

Learning From a Cover Crop Master

by Sally Hertz Gran

After visiting Gabe Brown's farm in North Dakota with Practical Farmers in 2015, I was thrilled at the chance to go on another bus trip to an extraordinary farm. PFI's trip to Dave Brandt's farm in Carroll, Ohio, in August was a great opportunity to see how Ohio farmers apply PFI values to a landscape with different soil, climate and markets.

Crop Rotation

Ohio soils are naturally higher in clay and lower in organic matter than Iowa soils, and continuous soybeans are common. Dave has increased the organic matter of his soils through extended rotations, planting cover crops and practicing no-till. The Brandts rely on limited synthetic nutrient inputs, deriving much of their fertility from cover crops. The three-year framework of this rotation (corn-cover-beans-small grains-cover) is applied throughout his entire farm.

Here is Dave's prescription for planting cover crops, which maximizes cover crop growth:

- **Year 1:** Plant an early cover crop of buckwheat and terminate a few weeks later at flowering. In late May, plant a corn crop, followed by a mixed cover crop of cereal rye and a couple of brassica species.
- **Year 2:** Drill soybeans in early June into the rye cover crop, followed by winter wheat.
- **Year 3:** Harvest winter wheat in mid-summer, then plant a diverse mix of cover crops to enrich the soil and fix nitrogen ahead of the corn crop.

In 1973, shortly after beginning his farming career, Dave's soil tested at .5 percent organic matter. Today, it measures as high as 8 percent – which is similar to that of prairie soil. For the Brandt family, investing in the soil has paid off. While many of his neighbors had to replant once or twice this spring after heavy rain events, Dave's soil and the crops fared well. After a 5.5-inch



rainfall event, he told our group that no water flowed through his drainage tiles.

Seed Selection

In order to cut costs, Dave plants untreated, non-GMO seed. Once a farmer has spent a few years building healthy soil biology, he said seed coatings no longer offer benefits. In fact, they can be detrimental to beneficial mycorrhizal fungi. "The lace you see between the roots are the 'cell phone' of my crops – how they communicate and get fed with nutrients they need," Dave said. He is concerned that neonicotinoids do not boost yields enough to cover the added expense, and can kill beneficial insects such as beetles and lightning bugs. He also takes advantage of recently developed short-season, high-yielding corn varieties that allow for a long cover cropping window. He has gone from using a 115-day corn to a 94-day variety that he harvests around Sept. 20, with reportedly no yield reduction – which he believes is due to improved genetics and soil health, as well as the timing of rainfall in current weather patterns.

Enterprise Diversification

To make it possible for younger generations of family members to return to the farm, the Brandts started Walnut Creek Seeds, a cover crop seed cleaning and packaging business. They also do custom work with a high-

clearance seeder and a roller-crimper. Dave estimates that by crimping cereal rye ahead of soybeans, they have reduced herbicide use in that crop by up to 95 percent.

Cover Crops Grazed By Neighbors

The Brandt family does not have livestock, but connected us with two farmers who graze diverse cover crop mixes, purchased from Walnut Creek Seeds, as part of their extended crop rotations. Wolfinger Family Farms grazes 80 cattle on 50 acres of cover crops from late November through January. The mixes include: field pea, cow pea, sunn hemp, oats, pearl millet, radish, Ethiopian cabbage, sunflower, crimson clover, hairy vetch, barley and triticale. They graze 3 to 4 acres at a time by moving single high-tensile wire. As a result, they save 80-100 round bales of hay each winter. Berry Family Farm is a diversified livestock and crop farm. Thirty cattle graze a diverse summer annual mix that included sunn hemp, soybeans and cow peas. ■

Sally Hertz Gran is a beginning farmer raising certified organic corn, soybeans and small grains near Nevada.

Learn More

➔ Read a more in-depth version of Sally's reflections on our blog at practicalfarmers.org/blog/2017/11/10/sally-gran.



Members Reflect on Lessons Learned in Ohio

Trip inspires Iowa farmers to make changes

by Meghan Filbert

In early August, PFI members had the chance to visit the farm of Dave Brandt and see firsthand how cover crops can significantly improve soil health and fertility. For many participants, the visit to Dave's farm near Carroll, Ohio, was a dream come true – a chance to cross an item off their bucket list. For everyone, the trip was inspiring. Seeing what is possible with cover crops and extended rotations on the farms of Dave and his neighbors sparked curiosity about what is possible here in Iowa. Here, members share the lessons they brought home.

Multiple facets of diversity were discussed during the trip. Two points stuck with Nathan Koester, of Scales Mound, Illinois: "Firstly, the value of planting mixes rather than single species of cover crops, to compound benefits, and secondly, diversity in your farm business. The many entities on the Brandt farm encourage the next generation. We will be looking at opportunities to diversify our [dairy] farm as we move forward, both from a cover crop standpoint as well as business entities."

Margaret Smith, of Hampton, echoed Nathan. "What stood out to me is the importance of seed-cleaning facilities and seed supply for more diverse agriculture," she said. For Tom Wind, of Jamaica, Dave reinforced the concept of achieving an ideal carbon-to-nitrogen ratio of 24-to-1 through diversity of cover crops: "In my transition to organic, I will likely use more plant species than just alfalfa or clover, and I will look at the carbon-to-nitrogen ratio of the cover crops in the third and fourth year of my rotation."

Wendell Zimmerman, of Greenfield, wants to reduce his inputs and came back to Iowa with ideas on how to do that. "I wish to

grow my own nitrogen with spring peas," he said, "and use cover crops to mine phosphorus, potassium, calcium and other nutrients from the soil instead of using commercial fertilizers."

Dave's discussion of seed selection stuck with several participants. "The biggest lesson for us was the seed treatment," said Teresa Wendt, of Stanwood. "Once my pollinator habitat gets older and more habitat-laden, and the cover crops have time to work on the soil, we're definitely going to start experimenting with naked seed corn and beans."

"Dave mentioned that seed treatments hinder soil biological life near the seed," Tom said. "I will consider reducing or eliminating seed treatments, such as [neonicotinoids], in my conventional crops as my soil health improves."

For Jon Kruse, a beginning farmer from Monona, the trip yielded a trove of practical ideas for his farm, as well as an inspiring vision of what can be achieved through strategic use of cover crops. "For my first year growing cover crops, I'm going to plant rye at 50 pounds and radishes at 2 pounds per acre on 200 acres of bean



Opposite Page: Sally Hertz Gran stands by cattle in pastures at Berry Family Farm.

Above: (Back to front): Wendell Zimmerman, Margaret Smith, Leland Shelton, Landon Corlett and Jon Kruse (front-right)

ground, and some rye on corn ground," Jon said. "I'm excited to have learned that with cover crops, the Brandts are able to use less commercial fertilizer and at the same time produce a more nutrient-dense product," Jon said. "It is hard to believe what Dave Brandt and his family have achieved from changing their soil profile – their ability to absorb excessive amounts of water and stop fertilizer run off.

"What if someday the Mississippi River would run clear? As a farmer, this would be a great accomplishment." ■



Left: Teresa Wendt listens to Dave Brandt speak.

Right: Nathan and Jeff Koester look at soil from Dave's farm, as Margaret Smith listens.