



IOWA

PROFILES IN soil health



Matt Byrnes
Dorchester, Iowa
Crops: corn, soybeans
Planting: no-till
Covers: cereal rye



Byrnes Top Dresses Cover Crops with Dairy Manure.

Matt Byrnes of Dorchester, in far northeastern Iowa, has milked dairy cows for nearly 20 years. With 180 cows, he pumps manure from a pit about twice per year and either knifes or top dress it to as many of his 484 cropland acres as he can.

Byrnes tried cover crops on a few acres once before, but late September 2017 was the first time he gave it a “good effort” when he broadcasted cereal rye on 30 acres of chopped silage in combination with pelletized lime. The custom applicator pumped the manure pit and top dressed the cover crop two days after cover crop application. “Luckily, we caught a rain a few days after that,” he said.



Matt Byrnes pumps from a manure pit outside his dairy barn and top dresses cover crops in the fall.

Two months after application, Byrnes says he doesn’t have a perfect cover crop stand, but it looks much better than it did a month prior. “There are some areas where the manure was a little thick and the cover crop had trouble coming up through that,” he said. “Driving over the spread manure packs it in and causes cover crop growth issues, too.”

District Conservationist LuAnn Rolling with USDA's Natural Resources Conservation Service (NRCS) in Allamakee County says one of the challenges for cover crop implementation is overcoming the mindset that cover crops cannot be used on acres with applied manure – either because manure drowns the seed or due to the timing of the manure application.

Rolling says cover crops provide water quality benefits when used in conjunction with manure. "Cover crops can scavenge nutrients and provide cover and ground surface protection during the fall and early spring when warm season crops like corn and soybeans are not growing," she said.

Allamakee Soil and Water Conservation District (SWCD) Project Coordinator Sara Berges is working with a handful of farmers, on a project funded through the Leopold Center for Sustainable Agriculture, to find what method, timing, and cover crop species work best. "We want to see as much cover crop growth in the fall as possible," said Berges, "and we want farmers to use a winter hardy cover crop like cereal rye that will survive and continue to provide benefits in the spring before planting."

Lessons Learned After 1 Year

Two months after application, Byrnes says he doesn't have a perfect cover crop stand, but it looks much better than it did a month prior. "There are some areas where the manure was a little thick and the cover crop had trouble coming up through that," he said. "Driving over the spread manure packs it in and causes cover crop growth issues, too."

As a dairy producer, Byrnes says the manure doesn't have the same consistency as hog manure, which makes growing cover crops in conjunction with manure application a little more challenging. He says in areas where the manure was more watered down, the cover crops responded better.



Byrnes used assistance through the NRCS administered Environmental Quality Incentives Program (EQIP) to help plan and pay for his manure pit.

Byrnes hopes the cover crops help reduce soil compaction, improve water infiltration, and add to the biology in the soil. "When I chop silage I am taking a lot off, so cover crops help with organic matter, too."

Project to Fund Additional Trials

Allamakee SWCD and a group of their conservation partners were recently awarded funding from USDA through the Innovative Conservation Agriculture Project to provide financial and planning assistance to producers in Allamakee and Clayton County to support the implementation of cover crops and no-till in conjunction with manure application. Through this Regional Conservation Partnership Project (RCPP), farmers can receive up to \$6,000 per contract for cover crops and up to \$1,500 per contract for no-till.

Want to read more Iowa success stories?

Go to: www.ia.nrcs.usda.gov