A unique venture in Beadle County showcases vibrant soil health systems that produce impressive returns.

Twenty-five years ago, the Beadle ~~County~~ Conservation District purchased 400 acres of what was once cropland in an area called Cain Creek. The board decided to showcase practices meant to improve the health of the soil by restoring warm season mixes to the pasture areas and planting beneficial cover crops to the cropland.

Two 10-acre plots show practices that can restore acres and bring them back into production by changing the techniques. One concentrates on soil health for row crops, the other on restoring saline soils. The soil in these areas has gone from under 3 percent organic matter to 4 percent in 6 years. That’s pretty dramatic.

Overseeing the work is Kent Vlieger who is the South Dakota Soil Health Specialist with the Natural Resources Conservation Service. He previously worked in Beadle County as the District Conservationist. He, along with current Beadle Conservation District Manager Robin Viestenz, manage an area where producers can see how efforts to enhance soil health work, both in pastures and on cropland.

Vlieger said, “In previous years, not much fertility was added to the soil. We continue to test the area, collect data and share that with producers. We can build organic matter pretty fast. ” This is the sixth year of the work. “We are seeing a turnaround faster than we hoped in restoring saline spots.”

The Beadle ~~County~~ Conservation District board oversees the Cain Creek project. Goals are to increase the organic matter, to reduce inputs, to improve fertility and water holding capacity, and to boost infiltration rates. While a number of private producers implement and share experiences with soil health practices, this is the only conservation district in the state to showcase the system in this way.

 “We have had great success and producers can see this, neighbors can see it,” Vlieger said. “There is a ripple effect, like dropping a rock in the pond. Others realize the possibilities and try it in their operation. The practices work and provide benefits.”

“I’m most excited when we can show producers that what we do works,” Vlieger said. “The area shows we are not just trying to sell programs. The practices are making it good for the land and good for the producer’s pocketbook. Those two things are important.”

Viestenz said the south crop field was a highly saline area. They seeded the site back to saline tolerant grass and alfalfa in 2015. It’s been a tough site for crop production. There is a lot of variation in the soil, ranging from nice loam to sandy soils. The district purchased a no-till drill to plant salt-tolerant grasses and alfalfa.

**Grazing management**

A young producer works with the district to run livestock on the demo farm for grazing management. The area began as three large lots, and now is 13 separate paddocks. Increased herd density and grass recovery between grazing events has increased forage production.

Through these efforts, the herd count increased from the original 50 pairs to 100 to 110 pairs on the same ground.

The old irrigation well provides water that runs through centralized tanks and pipes through the pastures. Vlieger said, “This is the first year they fully used the fencing and water lines as designed. It’s a way to show producers they can implement these practices and get production that pays.”

The rangeland specialist checks the acres, clipping vegetation to test forage health. They evaluate production on the acres and use that to adjust grazing schedule.

“The pastures used to have a big thistle population,” Vlieger said. “We are making headway on getting rid of them and encouraging beneficial grasses.”

Small critters provided a great deal of excitement.

“This was the first year we could identify dung beetles out there,” Vlieger said. “We are confident it’results from the improved grass community. With smaller paddocks, we’re seeing a higher density. The bugs are great for recycling manure which reduces fly and pest pressure.”

**Cover crops**

The north crop field shows what can be done to help row-crop areas regenerate soil.

In 2016, soybeans were interseeded with cereal rye and clover. In the spring, the cereal rye was allowed to come up and then it is terminated. They plant row crops into the nutrient-rich stubble.

 “The goal is to improve every year,” Vlieger said. “We plant high residue crops, with oats in the rotation for 2019. In 2018, the corn was interseeded with annual rye and three types of clovers. We hope that after two years, the clover will still be alive and fix the nitrogen.”

Viestenz helps Vlieger as needed, sowing grass seed, planting cover crops and planning for the future. She helps coordinate the once-a-year tours and also takes producers for one-on-one tours. After tours, she said producers will return to ask, “What was in the mix? I’d like to try it on one of my quarters.”

Viestenz said, “We learn that some things don’t work. That’s OK as that’s part of the process and we can share that, too.”

The goal is to decrease input costs and still meet yield goals. Producers need to see numbers and data supports the work. Tests for organic matter, the Haney test, and soil health scores show improvement. They review other tests for microbial activity along with levels of nitrogen, potassium and phosphorus and carbon/nitrogen ratios.

“By keeping track of inputs and yields, we show producers they can make money in the test plots,” Vlieger said. “It’s important for the producers to know their cost of production so they can compare numbers when looking at ways to improve.”

“We maintain yield goals,” Vlieger said. “All production depends on the weather. Fields goals are 155 to 160 bushel/acre for corn. In 2016, we exceeded our soybean goal as we had 41 bu/ac beans out there. We keep detailed precipitation records. This year we had the best rainfall with 21 ½ inches. In previous years, they’ve had just over 18 inches and one rain event dumped 5 ½ inches.”

The motivation is to show people practices on cropland that incorporate soil health practice such as no-till which leaves good residue along with diverse crop rotation.

One of the future goals is to run cattle on the cover crops. “Eventually that’s what we’d like to see,” Vlieger said.

**Try this at home**

While the Cain Creek area shows producers good soil health practices, each operation is different. Some producers will take baby steps, others will jump head first into the practices.

“Producers need to look at their operation and their goals,” Vlieger said. “If they are already no-tilling, they have a good start with some steps covered. If someone is new to this process, I suggest they designate a piece of ground and try practices for a few years to see if they have success. If they like what they see, then take those steps to a larger piece. Some try cover crops with livestock, others just concentrate on crops. Planting cover crops may provide late-season grazing which can be used by neighbors. It’s a way to recoup the costs of planting the covers. It can benefit you and your neighbors.”

Vlieger and Viestenz welcome visitors to the site. “Anyone interested is welcome to Cain Creek to see what is being done. We want to get people out there to see what we are doing. This past year showed that you can have good grass in a drought year and good crops. Take the opportunity to see how this works.”