

# Step by Step

*Don Elsbernd, Allamakee County, Ia.*

**D**on Elsbernd, who farms near Postville, Iowa, likes to have a strategy for conservation. Step by careful step, he keeps moving forward with improving his soil and water quality.

*“I research my ideas and adapt them to my operation,” he says. “We do have a long-term vision, but we have to make the short-term vision work first.”*

*Elsbernd and his son, Eric, primarily no-till 1,000 acres of corn, soybeans and hay. They employ a broad variety of erosion-control and soil health practices, such as a holding pond to capture neighboring runoff; Conservation Reserve Program (CRP) acres and hardwood tree projects; terracing, buffer strips and waterways; buffered sinkholes; and cover crops on nearly all acres.*

*Elsbernd is also the commissioner for the Allamakee County Soil and Water Conservation District, a hilly, livestock-heavy region. In 2014, his farm joined the Soil Health Partnership (SHP), a long-term study currently in nine Midwestern states that seeks to quantify the benefits of soil health practices such as cover crops. Elsbernd’s 50-acre test plot is set up in eight 90’ alternated strips with cereal rye and a control.*

*“Changes to soil health happen over a long period of time,” Elsbernd stresses. “But in this early stage, the SHP data looks positive.”*

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Farmer to Farmer Success Stories are a series of interviews of farmers sharing how they have found success in incorporating conservation into their operation. To follow this series, visit [www.HarvestingThePotential.org](http://www.HarvestingThePotential.org).

**Q:** How have you developed your cropping methods and conservation strategy?

**A:** Our cropping system has evolved over time. We used to be more conventional in our tillage practices. Over time, we have transitioned to no-tilling corn on soy, no-tilling soy into corn and strip-tilling all corn on corn. Currently, we are changing our nitrogen (N) program to sidedressing. We have gotten slightly higher yields with sidedressing and experience less risk with leaching and losing N on our rolling ground.

We have also been increasing variable-rate (VRT) applications of phosphorus (P) and potassium (K). It’s an economic benefit as well as a conservation effort to not apply excess fertilizer. We do soil testing on a four-year rotation to adjust VRT prescriptions for the following four years.

We have made a lot of progress with cover crops over the last couple of years, but our approach is still a work in progress. Down the road, we may be able to improve our program further as cover-crop technology improves, such as species that are more winter-hardy or easier to seed.

Our long-term vision is to have 100% of our soil covered with cover crops, with multiple years of using them on a regular basis to provide the most opportunities for benefits. Last fall we planted 750 acres, up from 450 the previous year. I believe that cover crops are taking us to the next level of soil health and adding to the benefit of less tillage.

**Q:** What are some of the specific strategies you have developed for cover crops?

**A:** Our short-term cover-crop strategy is an evolving process. Our goal is to develop strategies that work on a consistent basis and provide a good cover crop stand every year. We’re honing in on some things we believe will work. Then we’ll move forward on experimenting with some other mixes.

In 2013, we planted 200 to 300 acres of cover crops in 15” rows. We initially seeded cereal rye immediately after soybean harvest and really liked the results. We got consistent stands and were able to use our own equipment, so our cost was \$25 to \$30 per acre. In 2015, we had success with the same system after both corn and soybean harvest, seeding about 400 acres between mid-October and early November.

Annual ryegrass is still a work in progress. Last summer, we experimented with planting ryegrass into corn the third week of June during sidedressing. The idea was to get the



Healthy soil on the Elsbernd farm has good structure and is full of worm holes (top left). CRP acres protect area watersheds (top). A holding pond (bottom), built with Natural Resources Conservation Service cost-sharing, helps protect the Ludlow Creek watershed by capturing runoff and sediment from neighboring acres. Cereal rye, seeded in mid-September after corn silage is taken off, is well established by early October (right).

cover well established before the corn canopied completely, which would prevent us from having to make a separate pass or wait until after corn harvest to seed. We're learning we have to be out there earlier, however, such as the first week of June. Our part of the world has a short season, and annual ryegrass needs to be established prior to corn canopy in order for it to be able to survive throughout the growing season.

**Q:** What benefits have you seen on your farm from these systems?

**A:** Our soils are better able to absorb water, so there is less runoff. Our fields tolerate heavier equipment loads much easier and are less prone to compaction than tilled soil. Our inline ripper is in the shed – it's going the way of the old moldboard plow, at least for us.

When you break apart a piece of our soil, it crumbles into larger aggregates rather than small, dusty particles. You see worm holes. We have clearly seen less water erosion and soil movement, partly because we try to keep a good cover on the soil with residue or cover crops.

Before we started doing a lot of no-till, most of our soils tested between 2% and 3% organic matter. Most samples now average 3% to 3.5%, and higher in some fields.

Our system does not require as much fuel use per acre, and we don't need big investments in tractors and iron. This system also requires less labor.

These conservation practices should result in needing less fertilizer, too. We are already spending less per acre on P and K. If you are losing soil, you are also losing fertility. Instead, we want to be in the business of retaining what we have and building it up versus replacing what we are losing.

The payback is in productivity. We are building more resiliency in our soils, which are able to tolerate wet and dry years better than less healthy soil. We are going to see more yield consistency in times of stress.

**Q:** Why do you believe that adoption of these practices is important for U.S. farmers?

**A:** We need to continue to adapt. It's taken us 100 years to lose a good portion of our topsoil, and we need to build resilience back into our soil. These practices will do amazing things as far as environmental improvement while also making us more competitive on a global scale. Conservation is on a continuum, and every year American farmers must strive for continuous improvement.



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