

# The Ohio State University

## Influence of Tillage Types on Management of Amaranthus in Soybean

Trial ID: 14USBTILL Location: Western Branch Big E Trial Year: 2014  
 Protocol ID: 14USBTILL Investigator: Dr. Mark M. Loux  
 Project ID: Study Director: Dr. Kevin Bradley  
 Sponsor Contact:

### Crop Description

**Crop 1:** GLXMA Glycine max Soybean  
**Variety:** PIONEER 34T35L **BBCH Scale:** BSOY  
**Description:** LIBERTY LINK

**Planting Rate, Unit:** 165000 S/A  
**Depth, Unit:** 1 IN  
**Row Spacing, Unit:** 30 IN  
**Soil Temperature, Unit:** 64 F  
**Soil Moisture:** DRY dry  
**Seed Bed:** MEDTRA medium/trashy

**Planting Date:** May-29-2014  
**Planting Method:** PLANTD planted  
**Planting Equipment:** FE Field Equipment  
**Emergence Date:** Jun-4-2014

### Site and Design

**Treated Plot Width:** 10 FT  
**Treated Plot Length:** 40 FT  
**Treated Plot Area:** 400 FT2 **Treatments:** 8  
**Replications:** 4 **Study Design:** FACTOR Factorial

### Application Description

	A	B
<b>Application Date:</b>	May-30-2014	Jun-27-2014
<b>Appl. Start Time:</b>	8:00 AM	9:00 AM
<b>Appl. Stop Time:</b>	8:15 AM	9:15 AM
<b>Application Method:</b>	SPRAY	SPRAY
<b>Application Timing:</b>	PRE	21 DAPL
<b>Application Placement:</b>	BROSOL	BROFOL
<b>Applied By:</b>	Dobbels	Dobbels
<b>Air Temperature, Unit:</b>	66 F	76 F
<b>% Relative Humidity:</b>	64	72
<b>Wind Velocity, Unit:</b>	2 MPH	5 MPH
<b>Wind Direction:</b>	SSW	NNE
<b>Dew Presence (Y/N):</b>	N no	N no
<b>Soil Temperature, Unit:</b>	64 F	69 F
<b>Soil Moisture:</b>	DRY	MOIST
<b>% Cloud Cover:</b>	2	3
<b>Next Moisture Occurred On:</b>	Jun-2-2014	Jun-28-2014
<b>Time to Next Moisture, Unit:</b>	3 DAY	1 DAY

### Crop Stage At Each Application

	A	B
<b>Crop 1 Code, BBCH Scale:</b>	GLXMA BSOY	GLXMA BSOY
<b>Stage Scale Used:</b>		BBCH
<b>Stage Majority, Percent:</b>		16 100
<b>Height, Unit:</b>		12 IN

### Application Equipment

	A	B
<b>Appl. Equipment:</b>	Tractor	Tractor
<b>Equipment Type:</b>	SPTROMO	SPTROMO
<b>Operation Pressure, Unit:</b>	24 PSI	24 PSI
<b>Nozzle Type:</b>	AI	AI
<b>Nozzle Size:</b>	11002	11002
<b>Nozzle Spacing, Unit:</b>	20 IN	20 IN
<b>Boom Length, Unit:</b>	10 FOOT	10 FOOT
<b>Boom Height, Unit:</b>	24 IN	24 IN
<b>Ground Speed, Unit:</b>	3.8 MPH	3.8 MPH
<b>Carrier:</b>	WATER	WATER
<b>Spray Volume, Unit:</b>	15 GAL/AC	15 GAL/AC
<b>Mix Size, Unit:</b>	3 GALLONS	3 GALLONS
<b>Propellant:</b>	PUMROL	PUMROL

**Date By Notes**  
 Jul-11-2014 Reeb Overlaid with tractor sprayer at 11:30 am with Liberty @ 29 oz.

77 F was air temp  
 48% RH  
 3mph wind NNW  
 No Dew  
 25% clouds  
 Soil dry  
 70F soil temp



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Pest Type	W Weed	W Weed	W Weed	W Weed
Pest Code	AMARE	AMARE	AMARE	AMARE
Pest Scientific Name	Amaranthus ret>	Amaranthus ret>	Amaranthus ret>	Amaranthus ret>
Pest Name	Redroot pigweed	Redroot pigweed	Redroot pigweed	Redroot pigweed
Rating Date	Jun-13-2014	Jun-26-2014	Jul-11-2014	Jul-29-2014
Rating Type	COUPLA	COUPLA	COUPLA	COUPLA
Rating Unit	1/2M2	1/2 M2	1/2 M2	1/2 M2
Number of Subsamples	1	1	1	1
SE Group No.	1	2	3	4
Days After First/Last Applic.	14 14	27 27	42 14	60 32
Trt-Eval Interval	-14 DA-B	-2 DA-B	14 DA-B	32 DA-B
Plant-Eval Interval	15 DP-1	28 DP-1	43 DP-1	61 DP-1
Days After Emergence	9 DE-1	22 DE-1	37 DE-1	55 DE-1
Number of Decimals	0	0	0	0

Trt Treatment No. Name	Rate Rate Unit	Other Rate	Other Rate	Appl Unit Code	1	2	3	4
1 Deep Tillage					6	19	2	0
1 No Residual								
1 Liberty	0.53 lb ai/a	29 oz/a		B				
1 N PAK AMS	2.5 % v/v	48 oz/a		B				
2 Deep Tillage					2	0	0	0
2 Valor SX	0.08 lb ai/a	2.5 oz/a		A				
2 Liberty	0.53 lb ai/a	29 oz/a		B				
2 Dual II Magnum	1.24 lb ai/a	1.3 pt/a		B				
2 N PAK AMS	2.5 % v/v	48 oz/a		B				
3 Conventional Tillage					5	21	3	0
3 No Residual								
3 Liberty	0.53 lb ai/a	29 oz/a		B				
3 N PAK AMS	2.5 % v/v	48 oz/a		B				
4 Conventional Tillage					1	0	0	0
4 Valor SX	0.08 lb ai/a	2.5 oz/a		A				
4 Liberty	0.53 lb ai/a	29 oz/a		B				
4 Dual II Magnum	2.5 lb ai/a	2.62 pt/a		B				
4 N PAK AMS	2.5 % v/v	48 oz/a		B				
5 Minimum Tillage					4	6	1	0
5 No Residual								
5 Liberty	0.53 lb ai/a	29 oz/a		B				
5 N PAK AMS	2.5 % v/v	48 oz/a		B				
6 Minimum Tillage					0	0	0	0
6 Valor SX	0.08 lb ai/a	2.5 oz/a		A				
6 Liberty	0.53 lb ai/a	29 oz/a		B				
6 Dual II Magnum	2.5 lb ai/a	2.62 pt/a		B				
7 No-Tillage					1	4	1	0
7 No Residual								
7 Liberty	0.53 lb ai/a	29 oz/a		B				
7 N PAK AMS	2.5 % v/v	48 oz/a		B				

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Days After Emergence	9 DE-1	22 DE-1	37 DE-1	55 DE-1
Number of Decimals	0	0	0	0

Trt Treatment No. Name	Rate Rate Unit	Other Rate	Other Rate Unit	Appl Code	1	2	3	4
8 No-Tillage					0	0	0	0
8 Valor SX	0.08 lb ai/a	2.5 oz/a		A				
8 Liberty	0.53 lb ai/a	29 oz/a		B				
8 Dual II Magnum	2.5 lb ai/a	2.62 pt/a		B				
8 N PAK AMS	2.5 % v/v	48 oz/a		B				
LSD (P=.05)					2.1	9.5	1.7	0.0
Standard Deviation					1.4	6.5	1.1	0.0
CV					62.89	103.82	128.84	0.0
Bartlett's X2					14.56	21.377	14.265	0.0
P(Bartlett's X2)					0.024*	0.001*	0.006*	.
Skewness					0.6772	1.6955*	2.1213*	.
Kurtosis					-1.1782	1.5858	4.363*	.
Replicate F					0.936	0.399	1.590	0.000
Replicate Prob(F)					0.4407	0.7554	0.2216	1.0000
Treatment F					10.306	7.328	4.019	0.000
Treatment Prob(F)					0.0001	0.0002	0.0061	1.0000

Pest Type

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

Pest Code

AMARE, Amaranthus retroflexus, = US

Rating Type

COUPLA = count - plant / emergence - objective

Plant-Eval Interval

15 DP-1 = 1 GLXMA May-29-2014

28 DP-1 = 1 GLXMA May-29-2014

43 DP-1 = 1 GLXMA May-29-2014

61 DP-1 = 1 GLXMA May-29-2014