

The Ohio State University

2021 FALL/SPRING//SOYBEAN/

Trial ID: 22FALLSOY2
 Protocol ID: H21US-0X1-577-001 Location: Cooperator Trial ID:
 Project ID: Project ID 2: Project ID 3: Trial Year: 2020
 Study Director: Sponsor Contact:
 Investigator (Creator): Dr. Mark M. Loux

General Trial Information

Investigator: Joe Reed

Status: E established
 ARM Trial Created On: Nov-18-2021

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 °: 39.85876 N
 Longitude of LL Corner °: -83.6717 W
 Altitude of LL Corner: 1085.00 FT

Conducted Under GLP: No
 Conducted Under GEP: No
 None

Role: INVEST investigator
 Investigator: Joe Reed

Crop Description

Crop 1: C GLXMA Glycine max Soybean BBCH Scale: BSOY
 Entry Date: May-3-2022 Stage Scale: BBCH
 Variety: Pioneer P35T15E
 Attributes: 2,4-D Choline, Glyphosate, Glufosinate Tol
 Planting Date: Apr-27-2022 Seed Size: 2978 S/LB
 Depth: 1.5 IN Planting Rate: 165000 S/A
 Rows per Plot: 8 Planting Method: PLANTD planted
 Row Spacing: 15 IN Planting Equipment: PP plot planter
 Seed Bed: MEDTRA medium/trashy
 Soil Temperature: 43 F Soil Moisture: SLIDRY slightly dry
 Emergence Date: May-16-2022 Harvest Equipment: Kincaid 8XP
 Harvest Date: Oct-12-2022 Harvested Width: 6.25 FT
 Moisture Meter: Harvest Master Harvested Length: 30 FT
 % Standard Moisture: 13
 Weighing Equipment: Harvest Master HM800

Pest Description

Pest 1 Type: W Code: LAMPU Lamium purpureum Entry Date: Nov-29-2021
 Common Name: Purple deadnettle Stage Scale: BBCH
 Pest 2 Type: W Code: RANAB Ranunculus abortivus Entry Date: Nov-29-2021
 Common Name: Smallflower buttercup Stage Scale: BBCH
 Pest 3 Type: W Code: CARPE Cardamine pensylvanica Entry Date: Nov-29-2021
 Common Name: Pennsylvania bittercress Stage Scale: BBCH
 Pest 4 Type: W Code: SETFA Setaria faberi Entry Date: Jun-2-2022
 Common Name: Giant foxtail Stage Scale: BBCH
 Pest 5 Type: W Code: AMBTR Ambrosia trifida Entry Date: Jun-2-2022
 Common Name: Giant ragweed Stage Scale: BBCH
 Pest 6 Type: W Code: AMBEL Ambrosia artemisiifolia Entry Date: Jun-2-2022
 Common Name: Common ragweed Stage Scale: BBCH
 Pest 7 Type: W Code: CHEAL Chenopodium album Entry Date: Jun-2-2022
 Common Name: common lambsquarters Stage Scale: BBCH
 Pest 8 Type: W Code: ABUTH Abutilon theophrasti Entry Date: Jun-2-2022
 Common Name: velvetleaf Stage Scale: BBCH

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 Tillage Type: NOTILL no-till
 Replications: 3 Treatments: 6 Plots: 18 Study Design: RAOBL Randomized Complete Block (RCB)

Previous
 No. Crop Year
 1. CORN 2021

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Soil Description

Description Name: F-9 East
 % Sand: 36 % OM: 3 Texture: SICL silty clay loam
 % Silt: 49 Soil Name: Kokomo
 % Clay: 15 Fert. Level: G good
 pH: 6.4 CEC: 17.8
 Soil Drainage: G good

Application Description

	A	B	C	D
Application Date	Nov-19-2021	Apr-28-2022	May-31-2022	
Appl. Start Time	1:30 PM	10:30 AM	11:00 AM	
Appl. Stop Time	1:45 PM	11:00 AM	11:10 AM	
Interval to Prev. Appl.		160 DAYS	33 DAYS	
Application Method	SPRAY	SPRAY	SPRAY	
Application Timing	FALL	PRE	POST	
Application Placement	BROFOL	BROFOL	BROFOL	
Applied By	Dobbels	Essman	Dobbels	
Appl. Entry Date	Nov-29-2021	May-3-2022	Jun-1-2022	
Air Temperature Start, Stop	36, 36 F	43, 43 F	81, 81 F	
% Relative Humidity Start, Stop	54, 54	44, 44	59, 59	
Wind Velocity+Dir. Start	2 MPH, S	4 MPH, E	6 MPH, SW	
Wind Velocity+Dir. Stop	2 MPH, S	4 MPH, E	6 MPH, SW	
Wind Velocity+Dir. Max	2 MPH, S	4 MPH, E	6 MPH, SW	
Wet Leaves (Y/N)	N, no	N, no	N, no	
Soil Temperature	38 F	44 F		
Soil Moisture	NORMAL	DRY	DRY	
Soil Surface Condition	MEDTRA	MEDTRA	MEDTRA	
% Cloud Cover	20	90	10	
Next Moisture Occurred On	Nov-21-2021	Apr-30-2022	Jun-1-2022	
Time to Next Moisture	3.0 DAY	2.0 DAY	1.0 DAY	
Moisture 6 Hours after Appl.	0 IN	0 IN	0 IN	
Moisture 1 Week after Appl.	0.45 IN	1.1 IN	0.94 IN	

Crop Stage At Each Application

	A	B	C	D
Crop 1 Code, BBCH Scale	GLXMA, BSOY	GLXMA, BSOY	GLXMA, BSOY	GLXMA, BSOY
Days after Emergence	-178	-18	15	
Stage Majority, Percent			12, -	
Height Average			4 IN	
Height Minimum, Maximum			3, 4	

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Pest Stage At Each Application

	A	B	C	D
Pest 1 Code, Type, Scale	LAMPU, W, BBCH	LAMPU, W, BBCH	LAMPU, W, BBCH	LAMPU, W, BBCH
Stage Majority, Percent	16, 80			
Stage Minimum, Percent	14, 10			
Stage Maximum, Percent	18, 10			
Diameter Average	2 IN			
Diameter Minimum, Maximum	1, 2			
Height Average	2 IN			
Height Minimum, Maximum	1, 2			
Density Average	8 PLA/m2			
Density Minimum, Maximum	3, 20			
Pest 2 Code, Type, Scale	RANAB, W, BBCH	RANAB, W, BBCH	RANAB, W, BBCH	RANAB, W, BBCH
Stage Majority, Percent	12, 80			
Stage Minimum, Percent	12, 80			
Stage Maximum, Percent	13, 10			
Diameter Average	1 IN			
Diameter Minimum, Maximum	1, 2			
Height Average	1 IN			
Height Minimum, Maximum	0.5, 1			
Density Average	3 PLA/m2			
Density Minimum, Maximum	0, 5			
Pest 3 Code, Type, Scale	CARPE, W, BBCH	CARPE, W, BBCH	CARPE, W, BBCH	CARPE, W, BBCH
Stage Majority, Percent	19, 100			
Diameter Average	2 IN			
Diameter Minimum, Maximum	2, 3			
Height Average	0.5 IN			
Height Minimum, Maximum	0.5, 1			
Density Average	2 PLA/m2			
Density Minimum, Maximum	0, 3			
Pest 4 Code, Type, Scale	SETFA, W, BBCH	SETFA, W, BBCH	SETFA, W, BBCH	SETFA, W, BBCH
Height Average	6 IN			
Height Minimum, Maximum	4, 8			
Pest 5 Code, Type, Scale	AMBTR, W, BBCH	AMBTR, W, BBCH	AMBTR, W, BBCH	AMBTR, W, BBCH
Height Average	22 IN			
Height Minimum, Maximum	12, 24			
Pest 6 Code, Type, Scale	AMBEL, W, BBCH	AMBEL, W, BBCH	AMBEL, W, BBCH	AMBEL, W, BBCH
Height Average	4 IN			
Height Minimum, Maximum	2, 6			
Pest 7 Code, Type, Scale	CHEAL, W, BBCH	CHEAL, W, BBCH	CHEAL, W, BBCH	CHEAL, W, BBCH
Height Average	4 IN			
Height Minimum, Maximum	2, 4			
Pest 8 Code, Type, Scale	ABUTH, W, BBCH	ABUTH, W, BBCH	ABUTH, W, BBCH	ABUTH, W, BBCH
Height Average	3 IN			
Height Minimum, Maximum	2, 3			

Application Equipment

	A	B	CD
Appl. Equipment	6' AIXR	6' AIXR	
Equipment Type	BACCAI	BACCAI	
Operation Pressure	44 PSI	44 PSI	
Nozzle Model	110015	110015	
Nozzle Type	AI XR	AI XR	
Nozzle TradeName	TeeJet	TeeJet	
Nozzle Tip Size, Color	015, green	015, green	
Nozzle Spacing	18 IN	18.0 IN	
Boom Length	10 FT	10.0 FT	
Boom Height	20 IN	20.0 IN	
Ground Speed	3 MPH	3 MPH	
Carrier	WATER	WATER	
Water Hardness (ppm CaCO3)	250	250	
Application Amount	15 GAL/AC	15 GAL/AC	
Mix Overage	25 mL	25.0 mL	
Mix Size	2 L	2.0 L	
Spray pH	7.8	7.8	
Propellant	COMCO2	COMCO2	
Tank Mix (Y/N)	Y, yes	Y, yes	

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Pest Type	C, GLXMA	C, GLXMA	C, GLXMA	C, GLXMA			
Pest Code							
Pest Scientific Name	Soybean	Soybean	Soybean	Soybean			
Pest Name							
Crop Type, Code							
Crop Name							
Rating Date	Oct-12-2022	Oct-12-2022	Oct-12-2022	Oct-12-2022			
Rating Type	WEIGHT	MOICON	YIELD	WEITES			
Rating Unit/Min/Max	LBS, -, -	%, 0, 100	BU, -, -	LBS, -, -			
Number of Subsamples	1	1	1	1			
Data Entry Date	Oct-13-2022	Oct-13-2022		Oct-13-2022			
Rating Timing							
Days After First/Last Applic.	327, 134	327, 134	327, 134	327, 134			
Trt-Eval Interval							
Plant-Eval Interval	168 DP-1	168 DP-1	168 DP-1	168 DP-1			
Days After Emergence	149 DE-1	149 DE-1	149 DE-1	149 DE-1			
ARM Action Codes			TY1				
Number of Decimals	1	1	1	1			
Trt Treatment No. Name	Rate Rate Unit	Appl Code	Appl Description	16*	17*	18*	19*
1 Untreated Check		D		23.3a	14.7cd	88.4a	55.8a
2 Roundup PowerMax	32 fl oz/a A		Fall Application	23.3a	17.3b	85.6a	54.6a
2 Preview 2:1 SC	20 fl oz/a A		Fall Application				
2 N Pak AMS	2.5% v/v A		Fall Application				
2 InterMoc / KFD-235-02	29 fl oz/a C		Early Post Application				
2 NIS	0.25% v/v C		Early Post Application				
2 N Pak AMS	6% v/v C		Early Post Application				
2 Interline - Lifeline / KFD-138	32 fl oz/a E		Late Post Application				
2 NIS	0.25% v/v E		Late Post Application				
2 N Pak AMS	6% v/v E		Late Post Application				
3 Roundup PowerMax	32 fl oz/a A		Fall Application	22.2a	13.3d	85.4a	55.8a
3 Preview 2:1 SC	25 fl oz/a A		Fall Application				
3 N Pak AMS	2.5% v/v A		Fall Application				
3 InterMoc / KFD-235-02	29 fl oz/a C		Early Post Application				
3 NIS	0.25% v/v C		Early Post Application				
3 N Pak AMS	6% v/v C		Early Post Application				
3 Interline - Lifeline / KFD-138	32 fl oz/a E		Late Post Application				
3 NIS	0.25% v/v E		Late Post Application				
3 N Pak AMS	6% v/v E		Late Post Application				
4 Roundup PowerMax	32 fl oz/a A		Fall Application	16.9b	23.4a	57.7b	42.3b
4 Authority MTZ / KFD-291-02	14 oz/a A		Fall Application				
4 N Pak AMS	2.5% v/v A		Fall Application				
4 Anthem MAX	2 fl oz/a C		Early Post Application				
4 NIS	0.25% v/v C		Early Post Application				
4 N Pak AMS	6% v/v C		Early Post Application				
4 Interline - Lifeline / KFD-138	32 fl oz/a E		Late Post Application				
4 NIS	0.25% v/v E		Late Post Application				
4 N Pak AMS	6% v/v E		Late Post Application				
5 Roundup PowerMax	32 oz/a A		Fall Application	22.8a	16.2bc	85.1a	54.0a
5 Audit 1:1	0.75 oz/a A		Fall Application				
5 N Pak AMS	2.5% v/v A		Fall Application				
5 Preview 2:1 SC	20 fl oz/a B		Spring Application				
5 N Pak AMS	6% v/v B		Spring Application				
5 Interline - Lifeline / KFD-138	32 fl oz/a D		Mid Post Application				
5 NIS	0.25% v/v D		Mid Post Application				
5 N Pak AMS	6% v/v D		Mid Post Application				
5 Interline - Lifeline / KFD-138	32 fl oz/a E		Late Post Application				
5 NIS	0.25% v/v E		Late Post Application				
5 N Pak AMS	6% v/v E		Late Post Application				

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. 16-19=3

* Adjusted means

^ Calculated from residual.

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Pest Type				
Pest Code				
Pest Scientific Name				
Pest Name				
Crop Type, Code	C, GLXMA	C, GLXMA	C, GLXMA	C, GLXMA
Crop Name	Soybean	Soybean	Soybean	Soybean
Rating Date	Oct-12-2022	Oct-12-2022	Oct-12-2022	Oct-12-2022
Rating Type	WEIGHT	MOICON	YIELD	WEITES
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Trt-Eval Interval				
Plant-Eval Interval	168 DP-1	168 DP-1	168 DP-1	168 DP-1
Days After Emergence	149 DE-1	149 DE-1	149 DE-1	149 DE-1
ARM Action Codes			TY1	
Number of Decimals	1	1	1	1
Trt Treatment	Rate	Appl	Appl	
No. Name	Rate Unit	Code	Description	
6 Roundup PowerMax	32 fl oz/a	B	Spring Application	21.2a
6 Preview 2:1 SC	20 fl oz/a	B	Spring Application	13.8cd
6 N Pak AMS	6% v/v	B	Spring Application	81.5a
6 Interline - Lifeline / KFD-138	32 fl oz/a	D	Mid Post Application	55.5a
6 NIS	0.25% v/v	D	Mid Post Application	
6 N Pak AMS	6% v/v	D	Mid Post Application	
6 Interline - Lifeline / KFD-138	32 fl oz/a	E	Late Post Application	
6 NIS	0.25% v/v	E	Late Post Application	
6 N Pak AMS	6% v/v	E	Late Post Application	
LSD P=.05	3.51	2.07	12.61	3.62
Standard Deviation	1.93	1.14	6.93	1.99
CV	8.93	6.92	8.59	3.75
Grand Mean	21.62	16.46	80.61	53.01
Levene's F^	0.335	0.177	0.362	1.659
Levene's Prob(F)	0.882	0.966	0.865	0.219
Rank X2
P(Rank X2)
Skewness^	-0.3564	0.1261	-0.1478	0.0977
Kurtosis^	0.6001	-1.182	0.4191	3.4038*
Replicate F	4.586	4.062	4.006	1.900
Replicate Prob(F)	0.0386	0.0511	0.0527	0.1998
Treatment F	4.725	31.968	8.204	21.286
Treatment Prob(F)	0.0178	0.0001	0.0026	0.0001

Crop Type, Code

C = EPPO species (Bayer) codes
 GLXMA, BSOY, Glycine max, Soybean = US

Rating Type

MOICON = moisture content
 YIELD = yield
 WEITES = weight - test

Rating Unit/Min/Max

%, 0, 100 = percent
 BU, , = bushel

Plant-Eval Interval

168 DP-1 = 1 GLXMA Apr-27-2022

ARM Action Codes

TY1 = $3.872 * [16] * (100 - [17]) / 87$

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