

# The Ohio State University

## AGH 11021 Herbicide for No-Till Burndown Weed Control in Soybean

Trial ID: 13AGH11021  
Protocol ID: 13AGH11021  
Project ID:

Location: WESTERN BRANCH G-7 Trial Year: 2013  
Investigator: Dr. Mark M. Loux  
Study Director: Anthony F. Dobbels  
Sponsor Contact: John Smith, WinField Solutions

### Crop Description

**Crop 1:** GLXMA Glycine max Soybean  
**Variety:** Asgrow 3533 **BBCH Scale:** BSOY  
**Description:** RR2  
**Planting Rate, Unit:** 150000 SEED/A  
**Depth, Unit:** 0.75 IN  
**Row Spacing, Unit:** 15 IN  
**Soil Moisture:** GOOD good  
**Seed Bed:** MEDTRA medium/trashy

**Planting Date:** May-23-2013  
**Planting Method:** PLANTD planted  
**Planting Equipment:** PP Plot Planter  
**Emergence Date:** May-31-2013

### Pest Description

- Pest 1 Type:** W **Code:** CAPBP Capsella bursa-pastoris  
**Common Name:** Shepherd's purse
- Pest 2 Type:** W **Code:** AMBTR Ambrosia trifida  
**Common Name:** Giant ragweed
- Pest 3 Type:** W **Code:** ERYRE Erysimum repandum  
**Common Name:** Bushy wallflower
- Pest 4 Type:** W **Code:** ERICA Conyza canadensis  
**Common Name:** Horseweed
- Pest 5 Type:** W **Code:** TAROF Taraxacum officinale  
**Common Name:** Common dandelion

### Site and Design

**Treated Plot Width:** 6.67 FT  
**Treated Plot Length:** 30 FT  
**Treated Plot Area:** 200.1 FT2 **Treatments:** 10  
**Replications:** 3  
**Site Type:** FIELD field  
**Experimental Unit:** 1 PLOT plot  
**Tillage Type:** NOTILL no-till  
**Study Design:** RACOB� Randomized Complete Block (RCB)

**No. Previous Crop Year**  
1. Soybean 2012

### Soil Description

**Description Name:** G-7 West  
**% OM:** 1.7 **Texture:** SIL silt loam  
**pH:** 6.1 **Soil Name:** Crosby  
**CEC:** 12.8 **Fert. Level:** G good  
**Soil Drainage:** G good

### Application Description

**A**  
**Application Date:** May-13-2013  
**Appl. Start Time:** 9:30 AM  
**Appl. Stop Time:** 9:50 AM  
**Application Method:** SPRAY  
**Application Timing:** 14 EPP  
**Application Placement:** BROFOL  
**Applied By:** Dobbels  
**Air Temperature, Unit:** 50 F  
**% Relative Humidity:** 54  
**Wind Velocity, Unit:** 1 MPH  
**Wind Direction:** ENE  
**Dew Presence (Y/N):** N no  
**Soil Temperature, Unit:** 50 F  
**Soil Moisture:** NORMAL  
**% Cloud Cover:** 30  
**Next Moisture Occurred On:** May-17-2013  
**Time to Next Moisture, Unit:** 4 DAY

### Crop Stage At Each Application

**A**  
**Crop 1 Code, BBCH Scale:** GLXMA BSOY

# The Ohio State University

## Pest Stage At Each Application

**A**

**Pest 1 Code, Type, Scale:** CAPBP W  
**Stage Majority, Percent:** 69 100  
**Height, Unit:** 19 IN  
**Height Minimum, Maximum:** 18 20  
**Density, Unit:** 17.2 M2

**Pest 2 Code, Type, Scale:** AMBTR W  
**Stage Majority, Percent:** 14 100  
**Height, Unit:** 4 IN  
**Height Minimum, Maximum:** 2 3  
**Density, Unit:** 9.3 M2

**Pest 3 Code, Type, Scale:** ERYRE W  
**Stage Majority, Percent:** 69 100  
**Height, Unit:** 11 IN  
**Height Minimum, Maximum:** 10 12  
**Density, Unit:** 4 M2

**Pest 4 Code, Type, Scale:** ERICA W  
**Stage Majority, Percent:** 67 100  
**Height, Unit:** 4 IN  
**Height Minimum, Maximum:** 4 5  
**Density, Unit:** 21.2 M2

**Pest 5 Code, Type, Scale:** TAROF W  
**Stage Majority, Percent:** 67 100  
**Height, Unit:** 12 IN  
**Density, Unit:** 5.3 M2

## Application Equipment

**A**

**Appl. Equipment:** 6 foot boom  
**Equipment Type:** SPRBAC  
**Operation Pressure, Unit:** 25 PSI  
**Nozzle Type:** AI XR  
**Nozzle Size:** 110015  
**Nozzle Spacing, Unit:** 18 IN  
**Boom Length, Unit:** 6 FT  
**Boom Height, Unit:** 20 IN  
**Ground Speed, Unit:** 3 MPH  
**Carrier:** WATER  
**Spray Volume, Unit:** 10 GPA  
**Mix Size, Unit:** 1 Liters  
**Propellant:** CO2

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Protocol ID: 13AGH11021  
Project ID:

Location: WESTERN BRANCH G-7 Trial Year: 2013  
Investigator: Dr. Mark M. Loux  
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Pest Code			ERICA	ERYRE	CAPBP	TAROF	ERICA	TAROF				
Crop Code			May-21-2013	May-21-2013	May-21-2013	May-21-2013	May-29-2013	May-29-2013				
Rating Date												
Rating Type			CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO				
Rating Unit			%	%	%	%	%	%				
Days After First/Last Applic.			8 8	8 8	8 8	8 8	16 16	16 16				
Trt-Eval Interval			8 DA-A	8 DA-A	8 DA-A	8 DA-A	16 DA-A	16 DA-A				
Plant-Eval Interval			-2 DP-1	-2 DP-1	-2 DP-1	-2 DP-1	6 DP-1	6 DP-1				
Days After Emergence			-10 DE-1	-10 DE-1	-10 DE-1	-10 DE-1	-2 DE-1	-2 DE-1				
Trt No.	Treatment Name	Other Rate	Other Rate	Growth Unit	Appl Stage	Code	1	2	3	4	5	6
1	Touch Down Hi-Tech	20 oz/a		14 EPP A			63 a	41 a	52 a	58 a	82 a	73 a
1	E-99	1.33 pt/a		14 EPP A								
1	CLASS ACT NG	16 oz/a		14 EPP A								
1	InterLock	4 oz/a		14 EPP A								
2	Touch Down Hi-Tech	20 oz/a		14 EPP A			65 a	36 a	50 a	40 b	93 a	70 a
2	AGH 11021	1 pt/a		14 EPP A								
3	Touch Down Hi-Tech	20 oz/a		14 EPP A			57 a	31 a	43 a	50 ab	88 a	77 a
3	AGH 11021	1 pt/a		14 EPP A								
3	CLASS ACT NG	16 oz/a		14 EPP A								
3	InterLock	4 oz/a		14 EPP A								
4	Touch Down Hi-Tech	20 oz/a		14 EPP A			55 a	43 a	50 a	47 ab	87 a	65 a
4	AGH 11021	1 pt/a		14 EPP A								
4	CLASS ACT NG	16 oz/a		14 EPP A								
4	Superb HC	1 pt/a		14 EPP A								
4	InterLock	4 oz/a		14 EPP A								
5	Touch Down Hi-Tech	20 oz/a		14 EPP A			57 a	36 a	40 a	50 ab	83 a	78 a
5	AGH 11021	1.5 pt/a		14 EPP A								
6	Touch Down Hi-Tech	20 oz/a		14 EPP A			58 a	37 a	47 a	52 ab	83 a	72 a
6	AGH 11021	1.5 pt/a		14 EPP A								
6	CLASS ACT NG	16 oz/a		14 EPP A								
6	InterLock	4 oz/a		14 EPP A								
7	Touch Down Hi-Tech	20 oz/a		14 EPP A			53 a	37 a	40 a	48 ab	83 a	73 a
7	AGH 11021	2 pt/a		14 EPP A								
8	Touch Down Hi-Tech	20 oz/a		14 EPP A			62 a	37 a	43 a	45 ab	85 a	72 a
8	AGH 11021	2 pt/a		14 EPP A								
8	CLASS ACT NG	16 oz/a		14 EPP A								
8	InterLock	4 oz/a		14 EPP A								
9	Touch Down Hi-Tech	20 oz/a		14 EPP A			60 a	37 a	40 a	53 ab	83 a	72 a
9	AGH 11021	1.5 pt/a		14 EPP A								
9	CLASS ACT NG	16 oz/a		14 EPP A								
9	Superb HC	1 pt/a		14 EPP A								
9	InterLock	4 oz/a		14 EPP A								

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)  
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.  
Missing data estimates are included in columns: Yates=2,9,15

# The Ohio State University

Pest Code	ERICA		ERYRE		CAPBP		TAROF		ERICA		TAROF	
Crop Code												
Rating Date	May-21-2013		May-21-2013		May-21-2013		May-21-2013		May-29-2013		May-29-2013	
Rating Type	CONTRO		CONTRO		CONTRO		CONTRO		CONTRO		CONTRO	
Rating Unit	%		%		%		%		%		%	
Days After First/Last Applic.	8 8		8 8		8 8		8 8		16 16		16 16	
Trt-Eval Interval	8 DA-A		8 DA-A		8 DA-A		8 DA-A		16 DA-A		16 DA-A	
Plant-Eval Interval	-2 DP-1		-2 DP-1		-2 DP-1		-2 DP-1		6 DP-1		6 DP-1	
Days After Emergence	-10 DE-1		-10 DE-1		-10 DE-1		-10 DE-1		-2 DE-1		-2 DE-1	
Trt Treatment	Other	Other	Growth	Appl								
No. Name	Rate	Rate	Unit	Stage	Code	1	2	3	4	5	6	
10 UTC						0 b	0 b	0 b	0 c	0 b	0 b	
LSD (P=.05)						8.6	13.3	15.0	9.9	11.4	12.4	
Standard Deviation						5.0	7.6	8.8	5.8	6.6	7.2	
CV						9.49	22.73	21.63	13.04	8.63	11.06	
Bartlett's X2						5.173	3.578	3.296	5.498	11.581	7.92	
P(Bartlett's X2)						0.739	0.734	0.771	0.599	0.115	0.441	
Skewness						-2.3064*	-1.3326*	-0.8371	-1.8449*	-2.503*	-2.3719*	
Kurtosis						4.6137*	2.3616*	1.7644*	2.9712*	5.3632*	4.7495*	
Replicate F						3.857	0.403	8.045	6.457	0.474	0.786	
Replicate Prob(F)						0.0404	0.6760	0.0032	0.0077	0.6302	0.4706	
Treatment F						42.769	7.727	8.686	23.945	50.503	31.032	
Treatment Prob(F)						0.0001	0.0004	0.0001	0.0001	0.0001	0.0001	

# The Ohio State University

Pest Code				CAPBP	AMBTR	ERYRE	GLXMA	ERICA	TAROF		
Crop Code				May-29-201	May-29-201	May-29-2013	Jun-11-201	Jun-11-2013	Jun-11-2013		
Rating Date				3	3		3				
Rating Type				CONTRO	CONTRO	CONTRO	PHYLMA	CONTRO	CONTRO		
Rating Unit				%	%	%	%	%	%		
Days After First/Last Applic.				16 16	16 16	16 16	29 29	29 29	29 29		
Trt-Eval Interval				16 DA-A	16 DA-A	16 DA-A	29 DA-A	29 DA-A	29 DA-A		
Plant-Eval Interval				6 DP-1	6 DP-1	6 DP-1	19 DP-1	19 DP-1	19 DP-1		
Days After Emergence				-2 DE-1	-2 DE-1	-2 DE-1	11 DE-1	11 DE-1	11 DE-1		
Trt No.	Treatment Name	Other Rate	Other Rate Unit	Growth Stage	Appl Code	7	8	9	10	11	12
1	Touch Down Hi-Tech	20 oz/a		14 EPP A		95 a	100 a	91 a	0 b	93 a	85 a
1	E-99	1.33 pt/a		14 EPP A							
1	CLASS ACT NG	16 oz/a		14 EPP A							
1	InterLock	4 oz/a		14 EPP A							
2	Touch Down Hi-Tech	20 oz/a		14 EPP A		93 a	100 a	89 a	3 ab	100 a	80 a
2	AGH 11021	1 pt/a		14 EPP A							
3	Touch Down Hi-Tech	20 oz/a		14 EPP A		93 a	100 a	96 a	0 b	90 a	83 a
3	AGH 11021	1 pt/a		14 EPP A							
3	CLASS ACT NG	16 oz/a		14 EPP A							
3	InterLock	4 oz/a		14 EPP A							
4	Touch Down Hi-Tech	20 oz/a		14 EPP A		95 a	100 a	93 a	1 b	100 a	73 a
4	AGH 11021	1 pt/a		14 EPP A							
4	CLASS ACT NG	16 oz/a		14 EPP A							
4	Superb HC	1 pt/a		14 EPP A							
4	InterLock	4 oz/a		14 EPP A							
5	Touch Down Hi-Tech	20 oz/a		14 EPP A		97 a	100 a	94 a	3 ab	98 a	83 a
5	AGH 11021	1.5 pt/a		14 EPP A							
6	Touch Down Hi-Tech	20 oz/a		14 EPP A		93 a	100 a	90 a	4 ab	100 a	85 a
6	AGH 11021	1.5 pt/a		14 EPP A							
6	CLASS ACT NG	16 oz/a		14 EPP A							
6	InterLock	4 oz/a		14 EPP A							
7	Touch Down Hi-Tech	20 oz/a		14 EPP A		93 a	100 a	92 a	6 a	100 a	85 a
7	AGH 11021	2 pt/a		14 EPP A							
8	Touch Down Hi-Tech	20 oz/a		14 EPP A		90 a	100 a	93 a	1 b	95 a	86 a
8	AGH 11021	2 pt/a		14 EPP A							
8	CLASS ACT NG	16 oz/a		14 EPP A							
8	InterLock	4 oz/a		14 EPP A							
9	Touch Down Hi-Tech	20 oz/a		14 EPP A		97 a	100 a	88 a	3 ab	95 a	85 a
9	AGH 11021	1.5 pt/a		14 EPP A							
9	CLASS ACT NG	16 oz/a		14 EPP A							
9	Superb HC	1 pt/a		14 EPP A							
9	InterLock	4 oz/a		14 EPP A							

# The Ohio State University

Pest Code	CAPBP		AMBTR		ERYRE		GLXMA		ERICA		TAROF	
Crop Code	May-29-201		May-29-201		May-29-2013		Jun-11-201		Jun-11-2013		Jun-11-2013	
Rating Date	3		3		3		3		3		3	
Rating Type	CONTRO		CONTRO		CONTRO		PHYLMA		CONTRO		CONTRO	
Rating Unit	%		%		%		%		%		%	
Days After First/Last Applic.	16	16	16	16	16	16	29	29	29	29	29	29
Trt-Eval Interval	16 DA-A		16 DA-A		16 DA-A		29 DA-A		29 DA-A		29 DA-A	
Plant-Eval Interval	6 DP-1		6 DP-1		6 DP-1		19 DP-1		19 DP-1		19 DP-1	
Days After Emergence	-2 DE-1		-2 DE-1		-2 DE-1		11 DE-1		11 DE-1		11 DE-1	
Trt Treatment	Other	Other	Growth	Appl								
No. Name	Rate	Rate	Unit	Stage	Code	7	8	9	10	11	12	
10 UTC						0 b	0 b	0 b	0 b	0 b	0 b	0 b
LSD (P=.05)						8.4	0.0	7.4	2.8	9.1	10.7	
Standard Deviation						4.9	0.0	4.2	1.7	5.3	6.2	
CV						5.76	0.0	5.14	82.61	6.12	8.35	
Bartlett's X2						1.566	0.0	4.494	2.352	4.448	12.627	
P(Bartlett's X2)						0.98	.	0.721	0.885	0.349	0.125	
Skewness						-2.6802*	-2.8091*	-2.4547*	0.5578	-2.6495*	-2.5355*	
Kurtosis						5.8609*	6.3081*	4.6028*	-1.2595	5.7019*	5.3015*	
Replicate F						1.506	0.000	3.257	1.136	0.381	0.280	
Replicate Prob(F)						0.2485	1.0000	0.0689	0.3432	0.6885	0.7592	
Treatment F						112.047	0.000	141.216	4.179	100.264	54.286	
Treatment Prob(F)						0.0001	1.0000	0.0001	0.0048	0.0001	0.0001	

# The Ohio State University

Pest Code				CAPBP	AMBTR	ERYRE			
Crop Code									
Rating Date				Jun-11-201	Jun-11-2013	Jun-11-2013			
Rating Type				3					
Rating Unit				CONTRO	CONTRO	CONTRO			
Days After First/Last Applic.				%	%	%			
Trt-Eval Interval				29 29	29 29	29 29			
Plant-Eval Interval				29 DA-A	29 DA-A	29 DA-A			
Days After Emergence				19 DP-1	19 DP-1	19 DP-1			
				11 DE-1	11 DE-1	11 DE-1			
Trt No.	Treatment Name	Other Rate	Other Rate Unit	Growth Stage	Appl Code		13	14	15
1	Touch Down Hi-Tech	20 oz/a		14 EPP A			100 a	75 b	100 a
1	E-99	1.33 pt/a		14 EPP A					
1	CLASS ACT NG	16 oz/a		14 EPP A					
1	InterLock	4 oz/a		14 EPP A					
2	Touch Down Hi-Tech	20 oz/a		14 EPP A			100 a	90 ab	100 a
2	AGH 11021	1 pt/a		14 EPP A					
3	Touch Down Hi-Tech	20 oz/a		14 EPP A			100 a	85 ab	100 a
3	AGH 11021	1 pt/a		14 EPP A					
3	CLASS ACT NG	16 oz/a		14 EPP A					
3	InterLock	4 oz/a		14 EPP A					
4	Touch Down Hi-Tech	20 oz/a		14 EPP A			100 a	87 ab	100 a
4	AGH 11021	1 pt/a		14 EPP A					
4	CLASS ACT NG	16 oz/a		14 EPP A					
4	Superb HC	1 pt/a		14 EPP A					
4	InterLock	4 oz/a		14 EPP A					
5	Touch Down Hi-Tech	20 oz/a		14 EPP A			100 a	83 ab	100 a
5	AGH 11021	1.5 pt/a		14 EPP A					
6	Touch Down Hi-Tech	20 oz/a		14 EPP A			100 a	85 ab	100 a
6	AGH 11021	1.5 pt/a		14 EPP A					
6	CLASS ACT NG	16 oz/a		14 EPP A					
6	InterLock	4 oz/a		14 EPP A					
7	Touch Down Hi-Tech	20 oz/a		14 EPP A			100 a	87 ab	100 a
7	AGH 11021	2 pt/a		14 EPP A					
8	Touch Down Hi-Tech	20 oz/a		14 EPP A			100 a	87 ab	100 a
8	AGH 11021	2 pt/a		14 EPP A					
8	CLASS ACT NG	16 oz/a		14 EPP A					
8	InterLock	4 oz/a		14 EPP A					
9	Touch Down Hi-Tech	20 oz/a		14 EPP A			100 a	92 a	100 a
9	AGH 11021	1.5 pt/a		14 EPP A					
9	CLASS ACT NG	16 oz/a		14 EPP A					
9	Superb HC	1 pt/a		14 EPP A					
9	InterLock	4 oz/a		14 EPP A					

# The Ohio State University

Pest Code	CAPBP		AMBTR		ERYRE	
Crop Code						
Rating Date	Jun-11-201		Jun-11-2013		Jun-11-2013	
Rating Type	3		3		3	
Rating Unit	CONTRO		CONTRO		CONTRO	
Days After First/Last Applic.	%		%		%	
Trt-Eval Interval	29 29		29 29		29 29	
Plant-Eval Interval	29 DA-A		29 DA-A		29 DA-A	
Days After Emergence	19 DP-1		19 DP-1		19 DP-1	
Trt Treatment	11 DE-1		11 DE-1		11 DE-1	
No. Name	Other Rate	Other Rate	Growth Unit	Appl Stage	Code	
10 UTC						
			13			15
			0 b			0 b
			14			15
			0 c			0 b
LSD (P=.05)	0.0		9.2			0.1
Standard Deviation	0.0		5.4			0.0
CV	0.0		7.0			0.04
Bartlett's X2	0.0		5.711			0.0
P(Bartlett's X2)	.		0.68			.
Skewness	-2.8091*		-2.4799*			-2.5577*
Kurtosis	6.3081*		5.2135*			4.9149*
Replicate F	0.000		4.471			3.116
Replicate Prob(F)	1.0000		0.0265			0.0759
Treatment F	0.000		77.567		2112070.984	
Treatment Prob(F)	1.0000		0.0001		0.0001	



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Protocol ID: 13AGH11021    Investigator: Dr. Mark M. Loux  
Project ID:                    Study Director: Anthony F. Dobbels  
Sponsor Contact: John Smith, WinField Solutions

### Pest Code

ERICA, *Conyza canadensis*, = US  
ERYRE, *Erysimum repandum*, = US  
CAPBP, *Capsella bursa-pastoris*, = US  
TAROF, *Taraxacum officinale*, = US  
AMBTR, *Ambrosia trifida*, = US

### Crop Code

GLXMA, BSOY, *Glycine max*, = US

### Rating Type

CONTRO = control / burndown or knockdown  
PHYLMA = phytotoxicity - leaf malformation

### Rating Unit

% = percent

### Plant-Eval Interval

-2 DP-1 = 1 GLXMA May-23-2013  
6 DP-1 = 1 GLXMA May-23-2013  
19 DP-1 = 1 GLXMA May-23-2013