

Syngenta herbicide programs in soybeans

Trial ID: 19 PRPOST 3

Location: Western Branch G-6 Trial Year: 2019

Protocol ID: 19 PRPOST 3

Investigator: Dr. Mark M. Loux

Project ID: HDC050A4/HO51SMAD

Study Director: Bryan Reeb

Sponsor Contact: Dain Bruns, Syngenta

General Trial Information**Study Director:** Bryan Reeb**Investigator:** Dr. Mark M. Loux**Trial Status:** E established**ARM Trial Created On:** Apr-25-2019**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 °:** 39.8596 N
Longitude of LL Corner °: 83.67635 W
Altitude of LL Corner: 1109.00 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**Entry Date:** May-21-2019**Variety:** AG38X8**Attributes:** Roundup Ready/xtend**Planting Date:** May-16-2019**Depth:** 1.5 IN**Planting Rate:** 165000 S/A**Row Spacing:** 15 IN**Planting Method:** SEEDED seeded
Planting Equipment: PP plot planter**Seed Bed:** CLODDY cloddy**Soil Temperature:** 63 F**Soil Moisture:** GOOD good**Emergence Date:** May-29-2019**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-21-2019**Pest 2 Type:** W **Code:** ECHCG *Echinochloa crus-galli***Common Name:** Common barnyard grass**Entry Date:** Jul-30-2019**Pest 3 Type:** W **Code:** AMBTR *Ambrosia trifida***Common Name:** Giant ragweed**Entry Date:** Jun-21-2019**Attributes:** Gly-Res**Pest 4 Type:** W **Code:** CHEAL *Chenopodium album***Common Name:** common lambsquarters**Entry Date:** Jun-21-2019**Pest 5 Type:** W **Code:** AMARE *Amaranthus retroflexus***Common Name:** Redroot pigweed**Entry Date:** Jun-21-2019**Site and Design****Treated Plot Width:** 10 FT**Site Type:** FIELD field**Treated Plot Length:** 30 FT**Experimental Unit:** 1 PLOT plot**Treated Plot Area:** 300 FT² **Treatments:** 12**Tillage Type:** CONTIL conventional-till**Replications:** 4**Study Design:** RACOB� Randomized Complete Block (RCB)**Previous****No. Crop Year**

1. CORN 2018

Soil Description**Description Name:** G-6**% Sand:** 32**% OM:** 2.2**Texture:** SICL silty clay loam**% Silt:** 53**pH:** 5.9**Soil Name:** Kokomo**% Clay:** 15**CEC:** 14.8**Fert. Level:** G good**Soil Drainage:** G

good

Application Description

	A	B
Application Date	May-16-2019	Jun-21-2019
Appl. Start Time	9:00 PM	9:00 AM
Appl. Stop Time	10:00 PM	10:00 AM
Application Method	BROADC	Spray
Application Timing	PRE	POST
Application Placement	BROFOL	BROFOL
Applied By	KILEY	Ackley and Loux
Appl. Entry Date	May-17-2019	Jun-21-2019
Air Temperature Start, Stop	74 74 F	65 68 F
% Relative Humidity Start, Stop	43 43	73 63
Wind Velocity+Dir. Start	11 MPH SW	8 MPH NNW
Wind Velocity+Dir. Stop	11 MPH SW	6 MPH NNW
Wind Velocity+Dir. Max	11 MPH S	8 MPH NNW
Wet Leaves (Y/N)	N no	N no
Soil Temperature	63 F	65 F
Soil Moisture	DRY	DAMP
Soil Surface Condition	SMOOTH	SMOOTH
% Cloud Cover	90	0
Next Moisture Occurred On	May-17-2019	Jun-21-2019
Time to Next Moisture	3 HR	2 HR
Moisture 6 Hours after Appl.	1.32 IN	0.01 IN
Moisture 1 Week after Appl.	2.54 IN	1.21 IN

Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale	GLXMA BSOY	GLXMA BSOY
Days after Emergence	-13	23
Stage Scale Used		VR
Stage Majority, Percent		V3 100
Stage Minimum, Percent		V3 100
Stage Maximum, Percent		V3 100
Height Average		6 IN

Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale	SETFA W	SETFA W
Stage Majority, Percent		13 100
Height Average		6 IN
Height Minimum, Maximum		6 8
Density Average		125 PLA/m2
Density Min, Max		100 130
Pest 2 Code, Type, Scale	ECHCG W	ECHCG W
Stage Majority, Percent		13 100
Height Average		5 IN
Height Minimum, Maximum		3 6
Density Average		80 PLA/m2
Density Min, Max		75 120
Pest 3 Code, Type, Scale	AMBTR W	AMBTR W
Stage Majority, Percent		19 100
Height Average		15 IN
Height Minimum, Maximum		12 16
Density Average		15 PLA/m2
Density Min, Max		8 18
Pest 4 Code, Type, Scale	CHEAL W	CHEAL W
Stage Majority, Percent		14 80
Stage Minimum, Percent		14 80
Stage Maximum, Percent		16 20
Height Average		2 IN
Height Minimum, Maximum		2 3
Density Average		11 PLA/m2
Density Min, Max		9 12
Pest 5 Code, Type, Scale	AMARE W	AMARE W
Stage Majority, Percent		16 80
Stage Minimum, Percent		14 20
Stage Maximum, Percent		16 80
Height Average		2 IN
Height Minimum, Maximum		2 3
Density Average		4 PLA/m2
Density Min, Max		4 4

Application Equipment

	A	B
Appl. Equipment	10' TTI	10' TTI
Equipment Type	SPRBAC	SPRBAC
Operation Pressure	40 PSI	40 PSI
Nozzle Type	TTI	TTI
Nozzle Size	110015	110015
Nozzle Spacing	18 IN	18 IN
Boom Length	10 FT	10 FT
Boom Height	20 IN	20 IN
Ground Speed	3 MPH	3 MPH
Carrier	WATER	WATER
Application Amount	15 GPA	15 GPA
Mix Size	3 GAL	3 GAL
Propellant	CO2	CO2

Context	Date	By	Notes
STATUS	Apr-25-2019	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	Jun-10-2019	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'E' when Emergence Date entered.

SE Definitions

1.

Crop Type, Code C

	C C		GLXMA		C C		GLXMA	
	GLXMA	Soybean	GLXMA	Soybean	GLXMA	Soybean	GLXMA	Soybean
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean
Rating Date	Oct-4-2019	Oct-4-2019	Oct-4-2019	Oct-4-2019	Oct-4-2019	Oct-4-2019	Oct-4-2019	Oct-4-2019
Part Rated								
Rating Type	WEIGHT	MOICON	YIELD	WEITES				
Rating Unit	LBS	%	BU	LBS				
Number of Subsamples	1	1	1	1				
Data Entry Date	Oct-7-2019	Oct-7-2019	Oct-7-2019	Oct-7-2019				
Rating Timing								
Days After First/Last Applic.	141	105	141	105	141	105	141	105
Trt-Eval Interval								
Days After Emergence	128	DE-1	128	DE-1	128	DE-1	128	DE-1
ARM Action Codes						TY1		
Number of Decimals		2		2		1		2

Trt No.	Treatment Name	Rate	Rate Unit	Other Rate	Other Rate Unit	Appl Code	18*	19*	20*	21*
1	UTC						12.40 e	14.54 a	47.3 e	47.54 b
2	Boundary	1.46	lb ai/a	1.8	pt/a	A	20.19 ab	12.53 b	78.6 ab	56.67 a
	2 On Target	0.5	% v/v	9.6	oz/a	B				
	2 Class Act Ridion	1	% v/v	19.2	oz/a	B				
	2 Tavium	1.5	lb ae/a	56.5	oz/a	B				
	2 Roundup Power Max	1	lb ae/a	28.4	oz/a	B				
3	Broadaxe XC	1.37	lb ai/a	25	oz/a	A	19.06 abc	12.04 b	74.6 bc	56.19 a
	3 On Target	0.5	% v/v	9.6	oz/a	B				
	3 Class Act Ridion	1	% v/v	19.2	oz/a	B				
	3 Tavium	1.5	lb ae/a	56.5	oz/a	B				
	3 Roundup Power Max	1	lb ae/a	28.4	oz/a	B				
4	Prefix	1.32	lb ai/a	32	oz/a	A	20.17 ab	11.80 b	79.2 ab	56.26 a
	4 On Target	0.5	% v/v	9.6	oz/a	B				
	4 Class Act Ridion	1	% v/v	19.2	oz/a	B				
	4 Tavium	1.5	lb ae/a	56.5	oz/a	B				
	4 Roundup Power Max	1	lb ae/a	28.4	oz/a	B				
5	Valor XLT @ 3.5 oz					A	19.10 abc	11.96 b	74.8 abc	56.67 a
	5 Valor SX	0.0653	lb ai/a	2.05	oz/a	A				
	5 Classic	0.0227	lb ai/a	1.45	oz/a	A				
	5 On Target	0.5	% v/v	9.6	oz/a	B				
	5 Class Act Ridion	1	% v/v	19.2	oz/a	B				
	5 Xtendimax	0.5	lb ae/a	22	oz/a	B				
	5 Roundup Power Max	1	lb ae/a	28.4	oz/a	B				

Pest Type							
Pest Code							
Pest Name							
Crop Type, Code							
		C C	GLXMA		C C	GLXMA	
		GLXMA			GLXMA		
Crop Name		Soybean	Soybean		Soybean	Soybean	
Rating Date		Oct-4-2019	Oct-4-2019		Oct-4-2019	Oct-4-2019	
Part Rated							
Rating Type		WEIGHT	MOICON		YIELD	WEITES	
Rating Unit		LBS	%		BU	LBS	
Number of Subsamples		1	1		1	1	
Data Entry Date		Oct-7-2019	Oct-7-2019		Oct-7-2019	Oct-7-2019	
Rating Timing							
Days After First/Last Applic.		141	105		141	105	
Trt-Eval Interval							
Days After Emergence		128	DE-1		128	DE-1	
ARM Action Codes					TY1		
Number of Decimals			2		2	1	2

Trt No.	Treatment Name	Rate	Unit	Other Rate	Other Unit	Appl Code	18*	19*	20*	21*
6	Zidua Pro	0.192	lb ai/a	6	oz/a	A	19.27 abc	12.25 b	75.3 abc	55.64 a
6	On Target	0.5	% v/v	9.6	oz/a	B				
6	Class Act Ridion	1	% v/v	19.2	oz/a	B				
6	Engenia	0.5	lb ai/a	12.8	oz/a	B				
6	Roundup Power Max	1	lb ae/a	28.4	oz/a	B				
7	Boundary	1.46	lb ai/a	1.8	pt/a	A	16.35 d	11.86 b	64.1 d	54.99 a
7	Flexstar GT 3.5	1.25	lb ae/a	3.5	pt/a	B				
7	Dual II Magnum	0.95	lb ai/a	1	pt/a	B				
7	Superb HC	0.5	% v/v	9.6	oz/a	B				
7	N-pak ams	2.5	% v/v	1.5	qt/a	B				
8	Prefix	1.32	lb ai/a	2	pt/a	A	20.53 a	11.70 b	80.7 a	56.52 a
8	Metribuzin	0.28	lb ai/a	6	oz/a	A				
8	On Target	0.5	% v/v	9.6	oz/a	B				
8	Class Act Ridion	1	% v/v	19.2	oz/a	B				
8	Tavium	1.5	lb ae/a	56.5	oz/a	B				
8	Roundup Power Max	1	lb ae/a	28.4	oz/a	B				
9	Broadaxe XC	1.37	lb ai/a	25	oz/a	A	19.84 abc	12.03 b	77.7 abc	56.02 a
9	Metribuzin	0.28	lb ai/a	6	oz/a	A				
9	On Target	0.5	% v/v	9.6	oz/a	B				
9	Class Act Ridion	1	% v/v	19.2	oz/a	B				
9	Tavium	1.5	lb ae/a	56.5	oz/a	B				
9	Roundup Power Max	1	lb ae/a	28.4	oz/a	B				
10	On Target	0.5	% v/v	9.6	oz/a	B	18.39 c	12.12 b	71.9 c	56.28 a
10	Class Act Ridion	1	% v/v	19.2	oz/a	B				
10	Tavium	1.5	lb ae/a	56.5	oz/a	B				
10	Roundup Power Max	1	lb ae/a	28.4	oz/a	B				
11	Boundary	1.46	lb ai/a	1.8	pt/a	A	18.83 bc	11.72 b	74.0 bc	55.53 a
11	Prefix	1.32	lb ai/a	2	pt/a	A				
11	Roundup Power Max	1	lb ae/a	28.4	oz/a	B				
11	Superb HC	0.5	% v/v	9.6	oz/a	B				
11	N-pak ams	2.5	% v/v	1.5	qt/a	B				
12	On Target	0.5	% v/v	9.6	oz/a	B	19.12 abc	12.18 b	74.7 abc	56.09 a
12	Class Act Ridion	1	% v/v	19.2	oz/a	B				
12	Xtendimax	0.5	lb ae/a	22	oz/a	B				
12	Roundup Power Max	1	lb ae/a	28.4	oz/a	B				
LSD P=.05							1.534	0.969	6.05	2.392
Standard Deviation							1.066	0.674	4.21	1.663
CV							5.73	5.51	5.78	3.0
Grand Mean							18.605	12.226	72.74	55.367
Levene's F							1.095	0.542	1.237	1.518
Levene's Prob(F)							0.392	0.861	0.30	0.168
Skewness							-2.0205*	2.7761*	-2.1252*	-4.0999*
Kurtosis							5.5998*	10.6038*	6.0497*	20.0032*
Replicate F							3.795	0.408	3.780	1.510
Replicate Prob(F)							0.0192	0.7486	0.0195	0.2300
Treatment F							17.607	5.172	18.605	9.135
Treatment Prob(F)							0.0001	0.0001	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

ARM Action Codes

TY1 = $3.872 * [18] * (100 - [19]) / 87$