

Winter Cereal Rye Cover Crop Effect on Cash Crop Yield: Long-Term On-Farm Research

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Summary: Farmers reported that in 42 of 46 site-years, properly managed cereal rye cover crops had little or no negative effect on corn and soybean yield (and actually increased soybean yield in 4 site-years).

Methods: Six sites on cooperator farms across the state of Iowa were established in the fall of 2008; five more sites were established in the fall of 2009 with two previous sites dropping out of the study; 10 sites were then maintained from 2009-2012. In 2013, seven sites participated, and in 2014, six sites participated in the study resulting in a total of 46 site-years over the course of the study (2009-2014).

All cooperators were employing corn-soybean rotations. Cooperators established replicated strips the length of their field (Fig. 1) and maintained those strips across the duration of the trial. Each replication had one strip with a cereal rye cover crop and one without a cover crop, and each site-year contained at least two replications.

Farmer-Cooperators (Fig. 2):

1. Bill Buman, Harlan
2. Randy Caviness, Greenfield
3. Jim Funcke, Jefferson
4. Devan Green, Conrad
5. Rick Juchems, Plainfield
6. Rob Davis & Darwin Pierce, Coon Rapids
7. Mark Pokorny, Clutier
8. George Schaefer, Kalona
9. Jerry Sindt, Holstein
10. Rob Stout, West Chester
11. Gary & Dave Nelson, Fort Dodge
12. Kelly Tobin, New Market

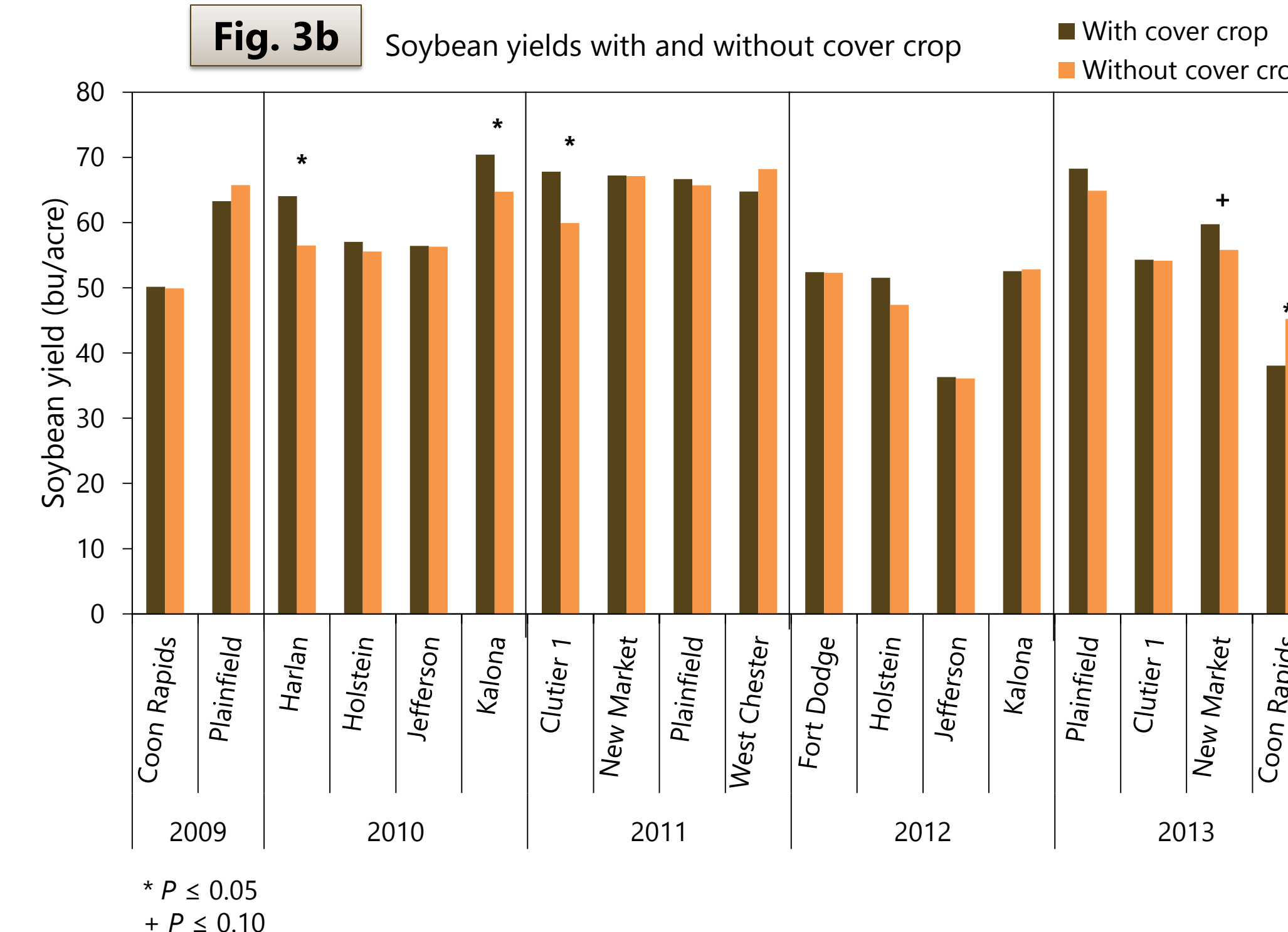
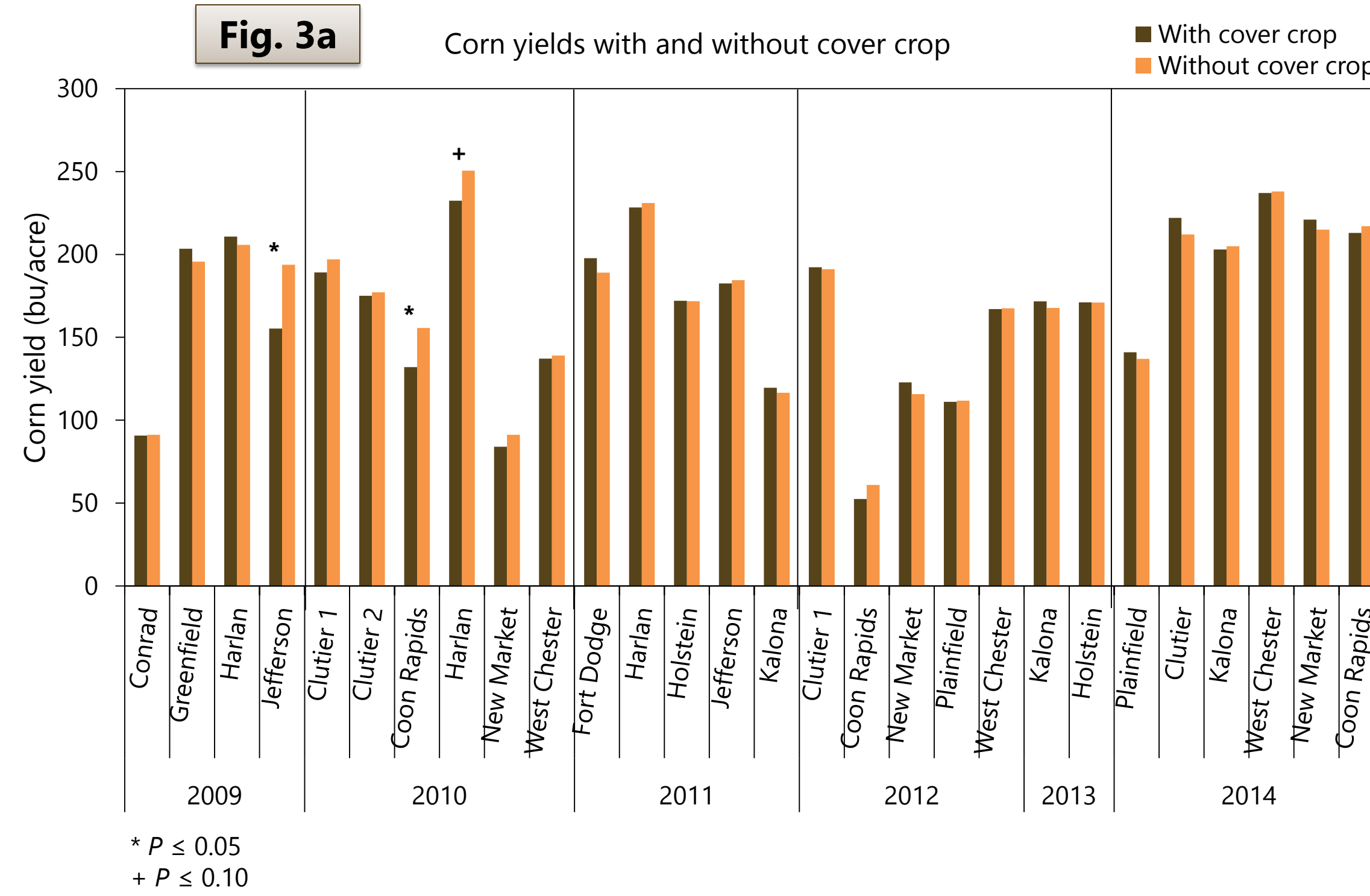


Fig. 4a Corn yields

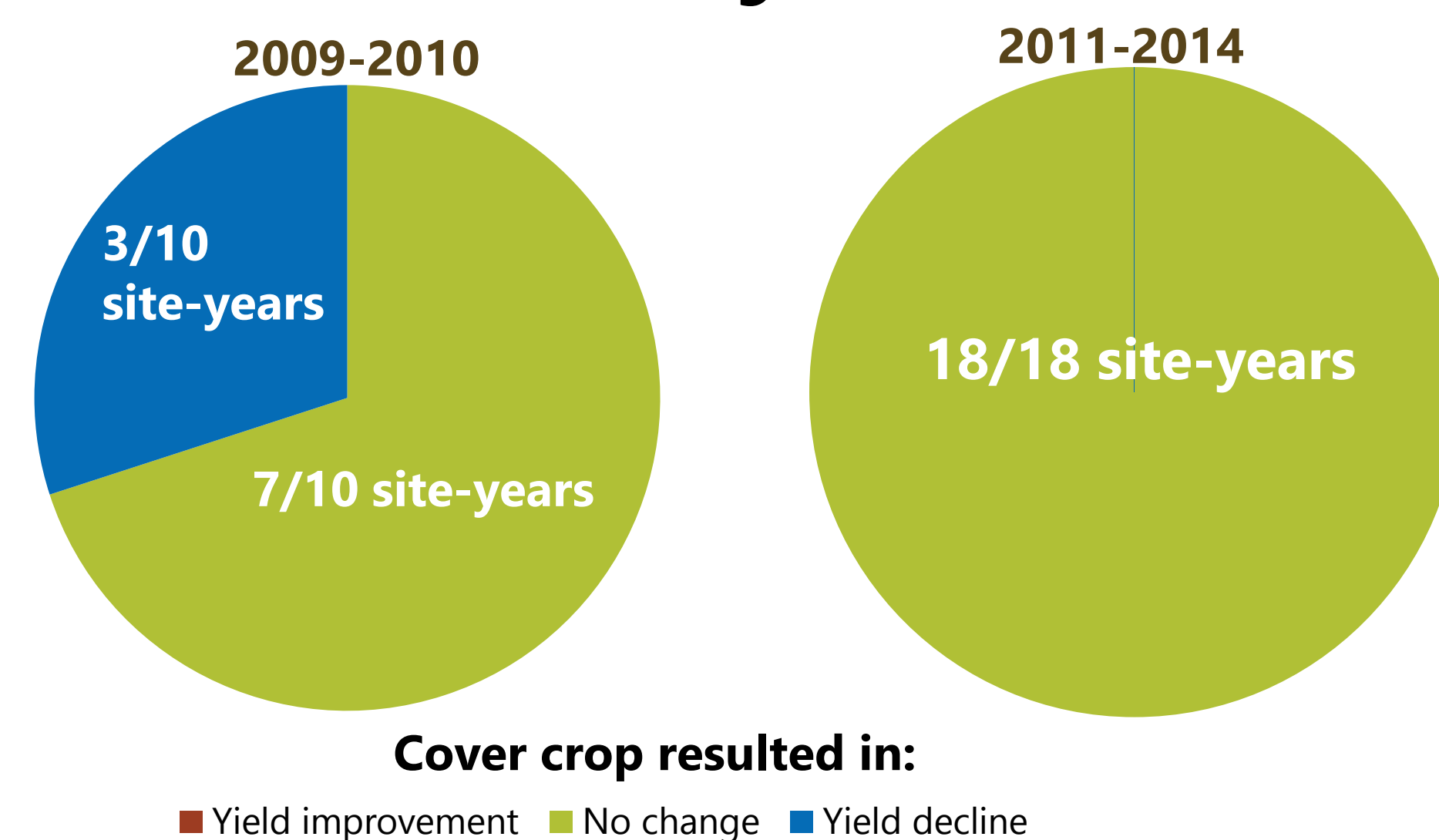


Fig. 4b Soybean yields

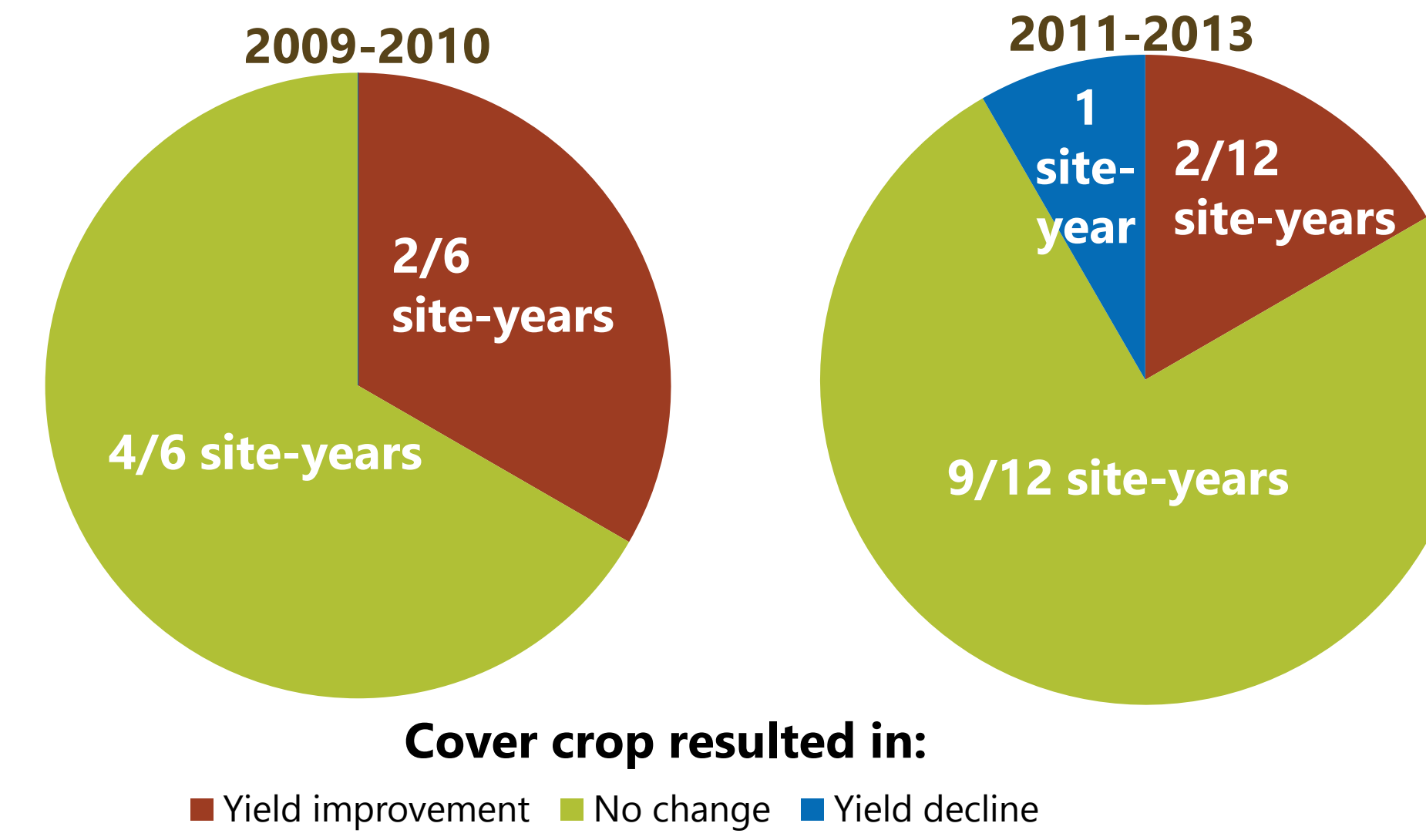


Fig. 2. Farmer-cooperator locations.



"We have learned that yields for soybeans are better in the rye strips and that corn yields are about equal in each."
—George Schaefer, Kalona, IA.

"Like any new change, there is a learning curve and some management changes need to be made to make adding cover crops a paying proposition."
—Rob Stout, West Chester, IA.

"I liked the idea of on-farm research that local farmers can buy into. I have learned that cover crops ahead of corn requires increased spring management and that rye ahead of soybeans seems to be the most beneficial simply because the cover crop has a longer growing season."
—Jerry Sindt, Holstein, IA.



Fig. 1. Replicated strips of cover crop and no cover crop in the spring of 2013 at Jim Funcke's farm near Jefferson, Iowa. The winter cereal rye cover crop was planted after soybeans in fall 2012.



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