

Economics of Grazing and Haying Cover Crops in North Central Kansas

Project Titles: Economics of Grazing and Haying Cover Crops North Central Kansas

Coordinators: Josh Roe

Location: Manhattan, Kansas

SARE Grants: \$7,223.00

Duration: 2015-2017

To read the full project reports, go to www.sare.org/projects and search for project number FNC14-971.

Grown on an estimated 10 million acres across the country, cover crops are becoming an indispensable part of crop rotations. To maintain this momentum, the development of reliable information at the local level—how to craft a diversified rotation that pays—needs to keep pace with growth in farmers' interest.

That is what motivated Josh Roe to use a \$7,223 NCR-SARE Farmer Rancher grant to explore the economics of grazing and haying cover crops in a corn-soybean-wheat rotation on his family's farm in North Central Kansas, where no-till is common but cover crops are rare. After one year of trials, Roe has seen many benefits that he likes, from profitability to system flexibility to improved resilience.

“Obviously we've been hearing more and more about cover crops. We are familiar with the benefits, especially after wheat, of further utilizing the soil resource and building up organic material,” said Roe, a sixth generation farmer who has 1,500 acres in no-till crop production and backgrounds 3,000 cattle per year. “We were interested in trying them out as part of our rotation.”

Backgrounding is a stage of beef production where excess calves are raised



This cover crop of oats, spring field peas and sorghum was cut for hay in October, yielding 1.59 tons per acre. Kansas farmer Josh Roe compared the economics of growing a cover crop for grazing and hay. Photo by Josh Roe.

on high quality feeds including grain, forage and pasture.

Working with a Kansas State University agronomist, Roe established a cover crop mix following wheat and compared the economics of three treatments: haying, grazing and terminating the cover crop without incorporating livestock. The cover crop mix included oats, spring field peas, radishes, turnips, and sorghum, except that the hay treatment excluded radishes and turnips.

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With high hay prices and particularly favorable weather for cover crop growth in 2014, Roe, an economist by training, used sensitivity analysis to evaluate profitability at various price and yield levels. He harvested 1.59 tons per acre and, based on his costs, estimated a break-even point of \$73 per ton, or nearly 20 percent below that season's price.

“We had very good luck with these trials, good rain, decent hay, and cattle prices,” Roe said. “We realize these results may not be replicable year after year, so we’re going to keep looking at how these systems perform under different conditions.” There was an immediate soil-health benefit from his trials, too, when a May rainfall of 9 inches in less than two hours caused heavy flooding in the area.

“We still had some flooding, but without the cover crop residue I can’t imagine how bad the erosion would have been—if it had been just bare soil or the previous year’s wheat stubble,” he said. Going forward, Roe plans to continue using cover crops for both grazing and haying, because the management flexibility it allows is a plus.

“Looking at a combined system like this is interesting,” he said. “Maybe there’s a time you can’t graze because it’s wet and you’re worried about compaction, then you can feed stockpiled forage from another hayed field.”

Roe says there has been a lot of interest in his trials among farmers, Extension agents and county conservation district staff in the area. Along with hosting on-farm field days, he has been asked to speak at numerous events about his experiences with cover crops.

For more information on Roe’s NCR-SARE Farmer Rancher grant project, visit the SARE project reporting website. Simply search by the project number, FNC14-971, at www.mysare.sare.org, or contact the NCR-SARE office.

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