

Ohio State University Horticulture and Crop Science

LL SOY MARESTAIL RESEARCH/DEMO STUDY

Title No. 2:
 Trial ID: 10LLHOWE(WARS) Protocol ID: 10LLHOWE
 Location: Western Branch G-7 Study Director: Bryan Reeb
 Project ID: 10LLHOWE Investigator: Dr. Mark M. Loux
 Sponsor Contact:

General Trial Information

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

<p>City: South Charleston State/Prov.: Ohio Postal Code: 45368 Country: USA</p>	<p>Trial Location Latitude of LL Corner °: 39.8582 N Longitude of LL Corner °: 83.67693 W Altitude of LL Corner, Unit: 1094.00 FT</p>
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Personnel

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

Crop Description

<p>Crop 1: GLXMA Glycine max Soybean Variety: S.C. 3330 LL BBCH Scale: BSOY Planting Method: SEEDED seeded Depth, Unit: 0.75 IN Row Spacing, Unit: 15 IN Seed Bed: NO-TIL Soil Moisture: GOOD good Harvested Width, Unit: 6.25 FT</p>	<p>Description: LIBERTY LINK Planting Date: Apr-29-2010 Rate, Unit: 196000 S/A Emergence Date: May-7-2010 Harvested Length, Unit: 30 FT</p>
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Pest Description

- Pest 1 Type:** W **Code:** SENGL *Senecio glabellus*
Common Name: Cressleaf groundsel
- Pest 2 Type:** W **Code:** ERPSS *Erophila sp.*
Common Name: Whitlowgrass
- Pest 3 Type:** W **Code:** ERICA *Conyza canadensis*
Common Name: Canada horseweed
- Pest 4 Type:** W **Code:** LAMPU *Lamium purpureum*
Common Name: Purple deadnettel
- Pest 5 Type:** W **Code:** CAPBP *Capsella bursa-pastoris*
Common Name: Shepherd's purse
- Pest 6 Type:** W **Code:** TAROF *Taraxacum officinale*
Common Name: Common dandelion
- Pest 7 Type:** W **Code:** AMBTR *Ambrosia trifida*
Common Name: Giant ragweed
- Pest 8 Type:** W **Code:** CHEAL *Chenopodium album*
Common Name: Common lambsquarters
- Pest 9 Type:** W **Code:** AMBEL *Ambrosia artemisiifolia*
Common Name: Common ragweed

Site and Design

<p>Plot Width, Unit: 6.67 FT Plot Length, Unit: 30 FT Plot Area, Unit: 200.1 FT² Replications: 3</p>	<p>Site Type: FIELD field Experimental Unit: 1 PLOT plot Tillage Type: NOTILL no-till Study Design: RACOB� Randomized Complete Block (RCB) Untreated Arrangement: INCLUDED single control randomized in each block</p>
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Soil Description

Description Name: G-7
 % OM: 2 **Texture:** SIL silt loam
 pH: 6.2 **Soil Name:** Crosby Silt Loam
 CEC: 14 **Fert. Level:** G good
Soil Drainage: G good

Application Description

	A	B	C
Application Date:	Nov-24-2009	Apr-21-2010	Jun-8-2010
Time of Day:	2:00 PM	9:00 AM	9:40 AM
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	FALL	7 EPP	POST
Application Placement:	BROFOL	BROFOL	BROFOL
Air Temperature, Unit:	53 F	53 F	60 F
% Relative Humidity:	70	49	65
Wind Velocity, Unit:	3 MPH	3 MPH	5 MPH
Wind Direction:	SE	WSW	ESE
Dew Presence (Y/N):		N no	N no
Soil Temperature, Unit:	48 F	50 F	62 F
Soil Moisture:	GOOD	DRY	GOOD
% Cloud Cover:	100	2	10
Next Rain Occurred On:	Nov-26-2009	Apr-24-2010	Jun-8-2010

Crop Stage At Each Application

	A	B	C
Crop 1 Code, BBCH Scale:	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY
Stage Scale Used:			BBCH
Stage Majority, Percent:			13 100
Height, Unit:			10 IN
Height Minimum, Maximum:			8 10

Pest Stage At Each Application

	A	B	C
Pest 1 Code, Type, Scale:	SENGL W	SENGL W	SENGL W
Stage Majority, Percent:	19 100	19 100	
Diameter, Unit:	4 IN		
Height, Unit:	4 IN	8 IN	
Height Minimum, Maximum:	2 4	6 8	
Pest 2 Code, Type, Scale:	ERPSS W	ERPSS W	ERPSS W
Stage Majority, Percent:	18 100		
Height, Unit:	0.5 IN		
Height Minimum, Maximum:	0.25 0.5		
Pest 3 Code, Type, Scale:	ERICA W	ERICA W	ERICA W
Stage Majority, Percent:	15 100	19 100	19 100
Height, Unit:	0.25 IN	6 IN	5 IN
Height Minimum, Maximum:		4 6	1 5
Pest 4 Code, Type, Scale:	LAMPU W	LAMPU W	LAMPU W
Stage Majority, Percent:	16 100	65 100	
Diameter, Unit:	1 IN	4 IN	
Height, Unit:	2 IN	6 IN	
Height Minimum, Maximum:	1 2	4 6	
Pest 5 Code, Type, Scale:	CAPBP W	CAPBP W	CAPBP W
Stage Majority, Percent:	18 100		
Diameter, Unit:	2 IN		
Height, Unit:	2 IN		
Height Minimum, Maximum:	1 2		
Pest 6 Code, Type, Scale:	TAROF W	TAROF W	TAROF W
Stage Majority, Percent:		65 100	
Diameter, Unit:		10 IN	
Height, Unit:		3 IN	
Pest 7 Code, Type, Scale:	AMBTR W	AMBTR W	AMBTR W
Stage Majority, Percent:		12 100	16 100
Height, Unit:		1 IN	6 IN
Height Minimum, Maximum:		0.5 1	4 6
Pest 8 Code, Type, Scale:	CHEAL W	CHEAL W	CHEAL W
Stage Majority, Percent:			18 100
Height, Unit:			4 IN
Height Minimum, Maximum:			2 4
Pest 9 Code, Type, Scale:	AMBEL W	AMBEL W	AMBEL W
Stage Majority, Percent:			16 100
Height, Unit:			7 IN
Height Minimum, Maximum:			6 7

Application Equipment

	A	B	C
Appl. Equipment:	Backpack	Backpack	Backpack
Equipment Type:	SPRBAC	SPRBAC	SPRBAC
Operating Pressure, Unit:	52 PSI	52 PSI	52 PSI
Nozzle Type:	DG	DG	DG
Nozzle Size:	8002	8002	11002
Nozzle Spacing, Unit:	18 IN	18 IN	18 IN
Boom Length, Unit:	6.67 FT	6.67 FT	10 FT
Boom Height, Unit:	18 IN	18 IN	18 IN
Ground Speed, Unit:	3 MPH	3 MPH	3 MPH
Carrier:	WATER	WATER	WATER
Spray Volume, Unit:	20 gal/ac	20 gal/ac	20 gal/ac
Mix Size, Unit:	0.33 gallons	0.33 gallons	3 gallons
Propellant:	COMCO2	COMCO2	COMCO2

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Pest Type						
Pest Code						
Pest Scientific Name						
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	Sep-21-2010	Sep-21-2010	Sep-21-2010			
Rating Type	YIELD	MOICON	YIELD			
Rating Unit	LB	%	BU			
Sample Size, Unit	187.5 FT2					
Number of Subsamples	1	1	1			
Days After First/Last Applic.	301 105	301 105	301 105			
Trt-Eval Interval						
Plant-Eval Interval	145 DP-1	145 DP-1	145 DP-1			
Days After Emergence	137 DE	137 DE	137 DE			
ARM Action Codes			TY1			
Number of Decimals	1	1	1			

Trt No.	Treatment Name	Form Conc	Form Unit	Other Rate	Other Unit	Appl Code	28	29	30
1	Ignite	2.34	LBA/GAL	32	oz/a	B	18.9 a	10.3 a	75.6 a
1	N-pak ams	100	%	2	qt/a	B			
1	Ignite	2.34	LBA/GAL	22	oz/a	C			
1	N-pak ams	100	%	2	qt/a	C			
2	Ignite	2.34	LBA/GAL	32	oz/a	B	20.1 a	10.6 a	80.1 a
2	Sencor 75DF	75	%AW/W	8	oz/a	B			
2	N-pak ams	100	%	2	qt/a	B			
2	Ignite	2.34	LBA/GAL	22	oz/a	C			
2	N-pak ams	100	%	2	qt/a	C			
3	Roundup Power Max	4.5	LBAE/GAL	22	oz/a	B	19.6 a	10.3 a	78.2 a
3	2,4-D Ester	4	LBA/GAL	1	pt/a	B			
3	N-pak ams	100	%	2	qt/a	B			
3	Ignite	2.34	LBA/GAL	22	oz/a	C			
3	N-pak ams	100	%	2	qt/a	C			
4	Roundup Power Max	4.5	LBAE/GAL	22	oz/a	B	18.2 a	10.3 a	72.7 a
4	Sharpen	2.85	LBA/GAL	1	oz/a	B			
4	N-pak ams	100	%	2	qt/a	B			
4	Ignite	2.34	LBA/GAL	22	oz/a	C			
4	N-pak ams	100	%	2	qt/a	C			
5	Valor XLT @4oz					B	18.4 a	10.4 a	73.2 a
5	Valor SX	51	%AW/W	2.35	oz/a	B			
5	Classic	25	%AW/W	1.65	oz/a	B			
5	Roundup Power Max	4.5	LBAE/GAL	22	oz/a	B			
5	2,4-D Ester	4	LBA/GAL	1	pt/a	B			
5	N-pak ams	100	%	2	qt/a	B			
5	Ignite	2.34	LBA/GAL	22	oz/a	C			
5	N-pak ams	100	%	2	qt/a	C			
6	Roundup Power Max	4.5	LBAE/GAL	11	oz/a	A	18.9 a	10.1 a	75.6 a
6	2,4-D Ester	4	LBA/GAL	1	pt/a	A			
6	N-pak ams	100	%	2	qt/a	A			
6	Roundup Power Max	4.5	LBAE/GAL	22	oz/a	B			
6	2,4-D Ester	4	LBA/GAL	1	pt/a	B			
6	N-pak ams	100	%	2	qt/a	B			
6	Ignite	2.34	LBA/GAL	22	oz/a	C			
6	N-pak ams	100	%	2	qt/a	C			
7	Roundup Power Max	4.5	LBAE/GAL	11	oz/a	A	20.4 a	10.3 a	81.6 a
7	2,4-D Ester	4	LBA/GAL	1	pt/a	A			
7	N-pak ams	100	%	2	qt/a	A			
7	Roundup Power Max	4.5	LBAE/GAL	22	oz/a	B			
7	Sharpen	2.85	LBA/GAL	1	oz/a	B			

Pest Type					
Pest Code					
Pest Scientific Name					
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	Sep-21-2010	Sep-21-2010	Sep-21-2010		
Rating Type	YIELD	MOICON	YIELD		
Rating Unit	LB	%	BU		
Sample Size, Unit	187.5 FT2				
Number of Subsamples	1	1	1		
Days After First/Last Applic.	301 105	301 105	301 105		
Trt-Eval Interval					
Plant-Eval Interval	145 DP-1	145 DP-1	145 DP-1		
Days After Emergence	137 DE	137 DE	137 DE		
ARM Action Codes			TY1		
Number of Decimals	1	1	1		

Trt No.	Treatment Name	Form Conc	Form Unit	Other Rate	Other Unit	Appl Code	28	29	30
7	N-pak ams	100 %		2 qt/a		B			
7	Ignite	2.34 LBA/GAL		22 oz/a		C			
7	N-pak ams	100 %		2 qt/a		C			
8	Roundup Power Max	4.5 LBAE/GAL		11 oz/a		A	19.2 a	10.2 a	76.8 a
8	2,4-D Ester	4 LBA/GAL		1 pt/a		A			
8	N-pak ams	100 %		2 qt/a		A			
8	VALOR XLT @4oz					B			
8	Valor SX	51 %AW/W		2.35 oz/a		B			
8	Classic	25 %AW/W		1.65 oz/a		B			
8	Roundup Power Max	4.5 LBAE/GAL		22 oz/a		B			
8	2,4-D Ester	4 LBA/GAL		1 pt/a		B			
8	N-pak ams	100 %		2 qt/a		B			
8	Ignite	2.34 LBA/GAL		22 oz/a		C			
8	N-pak ams	100 %		2 qt/a		C			
9	Roundup Power Max	4.5 LBAE/GAL		11 oz/a		A	19.5 a	10.6 a	77.6 a
9	2,4-D Ester	4 LBA/GAL		1 pt/a		A			
9	N-pak ams	100 %		2 qt/a		A			
9	Ignite	2.34 LBA/GAL		32 oz/a		B			
9	N-pak ams	100 %		2 qt/a		B			
9	Ignite	2.34 LBA/GAL		22 oz/a		C			
9	N-pak ams	100 %		2 qt/a		C			
10	Roundup Power Max	4.5 LBAE/GAL		11 oz/a		A	19.1 a	10.1 a	76.2 a
10	2,4-D Ester	4 LBA/GAL		1 pt/a		A			
10	N-pak ams	100 %		2 qt/a		A			
10	Ignite	2.34 LBA/GAL		32 oz/a		B			
10	Sencor 75DF	75 %AW/W		8 oz/a		B			
10	N-pak ams	100 %		2 qt/a		B			
10	Ignite	2.34 LBA/GAL		22 oz/a		C			
10	N-pak ams	100 %		2 qt/a		C			
11	Canopy	75 %AW/W		4.5 oz/a		A	17.8 a	11.0 a	70.4 a
11	2,4-D Ester	4 LBA/GAL		1 pt/a		A			
11	N-pak ams	100 %		2 qt/a		A			
11	Coc	100 %		0.8 qt/a		A			
11	Ignite	2.34 LBA/GAL		22 oz/a		C			
11	N-pak ams	100 %		2 qt/a		C			
12	Canopy	75 %AW/W		2.25 oz/a		A	18.5 a	10.1 a	74.1 a
12	2,4-D Ester	4 LBA/GAL		1 pt/a		A			
12	N-pak ams	100 %		2 qt/a		A			
12	Coc	100 %		0.8 qt/a		A			
12	Roundup Power Max	4.5 LBAE/GAL		22 oz/a		B			
12	2,4-D Ester	4 LBA/GAL		1 pt/a		B			
12	N-pak ams	100 %		2 qt/a		B			
12	Ignite	2.34 LBA/GAL		22 oz/a		C			
12	N-pak ams	100 %		2 qt/a		C			
13	Canopy	75 %AW/W		2.25 oz/a		A	17.8 a	10.2 a	71.3 a
13	2,4-D Ester	4 LBA/GAL		1 pt/a		A			
13	N-pak ams	100 %		2 qt/a		A			
13	Coc	100 %		0.8 qt/a		A			
13	Roundup Power Max	4.5 LBAE/GAL		22 oz/a		B			
13	Sharpen	2.85 LBA/GAL		1 oz/a		B			
13	N-pak ams	100 %		2 qt/a		B			
13	Ignite	2.34 LBA/GAL		22 oz/a		C			
13	N-pak ams	100 %		2 qt/a		C			

Pest Type						
Pest Code						
Pest Scientific Name						
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		Sep-21-2010	Sep-21-2010	Sep-21-2010		
Rating Type		YIELD	MOICON	YIELD		
Rating Unit		LB	%	BU		
Sample Size, Unit		187.5 FT2				
Number of Subsamples		1	1	1		
Days After First/Last Applic.		301 105	301 105	301 105		
Trt-Eval Interval						
Plant-Eval Interval		145 DP-1	145 DP-1	145 DP-1		
Days After Emergence		137 DE	137 DE	137 DE		
ARM Action Codes				TY1		
Number of Decimals		1	1	1		

Trt	Treatment	Form	Form	Other	Other	Appl			
No.	Name	Conc	Unit	Rate	Rate	Unit Code	28	29	30
14	Canopy	75 %AW/W		2.25 oz/a		A	17.7 a	10.5 a	70.5 a
14	2,4-D Ester	4 LBA/GAL		1 pt/a		A			
14	N-pak ams	100 %		2 qt/a		A			
14	Coc	100 %		0.8 qt/a		A			
14	Gramoxone Inteon	2 LBA/GAL		40 oz/a		B			
14	Sencor 75DF	75 %AW/W		8 oz/a		B			
14	N-pak ams	100 %		2 qt/a		B			
14	Ignite	2.34 LBA/GAL		22 oz/a		C			
14	N-pak ams	100 %		2 qt/a		C			
15	Canopy	75 %AW/W		2.25 oz/a		A	18.4 a	10.1 a	73.4 a
15	2,4-D Ester	4 LBA/GAL		1 pt/a		A			
15	N-pak ams	100 %		2 qt/a		A			
15	Coc	100 %		0.8 qt/a		A			
15	Valor XLT @4oz					B			
15	Valor SX	51 %AW/W		2.35 oz/a		B			
15	Classic	25 %AW/W		1.65 oz/a		B			
15	Roundup Power Max	4.5 LBAE/GAL		22 oz/a		B			
15	2,4-D Ester	4 LBA/GAL		1 pt/a		B			
15	N-pak ams	100 %		2 qt/a		B			
15	Ignite	2.34 LBA/GAL		22 oz/a		C			
15	N-pak ams	100 %		2 qt/a		C			
16	Canopy	75 %AW/W		2.25 oz/a		A	17.8 a	10.3 a	71.1 a
16	2,4-D Ester	4 LBA/GAL		1 pt/a		A			
16	N-pak ams	100 %		2 qt/a		A			
16	Coc	100 %		0.8 qt/a		A			
16	Valor XLT @2oz					B			
16	Valor SX	51 %AW/W		1.17 oz/a		B			
16	Classic	25 %AW/W		0.83 oz/a		B			
16	Roundup Power Max	4.5 LBAE/GAL		22 oz/a		B			
16	2,4-D Ester	4 LBA/GAL		1 pt/a		B			
16	N-pak ams	100 %		2 qt/a		B			
16	Ignite	2.34 LBA/GAL		22 oz/a		C			
16	N-pak ams	100 %		2 qt/a		C			
17	Canopy	75 %AW/W		2.25 oz/a		A	17.5 a	10.2 a	70.0 a
17	2,4-D Ester	4 LBA/GAL		1 pt/a		A			
17	N-pak ams	100 %		2 qt/a		A			
17	Coc	100 %		0.8 qt/a		A			
17	Ignite	2.34 LBA/GAL		32 oz/a		B			
17	N-pak ams	100 %		2 qt/a		B			
17	Ignite	2.34 LBA/GAL		22 oz/a		C			
17	N-pak ams	100 %		2 qt/a		C			
18	Canopy	75 %AW/W		2.25 oz/a		A	17.1 a	10.7 a	68.2 a
18	2,4-D Ester	4 LBA/GAL		1 pt/a		A			
18	N-pak ams	100 %		2 qt/a		A			
18	Coc	100 %		0.8 qt/a		A			
18	Ignite	2.34 LBA/GAL		32 oz/a		B			
18	Sencor 75DF	75 %AW/W		8 oz/a		B			
18	N-pak ams	100 %		2 qt/a		B			
18	Ignite	2.34 LBA/GAL		22 oz/a		C			
18	N-pak ams	100 %		2 qt/a		C			

LSD (P=.05)	2.51	0.54	9.90
Standard Deviation	1.51	0.32	5.94
CV	8.09	3.1	7.99

Pest Type					
Pest Code					
Pest Scientific Name					
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	Sep-21-2010	Sep-21-2010	Sep-21-2010		
Rating Type	YIELD	MOICON	YIELD		
Rating Unit	LB	%	BU		
Sample Size, Unit	187.5 FT2				
Number of Subsamples	1	1	1		
Days After First/Last Applic.	301 105	301 105	301 105		
Trt-Eval Interval					
Plant-Eval Interval	145 DP-1	145 DP-1	145 DP-1		
Days After Emergence	137 DE	137 DE	137 DE		
ARM Action Codes			TY1		
Number of Decimals	1	1	1		
Trt Treatment No. Name	Form Form Conc Unit	Other Other Rate Rate Unit Code	Appl		
				28	29
					30
Bartlett's X2				17.209	13.608
P(Bartlett's X2)				0.44	0.695
					19.352
					0.309
Replicate F				2.734	3.185
Replicate Prob(F)				0.0811	0.0557
Treatment F				1.136	1.817
Treatment Prob(F)				0.3685	0.0744
					1.182
					0.3342

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.

Crop Code
GLXMA, BSOY, Glycine max, = US
Rating Type
YIELD = yield
MOICON = moisture content
Rating Unit
LB = pound
% = percent
BU = bushel

FT2 = square foot
Plant-Eval Interval
145 DP-1 = 1 Apr-29-2010
ARM Action Codes
TY1 = $3.872 * [C28] * (100 - [C29]) / 87$