

Cover crops add value to soil

BY LIZ JUCHEMS

INTEREST in cover crops among farmers and landowners continues to increase each year due to the water quality and soil health benefits they provide. Cover crops are an important tool in the Iowa Nutrient Reduction Strategy.

“Cover crops reduce nitrate-nitrogen and phosphorus loss by about 30% and build soil quality parameters, making them beneficial to farmers and to the public in minimizing impact on water quality,” says Jamie Benning, water quality program manager for Iowa State University Extension.

Covers' economic benefit

To increase adoption and reach the conservative NRS goal of cover crops on 20% of row crop acres (about 4 million), the economic value of retaining soil and soil nutrients needs to be considered. A recent study by the Iowa Cover Crop Working

Group (ICCWG) explored the economic benefit of cover crops in retaining soil, soil nutrients and overall land value to the landowner.

According to Benning, the project is unique because of its focus. “Over the past several years many research projects have focused on the agronomic and environmental impacts of cover crops, but few have looked at the economic benefits,” he says. “This project begins to capture some of the economic value of cover crops when implemented to keep soil in place.”

Economic value of covers

The study used multiyear data from nine farmer partners in an ICCWG cereal rye cover crop replicated trial begun in 2009 and two randomly selected counties from each crop reporting district to run RUSLE2 soil loss estimates.

The 20 counties were also analyzed to estimate the cost of soil erosion. The cal-

culations used three methods to generate an average cost of soil loss to the landowner: the change in the Corn Suitability Rating Version 2 (CSR2), yield potential and rental rate. Animal manure fertilizer was used as a reference source to estimate the nutrient value lost to erosion.

Combining the average value of soil loss due to erosion (49 cents) and the lost nutrient value (\$5.57), the estimate per ton of soil is \$6.06. For each ton of soil that is kept in place through conservation practices such as cover crops, \$6.06 can offset the cost of implementation.

The largest benefits were in fields with the highest measured erosion rates without cover crops. Even in fields with lower erosion rates from the use of no-till, higher residue crops and moderate slopes, cover crops provided an economic benefit through soil and nutrient retention.

Mark Pokorny, a Tama County ICCWG farmer participant, agrees. “I’ve been pleased with the results from cover crop use, especially in the spring of 2013. I had

a couple hundred acres of cover crops that really held the soil with all the rain. I’ve got some landlords who were really pleased with the results of that. So I’ll be using cover crops in the future.”

Funding partners

Iowa’s State Soil Conservation Committee and the Leopold Center for Sustainable Agriculture funded the ICCWG study.

Visit extension.iastate.edu/ilf for a new publication detailing the study and to explore additional resources including archived webinars, publications, and field day and workshop schedules.

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Juchems is events coordinator with Iowa Learning Farms.



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