

Cover Crop Interseeding in Grain Corn using a Modified Drill

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Background

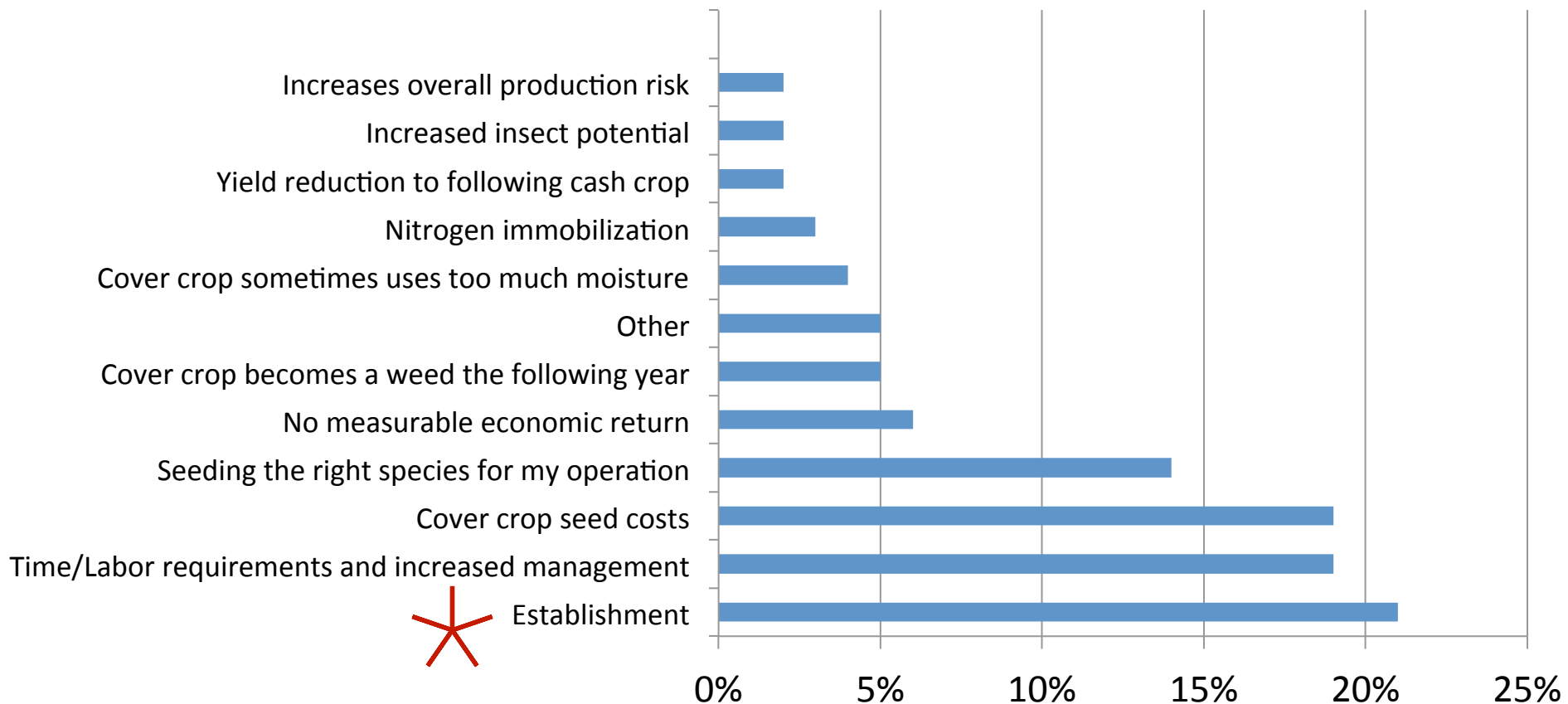
- Cover crops are of increasing interest to producers in Wisconsin due to many agronomic benefits.
- Cover crops easily establish after wheat and silage corn.
- Establishment difficult following grain corn in WI.



Cover Crop Challenges

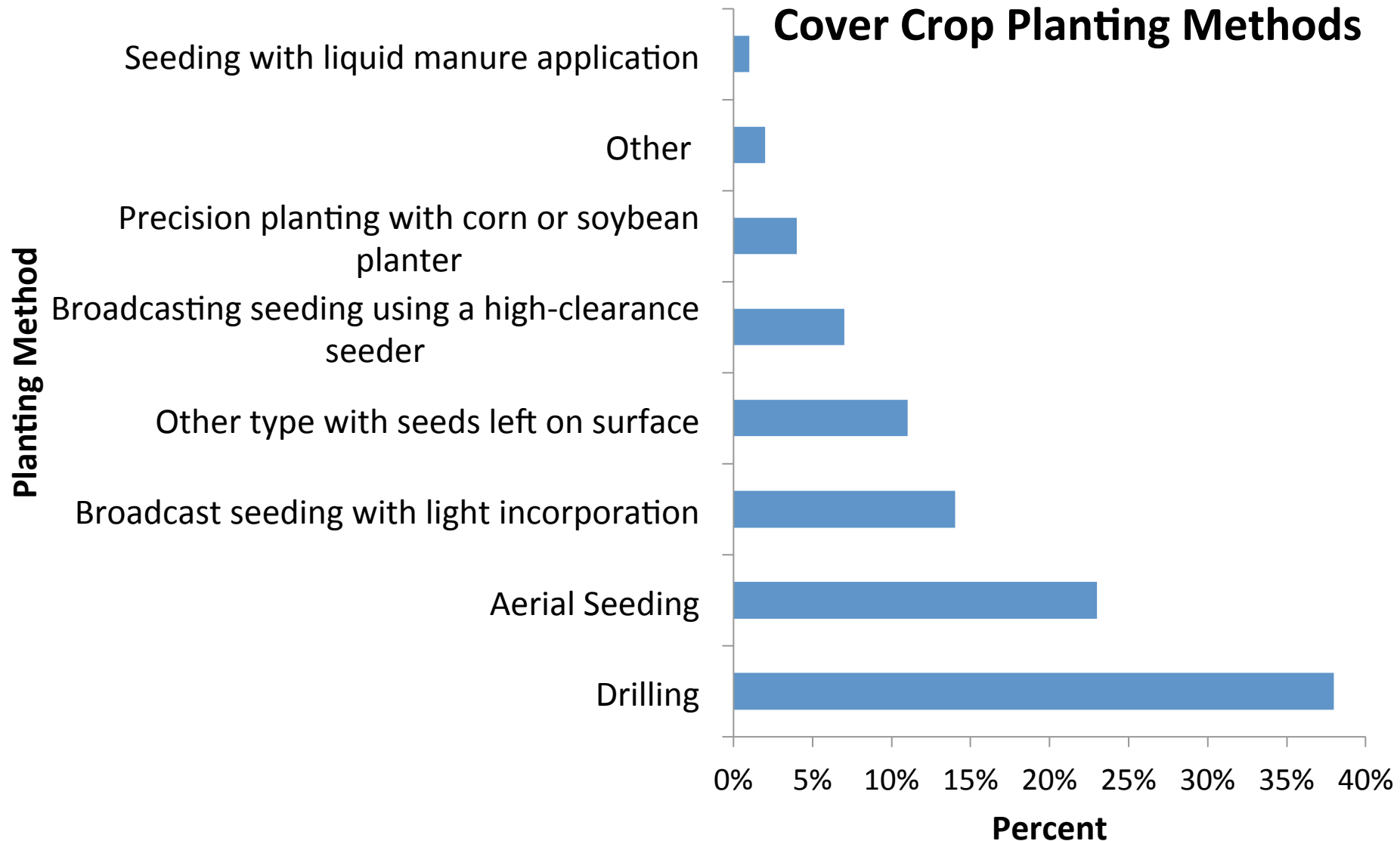
The SARE/CITC survey asked farmers what their biggest challenges with cover crops have been. **>21% of respondents indicated establishment biggest challenge!**

Biggest Cover Crop Challenges (Percent of Respondents) N=2814



How Farmers Establish Cover Crops

The SARE/CITC survey asked farmers how they establish their cover crops.



Objective

To determine if interseeding is possible utilizing a no-till drill in Wisconsin and if the cover crop will survive till corn grain harvest.

Materials and Methods

- Corn trials established in Arlington, WI in spring 2014 and 2015.
- RCBD with 4 replications and each rep included nontreated control.

	Dates	
	2014	2015
Corn planting	June 10 th	May 4 th
Glyphosate application	July 11 th	May 28 th
Cover crop planting Row Cultivation	July 14 th	June 6 th
Corn Harvest	October 28 th	November 9 th

Drill Modification



7.5 in.

15 in.

4 row units and no-till coulters removed to allow drill to travel between 30 in. rows

Seeding Data

	Winter rye	Oats + peas mix	Red clover	Radish
Depth (in)	1	1	0.25	0.25
Seeding Rate (lb/ac ⁻¹)	120	90 oats 30 peas	12	12

Species Selection

Midwest Cover Crops Council - Cover Crop Decision Tool

Wisconsin: Columbia County Seeding Dates

Location Information	Cash Crop Information	Soil Information	Attribute Information
Location Information	Wisconsin <input type="button" value="v"/> Columbia <input type="button" value="v"/>		
Cash Crop	Corn - Grain <input type="button" value="v"/> Plant Date: 05/01/2016 Harvest Date: 11/01/2016		
Drainage Information	Well Drained <input type="button" value="v"/> Flooding: No <input type="button" value="v"/>		
Goal #1	Interseed with Cash Crop <input type="button" value="v"/>	Goal #2	Select an attribute <input type="button" value="v"/>
		Goal #3	Select an attribute <input type="button" value="v"/>

Select cover crop to create information sheet 50% W.Pea/50%OSR ▼ Submit

Attribute Ratings: 0-Poor, 1-Fair 2-Good, 3-Very Good, 4-Excellent		Reliable Establishment					Freeze Risk to Establishment					Frost Seeding													
		Cash Crop Growing Period: Requires Aerial Seeding or Interseeding of Cover Crop																							
		Mar 15	Apr 1	Apr 15	May 1	May 15	Jun 1	Jun 15	Jul 1	Jul 15	Aug 1	Aug 15	Sep 1	Sep 15	Oct 1	Oct 15	Nov 1	Nov 15	Dec 1	Dec 15	Jan 1	Jan 15	Feb 1	Feb 15	
Interseed with Cash Crop																									
Nonlegumes																									
	Barley, Spring	4																							
	Barley, Winter	3																							
	Buckwheat	0																							
	Chicory (part of a mix)	4																							
	Millet, Japanese	0																							
	Millet, Pearl	0																							
	Oats	4																							
	Rye, Winter Cereal	2																							
	Ryegrass, Annual	3																							
	Sorghum-sudangrass	0																							
	Sudangrass	0																							
	Sunflower (part of a mix)	0																							
	Trifoliate, Winter	3																							
	Wheat, Spring	4																							
	Wheat, Winter	3																							
Brassicacae																									
	Radish, Oilseed	2																							
	Rapeseed/Canola	0																							
	Turnip, Forage type	2																							
Legumes																									
	Clover, Berseem	4																							
	Clover, Crimson	4																							
	Clover, Red	4																							
	Cowpea	0																							
	Pea, Field/Forage	2																							
	Pea, Winter	2																							
	Sweetclover	1																							
	Vetch, Hairy	3																							
Mixes																									
	40% W.Pea/60% Oats	0																							
	50% Br.Clover/50% Oats	0																							
	50% HV/50% WC Rye	0																							
	50% W.Pea/50%OSR	2																							
	60% A.Ryegr/40% OSR	0																							
	60% Oats/40% OSR	0																							

Cover Crop Establishment

Cover crops planted
into V5 corn
7/14/14 and
6/24/15



Winter Rye 7/28/14



Cover Crops 8/27/14



Radish and Red Clover 10/20/14



Post Harvest 11/8/14

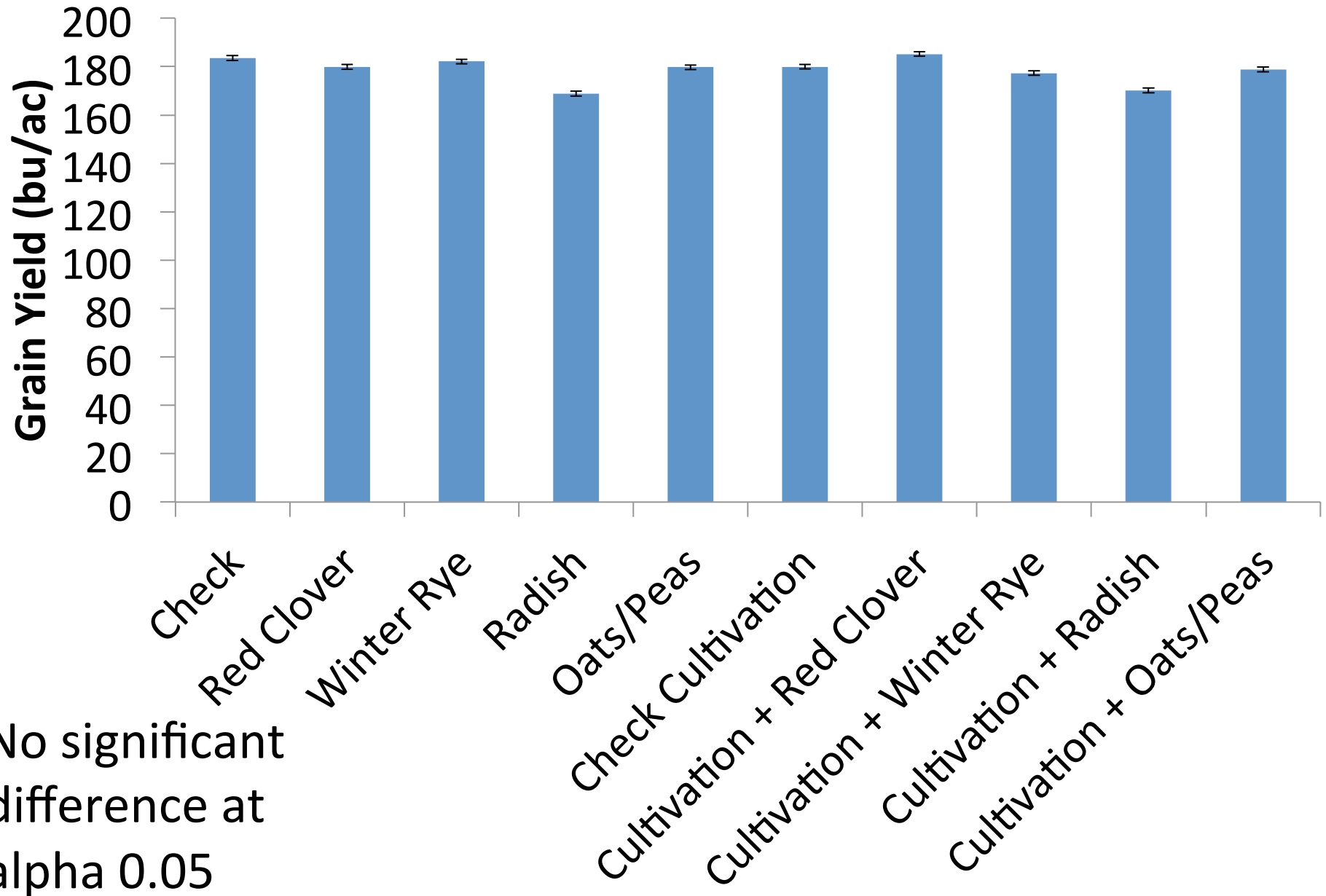


Spring 2015



Winter rye survived winter 2014-2014 . Photo taken 5/12/15

2014 Corn Grain Yield



Summer 2015



Winter Rye



Radish



Red Clover

Oat Pea Mixture did not consistently germinate in 2015

Harvest 2015



Winter Rye

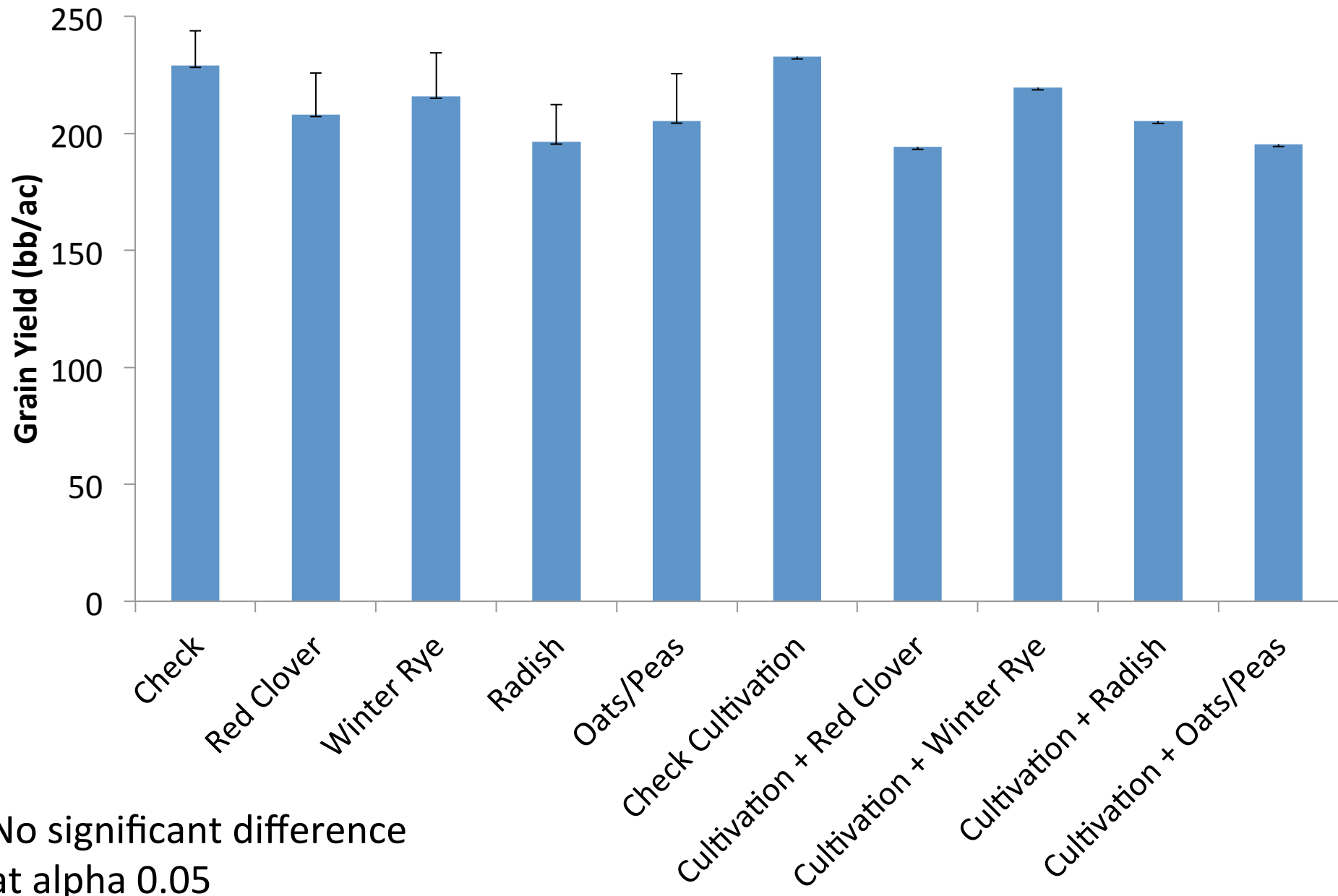


Radish



Red Clover

2015 Corn Grain Yield



Cover Crop Biomass At Grain Harvest

Cover Crop	2014 Biomass	2015 Biomass
	lb ac ⁻¹	
Red Clover	229 (137-311)	511 (200-899)
Winter Rye	209 (51-334)	485 (214-971)
Radish	900 (303-1944)	635 (57-1014)
Oat/Pea	201 (59-504)	21 (14-29)

¹Biomass weight (data range across plots)

Conclusions

- Interseeding has the potential to be a successful cover crop planting practice in Wisconsin.
- Trials were established under ideal soil and environmental conditions.



Future

Future research will focus on evaluating the soil conservation, soil carbon building, and potential N credits obtained with interseeding these cover crops.



More Info....

YouTube

Interseeding cover crops into corn in Wisconsin: Can it work?

College of Agricultural & Life Sciences
UNIVERSITY OF WISCONSIN-MADISON

UW Extension
University of Wisconsin-Extension

0:00 / 3:48

Interseeding cover crops into corn in Wisconsin: Can it work?

Univ of Wisconsin Integrated Pest and Crop Manage...

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Acknowledgments

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Questions?