FARMER TO FARMER SUCCESS STORIES

Wild Oats

Josh Cox, Wildcat Valley Farms, Lafayette, IN

As the seventh generation of a farm family that has row cropped and raised cattle in northwest Indiana since the 1830s, Josh Cox's willingness to buck the conventional trend hearkens back to his Quaker ancestors, some of whom served as conductors for the underground railroad.

At a young age, he was determined to inject innovation into the family operation. "When I got out of college, my dad was willing to listen to some of my wild ideas," he says. Along with his parents, Carl and Kathy, he now embraces conservation farming practices such as no-till, cover crops, waterways, filter strips and a denitrifying bioreactor on 4,000 owned and rented acres. They also run a 120-head seedstock cattle operation.

He and his wife Susanne's fifth child, Brynlee, recently joined Kylie, Eli, Samuel and Cade. The eighth generation enjoys farm work, the county fair and the backyard creek, which their parents are committed to protecting as a precious resource.

"We're trying to grow our operation using sustainable farming methods that build, not degrade, our soil for future generations," Cox says. "And hopefully, those future generations also won't have to worry about the water their kids are swimming in down at the creek."

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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*

Q: What convinced you to question age-old farming practices?

A: In the past, our farm, like many others, saw a lot of chisel and moldboard plowing. We were pretty much a conventional operation until I finished college.

My "aha" moment was in 2002 after a heavy rain event, when I watched some of our conventionally tilled topsoil washing into our neighbor's property and accumulating into a silt bank. That moment told me our situation wasn't very sustainable and spurred me to seek solutions.

At the time, my dad's motto was, "If it works, why change it?" If you don't realize you have a problem, you are not going to look for a solution. For many years, we didn't think we had a problem. But my dad was gracious enough to listen when I said, "Let's see what we can do differently." Admittedly, we wouldn't be where we are today in agriculture if it hadn't been for tillage, but technology is now available to make this conservation system viable.

Q: What kind of changes have you made in your operation?

A: We started no-tilling in 2002 and planted our first cover crop a few years later, when we flew triticale on some grazing acres. Our cover crop use has steadily increased. Now, all our owned acres and most rented acres are cover cropped.

We started studying our soils and test results more closely, learning how soils worked and how the nutrients are bound in the soil and when they are released. That really changed how we handled crop nutrition. If you really get the biology cranking in the soil, those bugs that break down residue also break down unavailable nutrients and make them available. We switched from anhydrous to a urea-ammonium nitrate solution, which is not as harmful to soil microbes. Now we spoon-feed the corn nitrogen throughout the season. We are also managing phosphorus and potassium differently, making applications where that crop is better able to utilize it. We also apply some dry cow manure and chicken manure on some of our fields.

Most areas are in a corn-bean rotation, with wheat in a three-year rotation on select fields that need extra help. July-harvested wheat is followed with a cover crop cocktail; that gives it a lot of time to grow. We'll plant corn into the winter-killed residue the following spring. Every year we adjust our cocktail, using species like sorghum

sudan, sunn hemp, sunflowers, cowpeas, radish, turnip and hairy vetch. The goal is to have a variety of different plant types. By simply adding wheat to our rotation, we have seen a nice yield bump in the following corn crop.

We might get a little exotic with cover crops after our early-harvested soybeans, but after Oct. 1 we usually stick with oats and radish, which give us the quickest growth. We can plant cereal rye even up to mid-December. You won't get much fall growth, but it will be there in the spring. We have yet to fail a cereal rye seeding.

We're starting to integrate cereal rye a little differently by letting it head out, then planting our soybeans into the 5' growth before terminating it. Then it creates a nice mat that preserves water later in the season. And how are you going to create organic matter (OM) without biomass?

Q: What improvements have you observed in your operation?

A: There have been a few hard knocks along the way, but overall, these changes have benefitted us.

We've definitely helped improve erosion by preserving topsoil and keeping it intact. Our soil structure is much better than under tillage, when we pulverized the soil. Now we have a lot of earthworms and better root channels and pore spaces. Our water-holding capacity has increased because of the improved soil structure. For example, one farm had a five-acre wetland deep enough to hold ducks nearly every year. Since integrating our wheat, corn and bean rotation with cover crops, we have been able to farm that area. It just shows that our good soil structure is allowing water to percolate and that residue is slowing water down.

Yields have increased. We certainly have better weed control than under conventional tillage, when a second pass was guaranteed because we stirred up the seed bank. Cover crops also help smother out other weeds.

We don't need high-horsepower tractors and large tillage equipment in this system, which frees up capital and saves fuel. Our rotary hoe – which we used quite a bit for conventional tillage – is now in a shed, covered with cobwebs.

Q: What are your top priorities to help guide your conservation farming decisions?

A: We're trying to improve our overall soil quality and mimic nature, which will make our soils more resilient to extreme weather conditions and events as well as to crop stresses such as drought.

In early April 2016, Josh Cox checks a field seeded to a cover crop mix. "We're seeing if we can mimic nature with our system, bit by bit," he says. "It still needs to be profitable – we can't throw caution to the wind – but it's interesting to see how soils respond to different food sources."

We also want to create OM, which will increase production with less inputs, thus increasing profits. We are currently testing how grazing and crop rotation with cover crops affect OM levels. How fast we can build and create OM are major areas of focus for us.

Another focus is natural resource preservation and water quality, as my five kids swim and fish in our creek and I like to hunt.

Q: What would you say to someone who is considering this approach?

A: When you get into this system, you are not going to see results overnight, and you have to think through everything you do. Start off slow, seek advice from others doing this and don't be too proud to ask questions.

Conventional systems have one set of problems, and conservation programs have another. There are no silver bullets, but we believe this method of farming will ultimately result in greater benefits.

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The Howard G. Buffett Foundation has invested over $150 million in research to improve agriculture and invested an additional $350 million in agriculture-related programs globally. Howard G. Buffett, the Foundation's Chairman and CEO, has farmed for over thirty-five years, including more than 20 years using no-till and cover crops.