MONTANA

PROFILES IN soil health

Julie Taylor
Fairfield, MT
510 acres (cropland, pastureland & rangeland)
Crops: barley and hay
Covers: Austrian winter peas, berseem clover, soybeans, field peas, red clover & hairy vetch

unlock the SECRETS IN THE SOIL

Farming Changes Focus on Soil Health

Julie Taylor, who farms on the Fairfield Bench, has changed her farming practices to include no-till farming methods, planting cover crops, composting to augment soil fertility, and intensively grazing both hay land and rangeland.

While burning crop residue each spring on the Fairfield bench in north central Montana may be the norm, you won't find a burned field on land Julie Taylor farms with her husband, Curt.

Farmers on the irrigated Fairfield bench produce malt barley, primarily under contract for Anheuser Busch. Stubble from the high residue crop is burned each spring so conventional planters not designed to cut through heavy residue can seed fields without the interference of residue.

Taylor, a third generation farmer, grew up using conventional agricultural practices. But her view of conventional methods began to change when she and her husband bought their farm and started breaking out old hay stands. She said they could see the difference between the hay land soil that had not been tilled for 30 or 40 years and the cropland that had been tilled and monocropped every year. "The hay land soil was much richer in color and more resilient; we didn't want to lose that."

So, their focus turned to soil health. "We didn't know a lot about soil health at first, but set out to learn and investigated what some of our options were." That's when they first got in touch with their local Natural Resources Conservation Service (NRCS) office in Choteau. Through NRCS, she said they were made aware of a lot more resources available to them and started attending workshops.

She said they are now transitioning to a system that is more sustainable and less risky. Those

changes include using no-till farming methods, planting cover crops, composting to augment soil fertility, and intensively grazing both hay land and rangeland.

Taylor said their primary challenge to switching to no-till was not having a seed drill that could handle the residue. "Before, we had to get rid of residue so we could seed," she said. "We would bail residue, burn what was left, and we did lots of tillage, making three passes and then another disturbance with the drill itself."

Taylor said it bothered her how much moisture they lost because of tillage, which left the ground bare and unprotected. "Switching the mind-set of preserving as much residue as possible has been a change for us," she said. "We used to think of our residue as a little savings account for the cows (for grazing) and now we think of it as a savings account for the soil microorganisms."

The purchase of a single disk drill allowed them to go no-till a year ago, and they were pleased with the results.

"Even with lower production the first year and with the mistakes we made, our crop was still profitable," Taylor said. "We are wiser this year and are confident we are going to have a better year." She said that drilling seed opposite old drill rows was one mistake and the other was not seeding enough.

With lessons learned, this year will be their second year of no-till cropping. She said they have not yet realized the full benefits of no-till, but she's excited to combine the use of cover crops, which they have been growing for four years, with no-till. Taylor believes the cover crop "cocktails" they have been planting are contributing to more moisture and nutrients in the soil. She said they are going to evaluate her belief this year by testing the soil to see if what's happening above ground is changing things below ground by improving soil quality.

No-till and cover crops may be the most visible difference on Taylor's farm, but those weren't the first changes they made to their operation.

A**lthough Taylor irrigates her barley fields**, she was bothered by moisture lost on her cropland fields because of tillage, which left the ground bare and unprotected. She and her husband, Curt, made the switch to no-till farming a year ago after they purchased a single disk drill.

Five years ago, they began an intensive grazing system to balance hay production and grazing. The goal, she said, was to improve the grazing land so they could graze cattle longer into the winter and not be as dependent on hay.

Taylor said they saw immediate changes in the first year they started their intensive grazing program. By incorporating grazing on marginal hay land with 35-day rest cycles between each grazing, grass production doubled the first year and again the second year. She said this occurred without additional inputs, only the cattle and what they were putting into the soil. "There's not a person on this planet that could talk me out of the advantages of intensive grazing," she said. "So that's been a good teaching model for us in realizing that once you find the triggers for your soil, it can respond in dramatic ways."

Managing intensive grazing on their rangeland has been more challenging. "We bought a farm that had been terribly overgrazed, so we were battling with trying to restore some of the plant population." She said they grazed cows to stimulate growth, encourage some seed production, and leave standing forage through the winter to collect snow for moisture.

While improving her rangeland may take some time, Taylor says all of their changes are adding "invisible value" to their farm. "If you were purely looking at gross numbers, this would probably be considered a failure," Taylor said. "But we stay focused on net profit and can clearly see improvements in our long-term soil health, and we always credit that as an advantage we are going to reap eventually."

Taylor said she and her husband have learned a lot in the last five years, but feel like they are continually learning. She said being flexible and making changes one step at a time have been the most important factors for them in finding what works on their farm. "If there are several goals you have to achieve for sustainable ag, choose the simplest one first, get that in hand, and move up from there," Taylor said. "Building your own confidence is very important."

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> *- Julie Taylor, landowner*

Paula Gunderson, NRCS district conservationist in Choteau, said that many of the farmers she works with have the same goals of building soil health, but they all have to go about it in different ways. "Julie hit the nail on the head when she said that you have to find your own path to reach your goals," Gunderson said. "What I do versus what you do can be completely different, and neither one is right or wrong, but everyone has to find what works for their land, their equipment, and their situation."

Paula Gunderson, left, NRCS district conservationist in Choteau, and Taylor talk about the impacts no-till farming has on the soil – reduced erosion, increased moisture, improved organic matter.

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