

ACHIEVING THE IDEAL SEEDBED WITH STRIP TILL

By Lynn Betts

FAMILY FARMERS: Karma and Gary Nelson (left) and their son Dave and wife Fonda are partners in Nelson Family Farms near Fort Dodge. Along for this walk in one of their strip-tilled soybean fields are Dave and Fonda's children, Morgan and Tyson.



After four years of strip till, Dave and Gary Nelson are convinced no other system makes a better seedbed. “We want a warm, dry, potting soil kind of seedbed, not chunks of soil. And in this part of Iowa, we need that narrow seedbed strip to be black,” says Dave.

That’s what they get with their strip-till machine, that builds an 8-inch-wide-by-3-inch-high berm for the seedbed and leaves the rest of the ground and crop residues untouched.

The Nelsons’ farming operation centers around Fort Dodge. “I got a huge reminder of how well strip till works last spring on one of our newly rented farms,” Dave says. “We had to field-cultivate it because we weren’t able to run the strip-till machine the fall before. I noticed compaction and sidewall smearing — the bottom of the field cultivator sweep made a smear layer, and rainwater didn’t go below that. Anywhere there was a tire track, we couldn’t get a good seedbed,” he says.

“It was corn on corn. The differences between field cultivating and till planting were very obvious to me,” Dave says. “I had to set the planter deeper, with more down pressure. And I didn’t get as good of a stand of corn.”

Each time the Nelsons work with a new landlord, they compare tillage systems on that farm. They also run side-by-side comparisons of strip till, conventional tillage (disk ripper and field cultivating) and no-till in cooperation with the Iowa Learning Farms.

“It kind of hurts to pull that conventional equipment through the field now for our trials,” Dave says. “Five years ago, the opposite was true.”

The trials have shown comparable yields. “What stands out most from the trials is our soil health, soil conservation, and the reduced fuel, labor and machinery savings we get with strip till,” says Dave. “We also get good seed-to-soil contact, minimal sidewall compaction and no smearing — all that affects net income.”

CUT EQUIPMENT, LABOR IN HALF

“We’re farming well over 2,000 acres with one primary tractor, with front-wheel assist,” Dave says. “My autosteer is in that tractor to pull the 12-row strip-till machine in the fall and the 24-row planter in the spring. We don’t need half the equipment or horsepower with strip till like we would if we were doing conventional tillage.”

DEALERSHIP HELPS FARM, VICE VERSA

BOTH GARY and Dave Nelson saw a good business opportunity when they and their wives bought Brokaw Supply Co. in Fort Dodge. The dealership specializes in the niche market of fertilizer and nutrient application equipment, and is also a sprayer center. The company offers parts, service and precision agriculture equipment to Midwest farmers.

The two are known for testing equipment on their land before selling it. Being active farmers is a huge advantage to the business, Dave believes. "We know how to make the equipment work because many times we've helped develop it. It then allows us to talk farmer to farmer with our customers," he says.

"We sell what we use on our farm," Gary adds. "We don't need to read it out of a book."

The farm benefits, too. "The business gives us access to cutting-edge technology," Dave says. "We can test new equipment on the farm, and help

perfect the machinery, like we did recently for a prototype machine. We can show our landlords we're using the most efficient machinery."

Both businesses have gone well. In three and a half years, the Nelsons have expanded from farming 800 acres to well over 2,000 acres, and Brokaw has grown from six employees to 26 full-time employees, plus eight part-timers.

Dave is president of Brokaw Supply, wife Fonda is the bookkeeper, and Gary is in charge of sprayer sales. The three and Gary's wife, Karma, own Brokaw together.

"With the success of both businesses, the toughest part is deciding where to spend our time," Dave says. "Our heart is in farming. Being able to help our customers – whether they are farmers or fertilizer retailers – and helping make them more profitable in their operation has been our goal since day one."

Fuel use with strip till for corn on corn is 1 gallon per acre in the fall — for making one trip with the strip-till machine to build the seedbed and apply variable-rate potassium, phosphorus and anhydrous. In the spring, a half-gallon per acre is used with one pass of the same strip-till machine, with a vertical-tillage attachment to freshen the strips, along with a trip for planting and a trip for sidedressing.

"The total 2 gallons per acre of fuel in strip till compares to 4 gallons needed for most conventional systems of anhydrous application, a disk ripper, field cultivation, planting and sidedressing," Dave says. "I figure we get by for half the fuel and half the equipment."

Dave says they get into the field as early or earlier than any of their neighbors. "It's like planting into a garden," he says. "Come spring, our strips are like potting soil."

Dave says if you make it a priority to get the strip-till machine over the ground in the fall, you'll make it happen. "Dad; my mom, Karma; and wife, Fonda; keep the combine going, and I get after the strip till as soon as I can put anhydrous on," he says. "Our typical fall nitrogen program consists of 100 pounds of nitrogen on every corn acre to ensure the plants have enough N for early seedling growth. Then we sidedress a variable rate of up to 80 pounds of N about June 15. We are firm believers in split applications of N; it's paid for the second application time after time."

SPRING TILL OPTION

For soybeans into cornstalks, the Nelsons run their strip-tiller in either the spring or fall, and then plant. For corn on beans and corn on corn, they

strip-till in the fall. But now they're excited about using their new vertical-tillage attachment on their strip-till bar to allow them the flexibility for both fall and spring strip till.

The Nelsons also own Brokaw Supply Co. in Fort Dodge. Being a specialty farm equipment company focused on fertilizer and spray equipment has allowed them to test new and next-generation equipment on their farm. They've even worked with strip-till manufacturers to perfect prototypes before they go to market.

The Nelsons' landlords also appreciate the new technologies they've adopted in their operations, Dave says. They use RTK autosteer and variable-rate applications for planting, and fertilizer and herbicide applications. "To

us, precision ag does not mean autosteer or a combine yield monitor. Precision ag to us is the agronomic system of prescriptive farming on each and every acre we farm," says Dave.

The Nelsons also use soil grid sampling, soil electrical conductivity mapping, yield mapping with variety tracking, stalk nitrate and plant tissue sampling, and satellite crop imagery. They've hosted several field days on land they farm, and installed a bioreactor last year on one of their farms to reduce the amount of nitrate nitrogen leaving their land by underground tile and reaching surface waters.

They also aerial-seeded cover crops on 70 acres over the Labor Day weekend ahead of last winter. "We're trying to see if we can build organic matter and reduce nitrogen needs. We seeded into standing soybeans early last fall, then strip-tilled into 4- to 5-inch-tall ryegrass after harvest," Dave says.

The Nelsons are continually performing tests on their land, trying two to three new technologies or production methods each year. "If you're not changing with the times and new technology, you are going backwards," Dave says.

Betts writes from Johnston.



FARMERS AND SUPPLIERS: Dave and Gary Nelson's farming operation complements their niche farm supply business. Both have experienced significant growth in the past three and a half years.

GETTING A START IN FARMING

"WE DIDN'T have enough land for Dave to farm with us when he graduated from high school or college, and we recommended Dave get experience off the farm," says Dave's father, Gary Nelson. "I thought I'd retire before he'd be back farming, but it happened sooner than that."

That's because Dave was aggressive in finding land to rent 10 years after graduation, and after leaving a promising sales career that took him through Monsanto and Ziegler Cat.

"Dave borrowed money as a high school junior to buy a big round baler, and that taught him responsibility," Gary says. "All our kids are level-headed. When Dave wanted to start farming, I was supportive, but he had to work to find his own land to farm. He and Fonda came up with a detailed business plan and a brochure explaining their business experience and their passion for farming. They talked to more than 15 land managers and many more landowners. Their hard work made an impression; many of those people are now their landlords."

Dave also worked to differentiate himself from other renters, pointing out that landowners could get 5% more cash rent in state tax exemptions by renting to a first-time farmer.

Today, Dave and Gary share labor and machinery in a 50-50 partnership involving them and their wives in Nelson Family Farms LLC, a fifth-generation Century Farm. Dave is in charge of the inputs, planting and strip-till operations, and Gary handles spraying and combine operations. They share the sidedressing work.

The two have weekly business meetings. "I'm quite a ways away from retiring," Gary says, "but Dave could take over at any time if something happened to me."

"I'm farming and doing business with my best friend – my dad," Dave says. "That's every farm kid's dream. I hope someday my son, Tyson, will want to do the same thing."

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