South Dakota producers reap rewards of cover crops

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Farmers who use cover crops for grazing are more likely to view them as increasing their profitability, even during the first few years, according to survey of eastern South Dakota producers. The spring 2018 survey evaluated producers' perceptions about the benefits of conservation practices. Credit: South Dakota State University

The longer farmers use cover crops, the more likely they are to see the benefits and to use the conservation practice on a higher percentage of their farmland, according to a survey of eastern South Dakota producers.

Cover crops, which are planted after harvesting the cash crop, help prevent erosion and runoff and increase soil organic matter, thereby reducing the need for fertilizer and improving water quality. In addition, cover crops can help suppress weeds, thereby reducing herbicide and pesticide usage, according to assistant professor Tong Wang of South Dakota State University's Ness School of Management and Economics.

She is part of a team of SDSU researchers who conducted the spring 2018 survey to evaluate producers' perceptions about the benefits of conservation practices aimed at improving soil health, reducing the industry's carbon footprint and increasing the sustainability of agriculture.

Furthermore, Wang reported those who use cover crops for grazing are more likely to view them as increasing their profitability, even during the first few years. "Grazing helps offset the cost of using cover crops by reducing forage costs." More than 70% of South Dakota producers graze their livestock on crop residue and cover crops, according to a 2016 survey in the Northern Great Plains.

An article on South Dakota farmers' perceptions about profitability and their likelihood of continuing to use cover crops was published in the *Journal of Agricultural and Resource Economics*. The research was funded by the South Dakota Corn Utilization Council and the U.S. Department of Agriculture Natural Resources Conservation Service.

Tracking cover crop usage

In the contiguous United States, the number of acres on which farmers

plant cover crops increased from 218,000 in 2012 to 619,000 in 2017, according to the fifth-annual Sustainable Agriculture Research and Education–Conservation Technology Information Center cover-crop survey. Of the 708 South Dakota producers who responded to the SDSU researchers' survey, more than 80% expressed interest in adopting cover crops in the future, including those who did not use them.

More than 40% of the survey respondents planted cover crops. Furthermore, the percentage of cover crop users reporting a profit of 5% or more—the threshold used in the survey—increases as the number of years of cover crop usage increases. Wang estimated the annual per acre cost of planting cover crops at $40 to $50 per acre. Based on the market price for soybeans and corn, the 5% profitability threshold translates to an increased profit of more than $11 per acre. "The savings typically come after three to five years," Wang said.

Among those who have used cover crops for less than three years, 20.6% saw profits increase by 5% or more. Nearly 29% of those using cover crops for three to five years met the 5% profitability threshold, while more than 35% of those who had used cover crops for six to 10 years reported doing so. Slightly more than 40% of those who had used cover crops for more than 10 years saw profits of 5% or more, Wang said. Even among those who had never used cover crops, 16.1% had the perception that the conservation measure could increase profitability.

Increasing cover crop usage

As the number of years of cover crop usage increases, so do the number of acres on which cover crops were planted. "The trend is to try the practice on a limited number of acres and then expand," Wang said. The newest adopters planted cover crops on only 12% of their farmland, while those who had used cover crops more than 10 years did so on 45% of their farmland.

In addition, Wang found a majority of the farmers who use cover crops have also adopted no-till or reduced tillage practices. "There is an interaction between the two practices," she said.

Farm size also affected the likelihood of adopting cover crops, Wang said. "Those farmers who report $100,000 to $1 million in gross sales are more likely to use cover crops." Very small and very large farms are less likely to use cover crops.

The USDA NRCS Environmental Quality Incentives Program and Conservation Stewardship Program are designed to promote adoption and continued use of cover crops, but only 40% of the survey respondents who use cover crops received incentives. "Since we did not ask producers why they did not apply for subsidies, the exact reasons are unknown," Wang said. Based on a research conducted from the 2012 USDA Agricultural Resources Management Survey of farmers, the SDSU researchers suggest, "the complexity of the application process and the programs themselves may discourage producers from participating."

Education may be the key to encouraging more producers to use these incentive programs, Wang said. The SDSU survey showed farmers who had attended SDSU Extension workshops and used social networks to learn about farming innovations were more likely to see cover crops as increasing profitability.

"Adoption is a learning process that involves improvement in farmers' knowledge and skills to apply the practice on their own farms. Therefore, the factors that potentially accelerate farmers' learning progress, such as Extension training, workshops and social networks, could facilitate the adoption process, help more producers use incentives and play a positive role in perceived profitability," Wang concluded.

More information: Cover Crops Usage in South Dakota: Farmer Perceived Profitability and Future Adoption Decisions, *Journal of Agricultural and Resource Economics*, DOI: 10.22004/ag.econ.304768

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