

## MILLER CREEK

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A denitrification bioreactor, which was installed in the watershed last fall, is a great teaching tool.

The bioreactor, which is marked with a sign, is south of Waterloo on the west side of Highway 21 along a Miller Creek tributary. Located on the Hollis farm, it is treating 80 acres of tile-drained water that comes off a field.

The bioreactor is 100 feet by 30 feet, about four feet deep, and filled with wood chips. A foot of dirt tops it, and the entire area is seeded to perennial grass. A water control structure allows tile water to flow into the bioreactor where bacteria on the wood chips convert nitrate into harmless nitrogen gas. A water control structure at the bottom end of the bioreactor directs treated water out where it outlets into the stream.

Extension research shows that bioreactors can reduce the nitrate in tile water by an average of 43 percent.

The Miller Creek project is working with the Iowa Soybean Association on water monitoring.

"We have a lot of great producers who are very conservation minded," Wulf said. "The project leaves it up to them to try these practices. The monitoring provides the proof that the practices are working."

Many farmers are trying cover crops this fall. About 1,000 acres are signed up.

The project is encouraging farmers to try multi-species cover crop mixes that include cereal rye, radishes and oats.

"The oats and rye are good nitrogen scavengers, and the radishes break up the soil," Wulf said. "Some guys say it costs so much to start this up, and while the economic benefits may not be there right away, the practice builds up soil organic matter, and over time they may have to put on fewer inputs. If you have to put on less fertilizer, it saves you money."

"Our district conservationist Shaffer Ridgeway likes to say that while cover crops may not be the answer to everything, they are one tool in the tool box," Wulf said. "We think that using no-till or strip-till with cover crops and maybe a bioreactor if it fits in your system all help in getting toward our goal of reducing nitrogen and phosphorus runoff."

For more information on the project, visit [facebook.com/MillerCreekWQIProject](http://facebook.com/MillerCreekWQIProject), or call Wulf at 319-296-3262, ext. 3.

## Miller Creek Watershed offers tools

BY JEAN CASPERS-SIMMET

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WATERLOO, Iowa — Cover crops, strip and no-till farming, nitrogen management and denitrification bioreactors, Shane Wulf takes an all-of-the-above approach when looking at strategies to improve water quality.

Wulf, who is watershed project coordinator for the Miller Creek Water Quality Improvement Project, encourages the 137 producers and 230 landowners in the 42,421-acre project area to try one or more conservation practices.



Wulf

The project area consists of two watersheds in southern Black Hawk and northern Tama counties. It is bordered by Hudson on the west and Washburn on the east. Miller Creek flows northeast into the Cedar River at Washburn.

The project, which started earlier this year, supports the Iowa Nutrient Reduction Strategy and the Iowa Water Quality Initiative by working with farmers in Black Hawk watershed to install demonstration practices.

During three years, the project goal is to establish 4,500 acres of cover crops, 4,000 acres of strip or no-till, 18 acres of buffer strips, three drainage water management systems, 2,500 acres using nitrification inhibitors, nitrogen application rate management on 1,000 acres and install four denitrification bioreactors.

Cost-share funding is provided by the state ag department for all these practices, and potential exists for additional federal funds.

Much of what Wulf does involves education. He isn't just educating landowners and farmers, he's looking at ways to educate the entire community. As part of that, Miller Creek and the Black Hawk County Soil and Water Conservation District are installing signs describing conservation practices. There are also plans for a billboard to thank farmers for using conserving practices.

"We want signs to be on well-traveled roads so people can see what farmers are doing on their own and that these practices are voluntary," Wulf said.

He has organized webinars, field days and gatherings he has dubbed "coffee shop hours" where he meets with producers at public locations. Farmers talk about their conservation practices and farmers who aren't using the practices can ask questions.