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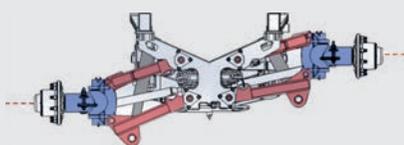
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Cover crops worth effort

BY KELLY TOBIN

THE adage is you can't teach an old dog new tricks. Well, it's wrong! This old dog has been learning a lot of new things about cover crops over the last decade.

When I first considered introducing cover crops into my corn-soybean rotation, there was little information about how cover crops help slow soil erosion, increase soil organic matter, reduce compaction impacts, contribute to weed suppression, and improve soil health and function. After 10 years of planting cover crops, I can tell you they do all of these things, as well as reduce input costs and, consequently, increase profitability.

Cover crops aren't new. We planted them in the 1940s and '50s. Back then, our cash crops included corn, oats and hay. I recall planting sweet clover in the fall (it grew to 6 feet) and plowing it under in the spring for fertilizer. It wasn't called a cover crop then, but I remember how much it helped our yields.

In corn-soybean rotations today, cover crops are even more important, and we need to learn how to incorporate them into our systems. On our farm, we've been no-tilling since 1979. I learned that cover crops and no-till are first cousins and should be used together!

In 2008, the Iowa Learning Farms (part of Iowa State University Extension) and Practical Farmers of Iowa asked us to be part of a five-year research and demonstration project. I immediately said yes, because I knew it would enable us to learn how to make cover crops work on our land so we could show this practice to others.

Finding long-term benefits

Our plot is 1,320 feet long and 45 feet wide, with eight replications of four with rye and without rye, drilled after rotation of corn and soybeans. If you want to see these plots, they're located next to a blacktop road (J-35 in Taylor County) 1 mile north and 3.5 miles east of New Market, about two hours southwest of Des Moines. That five-year project has expanded to 10 years so we can document the long-term effect of cover crops on our fields.

It was only after two years of experimenting with cereal rye, crimson clover and some radishes that we decided to use cover crops on all of the farm's 400 crop acres. The first year, corn yields following drilled rye were reduced by 7 to 8 bushels per acre. But we fixed that the second year by planting two weeks after termination of



COVER CROP PAYOFF: Kelly Tobin began using no-till in 1979 and cover crops in 2008. Cover crops and no-till go together, he says. They control erosion, keep nutrients in the field and protect water quality. They also help build up the soil and improve profitability.



the cover crop. We increased our corn yields. Consistently, soybean yields have shown an increase of 3 to 11 bushels each year when we have terminated one to three days before planting.

I'm not just enthusiastic about cover crops because of yields. They're also improving my soil's infiltration. Twenty years ago, we pattern-tiled 10 acres because it was heavy bottom soil. After a heavy rain, we still had standing water and no water coming out the tile lines. After three years of cover crops, the water drains through the tiles, and there is no water standing on top of the soil. Corn yields have also increased by more than 10 bushels per acre for that area.

Valuable lessons learned

Over the years of the project, we've continued to experiment with cover crops to figure out what will work best on the land. For example, we wanted to get the cover crops drilled in earlier, so we began using earlier-maturing corn hybrids and soybean varieties. The switch from 115-day to 100-day corn and to earlier soybeans has increased our cover crop stands and has had no impact on yields.

To plant cover crops, we use a 45-foot-wide air seeder. We can plant the 400 acres in two days and have excellent stands. We also do some aerial seeding of cover crops into corn and have had good stands.

I'm so enthusiastic about cover crops that we are also incorporating them into

row crops on all of the farms I manage. The tenants on these farms were not certain that cover crops were worth \$30 an acre, so I convinced the owner of the farms to pay half the cost, and that was enough to get the tenants on board. Understanding and seeing the benefits of cover crops will keep them using covers.

Other farmers and landowners have to be willing to learn more about the connections between soil health and water quality. Now that a lawsuit has been filed by the Des Moines Water Works against drainage districts in three counties in Iowa, we need to know more about the benefits of cover crops and how to manage the nitrate levels leaving our farms in tile water.

Water monitoring data from our farm shows that after using cover crops for several years, nitrate levels have dropped substantially. It's great to see that just one practice, planting cover crops, is making such a big difference.

Sharing our experiences

Outreach and education are important. As chairman of the State Soil Conservation Committee, I really enjoyed promoting cover crops across the state. As an Iowa Learning Farms farmer-partner, I've given numerous presentations on the benefits of cover crops. It gives me joy to help people, especially young beginning farmers. Sarah Carlson with Practical Farmers of Iowa even had me lead three science sessions at the Cover Crop Boot Camp.

It's all about working together and learning together. You have to keep learning. Heck, I didn't even start college until I was 54 years old. I got my bachelor's degree in ag business and agronomy from Iowa State in 1987. Can you believe that?

In our home, we have a sunroom with windows that allow me to look in three directions. From that room, I can see most of our farm. In late fall and early spring, there is a very dark green cover crop. That is something we appreciate and enjoy.

I continue to learn more about soils. I read all the magazines and papers, and listen to the KMA radio programs every Monday morning. Farmers need to be lifelong learners if they are going to keep working toward improving soil health and water quality on their land. We also need to maintain our sense of wonder of how it all works. There is always something more to learn.

Tobin is a soil and water conservation district commissioner, an Iowa Learning Farms farmer-partner, and an Iowa Master Farmer, Class of 1999.