0.5 % v/v		B			
2	Cheetah	0.53 lb ai/a		29 oz/a		C			
2	N Pak AMS	2.5 % v/v		2.5 % v/v		C			
3	Spitfire	0.56 lb ai/a		20 oz/a		A	93 ab	77 b	
3	NIS	0.25 % v/v		0.25 % v/v		A			
3	Panther MTZ	0.344 lb ai/a		12 oz/a		B			
3	Credit Xtreme	1.13 lb ae/a		32 oz/a		B			
3	HC MSO	0.5 % v/v		0.5 % v/v		B			
3	Cheetah	0.53 lb ai/a		29 oz/a		C			
3	N Pak AMS	2.5 % v/v		2.5 % v/v		C			
4	NUP-19070	0.504 lb ai/a		11 oz/a		A	100 a	83 ab	
4	Panther MTZ	0.344 lb ai/a		12 oz/a		A			
4	Credit Xtreme	1.13 lb ae/a		32 oz/a		A			
4	HC MSO	0.5 % v/v		0.5 % v/v		A			
4	Cheetah	0.53 lb ai/a		29 oz/a		C			
4	N Pak AMS	2.5 % v/v		2.5 % v/v		C			
5	NUP-19070	0.516 lb ai/a		11 oz/a		A	100 a	100 a	
5	NIS	0.25 % v/v		4.8 oz/a		A			
5	Panther Pro	0.397 lb ai/a		12 oz/a		B			
5	Credit Xtreme	1.13 lb ae/a		32 oz/a		B			
5	HC MSO	0.5 % v/v		0.5 % v/v		B			
5	Cheetah	0.53 lb ai/a		29 oz/a		C			
5	N Pak AMS	2.5 % v/v		2.5 % v/v		C			
6	Spitfire	0.56 lb ai/a		20 oz/a		A	100 a	100 a	
6	NIS	0.25 % v/v		4.8 oz/a		A			
6	Panther Pro	0.397 lb ai/a		12 oz/a		B			
6	Credit Xtreme	1.13 lb ai/a		32 oz/a		B			
6	HC MSO	0.5 % v/v		0.5 % v/v		B			
6	Cheetah	0.53 lb ai/a		29 oz/a		C			
6	N Pak AMS	2.5 % v/v		2.5 % v/v		C			

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 Investigator: Dr. Mark M. Loux
 Study Director: Anthony Dobbels
 Sponsor Contact: Dan Beran, NuFarm

Pest Type	W Weed	W Weed
Pest Code	CHEAL	AMARE
Pest Scientific Name	Chenopodium al>	Amaranthus ret>
Pest Name	lambsquarters,>	pigweed, redro>
Rating Date	Jul-14-2020	Jul-14-2020
Rating Type	CONTRO	CONTRO
Rating Unit	%	%
Number of Subsamples	1	1 1
Assessed By		
Data Entry Date	Jul-15-2020	Jul-15-2020
Rating Timing		
Days After First/Last Applic.	81 26	81 26
Trt-Eval Interval	26 DA-C	26 DA-C
Plant-Eval Interval	68 DP-1	68 DP-1
Days After Emergence	50 DE-1	50 DE-1
Number of Decimals	0	0

Trt No.	Treatment Name	Rate	Other Rate	Other Unit	Appl Code	16*	17*	18
7	NUP-19070	0.516 lb ai/a	11 oz/a		A	100 a	100 a	
7	Panther Pro	0.397 lb ai/a	12 oz/a		A			
7	Credit Xtreme	1.13 lb ae/a	32 oz/a		A			
7	HC MSO	0.5 % v/v	0.5 % v/v		A			
7	Cheetah	0.53 lb ai/a	29 oz/a		C			
7	N Pak AMS	2.5 % v/v	2.5 % v/v		C			
8	NUP-19070	0.516 lb ai/a	11 oz/a		A	100 a	100 a	
8	NIS	0.25 % v/v	4.8 oz/a		A			
8	Authority MTZ	0.394 lb ai/a	14 oz/a		B			
8	Credit Xtreme	1.13 lb ai/a	32 oz/a		B			
8	HC MSO	0.5 % v/v	0.5 % v/v		B			
8	Cheetah	0.53 lb ai/a	29 oz/a		C			
8	N Pak AMS	2.5 % v/v	2.5 % v/v		C			
LSD P=.05						9.7	19.3	.
Standard Deviation						5.6	11.0	.
CV						6.55	13.81	.
Grand Mean						85.0	80.0	.
Levene's F						0.857	1.293	.
Levene's Prob(F)						0.559	0.315	.
Rank X2						.	.	.
P(Rank X2)						.	.	.
Skewness						-2.2497*	-1.7821*	.
Kurtosis						3.6333*	2.1095*	.
Replicate F						1.615	0.922	
Replicate Prob(F)						0.2338	0.4206	
Treatment F						116.615	28.176	
Treatment Prob(F)						0.0001	0.0001	

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Sponsor Contact: Dan Beran, NuFarm

Pest Type

W, Weed = Weed or volunteer crop

Pest Code

ERICA, Erigeron canadensis, Canada horseweed = US
AMBTR, Ambrosia trifida, Giant ragweed = US
SETFA, Setaria faberi, Giant foxtail = US
CHEAL, Chenopodium album, common lambsquarters = US
ECHCG, Echinochloa crus-galli, Common barnyard grass = US
AMARE, Amaranthus retroflexus, Redroot pigweed = US
SETFA, Setaria faberi, foxtail, giant = US
ECHCG, Echinochloa crus-galli, barnyardgrass = US
AMBTR, Ambrosia trifida, ragweed, giant = US
CHEAL, Chenopodium album, lambsquarters, common = US
AMARE, Amaranthus retroflexus, pigweed, redroot = US

Rating Type

CONTRO = control / burndown or knockdown

Rating Unit

% = percent

Plant-Eval Interval

14 DP-1 = 1 GLXMA May-7-2020
29 DP-1 = 1 GLXMA May-7-2020
42 DP-1 = 1 GLXMA May-7-2020
68 DP-1 = 1 GLXMA May-7-2020