

The Ohio State University

Demonstrate benefit of adding glyphosate or poast to liberty applications. Determine what rate of glyphosate os needed when tank mixing with liberty in GT27 soybeans.

Trial ID: 19 PRPOST 4 Location: F-8 East Trial Year: 2019
Protocol ID: 19 PRPOST 4 Investigator: Dr. Mark M. Loux
Project ID: MKD-H-2019-US-D41 Study Director: Bryan Reeb
Sponsor Contact: Alice Harris, BASF

General Trial Information

Study Director: Bryan Reeb
Investigator: Dr. Mark M. Loux

Trial Status: E established
ARM Trial Created On: May-30-2019

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 °: 39.86163 N
Longitude of LL Corner °: 83.6671 W
Altitude of LL Corner: 1088.00 FT

Conducted Under GLP: No
Conducted Under GEP: No

Contacts

Study Director: Bryan Reeb

Investigator: Dr. Mark M. Loux

Crop Description

Crop 1: C GLXMA Glycine max Soybean BBCH Scale: BSOY
Entry Date: May-30-2019
Variety: Credezn 3309 GTLL
Attributes: Roundup/Liberty Link/HPPD
Planting Date: May-16-2019 Planting Rate: 165000 S/A
Depth: 1.5 IN
Rows per Plot: 8 Planting Method: SEEDED seeded
Row Spacing: 15 IN Planting Equipment: PP plot planter
Seed Bed: CLODDY cloddy
Soil Temperature: 63 F Soil Moisture: GOOD good
Emergence Date: May-28-2019
Harvested Width: 6.25 FT
Harvested Length: 30 FT
% Standard Moisture: 13

Pest Description

Pest 1 Type: W Code: SETFA Setaria faberi
Common Name: Giant foxtail Entry Date: Jun-13-2019
Pest 2 Type: W Code: ECHCG Echinochloa crus-galli
Common Name: Common barnyard grass Entry Date: Jun-13-2019
Pest 3 Type: W Code: AMBTR Ambrosia trifida
Common Name: Giant ragweed Entry Date: Jun-13-2019
Pest 4 Type: W Code: CHEAL Chenopodium album
Common Name: common lambsquarters Entry Date: Jun-13-2019
Pest 5 Type: W Code: AMARE Amaranthus retroflexus
Common Name: Redroot pigweed Entry Date: Jun-13-2019
Pest 6 Type: W Code: SIDSP Sida spinosa
Common Name: Prickly sida Entry Date: Jun-13-2019
Pest 7 Type: W Code: POLPY Persicaria pensylvanica
Common Name: annual smartweed Entry Date: Jun-20-2019
Pest 8 Type: W Code: ABUTH Abutilon theophrasti
Common Name: velvetleaf Entry Date: Jun-20-2019
Pest 9 Type: W Code: IPOHE Ipomoea hederacea
Common Name: ivy-leaf morning glory Entry Date: Jun-20-2019

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: 10 Tillage Type: CONTIL conventional-till
Replications: 3 Study Design: RACOB L Randomized Complete Block (RCB)

Previous

No. Crop Year
1. SOYBEAN 2018

Soil Description

Description Name: F-8 East
% Sand: 37 % OM: 2.7 Texture: SIL silt loam
% Silt: 49 pH: 6 Soil Name: Kokomo
% Clay: 15 CEC: 16.9 Fert. Level: G good
Soil Drainage: G good

Application Description

	A	B
Application Date	May-16-2019	Jun-19-2019
Appl. Start Time	9:00 PM	4:00 PM
Appl. Stop Time	10:00 PM	4:25 PM
Interval to Prev. Appl.		34 DAYS
Application Method	BROADC	BROADC
Application Timing	PRE	3' WDS
Application Placement	BROFOL	BROFOL
Applied By	KILEY	DOBBELS
Appl. Entry Date	May-30-2019	Jun-20-2019
Air Temperature Start, Stop	74 74 F	75 75 F
% Relative Humidity Start, Stop	43 43	79 79
Wind Velocity+Dir. Start	11 MPH SW	5 MPH SSW
Wind Velocity+Dir. Stop	11 MPH SW	5 MPH SSW
Wind Velocity+Dir. Max	11 MPH S	5 MPH SSW
Wet Leaves (Y/N)	N no	N no
Soil Temperature	63 F	74 F
Soil Moisture	DRY	WET
Soil Surface Condition	SMOOTH	SMOOTH
% Cloud Cover	90	60
Next Moisture Occurred On	May-17-2019	Jun-19-2019
Time to Next Moisture	3 HR	2 HR
Moisture 6 Hours after Appl.	1.32 IN	0.33 IN
Moisture 1 Week after Appl.	2.54 IN	0.75 IN

Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale	GLXMA BSOY	GLXMA BSOY
Days after Emergence	-12	22
Stage Majority, Percent		V3 100
Height Average		5 IN

Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale	SETFA W	SETFA W
Stage Majority, Percent	15	80
Stage Minimum, Percent	13	20
Stage Maximum, Percent	15	80
Height Average	7	IN
Height Minimum, Maximum	5	9
Density Average		306.66 m2
Density Min, Max		120 800
Pest 2 Code, Type, Scale	ECHCG W	ECHCG W
Stage Majority, Percent	13	100
Height Average	8	IN
Height Minimum, Maximum	6	10
Density Average		160 m2
Density Min, Max		80 400
Pest 3 Code, Type, Scale	AMBTR W	AMBTR W
Stage Majority, Percent	19	90
Stage Minimum, Percent	14	10
Stage Maximum, Percent	19	90
Height Average	15	IN
Height Minimum, Maximum	3	20
Density Average		20 m2
Density Min, Max		12 24
Pest 4 Code, Type, Scale	CHEAL W	CHEAL W
Stage Majority, Percent	19	100
Height Average	6	IN
Height Minimum, Maximum	4	10
Density Average		22.6 m2
Density Min, Max		8 60
Pest 5 Code, Type, Scale	AMARE W	AMARE W
Stage Majority, Percent	16	80
Stage Minimum, Percent	16	80
Stage Maximum, Percent	19	20
Height Average	7	IN
Height Minimum, Maximum	7	11
Density Average		173 m2
Density Min, Max		520 520
Pest 6 Code, Type, Scale	SIDSP W	SIDSP W
Stage Majority, Percent	15	100
Height Average	3	IN
Height Minimum, Maximum	2	3
Density Average		4 M2
Density Min, Max		1 5
Pest 7 Code, Type, Scale	POLPY W	POLPY W
Stage Majority, Percent	19	80
Stage Minimum, Percent	15	20
Stage Maximum, Percent	19	80
Height Average	6.5	IN
Height Minimum, Maximum	5	8
Density Average		3 M2
Density Min, Max		1 5
Pest 8 Code, Type, Scale	ABUTH W	ABUTH W
Stage Majority, Percent	14	100
Height Average	6.5	IN
Height Minimum, Maximum	6	7
Density Average		21.3 m2
Density Min, Max		4 40
Pest 9 Code, Type, Scale	IPOHE W	IPOHE W
Stage Majority, Percent	15	100
Height Average	2.5	IN
Height Minimum, Maximum	2	3
Density Average		1 M2
Density Min, Max		0 5

Application Equipment

	A	B
Appl. Equipment	6 foot TTI	6' BACKPACK
Equipment Type	SPRBAC	BACCAI
Operation Pressure	48 PSI	44 PSI
Nozzle Type	TTI	AIXR
Nozzle Size	110015	11015
Nozzle Spacing	18 IN	18 IN
Nozzles/Row		4
Boom Length	6.67 FT	6.67 FT
Boom Height	20 IN	20 IN
Ground Speed	3 MPH	3 MPH
Carrier	WATER	WATER
Application Amount	15 GPA	15 gal/ac
Mix Size	1 Liters	1 liters
Propellant	COMCO2	COMCO2

Context Date By Notes
 STATUS May-30-2019 Dr. Mark M. Loux Automatically added by ARM: Trial Status updated to 'S' during trial creation.
 STATUS Jun-13-2019 Dr. Mark M. Loux Automatically added by ARM: Trial Status updated to 'E' when Rating Date entered.

SE Definitions

1. Crop Type, Code C

Pest Type				
Pest Code				
Pest Scientific Name				
Pest Name				
Crop Type, Code	C	GLXMA	C	GLXMA
Crop Name	Soybean	Soybean	Soybean	Soybean
Rating Date	Oct-2-2019	Oct-2-2019	Oct-2-2019	Oct-2-2019
Rating Type	WEIGHT	MOICON	YIELD	WEITES
Rating Unit	LBS	%	BU	LBS
Number of Subsamples	1	1	1	1
Data Entry Date	Oct-4-2019	Oct-4-2019	Oct-4-2019	Oct-4-2019
Rating Timing				
Days After First/Last Applic.	139	105	139	105
Trt-Eval Interval				
Plant-Eval Interval	139 DP-1	139 DP-1	139 DP-1	139 DP-1
Days After Emergence	127 DE-1	127 DE-1	127 DE-1	127 DE-1
ARM Action Codes			TY1	
Number of Decimals		2	2	1

Trt No.	Treatment Name	Rate	Other Rate	Other Rate	Appl Unit Code	26*	27*	28*	29*
1	UTC					8.81 b	13.55 a	33.9 b	50.51 b
2	Zidua SC	0.114 lb ai/a	3.5 oz/a		A	21.21 a	13.18 ab	82.0 a	56.82 a
2	Liberty	0.585 lb ai/a	32 oz/a		B				
2	N-pak ams	4.5 % v/v	2.7 qt/a		B				
3	Zidua SC	0.114 lb ai/a	3.5 oz/a		A	21.54 a	12.48 cd	83.9 a	56.02 a
3	Roundup Power Max	1.13 lb ae/a	32 oz/a		B				
3	N-pak ams	4.5 % v/v	2.7 qt/a		B				
4	Zidua SC	0.114 lb ai/a	3.5 oz/a		A	21.93 a	12.18 d	85.7 a	55.90 a
4	Liberty	0.585 lb ai/a	32 oz/a		B				
4	Roundup Power Max	1.13 lb ae/a	32 oz/a		B				
4	N-pak ams	4.5 % v/v	2.7 qt/a		B				
5	Zidua SC	0.114 lb ai/a	3.5 oz/a		A	22.48 a	12.32 cd	87.7 a	56.14 a
5	Liberty	0.585 lb ai/a	32 oz/a		B				
5	Select Max	0.094 lb ai/a	12 oz/a		B				
5	N-pak ams	4.5 % v/v	2.7 qt/a		B				
6	Zidua SC	0.114 lb ai/a	3.5 oz/a		A	21.88 a	12.40 cd	85.3 a	56.73 a
6	Liberty	0.585 lb ai/a	32 oz/a		B				
6	Roundup Power Max	1.13 lb ae/a	32 oz/a		B				
6	Outlook	0.47 lb ai/a	10 oz/a		B				
6	N-pak ams	4.5 % v/v	2.7 qt/a		B				
7	Zidua SC	0.114 lb ai/a	3.5 oz/a		A	21.39 a	12.38 cd	83.4 a	56.43 a
7	Liberty	0.585 lb ai/a	32 oz/a		B				
7	Roundup Power Max	0.84 lb ae/a	24 oz/a		B				
7	N-pak ams	4.5 % v/v	2.7 qt/a		B				
8	Zidua SC	0.114 lb ai/a	3.5 oz/a		A	21.38 a	12.73 bc	83.0 a	56.86 a
8	Liberty	0.585 lb ai/a	32 oz/a		B				
8	Roundup Power Max	0.56 lb ae/a	16 oz/a		B				
8	N-pak ams	4.5 % v/v	2.7 qt/a		B				
9	Zidua SC	0.114 lb ai/a	3.5 oz/a		A	21.56 a	12.40 cd	84.1 a	56.72 a
9	Liberty	0.585 lb ai/a	32 oz/a		B				
9	Select Max	0.094 lb ai/a	12 oz/a		B				
9	Outlook	0.47 lb ai/a	10 oz/a		B				
9	N-pak ams	4.5 % v/v	2.7 qt/a		B				

Pest Type							
Pest Code							
Pest Scientific Name							
Pest Name							
Crop Type, Code	C	GLXMA	C	GLXMA	C	GLXMA	C
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean
Rating Date	Oct-2-2019	Oct-2-2019	Oct-2-2019	Oct-2-2019	Oct-2-2019	Oct-2-2019	Oct-2-2019
Rating Type	WEIGHT	MOICON	YIELD	WEITES			
Rating Unit	LBS	%	BU	LBS			
Number of Subsamples	1	1	1	1			
Data Entry Date	Oct-4-2019	Oct-4-2019	Oct-4-2019	Oct-4-2019			
Rating Timing							
Days After First/Last Applic.	139	105	139	105	139	105	139
Trt-Eval Interval							
Plant-Eval Interval	139 DP-1	139 DP-1	139 DP-1	139 DP-1			
Days After Emergence	127 DE-1	127 DE-1	127 DE-1	127 DE-1			
ARM Action Codes					TY1		
Number of Decimals		2		2		1	

Trt Treatment No. Name	Rate	Rate Unit	Other Rate	Other Rate Unit	Appl Code	26*	27*	28*	29*
10 Zidua SC	0.114	lb ai/a	3.5	oz/a	A	22.30 a	12.44 cd	86.9 a	56.86 a
10 Liberty	0.53	lb ai/a	29	oz/a	B				
10 Roundup Power Max	0.387	lb ae/a	11	oz/a	B				
10 N-pak ams	4.5	% v/v	2.7	qt/a	B				
LSD P=.05						2.048	0.490	7.96	1.840
Standard Deviation						1.194	0.286	4.64	1.073
CV						5.84	2.27	5.83	1.92
Grand Mean						20.448	12.606	79.59	55.900
Levene's F						0.723	0.647	0.742	1.095
Levene's Prob(F)						0.683	0.745	0.668	0.409
Skewness						-2.4545*	1.5724*	-2.4551*	-2.7849*
Kurtosis						5.0527*	2.6344*	5.0507*	8.0213*
Replicate F						1.455	0.328	1.347	1.982
Replicate Prob(F)						0.2596	0.7247	0.2851	0.1667
Treatment F						35.576	6.866	36.348	9.677
Treatment Prob(F)						0.0001	0.0003	0.0001	0.0001

Crop Type, Code

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

Rating Type

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

Rating Unit

% = percent
 BU = bushel

Plant-Eval Interval

139 DP-1 = 1 GLXMA May-16-2019

ARM Action Codes

TY1 = 3.872*[26]*(100-[27])/87