

The Ohio State University

NuFarm Fall Herbicides for Dandelion, Marestail, and Winter Annual Weed Control in Soybean

Trial ID: 21FALLSOY1 Location: Trial Year: 2020
 Protocol ID: 21FALLSOY1 Investigator (Creator): Dr. Mark M. Loux
 Project ID: Study Director:
 Sponsor Contact:

General Trial Information

Investigator: Dr. Mark M. Loux

Trial Status: E established

ARM Trial Created On: Oct-19-2020

Trial Location

City: South Charleston Country: USA United States

State/Prov.: Ohio

Postal Code: 45368

Latitude of LL Corner °: 39.85888 N
 Longitude of LL Corner °: -83.67362 W
 Altitude of LL Corner: 1090.00 FT

Conducted Under GLP: No

Conducted Under GEP: No

Role: INVEST investigator

Investigator: Dr. Mark M. Loux

Crop Description

Crop 1: C GLXMA Glycine max Soybean
 Entry Date: Jul-26-2021 Stage Scale: BBCH
 Variety: Asgrow AG38XF1
 Attributes: DICAMBA, GLYPHOSATE, GLUFOSINATE TOL
 Planting Date: May-14-2021 Planting Rate: 175000 S/A
 Depth: 1.5 IN
 Rows per Plot: 8 Planting Method: PLANT
 Row Spacing: 15 IN Planting Equipment: FE field equipment
 Seed Bed: MEDIUM medium
 Soil Temperature: 60 F Soil Moisture: NORMAL normal, adequate
 Emergence Date: Jun-1-2021

Pest Description

Pest 1 Type: W Code: TAROF Taraxacum officinale Entry Date: Jul-26-2021
 Common Name: Dandelion Stage Scale: BBCH
 Pest 2 Type: W Code: STEME Stellaria media Entry Date: Jul-26-2021
 Common Name: Common chickweed Stage Scale: BBCH
 Pest 3 Type: W Code: LAMPU Lamium purpureum Entry Date: Jul-26-2021
 Common Name: Purple deadnettle Stage Scale: BBCH
 Pest 4 Type: W Code: ERICA Erigeron canadensis Entry Date: Jul-26-2021
 Common Name: Marestail Stage Scale: BBCH
 Attributes: gly-R

Site and Design

Treated Plot Width: 6.67 FT
 Treated Plot Length: 30 FT
 Treated Plot Area: 200.1 FT2 Treatments: 8
 Replications: 3 Study Design: RAOBL Randomized Complete Block (RCB)

Soil Description

Description Name: F-9 West
 % Sand: 33 % OM: 1.6 Texture: SIL silt loam
 % Silt: 53 pH: 6 Soil Name: Crosby
 % Clay: 15 CEC: 8.6 Fert. Level: G good

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Application Description

	A
Application Date	Nov-6-2020
Appl. Start Time	9:30 AM
Appl. Stop Time	10:00 AM
Application Method	SPRAY
Application Timing	FALL
Application Placement	BROFOL
Applied By	Dobbels
Appl. Entry Date	Jul-26-2021
Air Temperature Start, Stop	53 57 F
% Relative Humidity Start, Stop	74 75
Wind Velocity+Dir. Start	5 MPH SW
Wind Velocity+Dir. Stop	7 MPH WSW
Wind Velocity+Dir. Max	7 MPH WSW
Wet Leaves (Y/N)	N no
Soil Temperature	44 F
Soil Moisture	dry
Soil Surface Condition	MEDTRA
% Cloud Cover	0
Next Moisture Occurred On	Nov-10-2020
Time to Next Moisture	4.0 DAY
Moisture 6 Hours after Appl.	0 IN
Moisture 1 Week after Appl.	0.73 IN

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale	GLXMA BSOY
Days after Emergence	-207

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Pest Stage At Each Application

	A
Pest 1 Code, Type, Scale	TAROF W BBCH
Stage Majority, Percent	19 100
Diameter Average	6 in
Height Average	1 in
Height Minimum, Maximum	0.5 1
Density Average	12 PLA/m2
Pest 2 Code, Type, Scale	STEME W BBCH
Stage Majority, Percent	19 80
Stage Minimum, Percent	12 10
Stage Maximum, Percent	19 80
Diameter Average	4 in
Height Average	0.5 in
Height Minimum, Maximum	0.5 1
Density Average	15 PLA/m2
Pest 3 Code, Type, Scale	LAMPU W BBCH
Stage Majority, Percent	16 80
Stage Minimum, Percent	12 10
Stage Maximum, Percent	19 10
Diameter Average	3 in
Height Average	1 in
Height Minimum, Maximum	0.5 2
Density Average	5 PLA/m2
Pest 4 Code, Type, Scale	ERICA W BBCH
Stage Majority, Percent	14 60
Stage Minimum, Percent	11 40
Stage Maximum, Percent	14 60
Diameter Average	0.125 in
Height Average	0.125 in
Height Minimum, Maximum	0.125 0.15
Density Average	3 PLA/m2
Density Minimum, Maximum	1 5

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Application Equipment

	A
Appl. Equipment	6' AIXR
Equipment Type	BACCAI
Operation Pressure	44 PSI
Nozzle Model	110015
Nozzle Type	AI XR
Nozzle TradeName	TeeJet
Nozzle Tip Size, Color	015 green
Nozzle Spacing	18 IN
Boom Length	10 FT
Boom Height	20 IN
Ground Speed	3 MPH
Carrier	WATER
Water Hardness (ppm CaCO3)	250
Application Amount	15 GAL/AC
Mix Overage	25 mL
Mix Size	2 L
Spray pH	7.8
Propellant	COMCO2
Tank Mix (Y/N)	Y yes

Notes

Context	Date	By	Notes
STATUS	Oct-19-2020	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	Apr-13-2021	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'E' when Rating Date entered.

Pest Type	W Weed ERICA	W Weed TAROF	CLOVER	W Weed LAMPU	W Weed ERYRE
Pest Code	Canada horseweed	Blowball		Purple deadnett>	Bushy wallflower
Pest Name	Mar-30-2021	Mar-30-2021	Mar-30-2021	Mar-30-2021	Mar-30-2021
Rating Date	Contro	Contro	Contro	Contro	Contro
Rating Type	% 0 100	% 0 100	% 0 100	% 0 100	% 0 100
Rating Unit/Min/Max					
Number of Subsamples	1	1	1	1	1
Data Entry Date	Apr-13-2021	Apr-13-2021	Apr-13-2021	Apr-13-2021	Apr-13-2021
Rating Timing	Late March				
Days After First/Last Applic.	144 144	144 144	144 144	144 144	144 144
Trt-Eval Interval	144 DA-A	144 DA-A	144 DA-A	144 DA-A	144 DA-A
Days After Emergence	-63 DE-1	-63 DE-1	-63 DE-1	-63 DE-1	-63 DE-1
ARM Action Codes		AA	AA		AS
Number of Decimals	0	0	0	0	0
Trt Treatment No. Name	Other Rate	Other Rate	Appl Unit Code		
1 UTC		1*		4*	5*
2 Panther SC	2 oz/a	A	2* dAA	3* dAA	4* dAS
Credit Xtreme	16 oz/a	A			
Weedone LV4	16 oz/a	A			
NIS	4.8 oz/a	A			
N Pak AMS	48 oz/a	A			
3 Panther MTZ	12 oz/a	A			
Credit Xtreme	16 oz/a	A			
Weedone LV4	16 oz/a	A			
NIS	4.8 oz/a	A			
N Pak AMS	48 oz/a	A			
4 Bobcat	1.5 oz/a	A			
Credit Xtreme	16 oz/a	A			
Weedone LV4	16 oz/a	A			
NIS	4.8 oz/a	A			
N Pak AMS	48 oz/a	A			

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 Project ID: Study Director:
 Sponsor Contact:

Pest Type	W Weed ERICA	W Weed TAROF	CLOVER	W Weed LAMPU	W Weed ERYRE
Pest Code	Canada horseweed	Blowball		Purple deadnett>	Bushy wallflower
Pest Name	Mar-30-2021	Mar-30-2021	Mar-30-2021	Mar-30-2021	Mar-30-2021
Rating Date	Contro	Contro	Contro	Contro	Contro
Rating Type	% 0 100	% 0 100	% 0 100	% 0 100	% 0 100
Rating Unit/Min/Max					
Number of Subsamples	1	1	1	1	1
Data Entry Date	Apr-13-2021	Apr-13-2021	Apr-13-2021	Apr-13-2021	Apr-13-2021
Rating Timing	Late March				
Days After First/Last Applic.	144 144	144 144	144 144	144 144	144 144
Trt-Eval Interval	144 DA-A	144 DA-A	144 DA-A	144 DA-A	144 DA-A
Days After Emergence	-63 DE-1	-63 DE-1	-63 DE-1	-63 DE-1	-63 DE-1
ARM Action Codes		AA	AA		AS
Number of Decimals	0	0	0	0	0
Trt Treatment	1*	2*	3*	4*	5*
Other Other		dAA	dAA		dAS
Rate Rate					
Unit Unit					
Code Code					
5 Bobcat	2 oz/a	A	100 -	100 a	100 a
Credit Xtreme	16 oz/a	A			
Weedone LV4	16 oz/a	A			
NIS	4.8 oz/a	A			
N Pak AMS	48 oz/a	A			
6 Spitfire	24 oz/a	A	100 -	98 ab	100 a
Credit Xtreme	16 oz/a	A			
NIS	4.8 oz/a	A			
N Pak AMS	48 oz/a	A			
7 WeedMaster	32 oz/a	A	100 -	99 ab	100 a
Credit Xtreme	16 oz/a	A			
NIS	4.8 oz/a	A			
N Pak AMS	48 oz/a	A			
8 Weedone LV4	16 oz/a	A	100 -	100 a	100 a
Credit Xtreme	16 oz/a	A			
NIS	4.8 oz/a	A			
N Pak AMS	48 oz/a	A			
LSD P=.05	.	6.2 - 18.7	11.7 - 18.3	.	10.7 - 11.0
Standard Deviation	0.0	8.2t	11.4t	0.0	0.3t
CV	0.0	11.89t	15.67t	0.0	3.59t
Levene's F^	.	0.30	0.418	.	0.913
Levene's Prob(F)	.	0.943	0.877	.	0.521
Skewness^	.	-0.6242	0.0194	.	-1.3259*
Kurtosis^	.	-0.4804	0.1451	.	3.3106*
Replicate F	0.000	2.080	2.710	0.000	0.467
Replicate Prob(F)	1.0000	0.1618	0.1012	1.0000	0.6365
Treatment F	0.000	39.934	21.941	0.000	322.722
Treatment Prob(F)	1.0000	0.0001	0.0001	1.0000	0.0001

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Project ID:	Study Director:	
Sponsor Contact:		

Pest Type Pest Code Pest Name Rating Date Rating Type Rating Unit/Min/Max	W Weed ERICA			W Weed TAROF			W Weed LAMPU			W Weed ERYRE			W Weed ERICA							
	Canada horseweed Apr-15-2021 Contro			Blowball Apr-15-2021 Contro			Purple deadnett> Apr-15-2021 Contro			Bushy wallflower Apr-15-2021 Contro			Canada horseweed Apr-30-2021 Contro							
	%	0	100	%	0	100	%	0	100	%	0	100	%	0	100					
Number of Subsamples	1			1			1			1			1							
Data Entry Date	Jul-26-2021			Jul-26-2021			Jul-26-2021			Jul-26-2021			Jul-26-2021							
Rating Timing																				
Days After First/Last Applic.	160 160			160 160			160 160			160 160			175 175							
Trt-Eval Interval	160 DA-A			160 DA-A			160 DA-A			160 DA-A			175 DA-A							
Days After Emergence	-47 DE-1			-47 DE-1			-47 DE-1			-47 DE-1			-32 DE-1							
ARM Action Codes				EC																
Number of Decimals	0			0			0			0			0							
Trt No.	Treatment Name	Other Rate	Other Rate	Appl Unit	Code	6*			7*			8*			9*			10*		
1	UTC					0 -			0			0 -			0 b			0 -		
2	Panther SC	2 oz/a			A	100 -			77 c			100 -			90 a			100 -		
	Credit Xtreme	16 oz/a			A															
	Weedone LV4	16 oz/a			A															
	NIS	4.8 oz/a			A															
	N Pak AMS	48 oz/a			A															
3	Panther MTZ	12 oz/a			A	100 -			63 d			100 -			93 a			100 -		
	Credit Xtreme	16 oz/a			A															
	Weedone LV4	16 oz/a			A															
	NIS	4.8 oz/a			A															
	N Pak AMS	48 oz/a			A															
4	Bobcat	1.5 oz/a			A	100 -			93 ab			100 -			100 a			100 -		
	Credit Xtreme	16 oz/a			A															
	Weedone LV4	16 oz/a			A															
	NIS	4.8 oz/a			A															
	N Pak AMS	48 oz/a			A															

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 Project ID: Study Director:
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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	ERICA	TAROF	LAMPU	ERYRE	ERICA
Pest Name	Canada horseweed	Blowball	Purple deadnett>	Bushy wallflower	Canada horseweed
Rating Date	Apr-15-2021	Apr-15-2021	Apr-15-2021	Apr-15-2021	Apr-30-2021
Rating Type	Contro	Contro	Contro	Contro	Contro
Rating Unit/Min/Max	% 0 100	% 0 100	% 0 100	% 0 100	% 0 100
Number of Subsamples	1	1	1	1	1
Data Entry Date	Jul-26-2021	Jul-26-2021	Jul-26-2021	Jul-26-2021	Jul-26-2021
Rating Timing					
Days After First/Last Applic.	160 160	160 160	160 160	160 160	175 175
Trt-Eval Interval	160 DA-A	160 DA-A	160 DA-A	160 DA-A	175 DA-A
Days After Emergence	-47 DE-1	-47 DE-1	-47 DE-1	-47 DE-1	-32 DE-1
ARM Action Codes		EC			
Number of Decimals	0	0	0	0	0
Trt Treatment	Other	Other	Other	Other	Other
No. Name	Rate	Rate	Rate	Rate	Rate
Unit	Code	Code	Code	Code	Code
5 Bobcat	2 oz/a	A	100 -	98 a	100 -
Credit Xtreme	16 oz/a	A			
Weedone LV4	16 oz/a	A			
NIS	4.8 oz/a	A			
N Pak AMS	48 oz/a	A			
6 Spitfire	24 oz/a	A	100 -	92 ab	100 -
Credit Xtreme	16 oz/a	A			
NIS	4.8 oz/a	A			
N Pak AMS	48 oz/a	A			
7 WeedMaster	32 oz/a	A	100 -	85 bc	100 -
Credit Xtreme	16 oz/a	A			
NIS	4.8 oz/a	A			
N Pak AMS	48 oz/a	A			
8 Weedone LV4	16 oz/a	A	100 -	82 bc	100 -
Credit Xtreme	16 oz/a	A			
NIS	4.8 oz/a	A			
N Pak AMS	48 oz/a	A			
LSD P=.05	.	8.7	.	9.5	.
Standard Deviation	0.0	4.9	0.0	5.4	0.0
CV	0.0	5.79	0.0	6.32	0.0
Levene's F^	.	0.445	.	1.006	.
Levene's Prob(F)	.	0.837	.	0.463	.
Skewness^	.	-0.2924	.	-0.9775*	.
Kurtosis^	.	-0.101	.	2.6585*	.
Replicate F	0.000	5.550	0.000	1.000	0.000
Replicate Prob(F)	1.0000	0.0197	1.0000	0.3927	1.0000
Treatment F	0.000	17.600	0.000	124.061	0.000
Treatment Prob(F)	1.0000	0.0001	1.0000	0.0001	1.0000

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Project ID:	Study Director:	
	Sponsor Contact:	

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	TAROF	ERYRE	LAMPU	DRBSS	AMBTR
Pest Name	Blowball	Bushy wallflower	Purple deadnett>	Whitlow-grass	Giant ragweed
Rating Date	Apr-30-2021	Apr-30-2021	Apr-30-2021	Apr-30-2021	Apr-30-2021
Rating Type	Contro	Contro	Contro	Contro	Contro
Rating Unit/Min/Max	% 0 100	% 0 100	% 0 100	% 0 100	% 0 100
Number of Subsamples	1	1	1	1	1
Data Entry Date	Jul-26-2021	Jul-26-2021	Jul-26-2021	Jul-26-2021	Jul-26-2021
Rating Timing					
Days After First/Last Applic.	175 175	175 175	175 175	175 175	175 175
Trt-Eval Interval	175 DA-A	175 DA-A	175 DA-A	175 DA-A	175 DA-A
Days After Emergence	-32 DE-1	-32 DE-1	-32 DE-1	-32 DE-1	-32 DE-1
ARM Action Codes			AS	AA	
Number of Decimals	0	0	0	0	0
Trt Treatment	11*	12*	13*	14*	15*
Other Rate			dAS	dAA	
Other Rate					
Appl Unit Code					
1 UTC	0 c	0 b	0 b	0 c	0 -
2 Panther SC	70 a	73 a	100 a	100 a	0 -
Credit Xtreme	2 oz/a				
Weedone LV4	16 oz/a				
NIS	4.8 oz/a				
N Pak AMS	48 oz/a				
3 Panther MTZ	47 b	80 a	100 a	100 a	0 -
Credit Xtreme	12 oz/a				
Weedone LV4	16 oz/a				
NIS	4.8 oz/a				
N Pak AMS	48 oz/a				
4 Bobcat	85 a	100 a	100 a	100 a	13 -
Credit Xtreme	1.5 oz/a				
Weedone LV4	16 oz/a				
NIS	4.8 oz/a				
N Pak AMS	48 oz/a				

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Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	TAROF	ERYRE	LAMPU	DRBSS	AMBTR
Pest Name	Blowball	Bushy wallflower	Purple deadnett>	Whitlow-grass	Giant ragweed
Rating Date	Apr-30-2021	Apr-30-2021	Apr-30-2021	Apr-30-2021	Apr-30-2021
Rating Type	Contro	Contro	Contro	Contro	Contro
Rating Unit/Min/Max	% 0 100	% 0 100	% 0 100	% 0 100	% 0 100
Number of Subsamples	1	1	1	1	1
Data Entry Date	Jul-26-2021	Jul-26-2021	Jul-26-2021	Jul-26-2021	Jul-26-2021
Rating Timing					
Days After First/Last Applic.	175 175	175 175	175 175	175 175	175 175
Trt-Eval Interval	175 DA-A	175 DA-A	175 DA-A	175 DA-A	175 DA-A
Days After Emergence	-32 DE-1	-32 DE-1	-32 DE-1	-32 DE-1	-32 DE-1
ARM Action Codes			AS	AA	
Number of Decimals	0	0	0	0	0
Trt Treatment	11*	12*	13*	14*	15*
Other Other Appl					
No. Name Rate Rate Unit Code			dAS	dAA	
5 Bobcat	2 oz/a	A			
Credit Xtreme	16 oz/a	A			
Weedone LV4	16 oz/a	A			
NIS	4.8 oz/a	A			
N Pak AMS	48 oz/a	A			
6 Spitfire	24 oz/a	A			
Credit Xtreme	16 oz/a	A			
NIS	4.8 oz/a	A			
N Pak AMS	48 oz/a	A			
7 WeedMaster	32 oz/a	A			
Credit Xtreme	16 oz/a	A			
NIS	4.8 oz/a	A			
N Pak AMS	48 oz/a	A			
8 Weedone LV4	16 oz/a	A			
Credit Xtreme	16 oz/a	A			
NIS	4.8 oz/a	A			
N Pak AMS	48 oz/a	A			
LSD P=.05	13.8	26.3	8.0 - 8.1	3.4 - 13.9	26.4
Standard Deviation	7.9	15.0	0.2t	6.1t	15.1
CV	12.17	18.39	2.64t	8.76t	212.6
Levene's F^	0.722	0.911	0.913	0.408	0.575
Levene's Prob(F)	0.656	0.523	0.521	0.883	0.766
Skewness^	-0.1002	-0.9795*	-1.3259*	0.67	-0.8724
Kurtosis^	0.3618	2.9156*	3.3106*	1.7011	3.0267*
Replicate F	0.827	1.127	0.467	2.833	1.672
Replicate Prob(F)	0.4578	0.3518	0.6365	0.0927	0.2233
Treatment F	41.475	16.000	593.137	75.981	3.126
Treatment Prob(F)	0.0001	0.0001	0.0001	0.0001	0.0330

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Pest Type

W, Weed = Weed or volunteer crop

Pest Code

ERICA, Erigeron canadensis, Canada horseweed = US

TAROF, Taraxacum officinale, Blowball = US

LAMPU, Lamium purpureum, Purple deadnettle = US

ERYRE, Erysimum repandum, Bushy wallflower = US

DRBSS, Draba sp., Whitlow-grass = US

AMBTR, Ambrosia trifida, Giant ragweed = US

Rating Type

Contro = control / burndown or knockdown

Rating Unit/Min/Max

%, 0, 100 = percent

ARM Action Codes

AA = Automatic arcsine square root % transformation

AS = Automatic square root transformation of X+0.5

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