

The Ohio State University
 Evaluation of multiple MOA herbicides for preemergence weed control in soybean
 Trial ID: 19 AMVPRE Location: Western Branch F-8 East Trial Year: 2019
 Protocol ID: 19 AMVPRE Investigator: Dr. Mark M. Loux
 Project ID: 19C05H056 Study Director: Bryan Reeb
 Sponsor Contact: Scott Akin, Amvac

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 °: 39.86008 N
Longitude of LL Corner °: 83.67062 W
Altitude of LL Corner: 1031.00 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 **Stage Scale:** VR
Variety: SC E x932E
Attributes: ENLIST E3
Planting Date: May-30-2019 **Planting Rate:** 145000 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: CLOTRA cloddy/trashy
Soil Temperature: 68 F **Soil Moisture:** SLIDRY slightly dry
Emergence Date: Jun-13-2019

Pest Description

Pest 1 Type: W **Code:** AMBTR *Ambrosia trifida*
Common Name: Giant ragweed **Entry Date:** Jul-15-2019

Pest 2 Type: W **Code:** ECHCG *Echinochloa crus-galli*
Common Name: Common barnyard grass **Entry Date:** Jul-15-2019

Pest 3 Type: W **Code:** SETFA *Setaria faberi*
Common Name: Giant foxtail **Entry Date:** Jul-15-2019

Pest 4 Type: W **Code:** POLPY *Persicaria pensylvanica*
Common Name: annual smartweed **Entry Date:** Jul-15-2019

Pest 5 Type: W **Code:** CHEAL *Chenopodium album*
Common Name: common lambsquarters **Entry Date:** Jul-15-2019

Pest 6 Type: W **Code:** AMARE *Amaranthus retroflexus*
Common Name: Redroot pigweed **Entry Date:** Jul-15-2019

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� 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

Application Date	May-30-2019
Appl. Start Time	10:00 AM
Appl. Stop Time	10:00 AM
Application Method	10:15
Application Timing	PRE
Application Placement	BROSOI
Applied By	OSBURN
Appl. Entry Date	May-30-2019
Air Temperature Start, Stop	68 68 F
% Relative Humidity Start, Stop	91 87
Wind Velocity+Dir. Start	9 MPH SW
Wind Velocity+Dir. Stop	10 MPH WSW
Wind Velocity+Dir. Max	10 MPH WSW
Wet Leaves (Y/N)	N no
Soil Temperature	65 F
Soil Moisture	DRY
Soil Surface Condition	CLOTRA
% Cloud Cover	100
Next Moisture Occurred On	May-30-2019
Time to Next Moisture	1 HR
Moisture 6 Hours after Appl.	0.32 IN
Moisture 1 Week after Appl.	0.66 IN

Crop Stage At Each Application

A

Crop 1 Code, BBCH Scale	GLXMA BSOY
Days after Emergence	-14

Pest Stage At Each Application

A

Pest 1 Code, Type, Scale	AMBTR W
Density Average	9.3 M2
Density Min, Max	4 20
Pest 2 Code, Type, Scale	ECHCG W
Density Average	1053 M2
Density Min, Max	128 2608
Pest 3 Code, Type, Scale	SETFA W
Density Average	133.3 M2
Density Min, Max	108 292
Pest 4 Code, Type, Scale	POLPY W
Density Average	1.3 M2
Density Min, Max	4 4
Pest 5 Code, Type, Scale	CHEAL W
Density Average	16 M2
Density Min, Max	16 32
Pest 6 Code, Type, Scale	AMARE W
Density Average	118.6 M2
Density Min, Max	28 208

Application Equipment

A

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

Date	By	Context	Notes
Apr-25-2019	Dr. Mark M. Loux	STATUS	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
May-30-2019	Dr. Mark M. Loux	STATUS	Automatically added by ARM: Trial Status updated to 'E' when Application Date entered.

SE Definitions

1.
Crop Type, Code C

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Table with columns for Pest Type, Crop Type, Rating, and Treatment. Rows include various herbicide treatments (UTC, AMV5813C, Scepter, Metribuzin, Spartan, Authority MTZ, Authority XL, Dual II Magnum) and statistical summary rows (LSD P=.05, Standard Deviation, CV, Levene's F, etc.).

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
t=Mean descriptions are reported in transformed data units, and are not de-transformed.
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,7,8,9,13,14 because error mean square = 0.

Pest Type	W Weed	W Weed	W Weed	W Weed						
Pest Code	CHEAL	AMARE	SETFA	ECHCG						
Pest Scientific Name	Chenopodium ai>	Amaranthus ret>	Setaria faberi	Echinochloa cr>						
Pest Name	common lambsqu>	Redroot pigweed	Giant foxtail	Common barnyar>						
Crop Type, Code	C -	C - C	GLXMA	C -						
BBCH Scale			BSOY							
Crop Scientific Name			Glycine max							
Crop Name			Soybean							
Rating Date	Jun-25-2019	Jun-25-2019	Jul-5-2019	Jul-10-2019						
Rating Type	CONTRO	CONTRO	PHYGEN	CONTRO						
Rating Unit	%	%	%	%						
Number of Subsamples	1	1	1	1						
Data Entry Date	Jun-25-2019	Jun-25-2019	Jul-29-2019	Jul-11-2019						
Days After First/Last Applic.	26 26	26 26	36 36	41 41						
Trt-Eval Interval	26 DA-A	26 DA-A	36 DA-A	41 DA-A						
Plant-Eval Interval	26 DP-1	26 DP-1	36 DP-1	41 DP-1						
Days After Emergence	12 DE-1	12 DE-1	22 DE-1	27 DE-1						
Number of Decimals	0	0	0	0						
Trt No.	Treatment Name	Rate	Other Rate	Other Rate	Appl Unit Code	7*	8*	9*	10*	11*
1	UTC				A	0 -	0 -	0 -	0 c	0
2	AMV5813C	0.39 lb ai/a	12 oz/a		A	100 -	100 -	0 -	77 b	53 b
3	AMV5813C	0.52 lb ai/a	16 oz/a		A	100 -	100 -	0 -	100 a	93 a
4	AMV5813C	0.65 lb ai/a	20 oz/a		A	100 -	100 -	0 -	90 ab	69 ab
5	Scepter	0.0735 lb ai/a	1.68 oz/a		A	100 -	100 -	0 -	98 a	88 a
5	Metribuzin	0.18 lb ai/a	3.84 oz/a		A					
5	Spartan	0.134 lb ai/a	4.3 oz/a		A					
6	Scepter	0.098 lb ai/a	2.24 oz/a		A	100 -	100 -	0 -	97 a	87 a
6	Metribuzin	0.24 lb ai/a	5.1 oz/a		A					
6	Spartan	0.18 lb ai/a	5.76 oz/a		A					
7	Scepter	0.123 lb ai/a	2.8 oz/a		A	100 -	100 -	0 -	98 a	83 ab
7	Metribuzin	0.3 lb ai/a	6.4 oz/a		A					
7	Spartan	0.225 lb ai/a	7.2 oz/a		A					
8	Authority MTZ	0.45 lb ai/a	16 oz/a		A	100 -	100 -	0 -	90 ab	77 ab
9	Authority XL	0.282 lb ai/a	6.45 oz/a		A	100 -	100 -	0 -	83 ab	69 ab
10	Scepter	0.123 lb ai/a	2.8 oz/a		A	100 -	100 -	0 -	100 a	93 a
10	Metribuzin	0.3 lb ai/a	6.4 oz/a		A					
10	Dual II Magnum	0.95 lb ai/a	1 pt/a		A					
	LSD P=.05					.	.	.	11.6	21.9
	Standard Deviation					0.0	0.0	0.0	6.8	12.6
	CV					0.0	0.0	0.0	8.13	15.96
	Levene's F					0.00	0.00	0.00	1.407	0.467
	Levene's Prob(F)					.	.	.	0.25	0.864
	Skewness					-2.8091*	-2.8091*	.	-2.3195*	-0.3954
	Kurtosis					6.3081*	6.3081*	.	4.4742*	-1.3627
	Replicate F					0.000	0.000	0.000	2.250	6.521
	Replicate Prob(F)					1.0000	1.0000	1.0000	0.1342	0.0085
	Treatment F					0.000	0.000	0.000	59.960	3.265
	Treatment Prob(F)					1.0000	1.0000	1.0000	0.0001	0.0210

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Trt No.	Treatment Name	Rate	Rate Unit	Other Rate	Other Rate Unit	Appl Unit Code	12*	13*	14*
1	UTC						0 -	0 -	0 -
2	AMV5813C	0.39 lb ai/a		12 oz/a		A	7 -	100 -	100 -
3	AMV5813C	0.52 lb ai/a		16 oz/a		A	2 -	100 -	100 -
4	AMV5813C	0.65 lb ai/a		20 oz/a		A	3 -	100 -	100 -
5	Scepter	0.0735 lb ai/a		1.68 oz/a		A	0 -	100 -	100 -
5	Metribuzin	0.18 lb ai/a		3.84 oz/a		A			
5	Spartan	0.134 lb ai/a		4.3 oz/a		A			
6	Scepter	0.098 lb ai/a		2.24 oz/a		A	9 -	100 -	100 -
6	Metribuzin	0.24 lb ai/a		5.1 oz/a		A			
6	Spartan	0.18 lb ai/a		5.76 oz/a		A			
7	Scepter	0.123 lb ai/a		2.8 oz/a		A	9 -	100 -	100 -
7	Metribuzin	0.3 lb ai/a		6.4 oz/a		A			
7	Spartan	0.225 lb ai/a		7.2 oz/a		A			
8	Authority MTZ	0.45 lb ai/a		16 oz/a		A	2 -	100 -	100 -
9	Authority XL	0.282 lb ai/a		6.45 oz/a		A	8 -	100 -	100 -
10	Scepter	0.123 lb ai/a		2.8 oz/a		A	0 -	100 -	100 -
10	Metribuzin	0.3 lb ai/a		6.4 oz/a		A			
10	Dual II Magnum	0.95 lb ai/a		1 pt/a		A			
LSD P=.05							9.6 - 45.0	.	.
Standard Deviation							0.7t	0.0	0.0
CV							135.41t	0.0	0.0
Levene's F							0.395	0.00	0.00
Levene's Prob(F)							0.923	.	.
Skewness							0.6332	-2.8091*	-2.8091*
Kurtosis							-1.6358	6.3081*	6.3081*
Replicate F							0.768	0.000	0.000
Replicate Prob(F)							0.4787	1.0000	1.0000
Treatment F							1.017	0.000	0.000
Treatment Prob(F)							0.4631	1.0000	1.0000

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Pest Type

W, Weed, G-BYRW7, G-WedStg = Weed or volunteer crop

Pest Code

SETFA, Setaria faberi, Giant foxtail = US
 ECHCG, Echinochloa crus-galli, Common barnyard grass = US
 AMBTR, Ambrosia trifida, Giant ragweed = US
 CHEAL, Chenopodium album, common lambsquarters = US
 AMARE, Amaranthus retroflexus, Redroot pigweed = US

Crop Type, Code

C, G-ByrC7 = EPPO species (Bayer) codes
 GLXMA, BSOY, Glycine max, Soybean = US

Rating Type

PHYGEN = phytotoxicity - general / injury
 STAOBJ = stand - objective (based on counts)
 CONTRO = control / burndown or knockdown

Rating Unit

% = percent
 PLANT = plant

Plant-Eval Interval

14 DP-1 = 1 GLXMA May-30-2019
 25 DP-1 = 1 GLXMA May-30-2019
 26 DP-1 = 1 GLXMA May-30-2019
 36 DP-1 = 1 GLXMA May-30-2019
 41 DP-1 = 1 GLXMA May-30-2019