

By Dean Houghton

SIZING UP STRIP TILL

Iowa operation studies strip-till system as a way to save fuel, time, and soil

Nelson Family Farms has grown corn and soybeans on soils of the Des Moines Lobe since 1889. Their forefathers in this area around Ft. Dodge, Iowa, knew that turning the ground black after harvest was the key to farming these fertile soils, which stay cooler and wetter through the spring than most other soils in the state.

Dave Nelson recently left an industry job to come home and join his father, Gary, in running the family farm. Dave insisted that the family study strip-till as a way to capture the advantages of fall tillage while reducing machinery costs, fuel, and labor.

Precision pass. Dave also has added efficiency to the family's strip-till operation by teaming it up with RTK-level accuracy for guidance and variable-rate fertilizer placement. "When we make our fall strips, we are delivering four products by variable rate [anhydrous, dry P and K, and N-serve nitrogen stabilizer]," he says. "In one pass, we are tilling an 8-inch wide

►**Right:** Nelson Family Farms has evaluated strip till soybeans against no-till soybeans, and runs a number of field-scale corn studies as well.





►**Above:** Dave Nelson teams up precision ag with strip till for one-pass, on-the-go variable rate placement of four fertilizer products.

strip, 8 inches deep. Nature will condition that seedbed over the winter through freezing and thawing, so it will be as mellow as garden soil by spring. The black soil in the strips also warms and dries more quickly, which allows us to get in fields sooner than even our conventionally tilled fields.”

There’s another advantage to the family farm that goes beyond agronomics. “Strip tillage is a way for us to continue the growth of our farming operation with reduced machinery costs, lower fuel usage, and a lot less labor,” Nelson points out.

Learning farm. The Nelson family operates the Smeltzer Trust Demonstration Farm near Otho, Iowa, which serves as an Iowa Learning Farms demonstration site. ILF is a statewide initiative that allows conservation-minded farmers to showcase systems that improve the quality of the soil and water, while also keeping farms profitable and sustainable.

The Nelson family has demonstrated strip-till systems on the site, and



PHOTO: DAVE NELSON

is continuing to evaluate the concept against other tillage options on their other land as well. Some field-scale research compares strip-till corn against a conventional tillage approach. Another site compares strip-tilled soybeans against no-till soybeans directly seeded into unworked corn stubble.

Learning about strip till isn’t limited to the farm community. The Nelsons also have invited their landlords to get hands-on experience with the concept. “We ask them to get down on their knees and feel how mellow the soil can be in the slots,” Dave says. “The process has been fun and allowed us to get closer to our landlords.”

Soil stewardship is another reason the Nelsons are setting up for the strip-till approach. “Strip till allows producers to have a warm, dry seedbed while keeping the benefits of reduced soil disturbance,” says Denis Shulte, Webster County Natural Resource Conservation Service district conservationist. “This means lower production costs for the producer, better soil qualities in the field, and no loss of crop yield. Landowners also should see better water infiltration and improved soil

►**Above:** Mother Nature provides seedbed conditioning through winter-long freezing and thawing cycles, producing a mellow spring seedbed.

structure.” Dave Nelson sees it as a way to gain many of the soil-building benefits of no-till systems while beating the problem of cool, wet soil conditions in the spring.

“We look at there being four options to tillage in our fields,” he says. “The first being moldboard plowing, the second is disk-ripping [which leaves more residue], then there is strip till. The fourth option is no till. We see the strip-till approach as taking us three-fourths of the way to no till.”

The bottom line. The goal of all the study at Nelson Family Farms is to see how strip till affects the bottom line. “I’m not really looking to make higher yields with strip till,” Dave says.

“I think that the results from some of our test plots indicate that we might be able to find an extra five bushels of yield, up to maybe 10 or 15 bushels, due to an agronomic advantage for strip till,” he continues. “If yields are just equal to conventionally tilled ground, our lower costs means strip till has already won.” ■