

The Ohio State University

Authority Programs in Soybeans

Trial ID: 20FMCSOY Location: Western Branch F-9 East Trial Year: 2020
 Protocol ID: 20FMCSOY Investigator: Dr. Mark M. Loux
 Project ID: USA-20-791 Study Director: Anthony Dobbels
 Sponsor Contact: Drake Copeland, FMC

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 °: 39.85876 N
 Longitude of LL Corner °: -83.67309 W
 Altitude of LL Corner: 1095.00 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
 Attributes: 2,4-D Choline, Glyphosate, Glufosinate Tol
 Planting Date: May-7-2020 Planting Rate: 155000 S/A
 Depth: 1.5 IN
 Rows per Plot: 8 Planting Method: PLANTD planted
 Row Spacing: 15 IN Planting Equipment: FE field equipment
 Seed Bed: MEDTRA medium/trashy
 Soil Temperature: 50 F Soil Moisture: NORMAL normal, adequate
 Emergence Date: May-25-2020
 Harvest Date: Oct-8-2020 Harvest Equipment: Kincaid 8XP
 Moisture Meter: Harvest Master Harvested Width: 6.25 FT
 % Standard Moisture: 13 Harvested Length: 30 FT
 Weighing Equipment: Harvest Master HM800

Pest Description

Pest 1 Type: W Code: AMBTR Ambrosia trifida
 Common Name: ragweed, giant Entry Date: Jun-9-2020
 Pest 2 Type: W Code: SETFA Setaria faberi
 Common Name: foxtail, giant Entry Date: Jun-22-2020
 Pest 3 Type: W Code: AMARE Amaranthus retroflexus
 Common Name: Redroot pigweed Entry Date: Jun-22-2020
 Pest 4 Type: W Code: ERICA Conyza canadensis
 Common Name: horseweed Entry Date: Jun-22-2020
 Pest 5 Type: W Code: CHEAL Chenopodium album
 Common Name: lambsquarters, common 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: 12 Tillage Type: NOTILL no-till
 Replications: 3 Study Design: RACOB L Randomized Complete Block (RCB)

Previous

No. Crop Year
 1. SOYBEAN 2019

Maintenance

No.	Date	Type	Maintenance Product Name	Form Conc	Form Unit	Form Type	Rate	Tank Mix	Tank Code	Tank Mix
1.	Apr-3-2020	HERB	Roundup Powermax	4.5	LBAE/GAL	SL	32	OZ/A	Y	yes
2.	Apr-3-2020	HERB	2,4-D Ester	4	LBA/GAL	SC	16	OZ/A	Y	yes

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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	May-7-2020	Jun-9-2020	Jun-18-2020
Appl. Start Time	8:00 PM	7:40 AM	8:00 AM
Appl. Stop Time	8:30 PM	8:00 AM	8:00 AM
Interval to Prev. Appl.		33 DAYS	9 DAYS
Application Method	SPRAY	SPRAY	SPRAY
Application Timing	PRE	MPO	POST
Application Placement	BROSOI	BROSOL	BROFOL
Applied By	Dobbels	Kimmet	Kimmet
Appl. Entry Date	May-8-2020	Jun-9-2020	Jun-22-2020
Air Temperature Start, Stop	60 58 F	69 69 F	65 65 F
% Relative Humidity Start, Stop	48 48	64 64	79 79
Wind Velocity+Dir. Start	8 MPH WSW	5 MPH ESE	3 MPH NE
Wind Velocity+Dir. Stop	8 MPH WSW	5 MPH ESE	3 MPH NE
Wind Velocity+Dir. Max	8 MPH W	5 MPH ESE	3 MPH NE
Wet Leaves (Y/N)	N no	N no	N no
Soil Temperature	61 F	68 F	68 F
Soil Moisture	NORMAL	DRY	DRY
Soil Surface Condition	MEDTRA	MEDTRA	MEDTRA
% Cloud Cover	30	20	70
Next Moisture Occurred On	May-8-2020	Jun-9-2020	Jun-18-2020
Time to Next Moisture	13 HR	10 HR	5 HR
Moisture 6 Hours after Appl.	0 IN	0 IN	0.05 IN
Moisture 1 Week after Appl.	0.65 IN	0.37 IN	0.9 IN

Crop Stage At Each Application

	A		B		C	
Crop 1 Code, BBCH Scale	GLXMA	BSOY	GLXMA	BSOY	GLXMA	BSOY
Days after Emergence	-18		15		24	
Stage Scale Used	BBCH		BBCH		BBCH	
Stage Majority, Percent			12 80		13 90	
Stage Minimum, Percent			11 10		12 10	
Stage Maximum, Percent			12 80		13 90	
Height Average			3 IN		5 IN	
Height Minimum, Maximum			1 6		3 6	

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Pest Stage At Each Application

	A		B		C	
Pest 1 Code, Type, Scale	AMBTR	W	AMBTR	W	AMBTR	W
Stage Majority, Percent	18	60	19	80		
Stage Minimum, Percent	12	10	14	10		
Stage Maximum, Percent	18	60	19	80		
Height Average	8	IN	13	IN		
Height Minimum, Maximum	2	19	4	20		
Density Average	5	PLA/m2				
Density Min, Max	3	6				
Pest 2 Code, Type, Scale	SETFA	W	SETFA	W	SETFA	W
Stage Majority, Percent	12	90	13	80		
Stage Minimum, Percent	12	90	12	10		
Stage Maximum, Percent	13	10	13	80		
Height Average	3	IN	6	IN		
Height Minimum, Maximum	1	5	3	12		
Density Average	95	PLA/m2				
Density Min, Max	80	120				
Pest 3 Code, Type, Scale	AMARE	W	AMARE	W	AMARE	W
Stage Majority, Percent	14	90	16	80		
Stage Minimum, Percent	12	10	14	10		
Stage Maximum, Percent	14	90	18	10		
Height Average	1	IN	3	IN		
Height Minimum, Maximum	0.5	1	2	4		
Density Average	3	PLA/m2				
Density Min, Max	1	4				
Pest 4 Code, Type, Scale	ERICA	W	ERICA	W	ERICA	W
Stage Majority, Percent	19	100	19	100		
Height Average	3	IN	6	IN		
Height Minimum, Maximum	1	3	4	8		
Density Average	3	PLA/m2				
Density Min, Max	1	5				
Pest 5 Code, Type, Scale	CHEAL	W	CHEAL	W	CHEAL	W
Stage Majority, Percent	12	80	16	80		
Stage Minimum, Percent	12	80	14	10		
Stage Maximum, Percent	14	10	16	80		
Height Average	2	IN	4	IN		
Height Minimum, Maximum	1	2				
Density Average	3	PLA/m2				
Density Min, Max	1	4				

Application Equipment

	A		B		C	
Appl. Equipment	6 Foot AI XR	6' AIXR	10' AIXR			
Equipment Type	BACCAI	BACCAI	BACCAI			
Operation Pressure	48 PSI	44 PSI	44 PSI			
Nozzle Type	AI XR	AIXR	AIXR			
Nozzle Size	110015	1110015	110015			
Nozzle Spacing	18 IN	18 IN	18 IN			
Boom Length	6.67 FT	6.67 FT	10 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	1 L	1 L			
Propellant	COMCO2	COMCO2	COMCO2			

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.

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Trt No.	Treatment Name	Rate	Unit	Other Rate	Other Unit	Appl Code	19*	20*	21*
1	UTC						17.20 -	11.67 -	67.6 -
2	Authority Supreme	0.26 lb ai/a		8 oz/a		A	18.83 -	11.53 -	74.1 -
3	Authority Edge	0.266 lb ai/a		8 oz/a		A	18.03 -	11.53 -	71.0 -
4	Authority Edge	0.332 lb ai/a		10 oz/a		A	18.00 -	11.43 -	70.9 -
5	Authority Edge	0.266 lb ai/a		8 oz/a		A	17.48 -	11.47 -	68.9 -
5	Anthem Maxx	0.084 lb ai/a		2.5 oz/a		B			
5	Roundup Powermax	0.77 lb ae/a		22 oz/a		B			
5	Enlist One	0.95 lb ae/a		32 oz/a		B			
5	N Pak AMS	2.5 % v/v		2.5 % v/v		B			
6	Zidua Pro	0.192 lb ai/a		6 oz/a		A	18.94 -	11.57 -	74.6 -
7	Boundary	1.47 lb ai/a		29 oz/a		A	19.77 -	11.77 -	77.6 -
8	Authority First	0.28 lb ai/a		6.4 oz/a		A	17.71 -	11.47 -	69.8 -
9	Authority Edge	0.266 lb ai/a		8 oz/a		A	19.66 -	11.73 -	77.2 -
9	Canopy Blend	0.109 lb ai/a		3 oz/a		A			
10	Fierce XLT	0.156 lb ai/a		4 oz/a		A	19.37 -	11.60 -	76.2 -
11	Anthem Maxx	0.109 lb ai/a		3.25 oz/a		A	18.71 -	11.63 -	73.6 -
11	Canopy Blend	0.109 lb ai/a		3 oz/a		A			

Means followed by same letter or symbol do not significantly differ (P=0.05, LSD).
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 * Adjusted means

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Pest Type				
Pest Code				
Pest Scientific Name				
Pest Name				
Crop Type, Code	C GLXMA	C GLXMA	C GLXMA	
BBCH Scale	BSOY	BSOY	BSOY	
Crop Scientific Name	Glycine max	Glycine max	Glycine max	
Crop Name	Soybean	Soybean	Soybean	
Rating Date	Oct-8-2020	Oct-8-2020	Oct-8-2020	
Rating Type	YIELD	MOICON	YIELD	
Rating Unit	LBS	%	BU	
Number of Subsamples	1	1	1	
Assessed By				
Data Entry Date	Oct-12-2020	Oct-12-2020		
Rating Timing	HARVEST	HARVEST	HARVEST	
Days After First/Last Applic.	154 112	154 112	154 112	
Trt-Eval Interval				
Plant-Eval Interval	154 DP-1	154 DP-1	154 DP-1	
Days After Emergence	136 DE-1	136 DE-1	136 DE-1	
ARM Action Codes			TY1	
Number of Decimals	2	2	1	
Trt Treatment	Rate	Other	Other	Appl
No. Name	Rate Unit	Rate	Rate Unit	Code
12 Boundary	1.47 lb ai/a	29 oz/a		A
12 Canopy Blend	0.109 lb ai/a	3 oz/a		A
LSD P=.05		1.801	0.330	7.03
Standard Deviation		1.063	0.195	4.15
CV		5.72	1.68	5.68
Grand Mean		18.593	11.581	73.16
Levene's F		0.995	0.462	0.998
Levene's Prob(F)		0.478	0.909	0.476
Rank X2		.	.	.
P(Rank X2)		.	.	.
Skewness		-0.0266	0.3618	-0.0303
Kurtosis		-0.5405	0.1726	-0.5411
Replicate F		0.148	1.805	0.114
Replicate Prob(F)		0.8629	0.1879	0.8928
Treatment F		2.085	0.868	2.057
Treatment Prob(F)		0.0686	0.5813	0.0722

Crop Type, Code

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

Rating Type

YIELD = yield
 MOICON = moisture content

Rating Unit

% = percent
 BU = bushel

Plant-Eval Interval

154 DP-1 = 1 GLXMA May-7-2020

ARM Action Codes

TY1 = 3.872*[19]*(100-[20])/87

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