

Minnesota Farm is a Learning Laboratory



MEET THE ADVOCATES
Grower: Dave Legvold, Northfield, MN (right). **Crop Advisor:** Ken Thomas, Farmers Mill and Elevator, Castle Rock, MN (left).

For 40 years, Dave Legvold has been farming 800 acres of corn and soybeans. And for 40 years, he's held the mantra that farmers and experts should work together. This is evidenced by his relationship with Ken Thomas, agronomy manager at Farmers Mill and Elevator.

Every year, Legvold and Thomas meet to develop a nutrient plan for Legvold's fields. Soil sampling is an important piece of Legvold's management strategy, but he takes a different slant on it. Soil sampling in each management zone throughout the season allows for precise crop nutrition monitoring from planting through harvest, allowing for nutrients to be applied when they are needed. By using a SoilWarrior® zone tillage and nutrient management system from Environmental Tillage Systems, they are able to optimize tillage and nutrient placement.

Conservation and stewardship strategies have helped to build the farm's overall organic matter from 1.7 to 6.5 percent in certain areas. He's done this while cutting his fertilizer use by one-third.

Legvold considers his farm to be a living laboratory where many folks learn and nearby St. Olaf and Carleton College students conduct research projects on the farm. Students who use the farm for studies may sample 250 times in a 20-acre parcel with three or four replications throughout

the season. They test all the way through the black layer and record with GPS so they can track from season to season, resulting in a nice continuum of agronomic samplings.

“We'll keep improving if we keep making the right source, right rate, right time and right place second nature.” – Thomas

Involving students is one way Legvold addresses the social goals of the 4Rs. In making his farm a laboratory for whoever wants to conduct a project, it helps him and his team understand the entire soil health system while helping others achieve their goals.

Legvold was named an Agricultural Water Hero by the Minnesota Governor. His farm is part of the Minnesota Agricultural Water Quality Certification Program, a voluntary effort for those whose who implement conservation practices that protect water quality.

BEST PRACTICE MANAGEMENT

- > Soil sampling in each management zone throughout the season allows for precise crop nutrition monitoring from planting through harvest, allowing for nutrients be applied when they are needed
- > Utilizes many information points including field mapping, crop removal data and Iowa State University N Calculator recommendations to determine yearly nutrient needs
- > All N is split applied with N-Serve in the spring with no fall application to increase efficiency and reduce the risk of loss
- > Phosphorus is placed two inches below the soil surface for maximum plant availability and minimal loss
- > Micronutrients including sulfur and zinc are incorporated during spring fertilizer application to improve production and soil health
- > Conservation and stewardship strategies have helped to build the farm's overall organic matter from 1.7 to 6.5% in certain areas
- > Strip-tillage is implemented as the main tillage practice to mitigate erosion and maximize nutrient availability
- > Employs a SoilWarrior® zone tillage and nutrient management system from Environmental Tillage Systems (ETS) to optimize tillage and nutrient placement
- > As a part of further conservation efforts a saturated buffer has been installed to remove nitrates from tile drainage water

- > Works with students from St. Olaf and Carleton College to conduct on-farm research projects

“When we use fertilizer properly, it benefits the environment,”
– Legvold

