

Scaling Connected Ag

**How Farmers Find Success With
Data-Driven Decision Making -
And How Trusted Ag Advisers
Can Help Accelerate It**

AMERICA'S CONSERVATION
AG MOVEMENT



It seems just about everyone wants U.S. farmers to get on board with data collection, analysis and decision making. Trusted advisers such as ag retailers are one of many important conduits for accomplishing this bold task.

Why the need? Depending on who you ask, data-driven decision making will:

- Unite agriculture and consumers through greater visibility into on-farm activities
- Open the financial spigot for farmers, providing premiums on identity-preserved commodities and access to ecosystem services markets
- Illustrate the economic and environmental benefits of conservation-oriented farming systems, with benefits for farmers, communities and society

These outcomes, and many others like them, are desirable and likely to come about. However, hoping to reach these goals today won't get us where we need to be tomorrow, and certainly not in the next decade. If you are a farmer or a trusted adviser, you know that well.

The Connected Ag Working Group is a precompetitive effort of America's Conservation Ag Movement (ACAM). The Movement is organized by Trust In Food, Farm Journal's sustainable ag initiative, in partnership with the Farm Journal Foundation. Financial and technical support is provided by USDA's Natural Resources Conservation Service and leading agribusinesses, food companies and nonprofit organizations. (See the full list of partners on the next page.)

The Working Group represents a cross-section of sustainable ag professionals who have found common cause helping farmers and their trusted advisers capture, analyze and make ROI-driven use of farm-level data for better economic and environmental outcomes.

From our perspective, taking action that improves farmers' lives right now is more important than continuing to talk about barriers without addressing them. That's why we decided to commission four focus groups with both farmers and ag retailers to learn firsthand the benefits data is offering—and the potential good it could do if farmers and their trusted advisers were properly resourced. Now more than ever, action is needed to help farmers adapt to a changing climate and participate fully in an increasingly digitized agri-food value chain.



As you will see, what we discovered is that the transition to data-driven farming will depend, first and foremost, on person-to-person relationships, knowledge sharing, and a safety net. Sure, new innovation and lower-cost access will undoubtedly help, but farmers and ag retailers note the immediate needs are often more practical – and the potential solutions more straightforward – than a mystical algorithm or a fleet of data wizards.

For example:

- Buddy seat ride-alongs for training and troubleshooting.
- 24/7 tech support that has a farmer's back in a pinch.
- Translational communication capabilities to help make sense of farm data in the context of local working lands.

Regardless of your professional title, consider this report a toolbox of ideas that have the power to help you or someone you know get started down the path to success in the future. You won't reach that vision tomorrow. But you can take the first step today.

Nate Birt
Vice President, America's Conservation Ag Movement
Trust In Food, Farm Journal's sustainable ag initiative

This report is possible thanks to the generous participation of the many Founding Partners of America's Conservation Ag Movement (ACAM) and collaborators. These leaders invested time, expertise and insights in making this report possible:

- Association of Equipment Manufacturers: Austin Gellings
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INSIGHT #1

Experimentation Reveals Data's Power

Historic records, select software and guesswork drive farmers and trusted advisers to find value in the numbers



To some, farming may seem like a game of chance: continually guessing about what the future holds in store and what cards nature may turn over. Successful farmers view running an operation more like a game of chess, where observation and strategy inform moves and countermoves, resulting in a given year's best possible yield.

"Every time you open a bag or open another unit, you wonder if that's the right thing to be doing that day at that time," explained one ag retailer participating in the Connected Ag focus groups. Long-time farmers have experience to draw upon. Newcomers may not be able to see what's on the horizon. Data analysis can help both find the right path forward.

When making decisions, the data flowing from technology deployed in the field and barn help farmers think several moves ahead. Farmers report that their reliance on data from planters, combines, milking parlors, ear tags and other sources continues to grow as data points proliferate and they determine which markers are most important to decision making for their own operations.

Unfortunately, farmers see limitations to the platforms for data analysis available in today's market. They cite differences in size, farmland, weather, equipment, crops, end-use of crops, presence of livestock, resources, goals and values as differentiating circumstances that analysis packages must account for. With a lack of customization, they often resort to using spreadsheets to manipulate the data themselves. However, one farmer in the focus groups commented that an operation may be able to find a "best fit" among the wide variety of platforms available.

In the focus groups, ag retailers reported that farmers take up data analysis for a myriad of reasons and it often has nothing to do with an innate love of data. Instead, many farmers find data can help them solve a problem. For example, some begin gathering data reluctantly at the request of lending institutions to secure financing. Others look for opportunities to improve procedures that create greater efficiency or eliminate waste to save money or reduce environmental footprint. One farmer remarked that it seems like the margins in farming get smaller every year. That leaves less room for error in operational decisions.

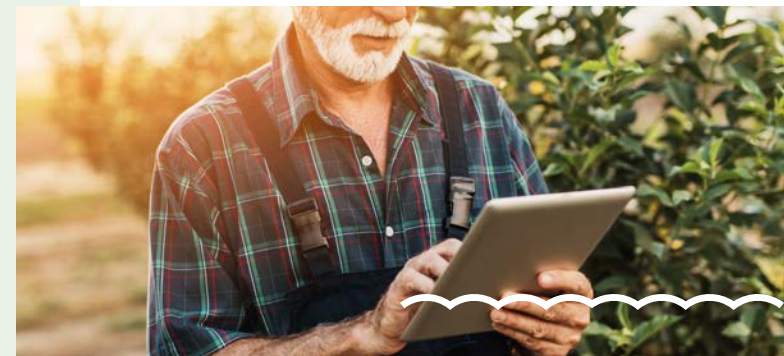
Focus group participants shared that nimble data analysis can reveal insights such as:

- untapped potential in a field
- land or animals that don't live up to the investment needed to sustain them
- how to fine-tune inputs to prevent waste
- when a hybrid lives up to a seed company's claims

Year in and year out, a successful farm relies on continual experimentation and measurement to survive these pressures. The data generated offers a standardized method to compare results and make educated decisions. One farmer commented: "I can only look at past results to see what's working. I use those past results from multiple years, so the value goes into the upcoming year."

“

There's so many variables that I think if we just went out and just planted the seed and didn't really care about anything, I think we wouldn't be in business very long. We literally have to sit here and analyze everything – what product, what input costs, commodity prices – just so we can still stay alive.” –Farmer



“

We want to demonstrate what each product [can do]. And [field trials] are good for us, too, so we know what kind of products work better than others. We have the option to sell different products. And so, when farmers bring us data, then we can analyze it and say, 'OK, Product X did better than Product Y by so many bushel.'” –Ag Retailer



<https://corteva.com>

Corteva

In November 2019, to support the goal to enhance biodiversity to improve about 75 million acres through sustainable land management practices and habitat conservation, Corteva launched LandVisor™ advanced brush management. It's a new integrated technology solution that combines sophisticated imagery, data, technology and expert guidance—enabling farmers and ranchers to manage their land for optimal productivity and environmental outcomes. LandVisor™ gives landowners a customized selective and sustainable pasture management approach that reduces unwanted and invasive vegetation, which allows new plant species to grow while keeping beneficial plants and trees in place.

To learn more, [click here](#)



“In an industry rife with change, one thing remains constant: we need an unwavering focus on increasing farmer productivity and profitability, solving real problems and maximizing the value they get from every cultivated acre.”

Sam Eathington, Chief Technology Officer, Corteva Agriscience

Training Could Expedite Data Usage

Straightforward investments such as buddy-seat and virtual support for farmers represent one greenfield opportunity for ag retailers



In a profession influenced so heavily by tradition, change is slow. Not all farmers feel as comfortable with reliance on technology as the early adopters. Some express concern to retailers regarding reliability and troubleshooting. Others say they just don't see the need to change what they do.

Several farmers noted that people or companies with intimate access to data from one operation (or many) could gain a negotiating advantage, such as outbidding farmers for the most productive farmland, as revealed by the numbers. They may also find ways to profit from repackaging or disclosing information that would not benefit the farm.

In the focus groups, farmers discussed the issue of trust when it comes to their data and cited pros and cons related to sharing data. These qualitative insights validate and add nuance to reports such as **“Farmer Perspectives on Data 2021”** from Trust In Food, a Farm Journal initiative. This report identified farmers' top three data collection barriers: cost (59% of survey respondents), lack of training or understanding (53%) and lack of needed equipment or technology (50%). The focus group farmers, who are experienced users of data, saw some silver linings, but even they perceive the many corresponding barriers that challenge them along the way.

In the Connected Ag focus groups, farmers said they saw several advantages to using data and a number of challenges:

PROS

- Recognize data sharing as helpful in promoting consistent input pricing
- Trust prescriptive recommendations made with locally captured on-farm data

CONS/BARRIERS

- View data as too complicated to use or understand
- Perceive data, particular to a specific operation, has limited value away from that farm
- Strive to maintain a competitive edge that sets them apart in the marketplace
- Maintain privacy: The information is not anyone else's business
- Ask whether data can be trusted, especially when poor data collection is an ever-present risk
- Lack comfort with sharing the financial data some tools require to provide analysis



Almost universally, the ag retailers in the focus groups pointed to improved education and training whether in the cab or in the office as the path toward building understanding and trust in the marketplace. Ag retailers and manufacturers alike can share in this effort.

In ag retailers' view, such support can illuminate how turning on the monitor in a tractor or combine benefits farm operations. Farmers also need greater confidence that equipment manufacturers and dealers can provide quick support if a problem suddenly idles machinery.

Ag retailers expressed the need to help farmers understand exactly how shared data will be used and who will see it. They added that farmers need assurances their data won't be sold to third parties or used to put them at a disadvantage.

Technological innovation paired with powerful data-driven decision making will be essential to drive productivity, efficiency and environmental stewardship on farms and ranches of the future. Yet even more pressing than innovation is the need to forge deep, multi-year, trustworthy relationships between farmers and trusted advisers.

There is rich potential for knowledge transfer, building capacity, and boosting confidence while honoring a farmer's right to independence and privacy. For trusted advisers committed to customer retention and service, this could flip the script, moving data from a liability and a hassle to a valuable commodity for farm operators. Available training and rapid-ready data support services can lead to successful navigation.

“Every combine or tractor, there's room in that cab for two people. I think that's one of the best ways we can train. I know, the way things are going, that's not what we want to do. But maybe to get the operator started. Everybody wants somebody to show them what lever to flip and what button to push. You've got to understand why you're doing [what you're doing]. The buddy in that buddy seat, I think, could help a lot.”
—Ag Retailer



“We try to limit who knows all of our data. Not that it's that private, but I just think that there's only a few people that can actually benefit from it – myself and the ones I'm working with.” —Farmer

 <https://simpas.com>**SIMPAS**

SIMPAS is an application system that enables farmers to sustainably address multiple agronomic issues, accomplished through one simple pass-through delivery of up to three SIMPAS-applied Solutions at planting. Agronomic data generated by other sources can easily be used to develop problem-specific prescriptions and the SIMPAS equipment allows farmers to deliver only what's prescribed, precisely where it's needed.

In September 2021, AMVAC Chief Operating Officer Bob Trogele authored an article about the market for soil health products aligned with the market for carbon credits. He discussed how SIMPAS, SIMPAS-applied Solutions, and Ultimus can help farmers to validate their use of products that enable soil health and carbon credits. To read the article, **[click here.](#)**



 <https://sustainabilityconsortium.org>

The Sustainability Consortium

Announced in September 2021, the Resilient Agriculture Accelerator Fund is a pre-competitive, corporate-driven fund designed to leverage federal, state and private foundation grants for amplified impact investment in U.S. farms in order to scale conservation agriculture and resilience. This fund will bridge the gap between initial upfront costs to implement conservation and regenerative practices (including digital record-keeping), and long-term returns from cost savings or participating in carbon and nutrient markets.

The Sustainability Consortium helps advance sustainability through THESIS. THESIS is the independent, science-based, performance management solution that allows brands and manufacturers to understand the sustainability story of their products, to quickly identify ways to improve, and to communicate that story to retailers, customers, investors and consumers.



Low-Tech Help Must Complement Digital Adoption

Farmers and ag retailers are aligned in their desire for prescriptive analysis, with proper safeguards

In today's farming environment, reliance on eyes and memory is not enough. Seeing how harvest plays out from the seat of a combine and playing that against past experience can certainly identify a problem such as yield loss, and narrow the field of potential causes.

In our focus groups, ag retailers share that the biggest hurdle often lies in getting their clients to sit down with them for a detailed review of field data. This type of run-through with an adviser, whether a salesman or an agronomist, can reveal unrealized potential in the field and generate a plan to achieve that potential.

Ignoring a farm's data is like playing a guessing game. As one ag retailer in the focus groups described it: "You're coming up with reasons in your head on why this field was so bad when you did the same thing to another field and that ended good. It's all trial and error. So, you want to do soil samples, tissue samples, and try to demonstrate where the yield losses or a problem came from in the field." Some farmers prefer to pass on this effort and just want the adviser to fix it. "That can be an issue," he continued.



As helpful as a single conversation can be, the reality is farmers depend on multiple sources for advice. A single farmer might draw on multiple co-op resources, an agronomy manager at a fertilizer plant, local salespeople and even an independent agronomist. "No one person sees all of my data," commented one farmer. Another farmer shared, "There's not really a trusted adviser, per se, that gets all of our data and looks at it without us being around."

For the farmers actively using data to drive decisions, multiple perspectives are valuable – as are analog tools beyond farm management information systems.

"I have to bring in a lot of people to help me analyze it because I just can't hold it all," one farmer explained. "I am also going to bring it to my own pen-and-paper environment so I can almost physically massage it, because no one platform can do everything we need."

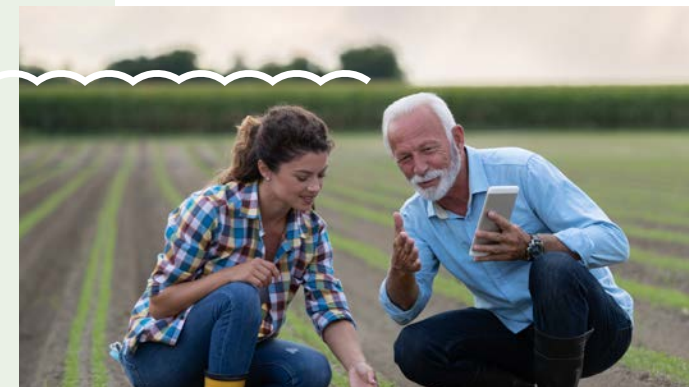
This underscores past Trust In Food research: one-quarter of farmers surveyed say paper or another non-digital platform is their primary data-collection method. It also adds further nuance in that even the most data-minded farmers depend on tools beyond digital to really think through the enterprise and solve for problems they feel technology can't.

Another focus group participant stressed the importance of seeking impartial perspective, often from a family member farming in a different region, because that person has no stake in the evaluation of a trial performed on the operation.

One ag retailer even suggested confidentiality agreements might be more widely adopted to ease farmers' minds about sharing information. This would enable trusted advisers to provide support by bringing more perspectives to the conversation.

“What’s neat is when you get them to try something that they thought was completely off – there’s no way that would ever work. And maybe it doesn’t work perfectly the first go around, but it’s enough improvement that they see there’s potential there. Don’t ever eliminate anything because you think it won’t work or that never, ever worked for your father or predecessors.”

–Ag Retailer



“You need to structure this like a major corporation does and these [farm data reviewers] are your trusted advisers. And really, you need to call a board of directors meeting once a year [where] everybody sits down and you look across the table from each other. That would be where I would share information.”

–Farmer

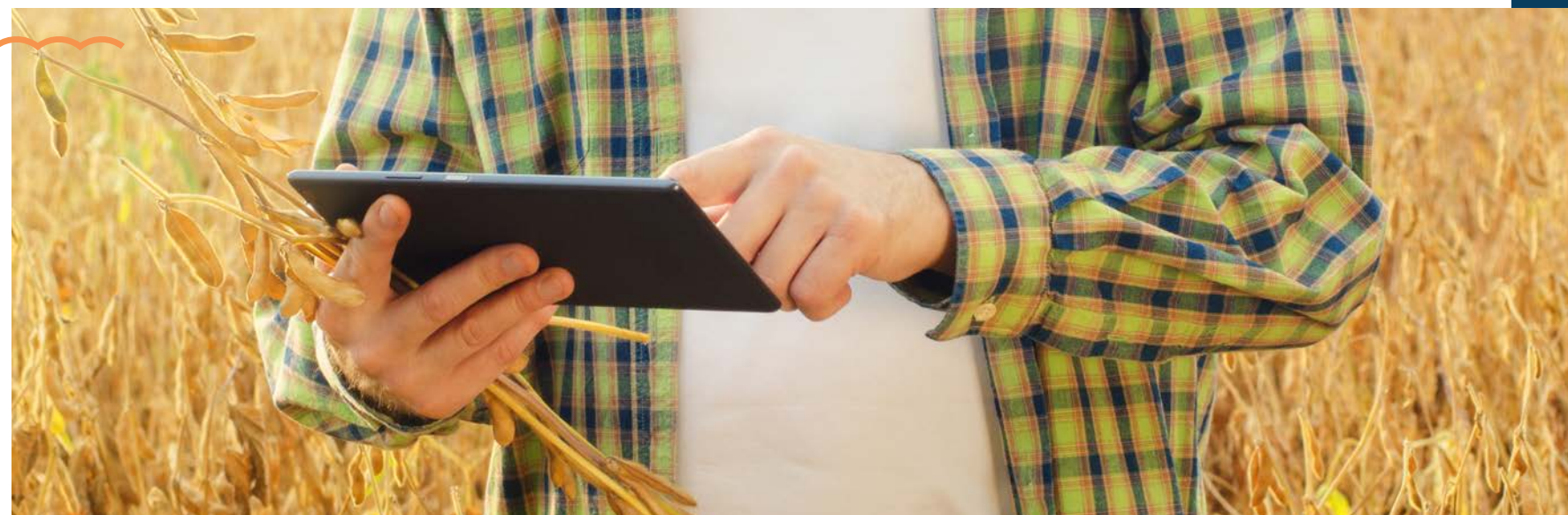


<https://valent.com>

Valent

In constant pursuit of developing relevant innovations to advance sustainable agriculture, Valent U.S.A. LLC is proud to share our first digital solution for ReTain® Plant Growth Regulator for California (ReTain) on almonds. This mobile application utilizes cutting edge machine learning techniques and harnesses orchard specific data and localized weather to help growers optimize the timing of ReTain and maximize almond production.

To learn more about Valent and how they are developing sustainable solutions for growers, [please visit here](#).



“Commercial sustainability is about how our portfolio fits into the farm and with growers and their sustainability practices. Our goal is to create tools supported by credible science and data, so growers are able to take our tools and solutions and translate them into something tangible and of value on their farm. I’ve challenged our R&D team, ‘As you’re going through the discovery and development process, let’s capture everything that we can from a sustainability perspective, so it fits into our total messaging when we get ready to launch that product.’ Water and soil health metrics fit into that message around sustainability. We need to make credible data part of our robust portfolio message.”

Matt Plitt, Executive Vice President and Chief Operating Officer



INSIGHT #4

Farmers Need Predictive Modeling

Retrospective data is limited in usefulness, so ag retailers seek to help more farmers capture good numbers to inform future plans

Adapting to new procedures and incorporating new technology takes patience and follow-through. Farmers in the focus groups questioned whether new data streams are valid. Is the technology working properly? Are specified procedures being used? Are data being entered accurately? How can they be sure?

The truism “garbage in, garbage out” pervades farmers’ perspectives on the data revolution. Those interviewed harbor concerns that any corruption of data reduces the value of their investment of time, effort and capital in using data to guide more farm decisions. “We have faith in the different softwares,” offered one farmer. “But yet, we don’t have enough faith to base our decisions solely on what it might show.”

Another shared: “I spend the winter months making decisions, entering data, and I make sure that I’ve entered when I spray [crops]. And then at harvest, the data comes up from the varieties I put in at planting time. You’re constantly making sure and trying to enter data correctly.”

Once data are collected and interpreted, it can tell a farmer a lot about the past season and guide decisions as the next season’s plan takes shape. Yet these farmers explain that backward-looking data isn’t sufficient. Predicting what might happen next is just as important, if not more so, and it’s also a major challenge.

“There’s always this unknown factor [that affects the growing season]. How do you put that factor into all this data?” one farmer shared. “That’s when you’ve got to fly by the seat of your pants analyzing all this data for the next season. You’ve got to have Plans A, B, C and D when it comes to springtime.”

A second farmer agreed, stating: “You get a hailstorm and everything is just gone, or last year, with COVID, you wanted to do this, but you can’t get the chemical. It’s not out there, not available. Having a Plan B is the only way, and having background data is how you make educated decisions. They’re not always the right ones, but at least they’re educated.”

From ag retailers’ perspective, patience is also necessary in efforts to help more middle-adopter farmers integrate data more deeply into their operations. One focus group participant suggested phasing in new technology and data collection tools slowly at the individual farm level. This would enable farmers to get comfortable with a smaller-scale application of data before taking the next step. It also might limit the risk of paralyzing the entire operation in the event of a problem.

Ag retailers pointed out the need to use in-field activities as an educational and support opportunity to help farmers. “Just the use of GPS on a tractor when you’re planting can help your population so much,” explained one retailer. “And that can help with stand counts and not overpopulating when you’re planting through your end rows.”



“We basically map everything from planting to spraying and whatnot, then lay it on to our harvest map. Then, we will sit down in the winter and add the layers to one another, per field, and look it over. We’ll look at the cost difference if we tried something else on a different field, and make our decisions based off that.” –Farmer

“You’ve got to take it one step further. You bring something. You show that success of whatever you are trying to show to the farmer – whether it’s the yield, whether it’s working fewer hours, whether it’s the new technology. But definitely do more advertising, more reaching out, more going over there.” –Ag Retailer

 <https://usdairy.com/about-us/innovation-center>



Innovation Center for U.S. Dairy

The Dairy Farm Environmental Stewardship Considerations and Resource Guide was developed to make it easier for farmers to identify practices and technologies that may help to reduce a dairy's environmental footprint.

In April of 2020, following a yearlong consultation process, the Innovation Center for U.S. Dairy set an ambitious new vision of dairy as an environmental solution with collective goals in areas where dairy currently has the greatest impact. By 2050, U.S. dairy collectively commits to achieve GHG neutrality, optimize water use while maximizing recycling and improve water quality by optimizing utilization of manure and nutrients. [Click here to learn more.](#)

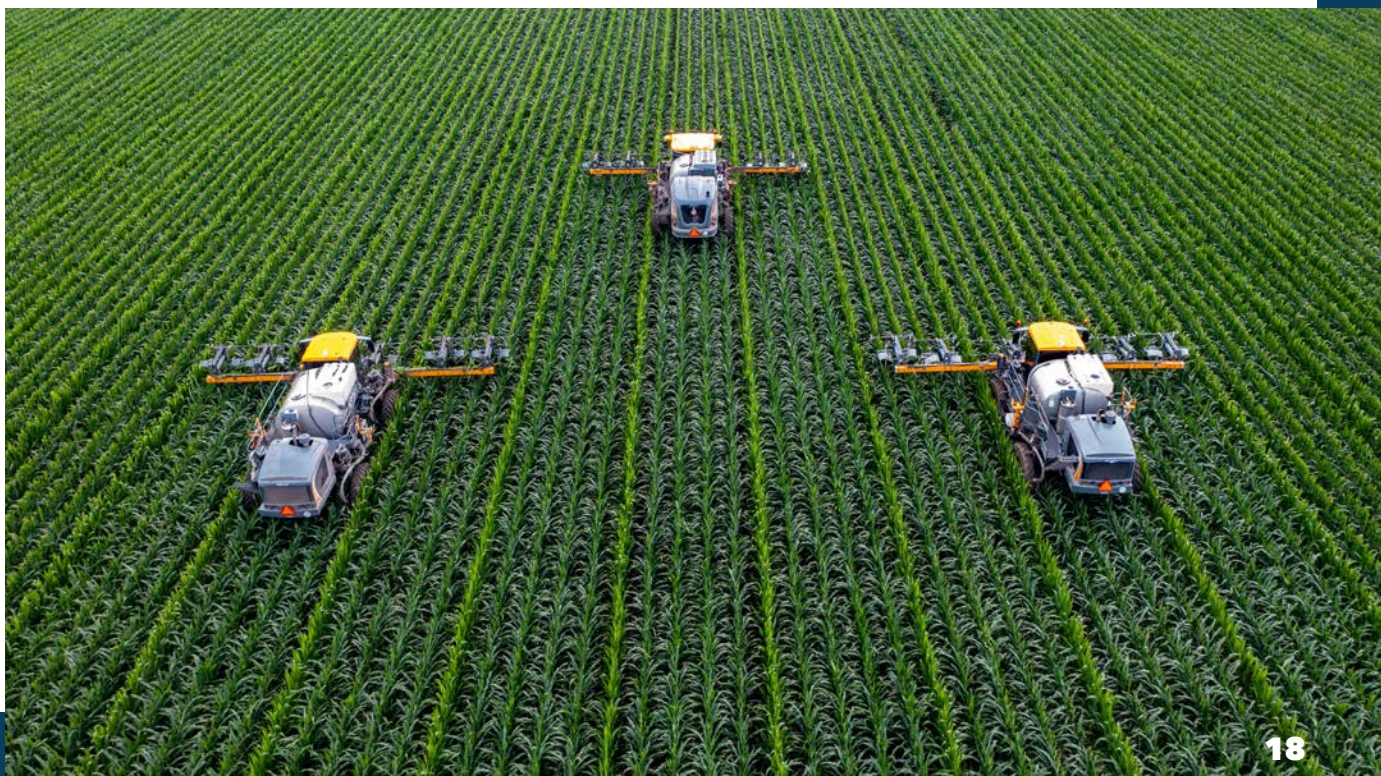


<https://nutrien.com>**Nutrien**

Nutrien's Agrible is a future-driven digital agronomy tool that lets growers plan today with data that's looking forward to tomorrow. This means growers have access to field-level weather data and real-time yield and soil fertility projections. Mother Nature can be exceedingly difficult to plan for, so having advanced technology to help plan day-to-day operations is a huge advantage for growers.

Nutrien's Feeding the Future Plan aims to transform agriculture through six commitments.

[Click here to learn more.](#)



Industry Should Prioritize Interoperability

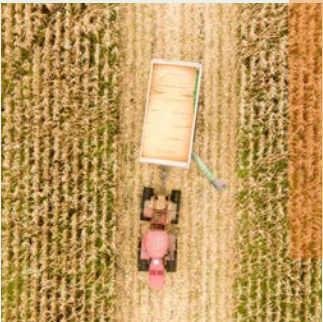
Farmers value data in different ways, and ag retailers can design outreach and support services to hit that sweet spot

According to focus group participants, the industry must take two steps for farmers to feel more comfortable relying on and accelerating adoption of data-driven decision making. First, open a path to interoperability while continuing to innovate with new technology solutions. Second, provide swift and accessible support—both in the field and in the office.

Farmers and ag retailers reported likeminded concerns about the real-world consequences of pervasive proprietary data systems. There's no question new innovations and tools bring value to farmers and retailers, as farmers reported working with a mixed bag of equipment and machinery. The challenge becomes getting those devices to talk to one another. When they don't, farmers are left to jerry-rig solutions for mapping out and matching data points sourced from different manufacturers. Both farmers and ag retailers called for a universal standard for communication across equipment and brands.

One farmer summed up the continual struggle to keep up and generate usable data from his equipment: "Every time we get things figured out, an update changes things and we have to figure it out again."

If manufacturers are too far down the road to change, focus group participants noted, an independent platform might be designed to communicate with equipment across the farm and aggregate data from all sources. Farmers stressed that current solutions try too hard to serve all of agriculture with one platform and create brand loyalty by making the application of technology and data streams unique to their systems.



Some farmers even suggested that ag retailers and other service providers explore ways to coach farmers in best practices for data interpretation. For example, advisers could develop resources with strategies for using data to address common questions in the field, with resources for drilling deeper based on what the data points say.

Ag retailers agreed with the farmers in calling for universality in equipment and pointed out that today's farmer is less likely to be brand-loyal than past generations. Once again, they also stressed education and training. Lastly, they acknowledged that it can be a challenge for farmers to wrap their minds around the many interrelated parts of data-driven decisions.

One ag retailer offered this caveat: before education can be successful, motivation must exist. The human dimension of data and technology adoption can't be understated. It falls to ag retailers to identify what aspects of ag data appeal to a particular farmer-customer and use that to drive excitement about making change.

“Producers often have good intuition or understanding of the land that they’re working. But when we have numbers that can confirm or deny some expectations that we have, then we’re able to ask really powerful and precise questions. They start to apply really intelligent solutions.” —Ag Retailer

<https://trimble.com>


Trimble Connected Farm

"Advancing Connected Agriculture is critical for the entire Ag industry as it works to produce more with less, all while protecting and preserving our environment. The data the farmer produces holds the keys to improving productivity by providing insights into operational efficiencies, profitability through better input allocation, and sustainability by opening up new markets such as carbon credits. By connecting on-machine devices to the cloud and then working with trusted advisors to leverage that data and draw insights, the farmer is driving both his or her operation and the Ag industry as a



whole into the future. As one of the few companies that offer both in-cab technology and cloud solutions, Trimble is able to not only connect machines in the field to the cloud but also create connected workflows that enable collaboration between different players up and down the Ag Value Chain on the Trimble Ag Platform."

Cory Buchs

Director, Trimble Connected Farm



INSIGHT # 6

Data Can Unlock Diverse ROI

Solid partnerships between advisers and producers can yield long-term, valuable insights

Although farmers frame their investment in farm management information systems and technology in different terms—such as bushels per acre, total spend and cost per acre—most interviewed agree their data investment generally ranges between \$10 and \$15 per acre.

Yet most farmers in the focus group couldn't articulate the ROI of that data investment. Instead, they described the ROI of specific farming practices and business decisions as a proxy for data value.

For example, yield increase is often the preferred measure of ROI on the farm, in the case of row-crop farmers. But not all decisions can be reduced to that level of simplicity, especially for livestock producers.

One cattle rancher described how data-driven insights led him to change his use of paddocks for grazing. By initially limiting the area available to cattle during the first few days in a new paddock, the animals did a better job of consuming the grass available to them before moving on. This increased efficiency within each paddock and gave resting paddocks more time to regenerate. On the whole, the farm has experienced lower forage costs and greater production—a tangible return that's saving money and improving the rancher's final product.

Data can also inform row-crop strategies. One farmer converted a field to dry land and sold the water rights to a nearby feed lot after data illustrated that an irrigated circle wasn't producing to potential. The farmer then used revenue from the water sale to purchase a more productive circle of land to farm.

A simpler way to assess data ROI may be to ask the question: "Once I have the data, do I use it?" One farmer elaborated on this principle: "When you incorporate data software, you ask yourself not necessarily how much it cost you but, 'Do you need what they offer? And are you going to be able to use what they offer?' So I agree a specific dollar amount is probably not logical for most farmers."

Another farmer expressed it this way: "As you begin to look at that data and start to make decisions, once you get that deep into it, ROI may not be as important as compatibility with your operation."

Easy ways to verify a salesperson's or adviser's data and technology recommendations can also be more valuable to some farmers than direct ROI. One farmer shared how he uses data to validate whether a tool is pulling its weight. "We've got to see that things work for the way we farm," he said.

Data-driven decision making on inputs can also deliver ROI to farmers, ag retailers added. "We run different trials because, if they're hesitant about fungicides, then maybe they don't want to do a whole field," one focus group participant explained. "We can put it on half the field or do a block in the field to demonstrate the ROI."

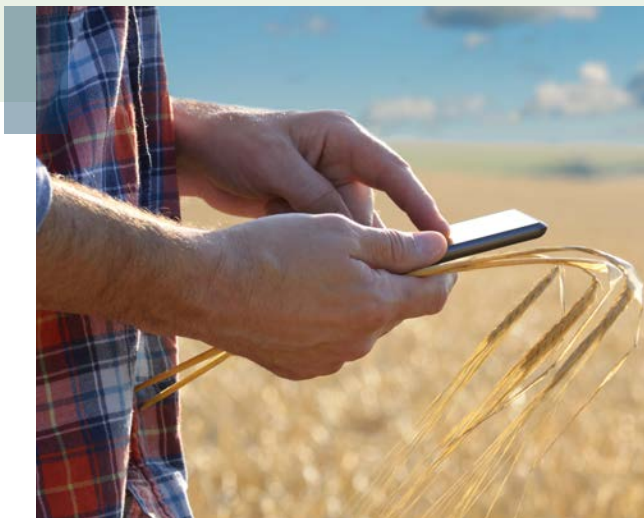
When they're harvesting, we can go back and block off where we did that fungicide and show them: [this] listed 10 bushel better than your untreated."

Above all, data's value should be determined by its compatibility with farmers' existing insights, and often generations of work, gleaned from their own unique lands and with their own herds. Data will never replace farmers' lived experiences.

"I can't stress enough that you still need to get out of your tractor cab," one focus group farmer noted. It's important to observe what the planter or combine is doing and how it is performing. So is walking the field, taking stand counts and spending time with farmers' and ranchers' herds scouting for irregularities. Participants agreed this manual tradition of observation can help determine what questions an operation's data must solve and where, within the vast quantities of data generated, the answers might lie.

“We try to get a mutual understanding between us and the grower that we’re out here trying to produce the best possible crop to get the best return. So I’m here to help the farmer, and we want to be able to look at that data coming out of the combine [to establish ROI].” –Ag Retailer

“It started out more that I thought it’d be great for record-keeping. I started there at a basic [level]. And I liked it and moved up. It costs a little more as you move up the scale, but it’s hard sometimes to put a return on investment on that stuff. But I can definitely say it does return. So it works.” –Farmer



 <https://aem.org>

Association of Equipment Manufacturers

To view the Environmental Benefits of Precision Ag Study from AEM and its members, [click here](#).

AEM Sustainability Council launched on Oct. 8, 2020. The Council was created to advance our member companies' efforts in addressing these issues related to building a sustainable future and to provide a framework for the adoption of best practices and innovation.



<https://aggrowth.com>**AGI**

"Connected ag is vital because we want to be able to document the practices farmers use, so they get credit for their stewardship of the land. We can do that by digitally documenting the crop from field to bin to consumer. Ultimately, by promoting more visibility, we add more value to farmers and ag retail."

Jason Tatge
Sr. VP AGI Digital



 <https://certisbio.com>

Certis Biologicals

The Find Your Solution Tool at certisbio.com enables farmers, retailers and distributors to solve problems quickly by entering data and identifying corresponding solutions and products to meet their needs when time is critical.

Certis Biologicals was founded on the need to develop sustainable, biological answers to the problems that growers face when feeding the world. In June 2021, Certis joined America's Conservation Ag Movement (ACAM) to bring the message of the sustainability of biologicals into the Movement's conversations about the health of soils, water resources and environment.



<https://ncga.com>


National Corn Growers Association

NCGA proudly led the Soil Health Partnership for seven years, working with 200 farms and farmers in 16 states to develop a farmer-led research network that could measure the impacts of implementing soil health practices on working farms. The program achieved its purposes, and the data collected is currently being catalogued and analyzed for further dissemination and sharing as NCGA moves forward with plans for how to take the learnings from the on-farm research conducted to scale up conservation on the vast majority of corn acres across the country. Some of the work and learnings are housed in the SHP informational resource library [found here](#) and the farmer resource library [found here](#).



Additionally, [Conservation's Impact on the Bottom Line](#) was a culminating report released in February 2021 to help farmers better understand the financial impact of conservation practices. SHP farmer accomplishments are also [highlighted here](#).

Working together to amplify impact in both market development and sustainability, leaders from the beef and corn industries came together again for an episode of the National Cattlemen Beef Association's series Cattlemen to Cattlemen on RFD-TV. [Beef and Corn: Working Together in a Sustainable System](#) panel participants include Bruce Cobb, Executive Vice President of Production for Certified Angus Beef; NCGA President and Ohio farmer John Linder; Brandon Hunnicutt, a Nebraska farmer and NCGA corn board member; Ohio Corn and Wheat Growers Association Vice President Ben Klick, who raises both corn and beef; NCBA President-Elect and Minnesota farmer Don Schiefelbein.



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