

# The Ohio State University

## Use of Rye, Wheat and Barley as a Cover Crop and Termination Timing

Trial ID: 21WBRCOVER  
 Protocol ID: 21WBRCOVER Location: Cooperator Trial ID:  
 Project ID: Project ID 2: Project ID 3: Trial Year: 2021  
 Study Director: Sponsor Contact:  
 Investigator (Creator): Dr. Mark M. Loux

Status: E established  
 ARM Trial Created On: Apr-7-2021

### Trial Location

Address (Location): 7721 South Charleston Pike  
 City: South Charleston Country: USA United States  
 State/Prov.: Ohio  
 Postal Code: 45368

Latitude of LL Corner °: 39.85789 N  
 Longitude of LL Corner °: -83.6741 W  
 Altitude of LL Corner: 1038.00 FT

Conducted Under GLP: No  
 Conducted Under GEP: No  
 None

### Crop Description

Crop 1: C	HORVW Hordeum vulgare	Winter barley	BBCH Scale: BCER
	Entry Date: May-4-2021	Stage Scale: BBCH	
	Variety: Saved		
	Planting Date: Nov-11-2020	Planting Rate: 90	LB/A
	Depth: 1 IN		
	Rows per Plot: 15	Planting Method: DRILLE	drilled
	Row Spacing: 7.5 IN	Planting Equipment: DD	disc drill
		Seed Bed: MEDIUM	medium
	Soil Temperature: 59 F		
	Emergence Date: Nov-26-2020		

Crop 2: C	TRZAW Triticum aestivum	Winter wheat	BBCH Scale: BCER
	Entry Date: May-4-2021	Stage Scale: BBCH	
	Variety: Saved		
	Planting Date: Nov-11-2020	Planting Rate: 90	LB/A
	Depth: 1 IN		
	Rows per Plot: 15	Planting Method: DRILLE	drilled
	Row Spacing: 7.5 IN	Planting Equipment: DD	disc drill
		Seed Bed: MEDIUM	medium
	Soil Temperature: 65 F	Soil Moisture: NORMAL	normal, adequate
	Emergence Date: Nov-26-2020		

Crop 3: C	SECCW Secale cereale	Winter rye	BBCH Scale: BCER
	Entry Date: May-4-2021	Stage Scale: BBCH	
	Variety: Hazlet		
	Planting Date: Nov-11-2020	Planting Rate: 90	LB/A
	Depth: 1 IN		
	Rows per Plot: 15	Planting Method: DRILL	
	Row Spacing: 7.5 IN	Planting Equipment: DD	disc drill
		Seed Bed: MEDIUM	medium
	Soil Temperature: 65 F	Soil Moisture: NORMAL	normal, adequate
	Emergence Date: Nov-26-2020		

Crop 4: C	GLXMA Glycine max	Soybean	BBCH Scale: BSOY
	Entry Date: Jun-3-2021	Stage Scale: BBCH	
	Variety: SC		
	Attributes: glyphosate, glufosinate 2,4-D tolerant		
	Planting Date: May-14-2021	Planting Density: 1550000	S/A
	Depth: 1.5 IN	Planting Method: PLANTD	planted
	Rows per Plot: 8	Planting Equipment: FE	field equipment
	Row Spacing: 15 IN	Seed Bed: MEDIUM	medium
	Soil Temperature: 63 F	Soil Moisture: DRY	dry
	Emergence Date: Jun-1-2021		
	% Standard Moisture: 13	Harvested Width: 6.25 FT	
		Harvested Length: 30 FT	

### Pest Description

Pest 1 Type: W Code: SETFA Setaria faberi Entry Date: Jun-7-2021  
 Common Name: Giant foxtail Stage Scale: BBCH

Pest 2 Type: W Code: AMBTR Ambrosia trifida Entry Date: Jun-7-2021  
 Common Name: Giant ragweed Stage Scale: BBCH

### Site and Design

Treated Plot Width: 10 FT	Site Type: FIELD field
Treated Plot Length: 30 FT	Experimental Unit: 1 PLOT plot
Treated Plot Area: 300.0 FT <sup>2</sup>	Tillage Type: NOTILL no-till
Replications: 3	Study Design: SPLPLO Split-Plot
Treatments: 24	Plots: 72

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Previous  
 No. Crop Year  
 1. CORN 2020

### Soil Description

Description Name: G-8  
 % Sand: 37 % OM: 2.4 Texture: L loam  
 % Silt: 46 Soil Name: Crosby  
 % Clay: 17 Fert. Level: G good  
 pH: 6.2 CEC: 13.4

### Application Description

	A	B	C	D
Application Date	Apr-27-2021	May-21-2021	Jun-6-2021	Jun-24-2021
Appl. Start Time	8:00 AM	5:00 PM	10:30 AM	9:30 AM
Appl. Stop Time	8:30 AM	5:15 PM	11:00 AM	10:00 AM
Interval to Prev. Appl.		24 DAYS	16 DAYS	18 DAYS
Application Method	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing	7 EPP	7 DAPL	21 DAPL	POST
Application Placement	BROFOL	BROFOL	BROFOL	BROFOL
Applied By	Dobbels	Essman	Dobbels	Dobbels
Appl. Entry Date	May-4-2021	Jun-3-2021	Jun-7-2021	Jun-25-2021
Air Temperature Start, Stop	62, 62 F	84, 84 F	83, 83 F	73, 74 F
% Relative Humidity Start, Stop	64, 64	33, 33	54, 53	58, 57
Wind Velocity+Dir. Start	9 MPH, SW	6.7 MPH, WSW	5 MPH, SSW	6 MPH, SW
Wind Velocity+Dir. Stop	9 MPH, SW	7 MPH, WSW	5 MPH, SSW	7 MPH, SW
Wind Velocity+Dir. Max	11 MPH, SW	7.6 MPH, WSW	5.5 MPH, SSW	7 MPH, SW
Wet Leaves (Y/N)	N, no	N, no	N, no	N, no
Soil Temperature	50 F	81 F	67 F	67 F
Soil Moisture	NORMAL	DRY	dry	dry
Soil Surface Condition	MEDIUM	MEDIUM	MEDIUM	MEDIUM
% Cloud Cover	50	10	60	
Next Moisture Occurred On			Jun-7-2021	
Time to Next Moisture			23.0 HR	
Moisture 6 Hours after Appl.			0 IN	

### Crop Stage At Each Application

	A	B	C	D
Crop 1 Code, BBCH Scale	HORVW, BCER	HORVW, BCER	HORVW, BCER	HORVW, BCER
Days after Emergence	152	176	192	210
Stage Majority, Percent	30, 100	61, 100	69, 100	
Height Average	6 IN	24 IN	24 IN	
Height Minimum, Maximum	6, 8	18, 26	18, 26	
Crop 2 Code, BBCH Scale	TRZAW, BCER	TRZAW, BCER	TRZAW, BCER	TRZAW, BCER
Days after Emergence	152	176	192	210
Stage Majority, Percent	30, 100	47, 100	69, 100	
Height Average	8 IN	21 IN	24 IN	
Height Minimum, Maximum	8, 10	18, 21	21, 25	
Crop 3 Code, BBCH Scale	SECCW, BCER	SECCW, BCER	SECCW, BCER	SECCW, BCER
Days after Emergence	152	176	192	210
Stage Majority, Percent	30, 100	61, 100	69, 100	
Height Average	11 IN	36 IN	60 IN	
Height Minimum, Maximum	11, 12	27, 42	48, 65	
Crop 4 Code, BBCH Scale	GLXMA, BSOY	GLXMA, BSOY	GLXMA, BSOY	GLXMA, BSOY
Days after Emergence	-35	-11	5	23
Stage Majority, Percent			12, 100	
Height Average			3 IN	
Height Minimum, Maximum			2.5, 3	

### Pest Stage At Each Application

	A	B	C	D
Pest 1 Code, Type, Scale	SETFA, W, BBCH	SETFA, W, BBCH	SETFA, W, BBCH	SETFA, W, BBCH
Pest 2 Code, Type, Scale	AMBTR, W, BBCH	AMBTR, W, BBCH	AMBTR, W, BBCH	AMBTR, W, BBCH

### Notes

Context	Date	By	Notes
STATUS	Apr-7-2021	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	May-4-2021	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'E' when Application Date entered.

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 Study Director: Sponsor Contact:  
 Investigator (Creator): Dr. Mark M. Loux

Pest Type		W, Weed AMBTR	W, Weed LAMSS	W, Weed STEME	W, Weed TAROF	W, Weed RANPF	W, Weed AMBTR	
Pest Code		Ambrosia trifida	Lamium sp.	Stellaria media	Taraxacum offic	Ranunculus parv	Ambrosia trifida	
Pest Scientific Name		Giant ragweed	Deadnettle	chickweed	dandelion	Small-flowered >	Giant ragweed	
Pest Name	cover crop at t>							
Crop Type, Code	C, SECCW							
Crop Name	Winter rye							
Rating Date		Apr-26-2021	Apr-26-2021	Apr-26-2021	Apr-26-2021	Apr-26-2021	May-21-2021	
Rating Type	Biomass	Density	Density	Density	Density	Density	Density	
Rating Unit/Min/Max	G/0.25M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	
Sample Size								
Number of Subsamples	1	1	1	1	1	1	1	
Data Entry Date	Jun-30-2021	Jun-30-2021	Jun-30-2021	Jun-30-2021	Jun-30-2021	Jun-30-2021	Jun-30-2021	
Rating Timing								
Days After First/Last Applic.		-1, -1	-1, -1	-1, -1	-1, -1	-1, -1	24, 24	
Trt-Eval Interval								
Plant-Eval Interval		166 DP-1	166 DP-1	166 DP-1	166 DP-1	166 DP-1	191 DP-1	
Days After Emergence		151 DE-1	151 DE-1	151 DE-1	151 DE-1	151 DE-1	176 DE-1	
ARM Action Codes								
Number of Decimals								
Trt Treatment	Rate	1*	2*	3*	4*	5*	6*	7*
No. Name	Rate Unit							

1 Rye		17.600 de	0.7-	1.7-	0.3-	0.0-	0.0-	
17 EPP	1.96 lb ai/a							
1 Enlist Duo	1.96 lb ai/a							
1 AMSOL	2.5 % v/v							
2 Rye		17.067 de	1.7-	5.3-	2.7-	0.3-	0.3-	
27 EPP	2.3 lb ai/a							
2 Sequence	2.3 lb ai/a							
2 Pursuit	0.0625 lb ai/a							
2 Enlist One	0.475 lb ai/a							
2 AMSOL	2.5 % v/v							
3 Rye		70.700 a-d						1.0-
37 DAPL	1.96 lb ai/a							
3 Enlist Duo	1.96 lb ai/a							
3 AMSOL	2.5 % v/v							
4 Rye		53.633 a-e						2.3-
47 DAPL	2.3 lb ai/a							
4 Sequence	2.3 lb ai/a							
4 Pursuit	0.0625 lb ai/a							
4 Enlist One	0.475 lb ai/a							
4 AMSOL	2.5 % v/v							
5 Rye		107.433 a						
514 DAPL	1.96 lb ai/a							
5 Enlist Duo	1.96 lb ai/a							
5 AMSOL	2.5 % v/v							
6 Rye		84.357 ab						
614 DAPL	2.3 lb ai/a							
6 Sequence	2.3 lb ai/a							
6 Pursuit	0.0625 lb ai/a							
6 Enlist One	0.475 lb ai/a							
6 AMSOL	2.5 % v/v							
7 Wheat		11.800 de	1.3-	3.7-	2.7-	0.0-	0.7-	
77 EPP	1.96 lb ai/a							
7 Enlist Duo	1.96 lb ai/a							
7 AMSOL	2.5 % v/v							

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).  
 Mean separations are based on the complete error term.  
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.  
 Due to missing data, the effective replicates used for mean comparisons are: col. 1,14-31=3  
 \* Adjusted means  
 Could not calculate LSD (% mean diff) for columns 24 because error mean square = 0.  
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Pest Type		W, Weed AMBTR	W, Weed LAMSS	W, Weed STEME	W, Weed TAROF	W, Weed RANPF	W, Weed AMBTR	
Pest Code		Ambrosia trifida	Lamium sp.	Stellaria media	Taraxacum offic	Ranunculus parv	Ambrosia trifida	
Pest Scientific Name	cover crop at t>	Giant ragweed	Deadnettle	chickweed	dandelion	Small-flowered >	Giant ragweed	
Pest Name	C, SECCW							
Crop Type, Code	Winter rye							
Crop Name								
Rating Date		Apr-26-2021	Apr-26-2021	Apr-26-2021	Apr-26-2021	Apr-26-2021	May-21-2021	
Rating Type	Biomass	Density	Density	Density	Density	Density	Density	
Rating Unit/Min/Max	G/0.25M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	
Sample Size								
Number of Subsamples	1	1	1	1	1	1	1	
Data Entry Date	Jun-30-2021	Jun-30-2021	Jun-30-2021	Jun-30-2021	Jun-30-2021	Jun-30-2021	Jun-30-2021	
Rating Timing								
Days After First/Last Applic.		-1, -1	-1, -1	-1, -1	-1, -1	-1, -1	24, 24	
Trt-Eval Interval								
Plant-Eval Interval		166 DP-1	166 DP-1	166 DP-1	166 DP-1	166 DP-1	191 DP-1	
Days After Emergence		151 DE-1	151 DE-1	151 DE-1	151 DE-1	151 DE-1	176 DE-1	
ARM Action Codes								
Number of Decimals								
Trt Treatment	Rate	1*	2*	3*	4*	5*	6*	7*
No. Name	Rate Unit							
8Wheat		13.067 de	2.3-	1.7-	0.3-	0.0-	0.0-	
87 EPP	2.3lb ai/a							
8 Sequence	2.3lb ai/a							
8 Pursuit	0.0625lb ai/a							
8 Enlist One	0.475lb ai/a							
8 AMSOL	2.5% v/v							
9Wheat		21.433 cde						3.7-
97 DAPL	1.96lb ai/a							
9 Enlist Duo	1.96lb ai/a							
9 AMSOL	2.5% v/v							
10Wheat		53.400 a-e						4.3-
107 DAPL	2.3lb ai/a							
10 Sequence	2.3lb ai/a							
10 Pursuit	0.0625lb ai/a							
10 Enlist One	0.475lb ai/a							
10 AMSOL	2.5% v/v							
11Wheat		72.323 a-d						
11 14 DAPL	1.96lb ai/a							
11 Enlist Duo	1.96lb ai/a							
11 AMSOL	2.5% v/v							
12Wheat		79.747 abc						
12 14 DAPL	2.3lb ai/a							
12 Sequence	2.3lb ai/a							
12 Pursuit	0.0625lb ai/a							
12 Enlist One	0.475lb ai/a							
12 AMSOL	2.5% v/v							
13Barley		13.000 de	12.0-	0.7-	1.7-	0.0-	0.0-	
137 EPP	1.96lb ai/a							
13 Enlist Duo	1.96lb ai/a							
13 AMSOL	2.5% v/v							
14Barley		12.100 de	0.0-	1.3-	1.3-	0.0-	0.0-	
147 EPP	2.3lb ai/a							
14 Sequence	2.3lb ai/a							
14 Pursuit	0.0625lb ai/a							
14 Enlist One	0.475lb ai/a							
14 AMSOL	2.5% v/v							

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Pest Type		W, Weed AMBTR	W, Weed LAMSS	W, Weed STEME	W, Weed TAROF	W, Weed RANPF	W, Weed AMBTR	
Pest Code		Ambrosia trifida	Lamium sp.	Stellaria media	Taraxacum offic	Ranunculus parv	Ambrosia trifida	
Pest Scientific Name	cover crop at t>	Giant ragweed	Deadnettle	chickweed	dandelion	Small-flowered >	Giant ragweed	
Pest Name	C, SECCW							
Crop Type, Code	Winter rye							
Crop Name								
Rating Date		Apr-26-2021	Apr-26-2021	Apr-26-2021	Apr-26-2021	Apr-26-2021	May-21-2021	
Rating Type	Biomass	Density	Density	Density	Density	Density	Density	
Rating Unit/Min/Max	G/0.25M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	
Sample Size								
Number of Subsamples	1	1	1	1	1	1	1	
Data Entry Date	Jun-30-2021	Jun-30-2021	Jun-30-2021	Jun-30-2021	Jun-30-2021	Jun-30-2021	Jun-30-2021	
Rating Timing								
Days After First/Last Applic.		-1, -1	-1, -1	-1, -1	-1, -1	-1, -1	24, 24	
Trt-Eval Interval								
Plant-Eval Interval		166 DP-1	166 DP-1	166 DP-1	166 DP-1	166 DP-1	191 DP-1	
Days After Emergence		151 DE-1	151 DE-1	151 DE-1	151 DE-1	151 DE-1	176 DE-1	
ARM Action Codes								
Number of Decimals								
Trt Treatment	Rate	1*	2*	3*	4*	5*	6*	7*
No. Name	Rate Unit							
15 Barley		58.400 a-e						1.3-
157 DAPL	1.96 lb ai/a							
15 Enlist Duo	1.96 lb ai/a							
15 AMSOL	2.5 % v/v							
16 Barley		39.663 b-e						6.0-
167 DAPL	2.3 lb ai/a							
16 Sequence	2.3 lb ai/a							
16 Pursuit	0.0625 lb ai/a							
16 Enlist One	0.475 lb ai/a							
16 AMSOL	2.5 % v/v							
17 Barley		71.523 a-d						
17 14 DAPL	1.96 lb ai/a							
17 Enlist Duo	1.96 lb ai/a							
17 AMSOL	2.5 % v/v							
18 Barley		87.440 ab						
18 14 DAPL	2.3 lb ai/a							
18 Sequence	2.3 lb ai/a							
18 Pursuit	0.0625 lb ai/a							
18 Enlist One	0.475 lb ai/a							
18 AMSOL	2.5 % v/v							
19 No Cover		0.000 e	1.3-	4.0-	4.3-	0.3-	0.0-	
197 EPP	1.96 lb ai/a							
19 Enlist Duo	1.96 lb ai/a							
19 AMSOL	2.5 % v/v							
20 No Cover		0.000 e	2.3-	2.3-	0.3-	0.0-	0.0-	
207 EPP	2.3 lb ai/a							
20 Sequence	2.3 lb ai/a							
20 Pursuit	0.0625 lb ai/a							
20 Enlist One	0.475 lb ai/a							
20 AMSOL	2.5 % v/v							
21 No Cover		0.000 e						3.3-
217 DAPL	1.96 lb ai/a							
21 Enlist Duo	1.96 lb ai/a							
21 AMSOL	2.5 % v/v							

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Pest Type		W, Weed	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed	
Pest Code		AMBTR	LAMSS	STEME	TAROF	RANPF	AMBTR	
Pest Scientific Name		Ambrosia trifida	Lamium sp.	Stellaria media	Taraxacum offic	Ranunculus parv	Ambrosia trifida	
Pest Name	cover crop at t>	Giant ragweed	Deadnettle	chickweed	dandelion	Small-flowered >	Giant ragweed	
Crop Type, Code	C, SECCW							
Crop Name	Winter rye							
Rating Date		Apr-26-2021	Apr-26-2021	Apr-26-2021	Apr-26-2021	Apr-26-2021	May-21-2021	
Rating Type	Biomass							
Rating Unit/Min/Max	G/0.25M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	
Sample Size								
Number of Subsamples	1	1	1	1	1	1	1	
Data Entry Date	Jun-30-2021	Jun-30-2021	Jun-30-2021	Jun-30-2021	Jun-30-2021	Jun-30-2021	Jun-30-2021	
Rating Timing								
Days After First/Last Applic.		-1, -1	-1, -1	-1, -1	-1, -1	-1, -1	24, 24	
Trt-Eval Interval								
Plant-Eval Interval		166 DP-1	166 DP-1	166 DP-1	166 DP-1	166 DP-1	191 DP-1	
Days After Emergence		151 DE-1	151 DE-1	151 DE-1	151 DE-1	151 DE-1	176 DE-1	
ARM Action Codes								
Number of Decimals								
Trt Treatment	Rate	1*	2*	3*	4*	5*	6*	7*
No. Name	Rate	Unit						
22 No Cover			0.000e					3.0-
227 DAPL	2.3lb ai/a							
22 Sequence	2.3lb ai/a							
22 Pursuit	0.0625lb ai/a							
22 Enlist One	0.475lb ai/a							
22 AMSOL	2.5% v/v							
23 No Cover			0.000e					
23 14 DAPL	1.96lb ai/a							
23 Enlist Duo	1.96lb ai/a							
23 AMSOL	2.5% v/v							
24 No Cover			0.000e					
24 14 DAPL	2.3lb ai/a							
24 Sequence	2.3lb ai/a							
24 Pursuit	0.0625lb ai/a							
24 Enlist One	0.475lb ai/a							
24 AMSOL	2.5% v/v							
LSD P=.05		36.0949	7.71	6.15	4.72	0.47	0.49	5.75
Standard Deviation		21.9619	4.41	3.51	2.70	0.27	0.28	3.29
CV		59.58	162.65	135.91	157.81	320.71	222.54	105.12
Grand Mean		36.8619	2.71	2.58	1.71	0.08	0.13	3.13
Levene's F^		0.747	1.584	0.498	0.657	0.286	0.63	0.25
Levene's Prob(F)		0.774	0.211	0.822	0.705	0.95	0.725	0.965
Rank X2		.	.	.	.	.	.	.
P(Rank X2)		.	.	.	.	.	.	.
Skewness^		0.0587	0.3435	0.6149	1.1567*	0.872	0.0	0.4076
Kurtosis^		2.093*	5.0043*	0.243	4.1801*	0.921	1.7458	-0.9056
Analyzed as		RCB	RCB	RCB	RCB	RCB	RCB	RCB
Replicate F		1.928	3.925	1.626	2.861	2.333	1.615	0.660
Replicate Prob(F)		0.1570	0.0443	0.2318	0.0908	0.1335	0.2338	0.5321
Treatment F		7.516	2.275	0.616	0.857	1.000	2.385	0.732
Treatment Prob(F)		0.0001	0.0903	0.7345	0.5609	0.4706	0.0788	0.6490

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).

Mean separations are based on the complete error term.

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Due to missing data, the effective replicates used for mean comparisons are: col. 1,14-31=3

\* Adjusted means

Could not calculate LSD (% mean diff) for columns 24 because error mean square = 0.

^Calculated from residual.

# The Ohio State University

## Use of Rye, Wheat and Barley as a Cover Crop and Termination Timing

Trial ID: 21WBRCOVER  
 Protocol ID: 21WBRCOVER Location: Cooperator Trial ID:  
 Project ID: Project ID 2: Project ID 3: Trial Year: 2021  
 Study Director: Sponsor Contact:  
 Investigator (Creator): Dr. Mark M. Loux

Pest Type	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed		
Pest Code	LAMSS	STEME	TAROF	VERSS	SENGL	POAAN		
Pest Scientific Name	Lamium sp.	Stellaria media	Taraxacum offic>	Veronica sp.	Packera glabella	Poa annua		
Pest Name	Deadnettle	chickweed	dandelion	Speedwell	Cressleaf groun>	Annual bluegrass		
Crop Type, Code							C, GLXMA	
Crop Name							Soybean	
Rating Date	May-21-2021	May-21-2021	May-21-2021	May-21-2021	May-21-2021	May-21-2021	Jun-11-2021	
Rating Type	Density	Density	Density	Density	Density	Density	Density	
Rating Unit/Min/Max	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/M, -, -	
Sample Size								
Number of Subsamples	1	1	1	1	1	1	2	
Data Entry Date	Jun-30-2021	Jun-30-2021	Nov-18-2022	Jun-30-2021	Jun-30-2021	Jun-30-2021	Jun-30-2021	
Rating Timing								
Days After First/Last Applic.	24, 24	24, 24	24, 24	24, 24	24, 24	24, 24	45, 5	
Trt-Eval Interval								
Plant-Eval Interval	191 DP-1	191 DP-1	191 DP-1	191 DP-1	191 DP-1	191 DP-1	28 DP-4	
Days After Emergence	176 DE-1	176 DE-1	176 DE-1	176 DE-1	176 DE-1	176 DE-1	10 DE-4	
ARM Action Codes								
Number of Decimals								
Trt Treatment	Rate	8*	9*	10*	11*	12*	13*	14*
No. Name	Rate Unit							

1 Rye								7.8-
17 EPP	1.96 lb ai/a							
1 Enlist Duo	1.96 lb ai/a							
1 AMSOL	2.5 % v/v							
2 Rye								9.0-
27 EPP	2.3 lb ai/a							
2 Sequence	2.3 lb ai/a							
2 Pursuit	0.0625 lb ai/a							
2 Enlist One	0.475 lb ai/a							
2 AMSOL	2.5 % v/v							
3 Rye		2.0-	1.0-	0.7-	0.0b	0.0-	0.0-	7.7-
37 DAPL	1.96 lb ai/a							
3 Enlist Duo	1.96 lb ai/a							
3 AMSOL	2.5 % v/v							
4 Rye		1.7-	0.3-	0.0-	0.3b	0.0-	0.0-	10.3-
47 DAPL	2.3 lb ai/a							
4 Sequence	2.3 lb ai/a							
4 Pursuit	0.0625 lb ai/a							
4 Enlist One	0.475 lb ai/a							
4 AMSOL	2.5 % v/v							
5 Rye								4.2-
514 DAPL	1.96 lb ai/a							
5 Enlist Duo	1.96 lb ai/a							
5 AMSOL	2.5 % v/v							
6 Rye								11.3-
614 DAPL	2.3 lb ai/a							
6 Sequence	2.3 lb ai/a							
6 Pursuit	0.0625 lb ai/a							
6 Enlist One	0.475 lb ai/a							
6 AMSOL	2.5 % v/v							
7 Wheat								6.5-
77 EPP	1.96 lb ai/a							
7 Enlist Duo	1.96 lb ai/a							
7 AMSOL	2.5 % v/v							

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).  
 Mean separations are based on the complete error term.  
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.  
 Due to missing data, the effective replicates used for mean comparisons are: col. 1,14-31=3  
 \* Adjusted means  
 Could not calculate LSD (% mean diff) for columns 24 because error mean square = 0.  
 ^Calculated from residual.

# The Ohio State University

## Use of Rye, Wheat and Barley as a Cover Crop and Termination Timing

Trial ID: 21WBRCOVER Cooperator Trial ID:  
 Protocol ID: 21WBRCOVER Location: Trial Year: 2021  
 Project ID: Project ID 2: Project ID 3:  
 Study Director: Sponsor Contact:  
 Investigator (Creator): Dr. Mark M. Loux

Pest Type	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed		
Pest Code	LAMSS	STEME	TAROF	VERSS	SENGL	POAAN		
Pest Scientific Name	Lamium sp.	Stellaria media	Taraxacum offic>	Veronica sp.	Packera glabella	Poa annua		
Pest Name	Deadnettle	chickweed	dandelion	Speedwell	Cressleaf groun>	Annual bluegrass		
Crop Type, Code						C, GLXMA		
Crop Name						Soybean		
Rating Date	May-21-2021	May-21-2021	May-21-2021	May-21-2021	May-21-2021	May-21-2021		
Rating Type	Density	Density	Density	Density	Density	Density		
Rating Unit/Min/Max	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -		
Sample Size								
Number of Subsamples	1	1	1	1	1	1		
Data Entry Date	Jun-30-2021	Jun-30-2021	Nov-18-2022	Jun-30-2021	Jun-30-2021	Jun-30-2021		
Rating Timing								
Days After First/Last Applic.	24, 24	24, 24	24, 24	24, 24	24, 24	24, 24		
Trt-Eval Interval								
Plant-Eval Interval	191 DP-1	191 DP-1	191 DP-1	191 DP-1	191 DP-1	191 DP-1		
Days After Emergence	176 DE-1	176 DE-1	176 DE-1	176 DE-1	176 DE-1	176 DE-1		
ARM Action Codes								
Number of Decimals								
Trt Treatment	Rate	8*	9*	10*	11*	12*	13*	14*
No. Name	Rate	Unit						
8Wheat								7.8-
87 EPP	2.3lb ai/a							
8 Sequence	2.3lb ai/a							
8 Pursuit	0.0625lb ai/a							
8 Enlist One	0.475lb ai/a							
8 AMSOL	2.5% v/v							
9Wheat		0.7-	0.7-	0.0-	0.0b	0.0-	0.7-	10.5-
97 DAPL	1.96lb ai/a							
9 Enlist Duo	1.96lb ai/a							
9 AMSOL	2.5% v/v							
10Wheat		1.3-	1.7-	0.0-	0.0b	0.3-	0.0-	12.2-
107 DAPL	2.3lb ai/a							
10 Sequence	2.3lb ai/a							
10 Pursuit	0.0625lb ai/a							
10 Enlist One	0.475lb ai/a							
10 AMSOL	2.5% v/v							
11Wheat								7.8-
11 14 DAPL	1.96lb ai/a							
11 Enlist Duo	1.96lb ai/a							
11 AMSOL	2.5% v/v							
12Wheat								9.7-
12 14 DAPL	2.3lb ai/a							
12 Sequence	2.3lb ai/a							
12 Pursuit	0.0625lb ai/a							
12 Enlist One	0.475lb ai/a							
12 AMSOL	2.5% v/v							
13Barley								11.5-
137 EPP	1.96lb ai/a							
13 Enlist Duo	1.96lb ai/a							
13 AMSOL	2.5% v/v							
14Barley								10.7-
147 EPP	2.3lb ai/a							
14 Sequence	2.3lb ai/a							
14 Pursuit	0.0625lb ai/a							
14 Enlist One	0.475lb ai/a							
14 AMSOL	2.5% v/v							

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).  
 Mean separations are based on the complete error term.  
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.  
 Due to missing data, the effective replicates used for mean comparisons are: col. 1,14-31=3  
 \* Adjusted means  
 Could not calculate LSD (% mean diff) for columns 24 because error mean square = 0.  
 ^Calculated from residual.



# The Ohio State University

## Use of Rye, Wheat and Barley as a Cover Crop and Termination Timing

Trial ID: 21WBRCOVER Cooperator Trial ID:  
 Protocol ID: 21WBRCOVER Location: Trial Year: 2021  
 Project ID: Project ID 2: Project ID 3:  
 Study Director: Sponsor Contact:  
 Investigator (Creator): Dr. Mark M. Loux

Pest Type	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed		
Pest Code	LAMSS	STEME	TAROF	VERSS	SENGL	POAAN		
Pest Scientific Name	Lamium sp.	Stellaria media	Taraxacum offic>	Veronica sp.	Packera glabella	Poa annua		
Pest Name	Deadnettle	chickweed	dandelion	Speedwell	Cressleaf groun>	Annual bluegrass		
Crop Type, Code								C, GLXMA
Crop Name								Soybean
Rating Date	May-21-2021	May-21-2021	May-21-2021	May-21-2021	May-21-2021	May-21-2021	May-21-2021	Jun-11-2021
Rating Type	Density	Density	Density	Density	Density	Density	Density	Density
Rating Unit/Min/Max	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/M, -, -
Sample Size								
Number of Subsamples	1	1	1	1	1	1	1	2
Data Entry Date	Jun-30-2021	Jun-30-2021	Nov-18-2022	Jun-30-2021	Jun-30-2021	Jun-30-2021	Jun-30-2021	Jun-30-2021
Rating Timing								
Days After First/Last Applic.	24, 24	24, 24	24, 24	24, 24	24, 24	24, 24	24, 24	45, 5
Trt-Eval Interval								
Plant-Eval Interval	191 DP-1	191 DP-1	191 DP-1	191 DP-1	191 DP-1	191 DP-1	191 DP-1	28 DP-4
Days After Emergence	176 DE-1	176 DE-1	176 DE-1	176 DE-1	176 DE-1	176 DE-1	176 DE-1	10 DE-4
ARM Action Codes								
Number of Decimals								
Trt Treatment	Rate	8*	9*	10*	11*	12*	13*	14*
No. Name	Rate Unit							
15 Barley		2.0-	3.3-	0.0-	0.0b	0.0-	0.0-	12.3-
157 DAPL	1.96lb ai/a							
15 Enlist Duo	1.96lb ai/a							
15 AMSOL	2.5% v/v							
16 Barley		0.3-	2.0-	0.3-	0.0b	0.0-	0.0-	14.0-
167 DAPL	2.3lb ai/a							
16 Sequence	2.3lb ai/a							
16 Pursuit	0.0625lb ai/a							
16 Enlist One	0.475lb ai/a							
16 AMSOL	2.5% v/v							
17 Barley								12.8-
1714 DAPL	1.96lb ai/a							
17 Enlist Duo	1.96lb ai/a							
17 AMSOL	2.5% v/v							
18 Barley								11.8-
1814 DAPL	2.3lb ai/a							
18 Sequence	2.3lb ai/a							
18 Pursuit	0.0625lb ai/a							
18 Enlist One	0.475lb ai/a							
18 AMSOL	2.5% v/v							
19 No Cover								12.8-
197 EPP	1.96lb ai/a							
19 Enlist Duo	1.96lb ai/a							
19 AMSOL	2.5% v/v							
20 No Cover								13.0-
207 EPP	2.3lb ai/a							
20 Sequence	2.3lb ai/a							
20 Pursuit	0.0625lb ai/a							
20 Enlist One	0.475lb ai/a							
20 AMSOL	2.5% v/v							
21 No Cover		3.3-	1.7-	2.3-	3.7a	0.0-	0.0-	11.2-
217 DAPL	1.96lb ai/a							
21 Enlist Duo	1.96lb ai/a							
21 AMSOL	2.5% v/v							

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).

Mean separations are based on the complete error term.

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Due to missing data, the effective replicates used for mean comparisons are: col. 1,14-31=3

\* Adjusted means

Could not calculate LSD (% mean diff) for columns 24 because error mean square = 0.

^Calculated from residual.

# The Ohio State University

## Use of Rye, Wheat and Barley as a Cover Crop and Termination Timing

Trial ID: 21WBRCOVER Cooperator Trial ID:  
 Protocol ID: 21WBRCOVER Location: Trial Year: 2021  
 Project ID: Project ID 2: Project ID 3:  
 Study Director: Sponsor Contact:  
 Investigator (Creator): Dr. Mark M. Loux

Pest Type	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed			
Pest Code	LAMSS	STEME	TAROF	VERSS	SENGL	POAAN			
Pest Scientific Name	Lamium sp.	Stellaria media	Taraxacum offic>	Veronica sp.	Packera glabella	Poa annua			
Pest Name	Deadnettle	chickweed	dandelion	Speedwell	Cressleaf groun>	Annual bluegrass			
Crop Type, Code							C, GLXMA		
Crop Name							Soybean		
Rating Date	May-21-2021	May-21-2021	May-21-2021	May-21-2021	May-21-2021	May-21-2021	Jun-11-2021		
Rating Type	Density	Density	Density	Density	Density	Density	Density		
Rating Unit/Min/Max	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/M, -, -		
Sample Size									
Number of Subsamples	1	1	1	1	1	1	2		
Data Entry Date	Jun-30-2021	Jun-30-2021	Nov-18-2022	Jun-30-2021	Jun-30-2021	Jun-30-2021	Jun-30-2021		
Rating Timing									
Days After First/Last Applic.	24, 24	24, 24	24, 24	24, 24	24, 24	24, 24	45, 5		
Trt-Eval Interval									
Plant-Eval Interval	191 DP-1	191 DP-1	191 DP-1	191 DP-1	191 DP-1	191 DP-1	28 DP-4		
Days After Emergence	176 DE-1	176 DE-1	176 DE-1	176 DE-1	176 DE-1	176 DE-1	10 DE-4		
ARM Action Codes									
Number of Decimals									
Trt Treatment	Rate	8*	9*	10*	11*	12*	13*	14*	
No. Name	Rate	Unit							
22 No Cover			1.3-	1.7-	0.0-	0.7b	0.7-	0.7-	12.5-
227 DAPL	2.3lb ai/a								
22 Sequence	2.3lb ai/a								
22 Pursuit	0.0625lb ai/a								
22 Enlist One	0.475lb ai/a								
22 AMSOL	2.5% v/v								
23 No Cover									13.7-
23 14 DAPL	1.96lb ai/a								
23 Enlist Duo	1.96lb ai/a								
23 AMSOL	2.5% v/v								
24 No Cover									13.2-
24 14 DAPL	2.3lb ai/a								
24 Sequence	2.3lb ai/a								
24 Pursuit	0.0625lb ai/a								
24 Enlist One	0.475lb ai/a								
24 AMSOL	2.5% v/v								
LSD P=.05		2.22	4.04	2.69	2.14	0.75	1.05	5.57	
Standard Deviation		1.27	2.31	1.53	1.22	0.43	0.60	3.39	
CV		79.92	149.55	368.01	209.54	343.65	358.57	31.97	
Grand Mean		1.58	1.54	0.42	0.58	0.13	0.17	10.60	
Levene's F^		0.509	0.331	0.789	1.695	0.396	0.913	0.46	
Levene's Prob(F)		0.814	0.928	0.606	0.181	0.891	0.521	0.977	
Rank X2		.	.	.	.	.	.	.	
P(Rank X2)		.	.	.	.	.	.	.	
Skewness^		0.4929	0.7376	1.5612*	0.8625	1.1813*	1.3259*	-0.4191	
Kurtosis^		-0.3588	-0.2519	6.5147*	5.3965*	3.7702*	3.3106*	1.3978*	
Analyzed as		RCB	RCB	RCB	RCB	RCB	RCB	RCB	
Replicate F		2.368	2.406	0.656	0.363	2.032	0.467	3.536	
Replicate Prob(F)		0.1301	0.1264	0.5343	0.7022	0.1679	0.6365	0.0373	
Treatment F		1.591	0.483	0.841	3.235	1.000	0.800	1.691	
Treatment Prob(F)		0.2175	0.8318	0.5724	0.0293	0.4706	0.6004	0.0644	

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).

Mean separations are based on the complete error term.

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Due to missing data, the effective replicates used for mean comparisons are: col. 1,14-31=3

\* Adjusted means

Could not calculate LSD (% mean diff) for columns 24 because error mean square = 0.

^Calculated from residual.

# The Ohio State University

## Use of Rye, Wheat and Barley as a Cover Crop and Termination Timing

Trial ID: 21WBRCOVER  
 Protocol ID: 21WBRCOVER Location: Cooperator Trial ID:  
 Project ID: Project ID 2: Project ID 3: Trial Year: 2021  
 Study Director: Sponsor Contact:  
 Investigator (Creator): Dr. Mark M. Loux

Pest Type	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed		
Pest Code	SETFA	AMBTR	AMARE	CHEAL	SOLPT	ABUTH		
Pest Scientific Name	Setaria faberi	Ambrosia trifida	Amaranthus retr>	Chenopodium alb>	Solanum ptychan>	Abutilon theoph>		
Pest Name	Giant foxtail	Giant ragweed	Redroot pigweed	common lambsqua>	West Indian nig>	velvetleaf		
Crop Type, Code	C, GLXMA							
Crop Name	Soybean							
Rating Date	Jun-11-2021	Jun-4-2021	Jun-4-2021	Jun-4-2021	Jun-4-2021	Jun-4-2021		
Rating Type	stand count	Density	Density	Density	Density	Density		
Rating Unit/Min/Max	2 M, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -		
Sample Size								
Number of Subsamples	1	2	2	2	2	2		
Data Entry Date	Nov-18-2022	Jul-1-2021	Jul-1-2021	Jul-1-2021	Jul-1-2021	Jul-1-2021		
Rating Timing								
Days After First/Last Applic.	45, 5	38, 14	38, 14	38, 14	38, 14	38, 14		
Trt-Eval Interval		-2 DA-C						
Plant-Eval Interval	212 DP-1	205 DP-1	205 DP-1	205 DP-1	205 DP-1	205 DP-1		
Days After Emergence	197 DE-1	190 DE-1	190 DE-1	190 DE-1	190 DE-1	190 DE-1		
ARM Action Codes			SUMSUB					
Number of Decimals								
Trt Treatment	Rate	15*	16*	17*	18*	19*	20*	21*
No. Name	Rate Unit							

1 Rye		15.7-	126.7 ab	7.7 ab	0.8-	0.2-	0.0-	0.0-
17 EPP	1.96 lb ai/a							
1 Enlist Duo	1.96 lb ai/a							
1 AMSOL	2.5 % v/v							
2 Rye		18.0-	28.7 bcd	9.0 ab	0.0-	0.0-	0.0-	0.5-
27 EPP	2.3 lb ai/a							
2 Sequence	2.3 lb ai/a							
2 Pursuit	0.0625 lb ai/a							
2 Enlist One	0.475 lb ai/a							
2 AMSOL	2.5 % v/v							
3 Rye		15.0-	16.7 cd	3.0 b	0.0-	0.0-	0.0-	0.0-
37 DAPL	1.96 lb ai/a							
3 Enlist Duo	1.96 lb ai/a							
3 AMSOL	2.5 % v/v							
4 Rye		20.7-	4.7 d	5.7 b	0.0-	0.0-	0.0-	0.0-
47 DAPL	2.3 lb ai/a							
4 Sequence	2.3 lb ai/a							
4 Pursuit	0.0625 lb ai/a							
4 Enlist One	0.475 lb ai/a							
4 AMSOL	2.5 % v/v							
5 Rye		8.3-	66.7 a-d	12.3 ab	0.0-	0.5-	0.0-	1.3-
514 DAPL	1.96 lb ai/a							
5 Enlist Duo	1.96 lb ai/a							
5 AMSOL	2.5 % v/v							
6 Rye		22.7-	65.0 a-d	7.0 ab	0.2-	0.0-	0.0-	0.7-
614 DAPL	2.3 lb ai/a							
6 Sequence	2.3 lb ai/a							
6 Pursuit	0.0625 lb ai/a							
6 Enlist One	0.475 lb ai/a							
6 AMSOL	2.5 % v/v							
7 Wheat		13.0-	113.3 abc	3.0 b	0.0-	0.0-	0.0-	0.2-
77 EPP	1.96 lb ai/a							
7 Enlist Duo	1.96 lb ai/a							
7 AMSOL	2.5 % v/v							

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).

Mean separations are based on the complete error term.

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Due to missing data, the effective replicates used for mean comparisons are: col. 1,14-31=3

\* Adjusted means

Could not calculate LSD (% mean diff) for columns 24 because error mean square = 0.

^Calculated from residual.

# The Ohio State University

## Use of Rye, Wheat and Barley as a Cover Crop and Termination Timing

Trial ID: 21WBRCOVER  
 Protocol ID: 21WBRCOVER Location: Cooperator Trial ID:  
 Project ID: Project ID 2: Project ID 3: Trial Year: 2021  
 Study Director: Sponsor Contact:  
 Investigator (Creator): Dr. Mark M. Loux

Pest Type		W, Weed	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed	
Pest Code		SETFA	AMBTR	AMARE	CHEAL	SOLPT	ABUTH	
Pest Scientific Name		Setaria faberi	Ambrosia trifida	Amaranthus retr>	Chenopodium alb>	Solanum ptychan>	Abutilon theoph>	
Pest Name		Giant foxtail	Giant ragweed	Redroot pigweed	common lambsqua>	West Indian nig>	velvetleaf	
Crop Type, Code	C, GLXMA							
Crop Name	Soybean							
Rating Date	Jun-11-2021	Jun-4-2021	Jun-4-2021	Jun-4-2021	Jun-4-2021	Jun-4-2021	Jun-4-2021	
Rating Type	stand count	Density	Density	Density	Density	Density	Density	
Rating Unit/Min/Max	2 M, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	
Sample Size								
Number of Subsamples	1	2	2	2	2	2	2	
Data Entry Date	Nov-18-2022	Jul-1-2021	Jul-1-2021	Jul-1-2021	Jul-1-2021	Jul-1-2021	Jul-1-2021	
Rating Timing								
Days After First/Last Applic.	45, 5	38, 14	38, 14	38, 14	38, 14	38, 14	38, 14	
Trt-Eval Interval		-2 DA-C						
Plant-Eval Interval	212 DP-1	205 DP-1	205 DP-1	205 DP-1	205 DP-1	205 DP-1	205 DP-1	
Days After Emergence	197 DE-1	190 DE-1	190 DE-1	190 DE-1	190 DE-1	190 DE-1	190 DE-1	
ARM Action Codes			SUMSUB					
Number of Decimals								
Trt Treatment	Rate	15*	16*	17*	18*	19*	20*	21*
No. Name	Rate							
8Wheat		15.7-	91.7 a-d	2.3b	0.7-	0.2-	0.2-	0.0-
87 EPP	2.3lb ai/a							
8 Sequence	2.3lb ai/a							
8 Pursuit	0.0625lb ai/a							
8 Enlist One	0.475lb ai/a							
8 AMSOL	2.5% v/v							
9Wheat		21.0-	20.0 cd	4.0b	0.0-	0.0-	0.0-	0.0-
97 DAPL	1.96lb ai/a							
9 Enlist Duo	1.96lb ai/a							
9 AMSOL	2.5% v/v							
10Wheat		24.3-	30.3 bcd	1.3b	0.0-	0.0-	0.0-	0.0-
107 DAPL	2.3lb ai/a							
10 Sequence	2.3lb ai/a							
10 Pursuit	0.0625lb ai/a							
10 Enlist One	0.475lb ai/a							
10 AMSOL	2.5% v/v							
11Wheat		15.7-	72.5 a-d	8.3 ab	0.0-	0.0-	0.0-	0.2-
11 14 DAPL	1.96lb ai/a							
11 Enlist Duo	1.96lb ai/a							
11 AMSOL	2.5% v/v							
12Wheat		19.3-	65.0 a-d	10.3 ab	0.0-	0.2-	0.0-	3.5-
12 14 DAPL	2.3lb ai/a							
12 Sequence	2.3lb ai/a							
12 Pursuit	0.0625lb ai/a							
12 Enlist One	0.475lb ai/a							
12 AMSOL	2.5% v/v							
13Barley		23.0-	97.5 a-d	22.3 a	1.0-	0.8-	0.5-	1.0-
137 EPP	1.96lb ai/a							
13 Enlist Duo	1.96lb ai/a							
13 AMSOL	2.5% v/v							
14Barley		21.3-	32.8 a-d	3.3b	1.0-	0.0-	0.2-	0.0-
147 EPP	2.3lb ai/a							
14 Sequence	2.3lb ai/a							
14 Pursuit	0.0625lb ai/a							
14 Enlist One	0.475lb ai/a							
14 AMSOL	2.5% v/v							

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).

Mean separations are based on the complete error term.

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Due to missing data, the effective replicates used for mean comparisons are: col. 1,14-31=3

\* Adjusted means

Could not calculate LSD (% mean diff) for columns 24 because error mean square = 0.

^Calculated from residual.

# The Ohio State University

## Use of Rye, Wheat and Barley as a Cover Crop and Termination Timing

Trial ID: 21WBRCOVER  
 Protocol ID: 21WBRCOVER Location: Cooperator Trial ID:  
 Project ID: Project ID 2: Project ID 3: Trial Year: 2021  
 Study Director: Sponsor Contact:  
 Investigator (Creator): Dr. Mark M. Loux

Pest Type	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed			
Pest Code	SETFA	AMBTR	AMARE	CHEAL	SOLPT	ABUTH			
Pest Scientific Name	Setaria faberi	Ambrosia trifida	Amaranthus retr>	Chenopodium alb>	Solanum ptychan>	Abutilon theoph>			
Pest Name	Giant foxtail	Giant ragweed	Redroot pigweed	common lambsqua>	West Indian nig>	velvetleaf			
Crop Type, Code	C, GLXMA								
Crop Name	Soybean								
Rating Date	Jun-11-2021	Jun-4-2021	Jun-4-2021	Jun-4-2021	Jun-4-2021	Jun-4-2021			
Rating Type	stand count	Density	Density	Density	Density	Density			
Rating Unit/Min/Max	2 M, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -			
Sample Size									
Number of Subsamples	1	2	2	2	2	2			
Data Entry Date	Nov-18-2022	Jul-1-2021	Jul-1-2021	Jul-1-2021	Jul-1-2021	Jul-1-2021			
Rating Timing									
Days After First/Last Applic.	45, 5	38, 14	38, 14	38, 14	38, 14	38, 14			
Trt-Eval Interval		-2 DA-C							
Plant-Eval Interval	212 DP-1	205 DP-1	205 DP-1	205 DP-1	205 DP-1	205 DP-1			
Days After Emergence	197 DE-1	190 DE-1	190 DE-1	190 DE-1	190 DE-1	190 DE-1			
ARM Action Codes			SUMSUB						
Number of Decimals									
Trt Treatment	Rate	15*	16*	17*	18*	19*	20*	21*	
No. Name	Rate	Unit							
15 Barley			24.7-	36.3 a-d	2.0b	0.0-	0.0-	0.0-	1.5-
157 DAPL	1.96 lb ai/a								
15 Enlist Duo	1.96 lb ai/a								
15 AMSOL	2.5 % v/v								
16 Barley			28.0-	4.7 d	10.3 ab	0.0-	0.0-	0.0-	0.0-
167 DAPL	2.3 lb ai/a								
16 Sequence	2.3 lb ai/a								
16 Pursuit	0.0625 lb ai/a								
16 Enlist One	0.475 lb ai/a								
16 AMSOL	2.5 % v/v								
17 Barley			25.7-	36.3 a-d	15.7 ab	0.0-	6.7-	0.0-	6.8-
1714 DAPL	1.96 lb ai/a								
17 Enlist Duo	1.96 lb ai/a								
17 AMSOL	2.5 % v/v								
18 Barley			23.7-	60.0 a-d	11.7 ab	0.0-	1.3-	0.0-	0.0-
1814 DAPL	2.3 lb ai/a								
18 Sequence	2.3 lb ai/a								
18 Pursuit	0.0625 lb ai/a								
18 Enlist One	0.475 lb ai/a								
18 AMSOL	2.5 % v/v								
19 No Cover			25.7-	126.7 ab	2.0b	2.8-	2.5-	0.0-	0.5-
197 EPP	1.96 lb ai/a								
19 Enlist Duo	1.96 lb ai/a								
19 AMSOL	2.5 % v/v								
20 No Cover			26.0-	63.8 a-d	2.3b	0.8-	0.0-	0.5-	0.0-
207 EPP	2.3 lb ai/a								
20 Sequence	2.3 lb ai/a								
20 Pursuit	0.0625 lb ai/a								
20 Enlist One	0.475 lb ai/a								
20 AMSOL	2.5 % v/v								
21 No Cover			23.0-	40.8 a-d	2.0b	2.0-	0.0-	0.0-	0.3-
217 DAPL	1.96 lb ai/a								
21 Enlist Duo	1.96 lb ai/a								
21 AMSOL	2.5 % v/v								

Means followed by same letter or symbol do not significantly differ (P=0.05, Student-Newman-Keuls).  
 Mean separations are based on the complete error term.  
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.  
 Due to missing data, the effective replicates used for mean comparisons are: col. 1,14-31=3  
 \* Adjusted means  
 Could not calculate LSD (% mean diff) for columns 24 because error mean square = 0.  
 ^Calculated from residual.

# The Ohio State University

## Use of Rye, Wheat and Barley as a Cover Crop and Termination Timing

Trial ID: 21WBRCOVER      Cooperator Trial ID:  
 Protocol ID: 21WBRCOVER      Location:      Trial Year: 2021  
 Project ID:      Project ID 2:      Project ID 3:  
 Study Director:      Sponsor Contact:  
 Investigator (Creator): Dr. Mark M. Loux

Pest Type	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed		
Pest Code	SETFA	AMBTR	AMARE	CHEAL	SOLPT	ABUTH		
Pest Scientific Name	Setaria faberi	Ambrosia trifida	Amaranthus retr>	Chenopodium alb>	Solanum ptychan>	Abutilon theoph>		
Pest Name	Giant foxtail	Giant ragweed	Redroot pigweed	common lambsqua>	West Indian nig>	velvetleaf		
Crop Type, Code	C, GLXMA							
Crop Name	Soybean							
Rating Date	Jun-11-2021	Jun-4-2021	Jun-4-2021	Jun-4-2021	Jun-4-2021	Jun-4-2021		
Rating Type	stand count	Density	Density	Density	Density	Density		
Rating Unit/Min/Max	2 M, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -	#/0.5M2, -, -		
Sample Size								
Number of Subsamples	1	2	2	2	2	2		
Data Entry Date	Nov-18-2022	Jul-1-2021	Jul-1-2021	Jul-1-2021	Jul-1-2021	Jul-1-2021		
Rating Timing								
Days After First/Last Applic.	45, 5	38, 14	38, 14	38, 14	38, 14	38, 14		
Trt-Eval Interval		-2 DA-C						
Plant-Eval Interval	212 DP-1	205 DP-1	205 DP-1	205 DP-1	205 DP-1	205 DP-1		
Days After Emergence	197 DE-1	190 DE-1	190 DE-1	190 DE-1	190 DE-1	190 DE-1		
ARM Action Codes			SUMSUB					
Number of Decimals								
Trt Treatment	Rate	15*	16*	17*	18*	19*	20*	21*
No. Name	Rate	Unit						
22 No Cover		25.0-	11.8cd	3.3b	0.0-	0.0-	0.0-	0.0-
227 DAPL	2.3lb ai/a							
22 Sequence	2.3lb ai/a							
22 Pursuit	0.0625lb ai/a							
22 Enlist One	0.475lb ai/a							
22 AMSOL	2.5% v/v							
23 No Cover		27.3-	59.2a-d	3.7b	0.8-	0.0-	0.0-	0.0-
23 14 DAPL	1.96lb ai/a							
23 Enlist Duo	1.96lb ai/a							
23 AMSOL	2.5% v/v							
24 No Cover		26.3-	135.0a	0.3b	0.5-	0.3-	0.0-	0.2-
24 14 DAPL	2.3lb ai/a							
24 Sequence	2.3lb ai/a							
24 Pursuit	0.0625lb ai/a							
24 Enlist One	0.475lb ai/a							
24 AMSOL	2.5% v/v							
LSD P=.05		11.10	56.89	9.62	1.73	4.06	0.43	4.66
Standard Deviation		6.76	34.62	5.86	1.05	2.47	0.26	2.84
CV		31.85	59.08	91.86	237.09	467.72	474.86	408.28
Grand Mean		21.21	58.59	6.38	0.44	0.53	0.06	0.69
Levene's F^		0.444	0.768	0.502	0.838	0.871	0.921	0.943
Levene's Prob(F)		0.981	0.75	0.962	0.67	0.632	0.573	0.547
Rank X2		.	.	.	.	.	.	.
P(Rank X2)		.	.	.	.	.	.	.
Skewness^		-0.4283	0.4687	0.9449*	2.0409*	2.8868*	2.1237*	2.4408*
Kurtosis^		1.3705*	3.3824*	2.4342*	15.5345*	26.0893*	12.2629*	18.3856*
Analyzed as		RCB	RCB	RCB	RCB	RCB	RCB	RCB
Replicate F		3.534	1.510	16.320	1.992	1.096	0.948	1.081
Replicate Prob(F)		0.0373	0.2317	0.0001	0.1480	0.3427	0.3950	0.3477
Treatment F		1.718	3.918	2.493	1.421	1.004	0.902	0.869
Treatment Prob(F)		0.0588	0.0001	0.0042	0.1535	0.4790	0.5949	0.6344

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).

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Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Due to missing data, the effective replicates used for mean comparisons are: col. 1,14-31=3

\* Adjusted means

Could not calculate LSD (% mean diff) for columns 24 because error mean square = 0.

^Calculated from residual.

# The Ohio State University

## Use of Rye, Wheat and Barley as a Cover Crop and Termination Timing

Trial ID: 21WBRCOVER Cooperator Trial ID:  
 Protocol ID: 21WBRCOVER Location: Trial Year: 2021  
 Project ID: Project ID 2: Project ID 3:  
 Study Director: Sponsor Contact:  
 Investigator (Creator): Dr. Mark M. Loux

Pest Type	W, Weed	W, Weed	GR	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed
Pest Code	TAROF	ERICA		SETFA	AMBTR	GRASSES	BROADLVS	SETFA	
Pest Scientific Name	Taraxacum offic>	Erigeron canad>		Setaria faberi	Ambrosia trifida			Setaria faberi	
Pest Name	dandelion	mare's-tail		Giant foxtail	Giant ragweed			Giant foxtail	
Crop Type, Code			C, GLXMA						
Crop Name			Soybean						
Rating Date	Jun-4-2021	Jun-4-2021	Jun-21-2021	Jun-21-2021	Jun-21-2021	Jun-23-2021	Jun-23-2021	Jun-23-2021	Sep-29-2021
Rating Type	Density	Density	PHYGEN	contro	contro	BIOMASS	BIOMASS	BIOMASS	contro
Rating Unit/Min/Max	#/0.5M2, -, -	#/0.5M2, -, -	%, 0, 100	%, 0, 100	%, 0, 100	G/0.25, -, -	G/0.25, -, -	G/0.25, -, -	%, 0, 100
Sample Size									
Number of Subsamples	2	2	1	1	1	1	1	1	1
Data Entry Date	Jul-1-2021	Jul-1-2021	Jun-22-2021	Jun-22-2021	Jun-22-2021	Jun-30-2021	Jun-30-2021	Jun-30-2021	Oct-1-2021
Rating Timing				at post					harvest
Days After First/Last Applic.	38, 14	38, 14	55, 15	55, 15	55, 15	57, 17	57, 17	57, 17	155, 97
Trt-Eval Interval				-3 DA-D				-1 DA-D	
Plant-Eval Interval	205 DP-1	205 DP-1	38 DP-4	222 DP-1	222 DP-1	224 DP-1	224 DP-1	224 DP-1	322 DP-1
Days After Emergence	190 DE-1	190 DE-1	20 DE-4	207 DE-1	207 DE-1	209 DE-1	209 DE-1	209 DE-1	307 DE-1
ARM Action Codes									
Number of Decimals									
Trt Treatment	Rate	22*	23*	24*	25*	26*	27*	28*	29*
No. Name	Rate	Unit							

1 Rye			0.0-	0.2-	0.0-	0.0c	23.3b	9.023abc	3.227-	86.7-
17 EPP	1.96 lb ai/a									
1 Enlist Duo	1.96 lb ai/a									
1 AMSOL	2.5 % v/v									
2 Rye			0.0-	0.2-	0.0-	80.0a	38.3ab	0.337d	1.647-	93.3-
27 EPP	2.3 lb ai/a									
2 Sequence	2.3 lb ai/a									
2 Pursuit	0.0625 lb ai/a									
2 Enlist One	0.475 lb ai/a									
2 AMSOL	2.5 % v/v									
3 Rye			0.0-	0.0-	0.0-	20.0bc	50.0ab	2.767d	0.213-	65.0-
37 DAPL	1.96 lb ai/a									
3 Enlist Duo	1.96 lb ai/a									
3 AMSOL	2.5 % v/v									
4 Rye			0.0-	0.0-	0.0-	96.7a	43.3ab	0.000d	5.917-	98.3-
47 DAPL	2.3 lb ai/a									
4 Sequence	2.3 lb ai/a									
4 Pursuit	0.0625 lb ai/a									
4 Enlist One	0.475 lb ai/a									
4 AMSOL	2.5 % v/v									
5 Rye			0.0-	0.2-	0.0-	100.0a	83.3ab	0.067d	0.240-	33.3-
514 DAPL	1.96 lb ai/a									
5 Enlist Duo	1.96 lb ai/a									
5 AMSOL	2.5 % v/v									
6 Rye			0.0-	0.0-	0.0-	100.0a	99.3a	0.040d	0.157-	100.0-
614 DAPL	2.3 lb ai/a									
6 Sequence	2.3 lb ai/a									
6 Pursuit	0.0625 lb ai/a									
6 Enlist One	0.475 lb ai/a									
6 AMSOL	2.5 % v/v									
7 Wheat			0.0-	0.3-	0.0-	0.0c	43.3ab	9.200abc	1.710-	66.7-
77 EPP	1.96 lb ai/a									
7 Enlist Duo	1.96 lb ai/a									
7 AMSOL	2.5 % v/v									

Means followed by same letter or symbol do not significantly differ (P=0.05, Student-Newman-Keuls).

Mean separations are based on the complete error term.

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Due to missing data, the effective replicates used for mean comparisons are: col. 1,14-31=3

\* Adjusted means

Could not calculate LSD (% mean diff) for columns 24 because error mean square = 0.

^Calculated from residual.

# The Ohio State University

## Use of Rye, Wheat and Barley as a Cover Crop and Termination Timing

Trial ID: 21WBRCOVER Cooperator Trial ID:  
 Protocol ID: 21WBRCOVER Location: Trial Year: 2021  
 Project ID: Project ID 2: Project ID 3:  
 Study Director: Sponsor Contact:  
 Investigator (Creator): Dr. Mark M. Loux

Pest Type	W, Weed	W, Weed	GR	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed	
Pest Code	TAROF	ERICA		SETFA	AMBTR	GRASSES	BROADLVS	SETFA		
Pest Scientific Name	Taraxacum offic>	Erigeron canad>		Setaria faberi	Ambrosia trifida			Setaria faberi		
Pest Name	dandelion	mare's-tail		Giant foxtail	Giant ragweed			Giant foxtail		
Crop Type, Code			C, GLXMA							
Crop Name			Soybean							
Rating Date	Jun-4-2021	Jun-4-2021	Jun-21-2021	Jun-21-2021	Jun-21-2021	Jun-23-2021	Jun-23-2021	Sep-29-2021		
Rating Type	Density	Density	PHYGEN	contro	contro	BIOMASS	BIOMASS	contro		
Rating Unit/Min/Max	#/0.5M2, -, -	#/0.5M2, -, -	%, 0, 100	%, 0, 100	%, 0, 100	G/0.25, -, -	G/0.25, -, -	%, 0, 100		
Sample Size										
Number of Subsamples	2	2	1	1	1	1	1	1		
Data Entry Date	Jul-1-2021	Jul-1-2021	Jun-22-2021	Jun-22-2021	Jun-22-2021	Jun-30-2021	Jun-30-2021	Oct-1-2021		
Rating Timing				at post				harvest		
Days After First/Last Applic.	38, 14	38, 14	55, 15	55, 15	55, 15	57, 17	57, 17	155, 97		
Trt-Eval Interval				-3 DA-D				-1 DA-D		
Plant-Eval Interval	205 DP-1	205 DP-1	38 DP-4	222 DP-1	222 DP-1	224 DP-1	224 DP-1	322 DP-1		
Days After Emergence	190 DE-1	190 DE-1	20 DE-4	207 DE-1	207 DE-1	209 DE-1	209 DE-1	307 DE-1		
ARM Action Codes										
Number of Decimals										
Trt Treatment	Rate	22*	23*	24*	25*	26*	27*	28*	29*	
No. Name	Rate	Unit								
8Wheat			0.3-	0.3-	0.0-	23.3bc	30.0b	4.483cd	5.270-	93.3-
87 EPP	2.3lb ai/a									
8 Sequence	2.3lb ai/a									
8 Pursuit	0.0625lb ai/a									
8 Enlist One	0.475lb ai/a									
8 AMSOL	2.5% v/v									
9Wheat			0.2-	0.0-	0.0-	46.7b	26.7b	2.670d	5.387-	96.7-
97 DAPL	1.96lb ai/a									
9 Enlist Duo	1.96lb ai/a									
9 AMSOL	2.5% v/v									
10Wheat			0.0-	0.0-	0.0-	99.3a	70.0ab	0.033d	1.957-	100.0-
107 DAPL	2.3lb ai/a									
10 Sequence	2.3lb ai/a									
10 Pursuit	0.0625lb ai/a									
10 Enlist One	0.475lb ai/a									
10 AMSOL	2.5% v/v									
11Wheat			0.3-	0.0-	0.0-	100.0a	90.0ab	0.003d	0.090-	66.7-
11 14 DAPL	1.96lb ai/a									
11 Enlist Duo	1.96lb ai/a									
11 AMSOL	2.5% v/v									
12Wheat			0.2-	0.2-	0.0-	100.0a	88.3ab	0.103d	0.257-	66.7-
12 14 DAPL	2.3lb ai/a									
12 Sequence	2.3lb ai/a									
12 Pursuit	0.0625lb ai/a									
12 Enlist One	0.475lb ai/a									
12 AMSOL	2.5% v/v									
13Barley			0.3-	0.0-	0.0-	0.0c	23.3b	12.683a	4.857-	80.0-
137 EPP	1.96lb ai/a									
13 Enlist Duo	1.96lb ai/a									
13 AMSOL	2.5% v/v									
14Barley			0.2-	0.0-	0.0-	50.0b	26.7b	2.177d	5.607-	93.3-
147 EPP	2.3lb ai/a									
14 Sequence	2.3lb ai/a									
14 Pursuit	0.0625lb ai/a									
14 Enlist One	0.475lb ai/a									
14 AMSOL	2.5% v/v									

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).

Mean separations are based on the complete error term.

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Due to missing data, the effective replicates used for mean comparisons are: col. 1,14-31=3

\* Adjusted means

Could not calculate LSD (% mean diff) for columns 24 because error mean square = 0.

^Calculated from residual.



# The Ohio State University

## Use of Rye, Wheat and Barley as a Cover Crop and Termination Timing

Trial ID: 21WBRCOVER Cooperator Trial ID:  
 Protocol ID: 21WBRCOVER Location: Trial Year: 2021  
 Project ID: Project ID 2: Project ID 3:  
 Study Director: Sponsor Contact:  
 Investigator (Creator): Dr. Mark M. Loux

Pest Type	W, Weed	W, Weed	GR	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed	
Pest Code	TAROF	ERICA		SETFA	AMBTR	GRASSES	BROADLVS	SETFA		
Pest Scientific Name	Taraxacum offic>	Erigeron canad>		Setaria faberi	Ambrosia trifida			Setaria faberi		
Pest Name	dandelion	mare's-tail		Giant foxtail	Giant ragweed			Giant foxtail		
Crop Type, Code			C, GLXMA							
Crop Name			Soybean							
Rating Date	Jun-4-2021	Jun-4-2021	Jun-21-2021	Jun-21-2021	Jun-21-2021	Jun-23-2021	Jun-23-2021	Sep-29-2021		
Rating Type	Density	Density	PHYGEN	contro	contro	BIOMASS	BIOMASS	contro		
Rating Unit/Min/Max	#/0.5M2, -, -	#/0.5M2, -, -	%, 0, 100	%, 0, 100	%, 0, 100	G/0.25, -, -	G/0.25, -, -	%, 0, 100		
Sample Size										
Number of Subsamples	2	2	1	1	1	1	1	1		
Data Entry Date	Jul-1-2021	Jul-1-2021	Jun-22-2021	Jun-22-2021	Jun-22-2021	Jun-30-2021	Jun-30-2021	Oct-1-2021		
Rating Timing				at post				harvest		
Days After First/Last Applic.	38, 14	38, 14	55, 15	55, 15	55, 15	57, 17	57, 17	155, 97		
Trt-Eval Interval				-3 DA-D				-1 DA-D		
Plant-Eval Interval	205 DP-1	205 DP-1	38 DP-4	222 DP-1	222 DP-1	224 DP-1	224 DP-1	322 DP-1		
Days After Emergence	190 DE-1	190 DE-1	20 DE-4	207 DE-1	207 DE-1	209 DE-1	209 DE-1	307 DE-1		
ARM Action Codes										
Number of Decimals										
Trt Treatment	Rate	22*	23*	24*	25*	26*	27*	28*	29*	
No. Name	Rate	Unit								
15 Barley			0.8-	0.0-	0.0-	10.0c	46.7 ab	6.047bcd	1.917-	100.0-
157 DAPL	1.96lb ai/a									
15 Enlist Duo	1.96lb ai/a									
15 AMSOL	2.5% v/v									
16 Barley			0.0-	0.0-	0.0-	95.0a	26.7 b	0.000d	4.517-	100.0-
167 DAPL	2.3lb ai/a									
16 Sequence	2.3lb ai/a									
16 Pursuit	0.0625lb ai/a									
16 Enlist One	0.475lb ai/a									
16 AMSOL	2.5% v/v									
17 Barley			0.0-	0.2-	0.0-	100.0a	84.3 ab	0.010d	0.470-	100.0-
1714 DAPL	1.96lb ai/a									
17 Enlist Duo	1.96lb ai/a									
17 AMSOL	2.5% v/v									
18 Barley			0.0-	0.3-	0.0-	100.0a	90.0 ab	0.000d	0.107-	100.0-
1814 DAPL	2.3lb ai/a									
18 Sequence	2.3lb ai/a									
18 Pursuit	0.0625lb ai/a									
18 Enlist One	0.475lb ai/a									
18 AMSOL	2.5% v/v									
19 No Cover			0.5-	0.0-	0.0-	10.0c	40.0 ab	10.367 ab	4.827-	95.0-
197 EPP	1.96lb ai/a									
19 Enlist Duo	1.96lb ai/a									
19 AMSOL	2.5% v/v									
20 No Cover			0.2-	0.5-	0.0-	48.3b	46.7 ab	1.807 d	5.783-	93.3-
207 EPP	2.3lb ai/a									
20 Sequence	2.3lb ai/a									
20 Pursuit	0.0625lb ai/a									
20 Enlist One	0.475lb ai/a									
20 AMSOL	2.5% v/v									
21 No Cover			0.0-	1.7-	0.0-	16.7c	66.7 ab	4.170 cd	0.000-	95.0-
217 DAPL	1.96lb ai/a									
21 Enlist Duo	1.96lb ai/a									
21 AMSOL	2.5% v/v									

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).

Mean separations are based on the complete error term.

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Due to missing data, the effective replicates used for mean comparisons are: col. 1,14-31=3

\* Adjusted means

Could not calculate LSD (% mean diff) for columns 24 because error mean square = 0.

^Calculated from residual.

# The Ohio State University

## Use of Rye, Wheat and Barley as a Cover Crop and Termination Timing

Trial ID: 21WBRCOVER Cooperator Trial ID:  
 Protocol ID: 21WBRCOVER Location: Trial Year: 2021  
 Project ID: Project ID 2: Project ID 3:  
 Study Director: Sponsor Contact:  
 Investigator (Creator): Dr. Mark M. Loux

Pest Type	W, Weed	W, Weed	GR	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed		
Pest Code	TAROF	ERICA		SETFA	AMBTR	GRASSES	BROADLVS	SETFA		
Pest Scientific Name	Taraxacum offic>	Erigeron canad>		Setaria faberi	Ambrosia trifida			Setaria faberi		
Pest Name	dandelion	mare's-tail		Giant foxtail	Giant ragweed			Giant foxtail		
Crop Type, Code			C, GLXMA							
Crop Name			Soybean							
Rating Date	Jun-4-2021	Jun-4-2021	Jun-21-2021	Jun-21-2021	Jun-21-2021	Jun-23-2021	Jun-23-2021	Sep-29-2021		
Rating Type	Density	Density	PHYGEN	contro	contro	BIOMASS	BIOMASS	contro		
Rating Unit/Min/Max	#/0.5M2, -, -	#/0.5M2, -, -	%, 0, 100	%, 0, 100	%, 0, 100	G/0.25, -, -	G/0.25, -, -	%, 0, 100		
Sample Size										
Number of Subsamples	2	2	1	1	1	1	1	1		
Data Entry Date	Jul-1-2021	Jul-1-2021	Jun-22-2021	Jun-22-2021	Jun-22-2021	Jun-30-2021	Jun-30-2021	Oct-1-2021		
Rating Timing				at post				harvest		
Days After First/Last Applic.	38, 14	38, 14	55, 15	55, 15	55, 15	57, 17	57, 17	155, 97		
Trt-Eval Interval				-3 DA-D				-1 DA-D		
Plant-Eval Interval	205 DP-1	205 DP-1	38 DP-4	222 DP-1	222 DP-1	224 DP-1	224 DP-1	322 DP-1		
Days After Emergence	190 DE-1	190 DE-1	20 DE-4	207 DE-1	207 DE-1	209 DE-1	209 DE-1	307 DE-1		
ARM Action Codes										
Number of Decimals										
Trt Treatment	Rate	22*	23*	24*	25*	26*	27*	28*	29*	
No. Name	Rate	Unit								
22 No Cover			0.0-	0.2-	0.0-	96.7 a	43.3 ab	0.140 d	2.487-	100.0-
227 DAPL	2.3lb ai/a									
22 Sequence	2.3lb ai/a									
22 Pursuit	0.0625lb ai/a									
22 Enlist One	0.475lb ai/a									
22 AMSOL	2.5 % v/v									
23 No Cover			0.0-	1.3-	0.0-	91.7 a	96.7 a	0.123 d	0.033-	100.0-
23 14 DAPL	1.96lb ai/a									
23 Enlist Duo	1.96lb ai/a									
23 AMSOL	2.5 % v/v									
24 No Cover			0.0-	1.7-	0.0-	100.0 a	100.0 a	0.143 d	1.327-	100.0-
24 14 DAPL	2.3lb ai/a									
24 Sequence	2.3lb ai/a									
24 Pursuit	0.0625lb ai/a									
24 Enlist One	0.475lb ai/a									
24 AMSOL	2.5 % v/v									
LSD P=.05		0.64	1.30	.	21.74	35.91	3.9490	6.0208	39.69	
Standard Deviation		0.39	0.79	0.00	13.23	21.85	2.4028	3.6634	24.15	
CV		313.47	265.29	0.0	21.39	38.08	86.86	151.59	27.29	
Grand Mean		0.13	0.30	0.00	61.85	57.38	2.7664	2.4167	88.47	
Levene's F^		0.578	0.841	.	0.709	0.494	1.304	0.644	0.591	
Levene's Prob(F)		0.922	0.667	.	0.813	0.965	0.216	0.873	0.914	
Rank X2		.	.	.	.	.	.	.	.	
P(Rank X2)		.	.	.	.	.	.	.	.	
Skewness^		1.4935*	1.9353*	.	-0.1421	0.3149	-0.2028	1.0781*	-0.451	
Kurtosis^		6.8803*	10.9964*	.	1.9369*	0.0733	3.9954*	2.2504*	2.4883*	
Analyzed as		RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	
Replicate F		4.139	0.503	0.000	1.205	6.741	1.823	2.905	3.440	
Replicate Prob(F)		0.0222	0.6077	1.0000	0.3088	0.0027	0.1730	0.0648	0.0405	
Treatment F		0.861	1.235	0.000	29.091	4.724	7.857	1.125	1.484	
Treatment Prob(F)		0.6429	0.2652	1.0000	0.0001	0.0001	0.0001	0.3574	0.1260	

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).

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Due to missing data, the effective replicates used for mean comparisons are: col. 1,14-31=3

\* Adjusted means

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^Calculated from residual.

# The Ohio State University

## Use of Rye, Wheat and Barley as a Cover Crop and Termination Timing

Trial ID: 21WBRCOVER Cooperator Trial ID:  
 Protocol ID: 21WBRCOVER Location: Trial Year: 2021  
 Project ID: Project ID 2: Project ID 3:  
 Study Director: Sponsor Contact:  
 Investigator (Creator): Dr. Mark M. Loux

Pest Type	W, Weed	W, Weed	
Pest Code	ECHCG	AMBTR	
Pest Scientific Name	Echinochloa cru>	Ambrosia trifida	
Pest Name	common barnyard>	Giant ragweed	
Crop Type, Code			
Crop Name			
Rating Date	Sep-29-2021	Sep-29-2021	
Rating Type	contro	contro	
Rating Unit/Min/Max	%, 0, 100	%, 0, 100	
Sample Size			
Number of Subsamples	1	1	
Data Entry Date	Oct-1-2021	Oct-1-2021	
Rating Timing			
Days After First/Last Applic.	155, 97	155, 97	
Trt-Eval Interval			
Plant-Eval Interval	322 DP-1	322 DP-1	
Days After Emergence	307 DE-1	307 DE-1	
ARM Action Codes			
Number of Decimals			
Trt Treatment	Rate	30*	31*
No. Name	Rate	Unit	

1 Rye		70.0-	70.0-
17 EPP	1.96 lb ai/a		
1 Enlist Duo	1.96 lb ai/a		
1 AMSOL	2.5 % v/v		
2 Rye		85.0-	78.3-
27 EPP	2.3 lb ai/a		
2 Sequence	2.3 lb ai/a		
2 Pursuit	0.0625 lb ai/a		
2 Enlist One	0.475 lb ai/a		
2 AMSOL	2.5 % v/v		
3 Rye		60.0-	96.0-
37 DAPL	1.96 lb ai/a		
3 Enlist Duo	1.96 lb ai/a		
3 AMSOL	2.5 % v/v		
4 Rye		98.3-	86.7-
47 DAPL	2.3 lb ai/a		
4 Sequence	2.3 lb ai/a		
4 Pursuit	0.0625 lb ai/a		
4 Enlist One	0.475 lb ai/a		
4 AMSOL	2.5 % v/v		
5 Rye		33.3-	66.7-
514 DAPL	1.96 lb ai/a		
5 Enlist Duo	1.96 lb ai/a		
5 AMSOL	2.5 % v/v		
6 Rye		90.0-	86.0-
614 DAPL	2.3 lb ai/a		
6 Sequence	2.3 lb ai/a		
6 Pursuit	0.0625 lb ai/a		
6 Enlist One	0.475 lb ai/a		
6 AMSOL	2.5 % v/v		
7 Wheat		53.3-	76.7-
77 EPP	1.96 lb ai/a		
7 Enlist Duo	1.96 lb ai/a		
7 AMSOL	2.5 % v/v		

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).  
 Mean separations are based on the complete error term.  
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.  
 Due to missing data, the effective replicates used for mean comparisons are: col. 1,14-31=3  
 \* Adjusted means  
 Could not calculate LSD (% mean diff) for columns 24 because error mean square = 0.  
 ^Calculated from residual.

# The Ohio State University

## Use of Rye, Wheat and Barley as a Cover Crop and Termination Timing

Trial ID: 21WBRCOVER Cooperator Trial ID:  
 Protocol ID: 21WBRCOVER Location: Trial Year: 2021  
 Project ID: Project ID 2: Project ID 3:  
 Study Director: Sponsor Contact:  
 Investigator (Creator): Dr. Mark M. Loux

Pest Type	W, Weed	W, Weed
Pest Code	ECHCG	AMBTR
Pest Scientific Name	Echinochloa cru>	Ambrosia trifida
Pest Name	common barnyard>	Giant ragweed
Crop Type, Code		
Crop Name		
Rating Date	Sep-29-2021	Sep-29-2021
Rating Type	contro	contro
Rating Unit/Min/Max	%, 0, 100	%, 0, 100
Sample Size		
Number of Subsamples	1	1
Data Entry Date	Oct-1-2021	Oct-1-2021
Rating Timing		
Days After First/Last Applic.	155, 97	155, 97
Trt-Eval Interval		
Plant-Eval Interval	322 DP-1	322 DP-1
Days After Emergence	307 DE-1	307 DE-1
ARM Action Codes		
Number of Decimals		

Trt	Treatment	Rate	30*	31*
No.	Name	Rate	Unit	
8	Wheat		85.0-	81.7-
87	EPP	2.3lb ai/a		
8	Sequence	2.3lb ai/a		
8	Pursuit	0.0625lb ai/a		
8	Enlist One	0.475lb ai/a		
8	AMSOL	2.5% v/v		
9	Wheat		86.7-	88.3-
97	DAPL	1.96lb ai/a		
9	Enlist Duo	1.96lb ai/a		
9	AMSOL	2.5% v/v		
10	Wheat		100.0-	100.0-
107	DAPL	2.3lb ai/a		
10	Sequence	2.3lb ai/a		
10	Pursuit	0.0625lb ai/a		
10	Enlist One	0.475lb ai/a		
10	AMSOL	2.5% v/v		
11	Wheat		65.0-	80.0-
11 14	DAPL	1.96lb ai/a		
11	Enlist Duo	1.96lb ai/a		
11	AMSOL	2.5% v/v		
12	Wheat		66.7-	61.0-
12 14	DAPL	2.3lb ai/a		
12	Sequence	2.3lb ai/a		
12	Pursuit	0.0625lb ai/a		
12	Enlist One	0.475lb ai/a		
12	AMSOL	2.5% v/v		
13	Barley		66.7-	80.0-
137	EPP	1.96lb ai/a		
13	Enlist Duo	1.96lb ai/a		
13	AMSOL	2.5% v/v		
14	Barley		80.0-	83.3-
147	EPP	2.3lb ai/a		
14	Sequence	2.3lb ai/a		
14	Pursuit	0.0625lb ai/a		
14	Enlist One	0.475lb ai/a		
14	AMSOL	2.5% v/v		

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).

Mean separations are based on the complete error term.

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Due to missing data, the effective replicates used for mean comparisons are: col. 1,14-31=3

\* Adjusted means

Could not calculate LSD (% mean diff) for columns 24 because error mean square = 0.

^Calculated from residual.

# The Ohio State University

## Use of Rye, Wheat and Barley as a Cover Crop and Termination Timing

Trial ID: 21WBRCOVER Cooperator Trial ID:  
 Protocol ID: 21WBRCOVER Location: Trial Year: 2021  
 Project ID: Project ID 2: Project ID 3:  
 Study Director: Sponsor Contact:  
 Investigator (Creator): Dr. Mark M. Loux

Pest Type	W, Weed	W, Weed	
Pest Code	ECHCG	AMBTR	
Pest Scientific Name	Echinochloa cru>	Ambrosia trifida	
Pest Name	common barnyard>	Giant ragweed	
Crop Type, Code			
Crop Name			
Rating Date	Sep-29-2021	Sep-29-2021	
Rating Type	contro	contro	
Rating Unit/Min/Max	%, 0, 100	%, 0, 100	
Sample Size			
Number of Subsamples	1	1	
Data Entry Date	Oct-1-2021	Oct-1-2021	
Rating Timing			
Days After First/Last Applic.	155, 97	155, 97	
Trt-Eval Interval			
Plant-Eval Interval	322 DP-1	322 DP-1	
Days After Emergence	307 DE-1	307 DE-1	
ARM Action Codes			
Number of Decimals			
Trt Treatment	Rate	30*	31*
No. Name	Rate	Unit	
15 Barley			100.0-
157 DAPL	1.96 lb ai/a		100.0-
15 Enlist Duo	1.96 lb ai/a		
15 AMSOL	2.5 % v/v		
16 Barley			100.0-
167 DAPL	2.3 lb ai/a		97.7-
16 Sequence	2.3 lb ai/a		
16 Pursuit	0.0625 lb ai/a		
16 Enlist One	0.475 lb ai/a		
16 AMSOL	2.5 % v/v		
17 Barley			100.0-
17 14 DAPL	1.96 lb ai/a		95.0-
17 Enlist Duo	1.96 lb ai/a		
17 AMSOL	2.5 % v/v		
18 Barley			100.0-
18 14 DAPL	2.3 lb ai/a		92.7-
18 Sequence	2.3 lb ai/a		
18 Pursuit	0.0625 lb ai/a		
18 Enlist One	0.475 lb ai/a		
18 AMSOL	2.5 % v/v		
19 No Cover			85.0-
197 EPP	1.96 lb ai/a		86.7-
19 Enlist Duo	1.96 lb ai/a		
19 AMSOL	2.5 % v/v		
20 No Cover			85.0-
207 EPP	2.3 lb ai/a		90.0-
20 Sequence	2.3 lb ai/a		
20 Pursuit	0.0625 lb ai/a		
20 Enlist One	0.475 lb ai/a		
20 AMSOL	2.5 % v/v		
21 No Cover			85.0-
217 DAPL	1.96 lb ai/a		85.0-
21 Enlist Duo	1.96 lb ai/a		
21 AMSOL	2.5 % v/v		

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).

Mean separations are based on the complete error term.

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Due to missing data, the effective replicates used for mean comparisons are: col. 1,14-31=3

\* Adjusted means

Could not calculate LSD (% mean diff) for columns 24 because error mean square = 0.

^Calculated from residual.

# The Ohio State University

## Use of Rye, Wheat and Barley as a Cover Crop and Termination Timing

Trial ID: 21WBRCOVER Cooperator Trial ID:  
 Protocol ID: 21WBRCOVER Location: Trial Year: 2021  
 Project ID: Project ID 2: Project ID 3:  
 Study Director: Sponsor Contact:  
 Investigator (Creator): Dr. Mark M. Loux

Pest Type	W, Weed	W, Weed	
Pest Code	ECHCG	AMBTR	
Pest Scientific Name	Echinochloa cru>	Ambrosia trifida	
Pest Name	common barnyard>	Giant ragweed	
Crop Type, Code			
Crop Name			
Rating Date	Sep-29-2021	Sep-29-2021	
Rating Type	contro	contro	
Rating Unit/Min/Max	%, 0, 100	%, 0, 100	
Sample Size			
Number of Subsamples	1	1	
Data Entry Date	Oct-1-2021	Oct-1-2021	
Rating Timing			
Days After First/Last Applic.	155, 97	155, 97	
Trt-Eval Interval			
Plant-Eval Interval	322 DP-1	322 DP-1	
Days After Emergence	307 DE-1	307 DE-1	
ARM Action Codes			
Number of Decimals			
Trt Treatment	Rate	30*	31*
No. Name	Rate	Unit	
22 No Cover			100.0-
227 DAPL	2.3lb ai/a		94.3-
22 Sequence	2.3lb ai/a		
22 Pursuit	0.0625lb ai/a		
22 Enlist One	0.475lb ai/a		
22 AMSOL	2.5% v/v		
23 No Cover			94.3-
23 14 DAPL	1.96lb ai/a		93.3-
23 Enlist Duo	1.96lb ai/a		
23 AMSOL	2.5% v/v		
24 No Cover			98.3-
24 14 DAPL	2.3lb ai/a		93.3-
24 Sequence	2.3lb ai/a		
24 Pursuit	0.0625lb ai/a		
24 Enlist One	0.475lb ai/a		
24 AMSOL	2.5% v/v		
LSD P=.05	41.56		32.68
Standard Deviation	25.29		19.88
CV	30.53		23.13
Grand Mean	82.82		85.94
Levene's F^	0.598		0.999
Levene's Prob(F)	0.909		0.484
Rank X2	.		.
P(Rank X2)	.		.
Skewness^	-0.306		-1.4646*
Kurtosis^	1.9995*		8.1779*
Analyzed as	RCB		RCB
Replicate F	1.752		1.986
Replicate Prob(F)	0.1849		0.1489
Treatment F	1.495		0.809
Treatment Prob(F)	0.1218		0.7034

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).  
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 Due to missing data, the effective replicates used for mean comparisons are: col. 1,14-31=3  
 \* Adjusted means  
 Could not calculate LSD (% mean diff) for columns 24 because error mean square = 0.  
 ^Calculated from residual.

# The Ohio State University

## Use of Rye, Wheat and Barley as a Cover Crop and Termination Timing

Trial ID: 21WBRCOVER      Cooperator Trial ID:  
 Protocol ID: 21WBRCOVER      Location:      Trial Year: 2021  
 Project ID:      Project ID 2:      Project ID 3:  
 Study Director:      Sponsor Contact:  
 Investigator (Creator): Dr. Mark M. Loux

### Pest Type

W, Weed = Weed or volunteer crop

### Pest Code

AMBTR, Ambrosia trifida, Giant ragweed = US  
 LAMSS, Lamium sp., Deadnettle = US  
 STEME, Stellaria media, chickweed = US  
 TAROF, Taraxacum officinale, dandelion = US  
 RANPF, Ranunculus parviflorus, Small-flowered buttercup = US  
 VERSS, Veronica sp., Speedwell = US  
 SENGL, Packera glabella, Cressleaf groundsel = US  
 POAAN, Poa annua, Annual bluegrass = US  
 SETFA, Setaria faberi, Giant foxtail = US  
 AMARE, Amaranthus retroflexus, Redroot pigweed = US  
 CHEAL, Chenopodium album, common lambsquarters = US  
 SOLPT, Solanum ptychanthum, West Indian nightshade = US  
 ABUTH, Abutilon theophrasti, velvetleaf = US  
 ERICA, Erigeron canadensis, mare's-tail = US  
 ECHCG, Echinochloa crus-galli, common barnyardgrass = US

### Crop Type, Code

C = EPP0 species (Bayer) codes  
 SECCW, BCER, Secale cereale, Winter rye = US  
 GLXMA, BSOY, Glycine max, Soybean = US

### Rating Type

PHYGEN = phytotoxicity - general / injury  
 contro = control / burndown or knockdown

### Rating Unit/Min/Max

%, 0, 100 = percent

### Plant-Eval Interval

166 DP-1 = 1 HORVW Nov-11-2020  
 191 DP-1 = 1 HORVW Nov-11-2020  
 28 DP-4 = 4 GLXMA May-14-2021  
 212 DP-1 = 1 HORVW Nov-11-2020  
 205 DP-1 = 1 HORVW Nov-11-2020  
 38 DP-4 = 4 GLXMA May-14-2021  
 222 DP-1 = 1 HORVW Nov-11-2020  
 224 DP-1 = 1 HORVW Nov-11-2020  
 322 DP-1 = 1 HORVW Nov-11-2020

### ARM Action Codes

SUMSUB = Show sum of subsamples when 1 subsample is visible on Assessment Data editor, and report sum of subsamples instead of mean on Summary reports.