

#FridaysOnTheFarm: Soil Health Takes Off

Each Friday, visit local farms, ranches, forests, and resource areas through our [#FridaysOnTheFarm](#) stories. Meet farmers, producers, and landowners who are working to improve their operations with USDA programs.

This Friday visit the Eastern Iowa Airport in Cedar Rapids. Airport officials partnered with USDA improve soil health and protect water quality on the airport's 2,000 cropland acres.

Like most airports, Iowa's second busiest owns extra land surrounding their terminal. The airport has leased their open space as cropland since the 1960s, according to Eastern Iowa Airport Director Marty Lenss. They currently lease their prime acres to five farm operators.

Eye-Opening Demo

It may just look like two jars of clean and muddy water, but to Marty, the sight was a "real eye-opener."

The demo, called a Slake Test, or Soil Stability Test, shows the stability of soil aggregates in water. USDA's [Natural Resources Conservation Service](#) used the test to help convince Eastern Iowa Airport officials to improve the quality of the cropland acres, an idea that took off.

Linn County District Conservationist John Bruene brought USDA staff to a meeting, which included the airport's farm operators and farm managers. USDA staff demonstrated the impacts of good soil conservation practices on soil health and water quality compared to tilling the soil.

"I really wanted to show Marty and the farmers that there were management changes that could be made to improve water quality running off the farm," said John. "There were long-term management changes that require significant airport commitment."

The Slake Test demo compared no-till and tilled soils. The results showed that tilled soils fall apart and "slake" very easily from the impacts of water, making the water dirty and cloudy. Undisturbed soils that are high in organic matter stay intact and absorb water like a sponge, keeping the water clean and clear.

Marty said the demo was so effective that they ran it again six months later for the Airport Commission, and again recently for another event.

"One of our core values is environmental stewardship, so we want to show the public that we are serious about taking care of our land in a sustainable way," said Marty.

Making a Plan

The airport worked with John and the farm manager to develop a five-year plan to address ephemeral gullies and other resource concerns on the farm.

"NRCS has been a great partner in helping us identify those problem areas first and to set the game plan around them," Marty said.



Grassed waterways were installed to treat the land's ephemeral gully issues. Some of the erosion is related to airport runway runoff, but some is caused by soil type, terrain, tillage practices, and even extreme weather.

In 2016, the airport adjusted farm leases not to allow tilling or fertilizer application during the fall. The new lease agreement also includes incremental steps to full no-till and cover crop adoption.

"Eliminating soil disturbing activities in the fall greatly reduces erosion potential during the winter months, including erosion from snow melt," John said. "Waiting to apply fertilizers until spring, when the plants need it most, is important for controlling leaching and offsite nitrogen losses."

Cover Cropped by 2020

By Fall 2018, about 300 acres were totally no-till and cover crops. Early in 2019, the airport sent notices to the operators that they would be re-bidding the leases for the 2020 planting season and will require no-till and cover crops on all cropland acres.

John says the airport also deserves a lot of credit for their financial commitment to the grassed waterway projects.

"The airport is planning to spend more than one million of their own money through 2023 on grassed waterway reshaping, seeding and tile installation," he said. "In a few years when the land is completely no-till and cover crops, and the grassed waterways are complete, this will be a conservation showcase farm."

More Information

USDA offers a variety of risk management, disaster assistance, loan, and conservation programs to help agricultural producers in the United States. [Learn about additional programs.](#)

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