

Minn. growers call cover crops 'amazing'

By Janelle Atyeo

REPORTER

Southwestern Minnesota farmer Jerry Ackermann is pretty impressed by what he's learned from using cover crops during the past five years.

He hopes to learn even more in the next three years by using a relatively new kind of soil test – known as a Haney soil test – to see what kind of nutrients are in his soils.

Jerry and Nancy Ackermann grow 1,200 acres of corn, soybeans and alfalfa in Jackson County, Minn. They've gradually been adding to their number of cover-crop acres. This is the first year all acres will have a cover crop.

"We saw some amazing results," he said.

Ackermann recounted a water infiltration test done with their soil last fall. He had seeded Aug. 6, putting cereal rye, turnips and radish seeds in standing corn with an airplane. A one-hour water test was done Oct. 20. The test found that the field could handle eight inches of rain and there would be no standing water on the surface.

Ackermann asked how that compared to neighboring fields where disc rippers tilled the ground each fall. The same one-hour test resulted in standing water on the soil surface after an inch of rain.

Tilling brings all of the fine dust to the surface, he explained. "When it gets wet, it acts like concrete."



Submitted photo

A cover crop of rye, turnips, radishes and crimson clover emerges between rows of corn on the Jerry and Nancy Ackermann place in this late August 2014 photo.

The Ackermanns are one of four southwestern Minnesota farms involved in a cover-crop study funded by a grant from the Environmental Protection Agency. Along with David Christoffer, Jerry and Terry Perkins and Tim Hansberger, they are in year two of a three-year project, working with the Heron Lake Watershed District to document the ways cover crops benefit soil and water quality.

Last month, the group of farms was awarded a grant from the Minnesota

Department of Agriculture's Sustainable Agriculture Demonstration program that will serve as a companion to the watershed work they've done. The state grant will help fund the Haney soil tests, which can be compared to information collected with the watershed district.

"We will finally have some actual data on the soil health itself," said Jan Voit, district administrator for the Heron Lake Watershed District.

The Haney soil survey is a suite of tests measuring various nutrients in the soil. It is becoming more common since the National Resources Conservation Service (NRCS) made it part of its conservation programs, but according to some, it needs more research behind it to make it really useful.

The Haney test was developed by U.S. Department of Agriculture soil scientist Rick Haney in Texas. In the

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Jerry Ackermann of Jackson County, Minn., said he is pleased with the health of his soil after using cover crops for five years. He and three other farmers will document soil health with a new grant from the state department of agriculture.

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Midwest, it doesn't have the same research to back it up and help explain what all of the numbers it comes up with really mean, explained John Lee, soil scientist at Agvise Laboratories in Northwood, N.D. It's difficult to quantify soil health, he said.

The test could, however, be useful for farmers comparing conventional and no-till fields over a period of time, Lee said.

One test unique to the Haney survey measures carbon dioxide respiration. It's a 24-hour test in which a given amount of water is added to the soil and placed in a jar. The more carbon dioxide built up inside the jar over

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the 24-hour period, the healthier the soil biology.

Agvise Laboratories processes Haney tests, but Lee said the recommendations that come with the results are limited.

Because of how extensive the tests are, they're quite a bit more expensive than standard soil tests. Where the standard will cost \$20 to \$25, the Haney test cost \$85.

Now that the Haney test is used in NRCS programs, more universities are starting to interpret the data generated. But research has to be replicated, and that takes time.

New soil tests are coming out all the time, and Lee suspects that in a few years, entirely different tests will be available. "Eventually, I hope there's value to those numbers," he said.

The soil health project the Ackermans are a part of is one of 13 new farm projects across Minnesota to receive part of \$237,000 in grants through the Sustainable Agriculture Demonstration Grant.

"This is a 25-year-old program, and each year farmers continue testing terrific new ideas," Minnesota Department of Agriculture Commissioner Dave Frederickson said in a news release.

There are a few other cover-crop projects. In Fillmore County, one farm will try planting cover crops after short-season corn harvested for grain. In Hennepin County, another will plant cereal rye after corn silage, hoping to harvest in spring before planting soybeans. Several winter small-grain cover crops will be tested in Stearns County to compare their spring yields and quality for dairy forage.

Other work ranges from handling dairy cows and lambing indoors to the honey bee business and predicting fruit pests based on the weather.

The Ackermans first got into cover crops because of their experience with alfalfa and how it helped build the soil biology. About a third of Ackermann's crop is alfalfa, and when he'd rotate it out, he would see a bump in yields of his next crop for two or three years afterward.

"I was trying to get some of the benefits similar to alfalfa by using cover crops," he said.

Last year, he planted a cover crop when his corn was at the V7 or V8 stage of growth, and he gained four to five bushels an acre in yields, he said. His cover-cropped acres put out 197 bushels per acre compared with 192 bushels on the conventional strip-till fields.

He's seen bigger jumps in yields, he said, but it's rare. More importantly, he said, he's never lost yield because of

cover crops.

Saving money is also part of the motivation. Rather than apply more nitrogen, he lets cover crops do the work.

"If there's any leftover nitrogen, I want to save it for the next crop," he said.

With cereal rye, the crop comes up in the spring. It sucks up the leftover nitrogen in the soil and holds it closer to the surface. When it is cut at 10 or 12 inches, it starts releasing the nitrogen back into the ground, Ackermann explained.

More of his neighbors are using cover crops now, too. Where one producer was used to seeing standing water in his fields, he had none, even after this year's wet spring.

"He was just amazed," Ackermann said.

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