

Meier innovates with cutting-edge conservation efforts

BY STEVE MEYER

Nick Meier's lifelong passion for conservation and water quality has led to his use of a range of conservation practices on his farm near La Porte City, including some that are still on the cutting edge.

"I'm very conscious about conservation. After I started farming, as time went on and I saw field erosion, it really bothered me," says Meier. He said that farmers should be proactive about water quality or else they may be forced by regulations.

Meier, 61, started farming in 1983 when he took over his uncle Ed Meier's farm five miles west of La Porte City when Ed retired from farming. He inherited his conservation ethic from his uncle and father, Othmar, who was one of the first farmers in the area to chisel plow.

Nick started no-till farming 26 years ago. Twenty-two years ago he started strip-tilling, which he says really helped with corn, but he still no-tills his beans.

"I had some bumps with no-till and had to change some things," recalls Meier, who farms 935 acres plus 400 acres of custom farming. The "bumps" he refers to were poor emergence, uneven emergence, getting the chaff from the combine to spread evenly to avoid uneven emergence and learning not to set the planter's trash wheel too deep.

Meier attributes his ability to overcome these challenges to his father and his crop scout, Shannon Gomes of Cedar Basin Crop Consulting in Decorah, who has been consulting with him for nearly his entire farming career. "Between the two of them, we would talk things out and figured out what we needed to change," said Meier.

Other conservation practices Meier uses are filter strips along creeks and waterways, contour planting and nutrient management with the Adapt-N program. The program was developed by Cornell University and helps prevent over applying nitrogen by



Nick Meier supervises installation of a bioreactor on his farm last summer. The bioreactor will filter drainage tile water from about 40 acres of land in the Miller Creek Watershed. FILE PHOTO

taking into consideration the amount of rainfall, previous crop, soil organic matter and soil tests.

Meier also started planting cover crops two years ago. "The first year did not go so

well, but I've learned a lot," he says. Last year, he seeded 600 acres, some of which was flown on and planted before harvest, and it worked well.

His main goals with cover crops are con-

trolling erosion, weed control and maintaining good soil health and nutrient levels. He would like to have the cover crop pay for itself someday, but he feels that is four to five years down the road.

In the last year, Meier implemented two new water quality and conservation practices: a saturated buffer strip and a bioreactor to filter tile drainage runoff.

He pattern tiled an 80-acre field, with one-half of it draining in one direction and the other half draining the opposite direction. Half of the field's drainage filters through the saturated buffer strip, while the other half goes through the bioreactor.

The saturated buffer strip is a research project in conjunction with Iowa State, so it was no cost to Meier. He received cost-share from the Environmental Quality Incentives Program (EQIP) for the bioreactor, which paid for 75 percent of the project.

"Nick was selected because he has been very active working with the Black Hawk NRCS," said Shane Wulf, who is the Black Hawk County Natural Resources Conservation Service (NRCS) watershed coordinator where the saturated buffer strip and bioreactor are located. "He's always willing to try new things."

Wulf is monitoring the nitrogen content of water coming out of the saturated buffer strip and bioreactor, but says it is too early to discuss any results.

Meier serves on the advisory board for Black Hawk County Conservation and the Miller Creek Watershed, and he is a past soil commissioner for Black Hawk County. He is involved in the Conservation Stewardship Program (CSP), a program that provides financial incentives to do conservation practices. In 2104, he received the Iowa Environmental Leadership Award presented at the Iowa State Fair. Meier and his wife, Nancy, have three sons and one daughter.

Steve Meyer is a freelance writer from Garrison.

Farmers adapting to heavier springtime rainfall patterns

BY TOM BLOCK

It's not just your imagination. It really is raining more in the springtime than it used to, according to Christopher Anderson, assistant director of the Climate Science Program at Iowa State University.

Since 1981, Iowa has received more than 11 inches of rain during May and June nearly 1 out of every 3 years, Anderson reports. That only happened 1 in 10 years, on average, during the previous 88 years, he notes.

"This is a level of risk previous generations of farmers didn't have to deal with," he says. "It's not just something that has happened in Iowa. It's part of a broader shift in rainfall (across the Midwest)."

Records show that Iowa's May-June rainfall has averaged 9.5 to 10.5 inches since the year 2000, compared to 7 to 8 inches in the 20 years before that, Anderson said.

Unusual spring and summer precipitation patterns have also occurred much more frequently since 1980, Anderson says. For example, he explains, exceedingly wet or dry springs are followed by excessively wet or dry summers with much greater regularity than before.

Targeting conservation

The increased rainfall has prompted farmers to target conservation practices to erosion-prone areas, expand conservation coverage on more acres and adapt agronomic practices to prevent excessive soil erosion and downstream sedimentation.

Cover crops and no-till slow the velocity of rainfall before it contacts the soil. Grassed waterways, buffer strips and terraces slow the movement of water from farm fields. Tile drainage increases the water holding capacity of the soil, reducing surface erosion. Fertilizer applications have also evolved, with more farmers utilizing nitrogen stabilizers and splitting applica-

tions into smaller doses applied later in the season so fertilizer remains present in the soil when crops need it.

Researchers are also examining strategies to reduce costs on lower-producing soils, such as conservation plantings or alternative crops.

"Either moving that highly-erodible land out of production, or at the very least, having a cover on it," Anderson says. "We definitely see the environmental value of putting in an extended rotation, but the business value, we have yet to see a rotation that works."

Ocean factors

So why is Iowa receiving so much more rain during the spring months? Like many weather trends, it all starts with the ocean, Anderson explains. Warmer-than-normal Atlantic Ocean temperatures mean excessive spring rainfall in Iowa, he says. The trend, which generally occurs in roughly 60-year cycles, went from cold to warm in the mid-1990s.

"We're close to the peak," Anderson says. "If we haven't hit it yet, we're going to in the next 10 to 15 years."

Warming air temperatures are also a trigger for increased rainfall, he adds. If temperatures rise by one degree Celsius from 2020 to 2045, as predicted, Iowa can expect



an additional inch of rain during May and June, Anderson says. That means fewer days suitable for field work, among other consequences.

"We have about 5 to 20 years to get ready," he says.

Along with conservation practices, farmers could also cope by utilizing water management practices, Anderson says. For example, while irrigation is sparsely used

in Iowa, there are opportunities to capture some of the abundant spring rainfall and hold it in a storage basin for irrigation usage later in the year if the weather turns dry, Anderson says. Studies suggest managing water to have dry soils at planting time and wet soils during the summer months could increase corn and soybean yields by as much as 13 percent compared to trendline yields, Anderson says.

Watershed plan aims to reduce nitrate, phosphorus

BY BETHANY BARATTA

A watershed project in northern Iowa is helping farmers work toward meeting the goals of the Iowa Nutrient Reduction Strategy.

The Iowa Soybean Association (ISA), with support from the Walton Family Foundation, began watershed planning three years ago in the Rock Creek Watershed in

Mitchell County, which includes 44,787 acres that drain to the confluence of Rock Creek and the Cedar River southwest of Osage.

The ISA worked with local farmers and a technical advisory committee to develop goals and create a plan. It identified seven main goals:

1. Reduce in-stream nitrogen by 41 percent from 2009-2011 average levels.
2. Reduce in-stream phosphorus by 29

percent from 2009-2011 levels.

3. Increase soil organic matter by 1 percent.
4. Maintain or increase agricultural productivity and revenues.
5. Reduce flood risk.
6. Maintain or increase upland wildlife habitat.
7. Maintain or improve aquatic life.

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