

Benton County cover crop trial: Improving soil, clearing up lakes

August Snapshots 2017



Benton County crop farmer Mel Hauck planned to seed a rye-clover cover crop mix in August with the aerial broadcast of potash on a soybean field. Photo Credit: Benton SWCD

Is Mel farming that field?

Ever so casually, the neighbors asked his wife. Mel Hauck is renting the land. What the neighbors really wanted to know was why, in early June, a crop of volunteer rye grass was coming up with the corn.

The rye, which was sprayed and died back shortly after the neighbors' conversation, was one of the unanticipated products of a cover crop Hauck planted two years earlier. In 2015 he tried cover crops in two fields and got very different results.

Both started with a nurse crop of oats, which lodged shortly before harvest.

On 34 acres of higher ground slated for soybeans, the combine picked up some of the oats. By the time the beans were ready to harvest, the rye cover crop was 8 to 10 inches tall. Hauck worried it would impede harvest; it didn't.

On 16 acres of low-lying ground slated for corn, the oats lodged enough that the combine couldn't pick it up. That layer of downed oats kept the ground cold during an unseasonably wet spring. Rye germination was spotty; some of it came up the following year.

That didn't deter Hauck.

He's giving cover crops another shot – with help from a Minnesota Board of Water and Soil Resources Clean Water Fund grant. (A \$2,500 Natural Resources Conservation Service Environmental Quality Incentives Program grant helped cover the 2015 project.)

In August, Hauck plans to sow a wide, 20- or 30-acre swath, likely a rye-berseem clover mix, down the middle of a 64-acre soybean field. Within the same field, he will compare the 2017 harvest with and without a cover crop. The following season, he plans to compare corn growth rates.

"What I'm trying to do is protect my land at its most vulnerable time of year," Hauck said, referring to the potential for erosion in the spring and fall.

The cover crop will remain after harvest, through the winter and into spring. It's meant to prevent erosion and add nutrients to the soil. Hauck raises about 235 acres of corn and soybeans in St. George Township. He doesn't have cows – and therefore doesn't have manure to spread.

"It's sort of a monoculture – I'm only using two crops. Getting a cover crop in there is important for biodiversity," Hauck said.

Hauck hoped the cover crop, especially the rye, would out-compete water hemp, a voracious weed.

The seeds will be broadcast with the aerial application of potash, scheduled for August to coincide with soybeans' peak potash uptake.

While Hauck didn't anticipate yield would vary much, the estimated \$1,500 in grant funds would cover 75 percent of costs, providing a sort of insurance.

Among the risks: A cover crop could exacerbate mold or disease in a wet year. It could impede drying. It could grow too tall and hamper combining.

"Those grants have been instrumental in helping me decide whether or not I'm going to do this. Like everybody else, I like to make a profit," Hauck said. "If I had a houseful of little kids sitting at the dinner table, profit would be No. 1."

But at age 78, with the end of his farming career in sight and none of his three children planning to take over, Hauck – a retired St. Cloud band director – had other things on his mind.

"I told my landlord, I said, 'Well you know, Gordon, it's really not your land and it's not mine. We just have a chance to use it for a few years here. I'd sure like the chance to see something done for the better,'" Hauck said. "It's been rented for many years. But this land has been going downhill for the last 20 years, and I want to bring it back. I think we should do something with it to make it better than it was when I got it."

The Hauck project is one tiny piece of \$1.5 million in improvements made possible with Clean Water Fund grants the Benton Soil & Water Conservation District received in 2016 and 2017.

“It helps sustainable soil development,” said Jason Weinerman, Waite Park-based BWSR board conservationist. “It’s a small-dollar grant, but it’s a high education investment.”

Hauck’s field is part of Benton SWCD’s much larger effort to improve water quality in the Big Elk and Mayhew lakes watersheds. According to a 2010 assessment by the Minnesota Pollution Control Agency, both lakes are considered impaired due to high phosphorus levels.

Improvements made throughout the watersheds – which in 2016 involved 12 landowners and 23 projects – could cut the algae blooms in both lakes. Benton County’s Mayhew Lake is more of a fishing lake. Sherburne County’s Big Elk Lake gets more recreational use.

Meeting water quality standards would mean cutting the existing phosphorus level by 78 percent in Mayhew Lake and 57 percent in Big Elk Lake.

“It’s never going to be crystal clear like the lakes up north. These are some shallow lakes. They’re a lot more fertile lakes to begin with,” said Mike McMillin, district technician with Benton SWCD.

They fall within the Elk River watershed, which drains 613 square miles, mostly in Benton and Sherburne counties. The area is flat (the river drops about 3 feet per mile). Much of it is agricultural. Feedlot density is high.

“It’s in a working landscape, so there’s multiple partners coming together, and there’s also lakeshore owners. You’re dealing with an extremely complex system on a somewhat contentious social landscape,” Weinerman said. “You’ve got farmers and you’ve got lakeshore owners and you’ve got renters and they’ve all got to work together to make this work.”