

The Ohio State University

Authority/Anthem/Cadet/Marvel pre and post treatments for Non-Gmo soybean programs

Trial ID: 14 SOYYLD2 Location: Western Branch Trial Year: 2014
 Protocol ID: 14 SOYYLD2 Investigator: Dr. Mark M. Loux
 Project ID: SULF.SOY.14.JPR.01(b) Study Director: Bryan Reeb
 Sponsor Contact: Joe Reed, FMC

General Trial Information

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

Latitude of LL Corner °: 39.85942 N
Longitude of LL Corner °: 83.67442 W

Contacts

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

Crop Description

Crop 1: GLXMA Glycine max Soybean
 Variety: PIONEER 35T58
 Planting Rate, Unit: 178000 S/A Planting Date: 5/27/2014
 Depth, Unit: 1 IN Planting Method: PLANTD planted
 Row Spacing, Unit: 15 IN Planting Equipment: FE Field Equipment
 Emergence Date: 6/2/2014
 Harvested Width, Unit: 6.25 FT
 Harvested Length, Unit: 40 FT
 Seed Bed: SMOTRA smooth/trashy

Pest Description

- Pest 1 Type: W Code: AMBTR Ambrosia trifida
Common Name: Giant ragweed
- Pest 2 Type: W Code: SETFA Setaria faberi
Common Name: Giant foxtail
- Pest 3 Type: W Code: AMARE Amaranthus retroflexus
Common Name: Redroot pigweed
- Pest 4 Type: W Code: CHEAL Chenopodium album
Common Name: Common lambsquarters
- Pest 5 Type: W Code: IPOHE Ipomoea hederacea
Common Name: Ivyleaf morningglory

Site and Design

Treated Plot Width: 6.67 FT Site Type: FIELD field
 Treated Plot Length: 40 FT Experimental Unit: 1 PLOT plot
 Treated Plot Area: 266.8 FT2 Tillage Type: CONTIL conventional-till
 Replications: 4 Study Design: RACOB L Randomized Complete Block (RCB)

Soil Description

Description Name: G-6
 % OM: 2.2 Texture: SICL silty clay loam
 pH: 6.3 Soil Name: Crosby
 CEC: 13.6 Fert. Level: G good
 Soil Drainage: G good

Application Description

	A	B
Application Date:	5/27/2014	6/20/2014
Appl. Start Time:	2:05 PM	10:00 AM
Application Method:	SPRAY	SPRAY
Application Timing:	PRE	V1-V2
Application Placement:	BROSOIL	BROFOL
Applied By:	REEB	REEB
Air Temperature, Unit:	86.2 F	75.0 F
% Relative Humidity:	55.3	76.7
Wind Velocity, Unit:	5.5 MPH	2.3 MPH
Wind Direction:	W	SSE
Dew Presence (Y/N):	N no	Y yes
Soil Temperature, Unit:	72 F	76 F
Soil Moisture:	DRY	WET
% Cloud Cover:	50	60
Next Moisture Occurred On:	6/2/2014	6/22/2014
Time to Next Moisture, Unit:	6 DAY	2 DAY

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Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale:	GLXMA BSOY	GLXMA BSOY
Stage Scale Used:		BBCH
Stage Majority, Percent:		12 100
Height, Unit:		5.5 IN
Height Minimum, Maximum:		5 6

Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale:	AMBTR W	AMBTR W
Stage Majority, Percent:		14 100
Height, Unit:		5.5 IN
Height Minimum, Maximum:		5 6
Density, Unit:		2.25 M2
Pest 2 Code, Type, Scale:	SETFA W	SETFA W
Stage Majority, Percent:		13 100
Height, Unit:		4 IN
Height Minimum, Maximum:		4 5
Density, Unit:		23 M2
Pest 3 Code, Type, Scale:	AMARE W	AMARE W
Stage Majority, Percent:		15 100
Height, Unit:		2 IN
Height Minimum, Maximum:		2 2.5
Density, Unit:		6 M2
Pest 4 Code, Type, Scale:	CHEAL W	CHEAL W
Density, Unit:		1.75 M2
Pest 5 Code, Type, Scale:	IPOHE W	IPOHE W
Stage Majority, Percent:		12 100
Height, Unit:		4 IN
Height Minimum, Maximum:		3 4
Density, Unit:		1.25 M2

Application Equipment

	A	B
Appl. Equipment:	6' BACKPACK	6' BACKPACK
Equipment Type:	BACCAI	BACCAI
Operation Pressure, Unit:	50 PSI	50 PSI
Nozzle Type:	AIXR	AIXR
Nozzle Size:	11015	11015
Nozzle Spacing, Unit:	18 IN	18 IN
Nozzles/Row:	4	4
Boom Length, Unit:	6.67 FT	6.67 FT
Boom Height, Unit:	20 IN	20 IN
Ground Speed, Unit:	3 MPH	3 MPH
Carrier:	WATER	WATER
Spray Volume, Unit:	15 gal/ac	15 gal/ac
Mix Size, Unit:	2 liters	1 liters
Propellant:	COMCO2	COMCO2

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Pest Type				
Pest Code				
Pest Scientific Name	Weight	Moisture	Weight	TestWeight
Pest Name				
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA
BBCH Scale	BSOY	BSOY	BSOY	BSOY
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max
Crop Name	Soybean	Soybean	Soybean	Soybean
Rating Date	10/25/2014	10/25/2014	10/25/2014	10/25/2014
Rating Type	WEIGHT	MOICON	YIELD	WEITES
Rating Unit	LBS	%	BU	LBS
Number of Subsamples	1	1	1	1
Days After First/Last Applic.	151 127	151 127	151 127	151 127
Trt-Eval Interval				
Plant-Eval Interval	151 DP-1	151 DP-1	151 DP-1	151 DP-1
Days After Emergence	145 DE-1	145 DE-1	145 DE-1	145 DE-1
ARM Action Codes			TY1	
Number of Decimals			1	

Trt No.	Treatment Name	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code	24	25	26	27
1	Authority First	0.28 lb ai/a		6.4 oz/a		PRE	A	15.4430765 a	15.455 a	43.6 a	54.1688 a
1	Cadet	0.00427 lb ai/a		0.6 oz/a		V1-V3	B				
1	Select Max	0.0625 lb ai/a		8 oz/a		V1-V3	B				
1	COC	1 % v/v		0.6 qt/a		V1-V3	B				
1	N-pak ams	5 % v/v		3 qt/a		V1-V3	B				
2	Authority First	0.28 lb ai/a		6.4 oz/a		PRE	A	15.9531516 a	14.070 a	45.8 a	55.0320 a
2	Marvel	0.17 lb ai/a		7.25 oz/a		V1-V3	B				
2	Select Max	0.0625 lb ai/a		8 oz/a		V1-V3	B				
2	COC	1 % v/v		0.6 qt/a		V1-V3	B				
2	N-pak ams	5 % v/v		3 qt/a		V1-V3	B				
3	Authority First	0.175 lb ai/a		4 oz/a		PRE	A	14.1221764 ab	14.275 a	40.4 ab	54.8558 a
3	Marvel	0.17 lb ai/a		7.25 oz/a		V1-V3	B				
3	Select Max	0.0625 lb ai/a		8 oz/a		V1-V3	B				
3	COC	1 % v/v		0.6 qt/a		V1-V3	B				
3	N-pak ams	5 % v/v		3 qt/a		V1-V3	B				
4	Authority MTZ	0.338 lb ai/a		12 oz/a		PRE	A	13.5073031 abc	14.328 a	38.5 abc	53.7962 a
4	Cadet	0.00427 lb ai/a		0.6 oz/a		V1-V3	B				
4	Select Max	0.0625 lb ai/a		8 oz/a		V1-V3	B				
4	COC	1 % v/v		0.6 qt/a		V1-V3	B				
4	N-pak ams	5 % v/v		3 qt/a		V1-V3	B				
5	Authority MTZ	0.338 lb ai/a		12 oz/a		PRE	A	15.6723016 a	14.030 a	45.0 a	55.5388 a
5	Marvel	0.17 lb ai/a		7.25 oz/a		V1-V3	B				
5	Select Max	0.0625 lb ai/a		8 oz/a		V1-V3	B				
5	COC	1 % v/v		0.6 qt/a		V1-V3	B				
5	N-pak ams	5 % v/v		3 qt/a		V1-V3	B				
6	Authority XL	0.175 lb ai/a		4 oz/a		PRE	A	14.7894515 a	14.278 a	42.3 a	54.2393 a
6	Cadet	0.00427 lb ai/a		0.6 oz/a		V1-V3	B				
6	Select Max	0.0625 lb ai/a		8 oz/a		V1-V3	B				
6	COC	1 % v/v		0.6 qt/a		V1-V3	B				
6	N-pak ams	5 % v/v		3 qt/a		V1-V3	B				

Means followed by same letter do not significantly differ (P=.05, LSD)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Missing data estimates are included in columns: Yates=24,25,26,27

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Pest Type				
Pest Code				
Pest Scientific Name		Weight	Moisture	Weight TestWeight
Pest Name				
Crop Code		GLXMA	GLXMA	GLXMA
BBCH Scale		BSOY	BSOY	BSOY
Crop Scientific Name		Glycine max	Glycine max	Glycine max
Crop Name		Soybean	Soybean	Soybean
Rating Date		10/25/2014	10/25/2014	10/25/2014
Rating Type		WEIGHT	MOICON	YIELD
Rating Unit		LBS	%	BU
Number of Subsamples		1	1	1
Days After First/Last Applic.		151 127	151 127	151 127
Trt-Eval Interval				
Plant-Eval Interval		151 DP-1	151 DP-1	151 DP-1
Days After Emergence		145 DE-1	145 DE-1	145 DE-1
ARM Action Codes				TY1
Number of Decimals				1

Trt No.	Treatment Name	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code	24	25	26	27
7	Authority XL	0.175	lb ai/a	4	oz/a	PRE	A	14.3779764 ab	14.283 a	41.1 ab	55.3470 a
7	Marvel	0.17	lb ai/a	7.25	oz/a	V1-V3	B				
7	Select Max	0.0625	lb ai/a	8	oz/a	V1-V3	B				
7	COC	1	% v/v	0.6	qt/a	V1-V3	B				
7	N-pak ams	5	% v/v	3	qt/a	V1-V3	B				
8	Authority MAXX	0.248	lb ai/a	6	oz/a	PRE	A	15.3535515 a	14.178 a	44.0 a	54.7430 a
8	Cadet	0.00427	lb ai/a	0.6	oz/a	V1-V3	B				
8	Select Max	0.0625	lb ai/a	8	oz/a	V1-V3	B				
8	COC	1	% v/v	0.6	qt/a	V1-V3	B				
8	N-pak ams	5	% v/v	3	qt/a	V1-V3	B				
9	Authority MAXX	0.248	lb ai/a	6	oz/a	PRE	A	14.4949514 ab	14.008 a	41.6 a	54.5935 a
9	Marvel	0.17	lb ai/a	7.25	oz/a	V1-V3	B				
9	Select Max	0.0625	lb ai/a	8	oz/a	V1-V3	B				
9	COC	1	% v/v	0.6	qt/a	V1-V3	B				
9	N-pak ams	5	% v/v	3	qt/a	V1-V3	B				
10	Authority Assist	0.156	lb ai/a	5	oz/a	PRE	A	14.5332008 a	14.511 a	41.4 ab	52.1529 a
10	Cadet	0.00427	lb ai/a	0.6	oz/a	V1-V3	B				
10	Select Max	0.0625	lb ai/a	8	oz/a	V1-V3	B				
10	COC	1	% v/v	0.6	qt/a	V1-V3	B				
10	N-pak ams	5	% v/v	3	qt/a	V1-V3	B				
11	Authority Assist	0.156	lb ai/a	5	oz/a	PRE	A	13.0295513 a-d	14.870 a	37.1 a-d	54.5410 a
11	Marvel	0.17	lb ai/a	7.25	oz/a	V1-V3	B				
11	Select Max	0.0625	lb ai/a	8	oz/a	V1-V3	B				
11	COC	1	% v/v	0.6	qt/a	V1-V3	B				
11	N-pak ams	5	% v/v	3	qt/a	V1-V3	B				
12	Authority Elite	1.37	lb ai/a	25	oz/a	PRE	A	7.4969757 ef	14.788 a	21.3 ef	48.7835 a
12	Cadet	0.00427	lb ai/a	0.6	oz/a	V1-V3	B				
12	Select Max	0.0625	lb ai/a	8	oz/a	V1-V3	B				
12	COC	1	% v/v	0.6	qt/a	V1-V3	B				
12	N-pak ams	5	% v/v	3	qt/a	V1-V3	B				
13	Authority Elite	1.37	lb ai/a	25	oz/a	PRE	A	13.7113764 abc	14.363 a	39.2 abc	54.4440 a
13	Marvel	0.17	lb ai/a	7.25	oz/a	V1-V3	B				
13	Select Max	0.0625	lb ai/a	8	oz/a	V1-V3	B				
13	COC	1	% v/v	0.6	qt/a	V1-V3	B				
13	N-pak ams	5	% v/v	3	qt/a	V1-V3	B				

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Pest Type	Weight	Moisture	Weight	TestWeight
Pest Code				
Pest Scientific Name				
Pest Name				
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA
BBCH Scale	BSOY	BSOY	BSOY	BSOY
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max
Crop Name	Soybean	Soybean	Soybean	Soybean
Rating Date	10/25/2014	10/25/2014	10/25/2014	10/25/2014
Rating Type	WEIGHT	MOICON	YIELD	WEITES
Rating Unit	LBS	%	BU	LBS
Number of Subsamples	1	1	1	1
Days After First/Last Applic.	151 127	151 127	151 127	151 127
Trt-Eval Interval				
Plant-Eval Interval	151 DP-1	151 DP-1	151 DP-1	151 DP-1
Days After Emergence	145 DE-1	145 DE-1	145 DE-1	145 DE-1
ARM Action Codes			TY1	
Number of Decimals			1	

Trt	Treatment	Rate	Other	Other	Growth	Appl		24	25	26	27	
No.	Name	Rate	Unit	Rate	Rate	Unit	Stage	Code				
14	Anthem	0.101 lb ai/a		6 oz/a			V1-V3	B	15.0750763 a	14.180 a	43.2 a	54.5850 a
14	Roundup Power Max	1.13 lb ae/a		32 oz/a			V1-V3	B				
14	Select Max	0.0625 lb ai/a		8 oz/a			V1-V3	B				
14	COC	1 % v/v		0.6 qt/a			V1-V3	B				
14	N-pak ams	5 % v/v		3 qt/a			V1-V3	B				
15	Authority First	0.28 lb ai/a		6.4 oz/a			PRE	A	14.3339264 ab	14.500 a	40.9 ab	54.3208 a
15	Anthem	0.101 lb ai/a		6 oz/a			V1-V3	B				
15	Select Max	0.0625 lb ai/a		8 oz/a			V1-V3	B				
15	COC	1 % v/v		0.6 qt/a			V1-V3	B				
15	N-pak ams	5 % v/v		3 qt/a			V1-V3	B				
16	Authority MTZ	0.338 lb ai/a		12 oz/a			PRE	A	10.2455260 de	14.728 a	29.1 de	51.7888 a
16	Anthem	0.101 lb ai/a		6 oz/a			V1-V3	B				
16	Select Max	0.0625 lb ai/a		8 oz/a			V1-V3	B				
16	COC	1 % v/v		0.6 qt/a			V1-V3	B				
16	N-pak ams	5 % v/v		3 qt/a			V1-V3	B				
17	Authority XL	0.175 lb ai/a		4 oz/a			PRE	A	12.9489763 a-d	14.685 a	36.9 a-d	53.4810 a
17	Anthem	0.101 lb ai/a		6 oz/a			V1-V3	B				
17	Select Max	0.0625 lb ai/a		8 oz/a			V1-V3	B				
17	COC	1 % v/v		0.6 qt/a			V1-V3	B				
17	N-pak ams	5 % v/v		3 qt/a			V1-V3	B				
18	Authority MAXX	0.165 lb ai/a		4 oz/a			PRE	A	10.8700011 cd	13.855 a	31.2 cd	52.2463 a
18	Anthem	0.101 lb ai/a		6 oz/a			V1-V3	B				
18	Select Max	0.0625 lb ai/a		8 oz/a			V1-V3	B				
18	COC	1 % v/v		0.6 qt/a			V1-V3	B				
18	N-pak ams	5 % v/v		3 qt/a			V1-V3	B				
19	Authority Elite	1.37 lb ai/a		25 oz/a			PRE	A	11.3864990 bcd	14.041 a	32.6 bcd	52.4299 a
19	Anthem	0.101 lb ai/a		6 oz/a			V1-V3	B				
19	Select Max	0.0625 lb ai/a		8 oz/a			V1-V3	B				
19	COC	1 % v/v		0.6 qt/a			V1-V3	B				
19	N-pak ams	5 % v/v		3 qt/a			V1-V3	B				

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Pest Type				
Pest Code				
Pest Scientific Name		Weight	Moisture	Weight TestWeight
Pest Name				
Crop Code		GLXMA	GLXMA	GLXMA GLXMA
BBCH Scale		BSOY	BSOY	BSOY BSOY
Crop Scientific Name		Glycine max	Glycine max	Glycine max Glycine max
Crop Name		Soybean	Soybean	Soybean Soybean
Rating Date		10/25/2014	10/25/2014	10/25/2014 10/25/2014
Rating Type		WEIGHT	MOICON	YIELD WEITES
Rating Unit		LBS	%	BU LBS
Number of Subsamples		1	1	1 1
Days After First/Last Applic.		151 127	151 127	151 127 151 127
Trt-Eval Interval				
Plant-Eval Interval		151 DP-1	151 DP-1	151 DP-1 151 DP-1
Days After Emergence		145 DE-1	145 DE-1	145 DE-1 145 DE-1
ARM Action Codes				TY1
Number of Decimals				1

Trt Treatment	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code	24	25	26	27
20 UTC							4.9636005 f	10.793 a	14.2 f	32.5370 b
LSD (P=.05)							3.12198403	2.4639	8.97	7.57065
Standard Deviation							2.20757608	1.7422	6.34	5.35326
CV							16.83	12.26	16.92	10.16
Bartlett's X2							23.898	137.841	24.093	123.037
P(Bartlett's X2)							0.20	0.001*	0.193	0.001*
Replicate F							2.206	0.491	2.247	1.910
Replicate Prob(F)							0.0979	0.6903	0.0933	0.1390
Treatment F							6.674	1.038	6.627	3.491
Treatment Prob(F)							0.0001	0.4368	0.0001	0.0002

Crop Code
 GLXMA, BSOY, Glycine max, = US
Rating Type
 WEIGHT = weight
 MOICON = moisture content
 YIELD = yield
 WEITES = weight - test
Rating Unit
 % = percent
 BU = bushel
Plant-Eval Interval
 151 DP-1 = 1 GLXMA 5/27/2014
ARM Action Codes
 TY1 = 2.904*[24]*(100-[25])/87