

FIELD OF DATA STREAMS

Adopting ag technology begins with a trusted cooperative partner. *By Joel Schettler*

On this bright morning in early May, Joe Ridl and his partners at Ridl Farms near Dickinson, N.D., work with an excited team of technicians to get new equipment into the field for the first time. The focus of attention: a Case IH model 2160, a 36-row planter. Only seven were built and six were sold in the world this year, says Ridl.

Like most modern farm machinery, the new model comes equipped with

an assortment of sensors to gather data. This planter includes pneumatic down pressure kits to assess soil conditions, row cleaners and variable-rate meters for planting.

“We’re really looking forward to getting out there and seeing what kind of data we can collect,” says Ridl.

Ridl owns and operates the farm with his uncle Kurt and father Arthur. Younger brother Rusty and another uncle, Keith, also help run the operation, which has been in the family since the 1940s. This year, they planted

nearly 4,200 acres of malting and food-grade barley and wheat, along with nearly 1,800 acres of sunflowers. In addition to row crops, the family operates a large feedlot of Holstein steers, plus a cow-calf operation with 150 registered Black Angus cows.

Early ag technology adopters have found information everywhere, collecting data from soil samples to weather to yield. But data comes easy; wisdom is hard-won.

As manufacturers big and small work to bring technological advances to the farm, the bigger >



Ridl Farms used this new Case IH model 2160 36-row planter this spring.



CHS Business Analyst Evan Sieling, left, and David Black, senior vice president and chief information officer for CHS, are working to help producers apply technology to improve farm economics and profitability.

Big Picture

Over the past decade or two, agriculture has made steady gains with yield improvements due by and large to biotechnology, says David Black, senior vice president and chief information officer for CHS. “That biotech curve is beginning to flatten.

“Yield improvements are now made from the aggregate of all farm decisions as opposed to just a move to a genetically modified seed,” says Black. “Clearly a theme that’s changing the way farms gain improvements in yield is through taking a broad look at farming practices.”

➤ question for the industry is the effect today’s suppressed commodity prices will have on the adoption of new technology and innovation based on new data-driven ideas. A farmer’s need to add value to the bottom line presents an opportunity for the valued cooperative partner.

On this day, as the group prepares to begin planting nearly 2,500 acres of corn, Ridl is joined by Ben Lee, an agronomist from CHS Southwest Grain, Dickinson, N.D., who helped create a plan to gather valuable data from across the farm and evaluate variable-rate test strips. Come fall, the data will begin to tell a story.

In recent years, much development and research in ag technology has centered on solving a single question: How are producers able to discern an overall pattern in the mass of detail that is available from the field?

In an agricultural downturn with thin operating margins, the inability to make best use of data that’s been gathered is just one reason some growers may delay adopting new practices, says Evan Sieling, a CHS business analyst and former regional CHS YieldPoint® specialist.

“The ability to use yield data, and what you can produce from it on its own, peaks pretty quickly. That’s a negative in producers’ eyes,” says Sieling. Context matters, he adds. “There’s a lot you can do and much more out there besides yield data that many growers may not know how to use. It takes

“I’ve begun to see how using all the data can affect management decisions.”

someone who’s really trained to turn it into something actionable.”

Producers may also avoid adopting new technology if they feel it will slow them down, says Sieling. Creating a plan and implementing new techniques on a larger scale “takes time any way you spin it, and time is money in the world of a grower.”

Overcoming these barriers requires a complete approach, says Sieling. The term “precision ag” means many different things for different people, he says. Instead it’s the

technology itself, paired with trusted relationships with local experts who will help develop management practices, that can turn data into decision-making.

Trusted Partner

“Everybody is talking about technology,” says Sieling. “You need a really good partner to get you into it, and it comes back to the personal touch. Probably the biggest barrier for producers adopting new technology is finding partners they can trust, who can really utilize their information and data and do something with it.”

Ben Lee worked in agronomy for four years before joining CHS Southwest Grain in late 2014.

“Data doesn’t really mean anything until you interpret it.”

“I’ve begun to see how using all the data can affect management decisions,” he says. Last year, Lee began working with Ridl to learn more about Ridl Farms’ yield data. Together they began working with CHS YieldPoint Services and Climate Corporation to overlay imagery with soil maps and other data to get a broader understanding of Ridl Farms fields.

During planting season, the group planted two quarter-sections of corn to test variable rates. “We set planting population as low as 17,500 kernels an acre all the way up to 26,500,” says Ridl. “We reduced population on some of the mediocre soils and increased them on some of the better soils to see if we could get more efficient.

“Throughout the year, we’ll work closely with our cooperative, Southwest Grain,” he says. “Ben

Lee will come out and do some stand counts and possibly some cob measurements around August-September. We’re going to have check strips out there as well.” Lee will help Ridl determine what effect a standard fertilizer rate has on the various seed populations.

“I would like more data before we get the whole farm involved,” says Lee, “but we are definitely starting to collect data. [The Ridls] see a lot of value in that; they have taken steps to make sure they’re going to get a lot of data collected this year.”

Combining grower yield data with other information from Climate Corporation and sources gathered by CHS will begin to give a more detailed picture of the farm. “Analyzing the information needs to be the biggest thing and that’s how I’ve been trying to help these guys,” Lee says. “Some might think a two-bushel difference from one field to the next just meant it rained a little more over there. But when you overlay yield data on top of planting and other data, you begin to see that it might be a seed variety or maybe it was a population difference.

“You can get the data into your hands,” Lee says, “but it doesn’t really mean anything until you interpret it.” And begin to act.

New Road Map

As new technology is developed for the farm, many providers attempt to bypass the retail environment and the agronomy relationship and go straight to the farm, says Black. CHS is uniquely positioned to take a different approach.

“Our strategy is 100 percent grounded in helping the agronomist and the farmer improve overall farm economics and farm profitability,” he says. “So our strategy is not grounded in the ➤

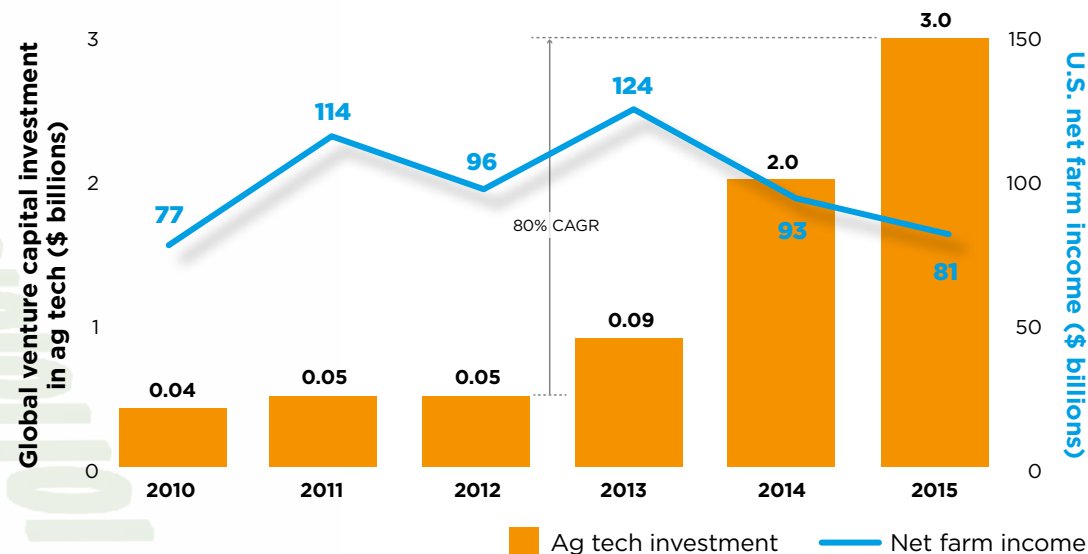
On the technology generation gap:

“Talking to younger-generation farmers out here who are still farming with their dads or uncles, it seems like that’s definitely the biggest conversation. The older generation says, ‘We’ve been doing it this way for years and it’s been working that way. Why would we want to spend a little bit of money to try it this way?’ It’s important to learn and be prepared for the future. Like they say, you’ve got to spend a little money to make money.”

— Joe Ridl, age 35



For North Dakota grower Joe Ridl, left, with his father Arthur, ag technology isn’t about expansion. Instead it will enable him to get the same work done without having to hire added help. “That’s how I’m looking at technology right now — to make some of our more mediocre ground more efficient and use our better ground to the best of our abilities.”



Note: Excludes venture capital investment in downstream technologies associated with food production and e-commerce, which are typically included in AgFunder’s reports. Source: U.S. Department of Agriculture, August 30, 2016; AgFunder

➤ individual technology itself; it's grounded in an agronomist-farmer relationship. How do we enable the agronomist through technology? What are the tools, what's the information and how can we manage the portfolio of solutions that an agronomist can use to help a farmer across the entire operation? That's fundamentally different than what anyone else is doing."

Where one technology today may help a producer select a seed and another may make a recommendation for a nitrogen application, says Black, "We are looking at all decisions and how they fit into the business plan. If we bring more technology to that agronomist and support that conversation with the farmer, that's the way."

Ridl considers himself tech-savvy. Often he will sit up at night and surf the web to try to answer his own questions, he says. "But on the other hand, when we are in the heat of the battle, I like being able to pick up the phone, call Ben Lee and say, 'Hey, what do you think of this? Can we do that? What can you find out for us?' And usually within hours he's got an answer for me. It relieves a lot of my stress; it's nice to be able to have resources to fall back on." ■

Agronomist Ben Lee of CHS Southwest Grain, Dickinson, N.D., left, helps grower Joe Ridl create a plan to gather valuable data from across Ridl Farms' acres.



SEE MORE — Watch a video with Ben Lee and Joe Ridl at chsinc.com/c.

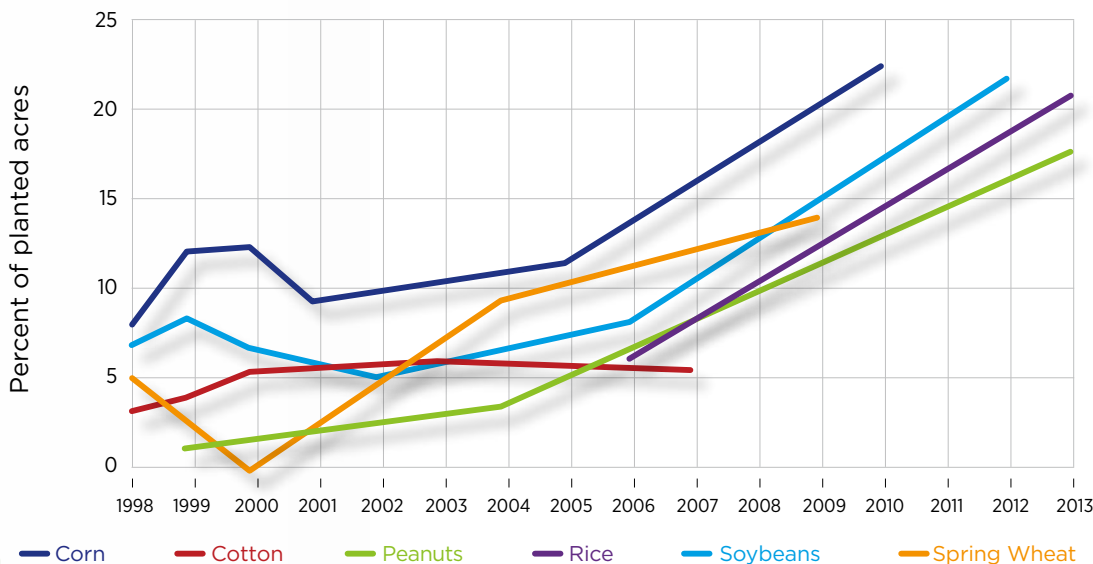
Large and Small Scale

In a study conducted by Farms.com, even a 1,000-acre operation can increase revenue (not profit) of \$20,000 to \$70,000 per year by adopting technology and acting on knowledge gained from precision data.

However, large farms are more likely to adopt these technologies, according to a USDA study released last fall. "The largest corn farms, more than 2,900 acres, have double the precision agriculture adoption rate of all farms: 70 to 80 percent of large farms use mapping, about 80 percent use guidance systems and 30 to 40 percent use variable-rate technology."

VARIABLE-RATE TECHNOLOGY ADOPTION RATE

Corn and soybean acres used more yield mapping than other crops in 2016, but use of yield maps increased for peanuts, rice and spring wheat over the previous year.



Source: USDA Economic Research Service and National Agricultural Statistics Service, Agricultural Resource Management Survey, 1998-2013, October 2016