



**Colorado State University Extension**  
Golden Plains Area Extension

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**ECONOMIC AND ENVIRONMENTAL POTENTIAL OF HIGH PLAINS COVER CROPS**

Sparse or erratic rainfall leaves farmers looking for anything they can do to increase yield while decreasing things that cost money – such as irrigation. High Plains crop producers have a keen interest in both crop rotation and management strategies that influence their economic viability and the future of their agricultural enterprises.

Colorado State University crop and soil scientist Meagan Scipanski is interested in how diversifying crop rotations and using cover crops can maintain yields, keep soils productive, reduce environmental impacts and address retention of both soil carbon and water. She recently secured funding for a collaborative grant for sites in northeastern Colorado, Kansas and Nebraska. Extension personnel on the Golden Plains will be assisting in local areas by providing a solid producer base for onsite research.

“One of the costs to tillage is we release both carbon and water into the atmosphere and that’s unproductive and part of the greenhouse gas complex,” says Ron Meyer, Extension agronomist in the Golden Plains area of eastern Colorado. His collaboration with Schipanski will guide conversations with cooperators who have an interest in hosting this research on their farms of between 20 and 40 acres. Crop scientists at Colby, Kansas, and several sites in Nebraska are also recruiting volunteer cooperators to expand on-farm testing to sites throughout the region.

“Meagan’s interest in cropping systems, cover crops, no-till and integrating livestock into this whole system is just a natural fit for High Plains Agriculture,” says Meyer, who, for the past five years has conducted research comparing nearly 30 different plant species for cover potential and forage production with various production techniques.

• **Including Livestock in the Mix**

The new research project will incorporate Meyer’s original cooperators, but including livestock into the mix means more land is needed.

“On-farm research is an essential component of this study, Schipanski says. “We would like to utilize a wide spectrum of farmers from across the region to help validate our recommendations for new crop rotation practices.”

Beginning in February the team will bring cooperators together with researchers to discuss timeline and strategies.

“Anytime you get 10 or more farms and farmers together, the dynamics change,” Meyer notes. “Some farms may have no livestock, some farms may be heavily livestock-oriented. We have to have a way to coordinate that so the research and the information coming out of this project make sense.”

Where the research protocol identifies a need for livestock on the site at a certain period of time, for example, the cooperators will agree to bring the livestock in for a set number of days and then take them off. The research team will weigh them in and weigh them out with a focus on a data-rich project.

- **Cropping Research Long-Standing**

Colorado State University research in the Golden Plains Area cropping systems has been in place since the early 1990s, with projects conducted by CSU soil and crop scientist Gary Peterson. His findings moved the farming community to two dryland crops in three years. Farmers now plant wheat, then into that wheat stubble the next year, they plant a spring-seeded crop such as corn, milo, millet or sunflowers, followed by a fallow season. Reduced tillage strategies were a part of this transformation.

“Dr. Peterson had to get through a couple of years of research and get results before farmers began to take notice,” Meyer notes. “One of the early results was, dryland corn yields almost 70 bushels an acre some years. Farmers began to ask, ‘Can you make some money with this practice?’ And the answer was, ‘yes, most years you can make some money,’” Meyer said. “Employing reduced-till strategies is better for the environment and increases yields, so it was a win-win situation for everybody.”

Meyer says adoption of these new techniques took a while. “It was probably a whole seven years before producers really started to adopt the conversions and it was the innovators that did those conversions first.”

As neighbors and the community saw the new method working, the whole countryside began to adopt the new practice. “We’ll see what the research results show us with this new project. Maybe there will be another change for production agriculture out here,” Meyer says.

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