

# Residue: it's not the enemy

Two farmers share their enthusiasm and their observations about the nature of residue



**BY KAREN DALLIMORE**  
The writer is a freelance writer and horse fanatic near Orton

back to the plow," Nixon told the audience at FarmSmart 2016 in Guelph. Like going back to an old girlfriend, "We knew it wasn't healthy but we could predict the result."

But residue isn't the enemy, said Nixon. Residue is essential to healthy soils, which are necessary for high, stable yields. Improving soil health is accomplished by increasing the biological activity of the soil; no tillage instrument will do that, said Nixon. Building organic matter is the key, but you can't buy organic matter, you have to earn it.

Nixon parked the moldboard plow in 1992 at his farm in Ilderton, where he

no-tills a corn, soybean or dry bean, and winter or spring wheat rotation with his brother, Kevin and father, George.

They'll do one strip tillage pass every three years, use manure from other farms and add cover crops as their comfort level permits. He also suggests incorporating perennial forages into the rotation. A few years of alfalfa generates great root mass.

The first step to healthy soil is to quit burning off the organic matter with tillage, said Nixon. After that, good residue management is key.

At cereal harvest, deal with straw and chaff separately, spreading the chaff with its



**Corn residue is becoming more of a problem on some operations.**

Residue got a bad reputation in 2015.

As Ken Nixon tells the story, a late corn harvest the year before followed by a few frost events in the spring left a bad taste, while the 'black dirt guys' didn't miss a beat.

"What did we do? We went

nutrients. Cut it low, chop it fine and spread it wide, were his words of advice. It needs to be on the ground to benefit from four months of decom-

position. As he says, fungi doesn't climb trees. Mow it or clip if you have to, and adding a light coat of manure can help.

For soybeans or edible beans, Nixon likes rolling after planting and spreading the pods after harvest. He admits he'd like to see some improvement on the spreading ability of dry bean combines.

As for corn, Nixon questions some of the common stories he hears surrounding corn residue. New varieties are healthier, with better stalks and roots that take longer to decompose, but Bt decomposition is "not as big a factor as we think", looking instead to issues being caused by row width reduction combined with population increases as a practice to increase biomass.

Another management factor could be using a fungicide pass. He wonders if fungicide is a good idea when the objective is to improve soil biology? If that fungicide hits the soil surface, are fungi on the soil susceptible?

With no-till, harvest timing has changed. We harvest later, no longer in a hurry because we don't have four weeks of plowing. That means colder temperatures at harvest time, which means slower decomposition of residues.

Corn heads factor in as well. Picking up the head as high as possible leaves more standing and less on the ground in smaller pieces. If you're harvesting in October it might make sense, but if you're harvesting later the residue may only touch the soil for the first time in March.

In general, the longer the soil is left undisturbed, the faster the residue breaks down, and he's noticing faster

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## TOUGH TO BEAT IN THE LONG RUN



decomposition of residue when cover crops are used.

STEFAN ZEHETNER showed photos of fungi in his fields. He calls them “the little red guys”, encouraging their presence with a strategic mix of cover crops in a four-year rotation of twin row corn and soybean and no-till 7 1/2 inch wheat.

Zehetner farms 1100 acres in Huron County with his dad, which has been incorporating multi-species cover crops after wheat, into standing corn and after soybeans for over 20 years. In his travels around the world he has met farmers that have achieved world record yields and what they have in common is a minimum eight-year rotation that includes pasture.

He is seeing the effects of crop rotation on his own land. For the last three years he’s been no till inter seeding cover crops into corn in a field that was 18 acres of grass hay, with good soil structure and health. The cover crop mixture was inter seeded at the two to three leaf stage for narrower rows, up to the five or six leaf stage with 30-inch rows.

The clover got to hip high or more, said Zehetner, and some of the rapeseed had roots three feet deep. He was a little concerned when some of the growth got as high as the cob, but the cover crops fell down before harvest, but continued to grow late into the fall after harvest. The result? 160 bushels with zero inputs other than seed.

As the owner of Huron Cover Crops, Zehetner will often blend several species of cover crop seed, but he says even elaborate blends are still not expensive – around \$20 per acre for 10 to 12 pounds of seed – which is not expensive compared to the nitrogen savings from working on healthier soil. Even a simple rye cover crop makes a visible difference.

At one time he thought clover was a waste of time, but the roots changed his mind. What other tillage tool do you have that can work five inches deep on wet fields and have residue to protect the soil?

Last year, planting green resulted in a 50-bushel soybean yield – a four to seven bushel boost. “That’s huge,” said Zehetner. “There’s something going on, but I’m not a scientist...”

His combine and grain cart are the last thing his field sees before the planter,



**Ken Nixon: “The first step to healthy soil is to quit burning off the organic matter with tillage.”**

with manure only going on when it’s bone dry in August or if he needs more storage. He’s not entirely no-till however, using one shallow pass ahead of corn on soybean ground.

When his neighbours are out planting corn this year and he’s impatient to get out there, Zehetner has decided that he will go out and plant cover crops instead, maybe 100 acres



**Stefan Zehetner: In his travels around the world he has met farmers that have achieved world record yields and what they have in common is a minimum eight-year rotation that includes pasture.**

this year.

He doesn’t believe this is setting back the planting date on his heavier soils with high magnesium content: the green cover crop will be sucking water out every day.

The field may look wet but if it doesn’t pack, it’s good, we’ve just got to get used to the look of it. If it gets dry, the cover crop can be terminated, leaving a mulch that will help preserve water.



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