Demand for fresh lamb from five-star restaurants drives Bob Corio’s use of cover crops and better forages that provide feed but also build organic matter in the fields he farms in Union County, SD. “We needed something else for our sheep to eat other than hay,” says Corio, who has a flock of Dorper sheep and a herd of Dexter heritage breed cattle on their farm outside of Jefferson, SD. “I’m always concerned about the animals. I want something for them to graze all of the time. And, I want my sheep to graze at least until the snow hits. They grazed all winter last year, but I started supplementing with hay and baleage in mid-January,” says Corio.

The sheep walk the whole 160 acres. After they graze that field, then they walk another 160 acres,” says Corio, who operates Dakota Harvest Farm. “The sheep get exercise and that makes the meat tender.”

He sells lamb to fine restaurants, at a farmers’ market in Omaha, ships to customers in five states and has a waiting list for new customers. “I’ve got way more demand than I can meet,” he says.” Now, Corio’s goals are keeping the resources healthy to sustain the productivity of his successful business.
Cover Crops Do Double Duty

Corio started seeding turnips five years ago after harvesting small grain and after seeing a neighbor seed turnips after chopping silage. Then, he tried cereal rye grain and a “forage” winter wheat. Corio keeps experimenting with different cover crop combinations, rates and timing. While these variables change each year, the goal remains the same: Provide as much forage as possible during the year for his sheep.

“I’ve seeded (cover crops) into November,” Corio says. “That late, I’ve used winter wheat and winter rye (grain) and, sometimes, radish or turnips. They will come up OK in the spring,” which gives his sheep something fresh and green to graze.

In a multi-species mix of cover crops, Corio noticed that sheep ate the species in a specific order. “First they ate the oats then the clovers,” Corio says. “After that, the turnips and then the tops of the radish, followed by the soybeans. The last thing left was the sorghum Sudan grass.”

Cover crops do more than provide forage for Corio’s sheep. They are reviving soil life in an 80-acre field that was under water for months after the Missouri River flooded in 2011. “The flood deadened the land,” Corio says. “After the flood, I planted cover crops on that field through the NRCS’s Environmental Quality Incentives Program (EQIP).

Accelerated Cover Crop Learning

Corio is accelerating his cover crop learning by experimenting on 12-15 acres at a time with different crop seeding mixes in each planter box. Corio seeds entire fields with cover crops, and within a field, he will seed blocks of 12 acres to test different mixes. In these smaller test areas, he places different cover crop mixes in each of the boxes on his Kinze planter.

“In one box, I may put sorghum and peas and maybe radish,” he says. “In the next box, could be radish, turnips, peas and buckwheat. The cover crops I seed depend on what I’m going to use the field for.” Corio doesn’t worry about the exact cover crop seeding rates. He says, “When it comes up, look at what you need to adjust for next year.”

“For example, on fields where I spread manure, I seed radishes to scavenge nutrients,” Corio says. “I am trying to get my cover crops to eat up and incorporate the manure into the soil without tilling it.” Corio says he’s learned from the practices of Gabe Brown, a well-known cover crop innovator and cattleman from North Dakota. Jeff Loof, the Natural Resources Conservation Service (NRCS) District Conservationist for Union County and Clay County.
Bob and Barb Corio, South Dakota

“My input costs are so much lower with a no-till farming system and it saves time.

- Bob Corio, Jefferson, SD

In healthy soil, microscopic life and processes below ground are more abundant than life above the ground, explains Barsness. Biological activity is essential for a balanced soil ecosystem.

“Conventional Soil Tests will not provide the carbon to nitrogen ratio.” As part of the pilot project, we are analyzing Corio’s soil to see how the C to N ratio is influenced by the biological activity of the soil and the species of cover crops planted,” Barsness says.

Soil science has become quite complex with farmers needing an understanding of the chemical, physical as well as the biological aspects of soil. And, an understanding how their above ground management affects what is happening below ground. That knowledge level is growing for farmers, such as Bob Corio, because the economics of his sheep marketing operation are necessary and support his goals of keeping the resources healthy.

Building Better Soil Health

Corio is one of several South Dakota crop farmers working with the NRCS to evaluate “the Haney test” which is named after USDA Agricultural Research Service Scientist Rick Haney. “The test measures the microbial activity in the soil,” says Eric Barsness, Conservation Agronomist, NRCS, Brookings, SD.

NRCS Conservation Agronomist Eric Barsness, Brookings, SD, and Bob Corio saw improved soil structure in the areas where Corio had used a cover crop mix the prior year. He had chosen a cover crop mixture best suited for grazing.

says “Corio is on the cutting edge of cover crop and livestock innovation.” “When I want to see unique ideas and what’s happening out in the countryside,” Loof says, “I check to see what Bob’s doing now.”

NRCS Conservation Agronomist Eric Barsness, Brookings, SD, and Bob Corio saw improved soil structure in the areas where Corio had used a cover crop mix the prior year. He had chosen a cover crop mixture best suited for grazing.

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