No-till/Crop Rotations
Proven Best for Ziebach County

When the 1985 Farm Bill began requiring American farmers to maintain at least 20 percent cover on their crop land, Lawrence “Woody” Woodward made a decision. “I thought the easiest way to do that was to go no-till,” he says. He’s never looked back.

Today, the 71-year-old farmer operates 12,000-acres in Ziebach County near Dupree, SD. He owns 8,000 of those acres and practices no-till on more than 90 percent of that farmland. He jokes that his chisel plow, once used for summer fallow, hasn’t been used in so long it’s probably lonely. “It sits down there in machinery row all by itself.”

Woodward also practices crop rotation, carefully orchestrating his crop selections to replace important minerals and nutrients to the soils.

The two practices, when combined, not only prevent wind erosion and maintain soil health, but improve rain infiltration on his land. As proof, Woody says that shortly after seven inches of rain recently, he was able to drive onto the field without sinking into topsoil mud.
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The rain followed the canals and paths infiltrating deep into the soil through macropores created by remaining stubble roots. That is where it does the most good. “You wouldn’t be able to drive out there without that infiltration,” he says.

From 1960-2004, Woodward ran about 500 head of cattle on his rangeland and he practiced conservation there as well. A rotational grazing rotation, cross fencing, and the building of dams and dugouts to disperse water access to his cattle have been great tools in his strategy.

It’s all part of his overall plan to leave the land better than he received it. But Woody admits his initial decision to give no-till a try back in the ‘80s met with plenty of skepticism from his fellow farmers. “My neighbors…, they were talking,” he says with a smile.

He understood their skepticism. He, like most farmers at that time, had been taught that a “clean” plowed field was the best way to prep for planting. Yet, he recognized the disadvantages of summer fallow practices.

“We were losing a lot of soil down the creek,” he says of his land, which has heavy clay soils. “The more we worked it, the more erosion we had!”

Fields in windy Ziebach County fell victim to blowing soil left exposed and vulnerable by plowing. Rainwater runoff was an issue and plowing resulted in a loss of precious organic matter. “People thought you just had to live with it,” he says of the issues.

The long-term consequences of the status quo seemed obvious to Woody – less healthy soil with each year and a dim future for his family farm someday. “I may have been raising more wheat, but were my grandchildren going to be able to farm it?” he says. “You ruin the soil once; it takes a long time to build back up.”

He began his no-till venture by renting a 15-foot drill from Dewey County Conservation District. He planted 300 acres of sorghum. Using no-till, Woody was able to plant his no-till acreages continually, providing an immediate increase in crop production. As for the result of the conservation practices alone, “It wasn’t perfect every time, but you have to be committed.”

Woody was committed.

Next, he planted 150 acres of no-till winter wheat. And when a 42-foot no-till drill hit the market the following year, Woody bought one.

In five years, Woody’s yields were approximately 20 percent higher based both on the added number of acres harvested and the improvement of his soil. Today, he guesstimates that his yields are 15 percent higher based solely on soil improvement.

In a field that has been no-till for 15 years, Woody finds earth worms, a sure sign of healthy soil. “For long-time no-tillers, earth warms become part of the process,” he says.

He also sees far less wind and rain erosion on his fields and his operation has blossomed. He now owns two no-till drills.

“You leave that stubble out there … that makes organic matter. It does nothing but improve your soil,” says Nate Grueb, the District Conservationist with the Natural Resources Conservation Service (NRCS) in Ziebach County.

Grueb says Woody’s success helped demonstrate to others that no-till was not only a good idea environmentally, but a good idea for business as well. Today, 90 percent of Ziebach County farm ground is under no-till farming systems.

Grueb credits Woody for setting the precedent.

“The more we worked it, the more erosion we had.

- Lawrence “Woody” Woodward
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Lawrence Woodward, South Dakota

Background

Lawrence “Woody” Woodward operates 12,000 acres, 8,000 of which he owns, near Dupree. A second generation farmer, Woody began farming right out of high school in 1960 with his father, Lawrence Woodward Sr. He bought his first farm in 1963 and continued to farm with his father until 1985 when Lawrence Sr. retired.

Woodward produces a variety of crops, including sunflowers, corn, millet, peas, oats, alfalfa and wheat. He began working with the Natural Resources Conservation Service in 1965 and has used such conservation techniques as a no-till system and crop rotation since the mid-1980s.

Woody credits his father, who practiced grassland conservation techniques, with first interesting him in conservation. “I think Dad saw the need for it,” he says, recalling how his father put in irrigation systems and a dam on Bear Creek to prevent runoff and improve moisture control. “He was working with the conservation district in the late 1950s,” Woody says of his father. “We were always working on conservation practices. He was one of the forerunners for flood irrigation.”

Woody served for 30 years as the supervisor of the Ziebach County Conservation District and eight years on the State Conservation Board. He also served for 40 years on the Ziebach County Crop Improvement Association.

Woody and his late wife Marlene had three children – Delbert Woodward, 51, Darla Vrooman, 50, and Suria Woodward, 44. All three live in Dupree. Delbert took over his father’s cattle operation in 2004. Delbert now runs 700 head of cattle and 1,500 head of yearlings on both Woody’s grassland and his own.

Why no-till and crop rotation?

No-till farming allows a producer to plant a crop and control weeds without turning the soil. By leaving the previous year’s stubble, farmers will reduce wind and rain erosion, improve moisture infiltration and allow the soil to better utilize existing organic matter.

Organic matter causes soil to clump into clods, which develop pores. Those pores become conduits for water and air, allowing the soil to better retain moisture.

Traditional plowing, by contrast, exposes organic matter-rich top soil to the surfaces and break up naturally forming clods. The exposed soil is more vulnerable to blowing and rain.

No-till also allows a farmer to plant crops continually.

Crop rotation enhances no-till, increasing the soil’s moisture-holding ability and its organic matter content. Because different crops deposit and absorb different elements in the soil, rotation allows for a balancing of soil makeup. Crop rotation can increase yields and reduce costs by maintaining important minerals in the soil.

The overall outcome of both practices is more fertile and productive soil, which will reduce weeds, disease and insect pressure, spread weather risks and overall diversify income.

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