

The Ohio State University

Trial ID: Location: Trial Year:
 Protocol ID: Investigator: Dr. Mark M. Loux
 Project ID: Study Director:
 Sponsor Contact:

General Trial Information

Investigator: Dr. Mark M. Loux

Trial Location

City: South Charleston Country: USA United States
 State/Prov.: Ohio
 Postal Code: 45368 Climate Zone: US Warm Continental

Latitude of LL Corner °: 39.85947 N
 Longitude of LL Corner °: 83.66972 W

Investigator: Dr. Mark M. Loux

Crop Description

Crop 1: GLXMA Glycine max
Variety: Pioneer P35T58R
Description: Roundup Ready

Soybean
Planting Date: 5-5-2014
Planting Method: SEEDED seeded
Planting Equipment: FE Field Equipment
Emergence Date: 5-14-2014
Harvest Date: 10-24-2014
Harvested Width, Unit: 6.25 FT
Harvested Length, Unit: 40 FT
Harvest Equipment: Massey Ferguson 8 XP
% Standard Moisture: 13.0
Moisture Meter: Harvest Master
Weighing Equipment: Harvest Master

Planting Rate, Unit: 160000 S/A
Depth, Unit: 1 IN
Row Spacing, Unit: 15 IN

Soil Moisture: SLIWET slightly wet, moist
Seed Bed: MEDIUM medium

Crop 2: GLXMA Glycine max
Variety: Pioneer P34T35L
Description: Liberty Link

Soybean
Planting Date: 5-5-2014
Planting Method: SEEDED seeded
Planting Equipment: FE Field Equipment
Emergence Date: 5-14-2014
Harvest Date: 10-24-2014
Harvested Width, Unit: 6.25 FT
Harvested Length, Unit: 40 FT
Harvest Equipment: Massey Ferguson 8 XP
% Standard Moisture: 13.0
Moisture Meter: Harvest Master
Weighing Equipment: Harvest Master

Planting Rate, Unit: 1600000 S/A
Depth, Unit: 1 IN
Row Spacing, Unit: 15 IN

Soil Moisture: SLIWET slightly wet, moist
Seed Bed: MEDIUM medium

Crop 3: SECCW Secale cereale (winter)
Variety: VNS
Description: Walnut Creek Seed, Lot KD2013B

Winter rye
Planting Date: 10-11-2013
Planting Method: DRILLE drilled
Planting Equipment: DD Disc Drill

Planting Rate, Unit: 90 LB/A
Depth, Unit: 0.75 in
Row Spacing, Unit: 7.5 IN

Crop 4: AVESS Avena sp.
Variety: VNS

Oats
Planting Date: 10-11-2013
Planting Method: DRILLE drilled
Planting Equipment: DD Disc Drill

Planting Rate, Unit: 60 LB/A
Depth, Unit: 0.75 IN
Row Spacing, Unit: 7.5 IN

Pest Description

Pest 1 Type: W **Code:** SETFA Setaria faberi
Common Name: Giant foxtail

Pest 2 Type: W **Code:** AMARE Amaranthus retroflexus
Common Name: Redroot pigweed

Pest 3 Type: W **Code:** AMBTR Ambrosia trifida
Common Name: Giant ragweed

The Ohio State University

Trial ID: Location: Trial Year:
 Protocol ID: Investigator: Dr. Mark M. Loux
 Project ID: Study Director:
 Sponsor Contact:

Treated Plot Width: 10 FT
Treated Plot Length: 40 FT
Treated Plot Area: 400 FT2 **Treatments:** 18
Replications: 4

Site and Design
Site Type: FIELD field
Experimental Unit: 1 PLOT plot
Tillage Type: CONTIL conventional-till
Study Design: SPLPLO Split-Plot

No. Previous Crop Year
 1. None 2013

Soil Description

Description Name: E-1
% OM: 3.5 **Texture:** SICL silty clay loam
pH: 6.6 **Soil Name:** Kokomo
CEC: 22 **Fert. Level:** G good
Soil Drainage: G good

Analyzed By:
 Spectrum Analytic, Inc.
 Washington Court House, Oh

Additional Measured Elements

Date	Element	Quantity	Unit
3-14-2014 P		82	LB/A
3-14-2014 K		317	LB/A

Application Description

	A	B	C
Application Date:	4-17-2014	6-4-2014	6-26-2014
Appl. Start Time:	11:30 AM	8:30 AM	8:30 AM
Appl. Stop Time:	12:00 PM	9:10 AM	9:00 AM
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	14 EPP	21DAPL	21 DAPO
Application Placement:	BROFOL	BROFOL	BROFOL
Applied By:	Rebb	Bethel	Ackley
Air Temperature, Unit:	48.7 F	68.6 F	76 F
% Relative Humidity:	54	65	77
Wind Velocity, Unit:	8.3 MPH	1.0 MPH	2 MPH
Wind Direction:	S	E	NNW
Dew Presence (Y/N):	N no	N no	Y yes
Soil Temperature, Unit:	40 F	66 F	69 F
Soil Moisture:	MOIST	SLIDRY	WET
% Cloud Cover:	15	90	10
Next Moisture Occurred On:	4-28-2014	6-4-2014	6-28-2014
Time to Next Moisture, Unit:	11 DAY	7 HR	2 DAY

Crop Stage At Each Application

	A	B	C
Crop 1 Code, BBCH Scale:	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY
Stage Scale Used:		BBCH	BBCH
Stage Majority, Percent:		13 100	22 100
Height, Unit:		6 IN	15 IN
Height Minimum, Maximum:		4 6	14 16
Crop 2 Code, BBCH Scale:	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY
Stage Scale Used:		BBCH	BBCH
Stage Majority, Percent:		13 100	22 100
Height, Unit:		6 IN	15 IN
Height Minimum, Maximum:		4 6	14 16
Crop 3 Code, BBCH Scale:	SECCW BCER	SECCW BCER	SECCW BCER
Stage Scale Used:		BBCH	
Stage Majority, Percent:		27 100	
Height, Unit:		12 IN	
Height Minimum, Maximum:		10 12	
Crop 4 Code, BBCH Scale:	AVESS BCER	AVESS BCER	AVESS BCER

The Ohio State University

Trial ID: Location: Trial Year:
 Protocol ID: Investigator: Dr. Mark M. Loux
 Project ID: Study Director:
 Sponsor Contact:

Pest Stage At Each Application

	A	B	C
Pest 1 Code, Type, Scale:	SETFA W	SETFA W	SETFA W
Stage Majority, Percent:		12 100	
Height, Unit:		3 IN	
Height Minimum, Maximum:		3 4	
Density, Unit:		246 M2	
Pest 2 Code, Type, Scale:	AMARE W	AMARE W	AMARE W
Stage Majority, Percent:		14 90	
Stage Minimum, Percent:		12 10	
Stage Maximum, Percent:		14 90	
Height, Unit:		2 IN	
Height Minimum, Maximum:		1 2	
Pest 3 Code, Type, Scale:	AMBTR W	AMBTR W	AMBTR W
Stage Majority, Percent:		14 100	14 100
Height, Unit:		4 IN	3 IN
Height Minimum, Maximum:		4 6	2 3
Density, Unit:		3 M2	0.3 M2

Application Equipment

	A	B	C
Appl. Equipment:	10' AI XR	10' AI XR	10' AI XR
Equipment Type:	SPRBAC	SPRBAC	SPRBAC
Operation Pressure, Unit:	46 PSI	46 PSI	46 PSI
Nozzle Type:	AI XR	AI XR	AI XR
Nozzle Size:	110015	110015	110015
Nozzle Spacing, Unit:	18 IN	18 IN	18 IN
Boom Length, Unit:	10 FT	10 FT	10 FT
Boom Height, Unit:	20 IN	20 IN	20 IN
Ground Speed, Unit:	3 MPH	3 MPH	3 MPH
Carrier:	WATER	WATER	WATER
Spray Volume, Unit:	15 GPA	15 GPA	15 GPA
Mix Size, Unit:	0.33 Gallons	0.33 Gallons	0.33 Gallons
Propellant:	CO2	CO2	CO2

The Ohio State University

Trial ID: Location: Trial Year:
 Protocol ID: Investigator: Dr. Mark M. Loux
 Project ID: Study Director:
 Sponsor Contact:

Pest Type				
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	10-24-2014	10-24-2014	10-24-2014	10-24-2014
Rating Type	YIELD	MOICON	YIELD	WEITES
Rating Unit	LBS	%	BU	LBS
Number of Subsamples	1	1	1	1
Days After First/Last Applic.	190 120	190 120	190 120	190 120
Trt-Eval Interval	HARVEST	HARVEST	HARVEST	HARVEST
Plant-Eval Interval	172 DP-1	172 DP-1	172 DP-1	172 DP-1
Days After Emergence	163 DE-1	163 DE-1	163 DE-1	163 DE-1
ARM Action Codes			TY1	
Number of Decimals		1	1	1

Trt No.	Treatment Name	Other Rate	Other Rate	Appl Unit	Appl Code	Description	9	10	11	12
1	Cereal Rye						23.4 abc	14.9 a	66.5 a-d	51.4 bcd
1	Roundup Ready									
1	Valor SX	2.5 oz/a		A		14 EPP				
1	Roundup PowerMax	21.3 oz/a		A		14 EPP				
1	2,4-D Ester	1 pt/a		A		14 EPP				
1	N PAK AMS	1.5 qt/a		A		14 EPP				
1	Roundup PowerMax	21.3 oz/a		B		21 DAPL				
1	Flexstar	1.33 pt/a		B		21 DAPL				
1	Dual II Magnum	1.3 pt/a		B		21 DAPL				
1	MSO	0.6 qt/a		B		21 DAPL				
1	N PAK AMS	1.5 qt/a		B		21 DAPL				
2	Cereal Rye						23.5 abc	14.7 a	67.0 abc	54.0 ab
2	Roundup Ready									
2	Valor SX	2.5 oz/a		A		14 EPP				
2	Roundup PowerMax	21.3 oz/a		A		14 EPP				
2	2,4-D Ester	1 pt/a		A		14 EPP				
2	N PAK AMS	1.5 qt/a		A		14 EPP				
2	Roundup PowerMax	21.3 oz/a		B		21 DAPL				
2	Flexstar	1.33 pt/a		B		21 DAPL				
2	Dual II Magnum	1.3 pt/a		B		21 DAPL				
2	MSO	0.6 qt/a		B		21 DAPL				
2	N PAK AMS	1.5 qt/a		B		21 DAPL				
2	Warrant	1.5 qt/a		C		21 DAPO				
3	Cereal Rye						17.6 b-e	14.3 a	50.4 b-e	52.7 a-d
3	Roundup Ready									
3	Roundup PowerMax	21.3 oz/a		A		14 EPP				
3	2,4-D Ester	1 pt/a		A		14 EPP				
3	N PAK AMS	1.5 qt/a		A		14 EPP				
3	UTC									
4	Cereal Rye						24.7 ab	14.0 a	70.8 ab	54.4 a
4	Liberty Link									
4	Valor SX	2.5 oz/a		A		14 EPP				
4	Roundup PowerMax	21.3 oz/a		A		14 EPP				
4	2,4-D Ester	1 pt/a		A		14 EPP				
4	N PAK AMS	1.5 qt/a		A		14 EPP				
4	Liberty	32 oz/a		B		21 DAPL				
4	Dual II Magnum	1.3 pt/a		B		21 DAPL				
4	N PAK AMS	1.5 qt/a		B		21 DAPL				

Means followed by same letter do not significantly differ (P=.05, LSD)
 Mean separations are based on the complete error term.
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

The Ohio State University

Trial ID: Location: Trial Year:
 Protocol ID: Investigator: Dr. Mark M. Loux
 Project ID: Study Director:
 Sponsor Contact:

Pest Type				
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	10-24-2014	10-24-2014	10-24-2014	10-24-2014
Rating Type	YIELD	MOICON	YIELD	WEITES
Rating Unit	LBS	%	BU	LBS
Number of Subsamples	1	1	1	1
Days After First/Last Applic.	190 120	190 120	190 120	190 120
Trt-Eval Interval	HARVEST	HARVEST	HARVEST	HARVEST
Plant-Eval Interval	172 DP-1	172 DP-1	172 DP-1	172 DP-1
Days After Emergence	163 DE-1	163 DE-1	163 DE-1	163 DE-1
ARM Action Codes			TY1	
Number of Decimals		1	1	1

Trt No.	Treatment Name	Other Rate	Other Rate	Appl Unit	Appl Code	Appl Description	9	10	11	12
10	Oats						25.7 a	13.7 a	74.0 a	53.9 ab
10	Liberty Link			A		PRE				
10	Valor SX	2.5 oz/a		A		14 EPP				
10	Roundup PowerMax	21.3 oz/a		A		14 EPP				
10	2,4-D Ester	1 pt/a		A		14 EPP				
10	N PAK AMS	1.5 qt/a		A		14 EPP				
10	Liberty	32 oz/a		B		21 DAPL				
10	Dual II Magnum	1.3 pt/a		B		21 DAPL				
10	N PAK AMS	1.5 qt/a		B		21 DAPL				
11	Oats						25.9 a	14.3 a	74.0 a	54.4 a
11	Liberty Link									
11	Valor SX	2.5 oz/a		A		14 EPP				
11	Roundup PowerMax	21.3 oz/a		A		14 EPP				
11	2,4-D Ester	1 pt/a		A		14 EPP				
11	N PAK AMS	1.5 qt/a		A		14 EPP				
11	Liberty	32 oz/a		B		21 DAPL				
11	Dual II Magnum	1.3 pt/a		B		21 DAPL				
11	N PAK AMS	1.5 qt/a		B		21 DAPL				
11	Warrant	1.5 qt/a		C		21 DAPO				
12	Oats						16.0 de	14.2 a	45.9 de	50.9 cd
12	Liberty Link									
12	UTC									
13	No Cover						23.9 ab	14.0 a	68.5 ab	54.6 a
13	Roundup Ready									
13	Valor SX	2.5 oz/a		A		14 EPP				
13	Roundup PowerMax	21.3 oz/a		A		14 EPP				
13	2,4-D Ester	1 pt/a		A		14 EPP				
13	N PAK AMS	1.5 qt/a		A		14 EPP				
13	Roundup PowerMax	21.3 oz/a		B		21 DAPL				
13	Flexstar	1.33 pt/a		B		21 DAPL				
13	Dual II Magnum	1.3 pt/a		B		21 DAPL				
13	MSO	0.6 qt/a		B		21 DAPL				
13	N PAK AMS	1.5 qt/a		B		21 DAPL				

The Ohio State University

Trial ID: Location: Trial Year:
 Protocol ID: Investigator: Dr. Mark M. Loux
 Project ID: Study Director:
 Sponsor Contact:

Pest Type				
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	10-24-2014	10-24-2014	10-24-2014	10-24-2014
Rating Type	YIELD	MOICON	YIELD	WEITES
Rating Unit	LBS	%	BU	LBS
Number of Subsamples	1	1	1	1
Days After First/Last Applic.	190 120	190 120	190 120	190 120
Trt-Eval Interval	HARVEST	HARVEST	HARVEST	HARVEST
Plant-Eval Interval	172 DP-1	172 DP-1	172 DP-1	172 DP-1
Days After Emergence	163 DE-1	163 DE-1	163 DE-1	163 DE-1
ARM Action Codes			TY1	
Number of Decimals	1	1	1	1

Trt No.	Treatment Name	Other Rate	Other Rate	Appl Unit	Appl Code	Appl Description	9	10	11	12
14	No Cover						23.9 ab	14.7 a	68.1 ab	54.0 ab
14	Roundup Ready									
14	Valor SX	2.5 oz/a		A		14 EPP				
14	Roundup PowerMax	21.3 oz/a		A		14 EPP				
14	2,4-D Ester	1 pt/a		A		14 EPP				
14	N PAK AMS	1.5 qt/a		A		14 EPP				
14	Roundup PowerMax	21.3 oz/a		B		21 DAPL				
14	Flexstar	1.33 pt/a		B		21 DAPL				
14	Dual II Magnum	1.3 pt/a		B		21 DAPL				
14	MSO	0.6 qt/a		B		21 DAPL				
14	N PAK AMS	1.5 qt/a		B		21 DAPL				
14	Warrant	1.5 qt/a		C		21 DAPO				
15	No Cover						13.0 e	14.5 a	37.4 e	52.3 a-d
15	Roundup Ready									
15	UTC									
16	No Cover						25.3 a	13.8 a	72.8 a	54.0 ab
16	Liberty Link			A		PRE				
16	Valor SX	2.5 oz/a		A		14 EPP				
16	Roundup PowerMax	21.3 oz/a		A		14 EPP				
16	2,4-D Ester	1 pt/a		A		14 EPP				
16	N PAK AMS	1.5 qt/a		A		14 EPP				
16	Liberty	32 oz/a		B		21 DAPL				
16	Dual II Magnum	1.3 pt/a		B		21 DAPL				
16	N PAK AMS	1.5 qt/a		B		21 DAPL				
17	No Cover						24.5 ab	14.0 a	70.5 ab	53.9 ab
17	Liberty Link									
17	Valor SX	2.5 oz/a		A		14 EPP				
17	Roundup PowerMax	21.3 oz/a		A		14 EPP				
17	2,4-D Ester	1 pt/a		A		14 EPP				
17	N PAK AMS	1.5 qt/a		A		14 EPP				
17	Liberty	32 oz/a		B		21 DAPL				
17	Dual II Magnum	1.3 pt/a		B		21 DAPL				
17	N PAK AMS	1.5 qt/a		B		21 DAPL				
17	Warrant	1.5 qt/a		C		21 DAPO				

The Ohio State University

Trial ID: Location: Trial Year:
 Protocol ID: Investigator: Dr. Mark M. Loux
 Project ID: Study Director:
 Sponsor Contact:

Pest Type				
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	10-24-2014	10-24-2014	10-24-2014	10-24-2014
Rating Type	YIELD	MOICON	YIELD	WEITES
Rating Unit	LBS	%	BU	LBS
Number of Subsamples	1	1	1	1
Days After First/Last Applic.	190 120	190 120	190 120	190 120
Trt-Eval Interval	HARVEST	HARVEST	HARVEST	HARVEST
Plant-Eval Interval	172 DP-1	172 DP-1	172 DP-1	172 DP-1
Days After Emergence	163 DE-1	163 DE-1	163 DE-1	163 DE-1
ARM Action Codes			TY1	
Number of Decimals	1	1	1	1
Trt Treatment	Other	Other	Appl	Appl
No. Name	Rate	Rate	Unit	Code Description
18 No Cover	14.0 e	14.1 a	11	12
18 Liberty Link				
18 UTC				
LSD (P=.05)	7.29	0.80	20.93	2.79
Standard Deviation	5.10	0.56	14.65	1.95
CV	24.11	3.95	24.18	3.66
Grand Mean	21.16	14.22	60.59	53.31
Bartlett's X2	74.527	22.859	75.666	45.37
P(Bartlett's X2)	0.001*	0.154	0.001*	0.001*
Skewness	-1.9682*	0.4564	-1.9595*	-1.6878*
Kurtosis	3.2439*	-0.2187	3.2131*	4.1634*
Replicate F	3.565	0.290	3.608	1.947
Replicate Prob(F)	0.0234	0.8323	0.0224	0.1395
Treatment F	3.399	1.599	3.399	1.941
Treatment Prob(F)	0.0010	0.1161	0.0010	0.0467

Crop Code
 GLXMA, BSOY, Glycine max, = US
Rating Type
 YIELD = yield
 MOICON = moisture content
 WEITES = weight - test
Rating Unit
 % = percent
 BU = bushel
Plant-Eval Interval
 172 DP-1 = 1 GLXMA 5-5-2014
ARM Action Codes
 TY1 = 2.904*[9]*(100-[10])/87