Co-Alliance is one of the largest agribusiness and supply cooperatives in the Midwest. It has roots in the community extending back to the 1920s. Co-Alliance is a 100% farmer-owned partnership of local co-ops. In order to give the farmers what they need -- hyper-local, accurate, real-time weather information -- to make better decisions on their farms, Co-Alliance has installed a network of over 200 Davis weather stations. The team established a grid that covers 2.3 million acres and installed a Davis station every five miles, each communicating via a cellular network. With this network in place, Co-Alliance members get current in-field weather information, forecasting, and historical data online through their DataOnTouch™ and WeatherView™ apps.

One of Co-Alliance’s most recent and exciting innovation relates to something very critical to productive farming: nitrogen. Co-Alliance has developed a Nitrogen Distribution Model (NDM) that leverages data gathered by the Davis Instruments soil moisture sensors in conjunction with the soil temperature probes installed throughout the Co-Alliance farm grid.

The Importance of Nitrogen
Nitrogen is the most important determinant of plant growth and crop yield. Farmers add nitrogen to the soil in the form of nitrates in fertilizers. Plants lacking nitrogen show stunted growth and yellowish leaves. Plant growth and crop yield usually increase when nitrogen is added, but too much nitrogen can also cause plant problems such as weak stems in grain crops (lodging) and reduction of crop quality. Too much can also damage the waterways into which runoff occurs, causing algal blooms and depleting oxygen. Matching nitrogen availability in soil solution and crop uptake needs is critical to improving production, while avoiding over application of costly fertilizers. The model Co-Alliance developed is aimed at ensuring that informed decisions are made for proper management of water and nitrogen resources on a farm.

The biggest advantage Co-Alliance’s model has over other NDMs is that it uses data from localized sensors installed in the fields of their members. It is not just modeling based on static values; it is measuring in real time. Incorporating the farmer’s in-field data when modeling improves accuracy. This real-time, accurate data are critical to the farmer’s ability to make well-informed decisions. The model has been so successful, Co-Alliance is considering offering it as a separate platform to their customers.

Decisions Driven by Mother Nature
In many cases, critical decisions are based on which way the wind blows... and how fast it’s blowing, and the temperature and rainfall and humidity, too. Co-Alliance farmers get hyper-local data on all weather variables.

“The farmer’s factory doesn’t have a roof; weather affects everything they do,” says Luke Lightfoot, Ag Technology’s Director for Co-Alliance. “For example, wind is a key factor to consider when determining the best time to spray the crops.”
Davis: The System of Choice
When they were designing their network, Co-Alliance knew that the success of its model depended on precision instruments. The model and information could only be as good as the data were accurate. And those instruments had to be tough and affordable. That’s why they chose Davis Instruments.

While Co-Alliance has already created an impressive network of Davis systems, they aren’t done yet. They continue to add more. By adding more stations, they hope to make their model even more accurate. They also hope to expand coverage and find additional co-ops to partner with.

Davis weather instrumentation will be right there as Co-Alliance grows their network and lets more farmers enjoy the success that comes with accurate, useful, timely, and accessible information.

The Measure of Success
By staying nimble and offering its deep expertise, Co-Alliance has been able to make their farmers more productive. Co-Alliance’s experience in farming, along with the data from the Davis Instruments weather stations, has built a strong trust in the farming community. Trust that continues to grow. This family of farmers band together and aim to prosper together with the help from Co-Alliance… and Davis is proud to play a part in this collaboration.

Co-Alliance’s Typical Davis System
- A wireless Vantage Pro2™ integrated sensor suite
- A wireless/cellular Vantage Connect®, CDMA
- A Davis soil moisture/temperature station with four soil moisture sensors and four soil temperature probes

www.davisnet.com  (510) 732-9229  sales@davisnet.com