How Ag Technology Can Combat Labor Shortages

Over the past few years, the agriculture industry, among others, has been the facing the repercussions of the COVID-19 pandemic and economic-based issues. One of the most significant outcomes is the labor shortage that has ravaged the world – which is especially troubling in such a high-demand industry.

The COVID-19 pandemic, partnered with a variety of factors, have resulted in the labor shortage we see today:

- Low interest
- Wage requirements
- Increase in education and job opportunities
- International policies

With limited labor availability, everything becomes more complicated. The consequences of this labor shortage have resulted in less time and resources – causing a rise in costs and losses. In such a high-demand industry, this labor shortage has had detrimental effects.

For agriscience, this has made it challenging – if not impossible – to find the workers required in the field to count and measure plants to understand growth rates, which are imperative to understanding how well plot trials are performing. And, without this data, what can researchers do to progress their research ahead?

To the Rescue: Advancements in Ag Technology

Digital agronomy and associated technologies have become more popular in recent years. Much of this is because the technology itself has become more advanced; but it has also resulted in some solid proof points that help users understand the return on investment.

Before we dig into the value that ag technology can provide in lieu of labor shortages, let's highlight some of the most significant innovations in digital agronomy.

Ag drones and sensors have come a long way in the past decade. From capturing aerial data to serving as spot sprayers in the field, they have a number of different applications that transform crop health and performance management.

Using ag drones and sensors for high-resolution imagery has gone beyond providing multispectral indices for imaging. Initially, these outputs were focused on RGB, Normalized Difference Vegetative Index (NDVI), or Normalized Difference Red Edge (NDRE) maps.

These are helpful, as it provides insight into what is happening within the field based on the health of the plants. However, it doesn't provide enough detail or measurement for research purposes.

In recent years, companies like Sentera have started to use machine learning to translate these indices into detailed data sets – delivering measurements to understand what is truly happening within the field.

The result? An indication of what's happening across the field, like what does emergence look like or how uniform are plants growing. It also results in data sets that analyze each plant's vigor, maturity, and health. Crop height, flowering, canopy cover, and tassel count are some of the most popular data sets that are available for researchers in agriscience today.

How Does This Help the Labor Shortage?

The combination of drones, sensors, and detailed analytics have transformed the data available to researchers; but it is also a key toolset for data collection – resulting in more precise, accurate data that's captured faster than manual methods.

Instead of requiring the researcher and his or her team in the field to capture data for plants, ag drones and sensors can capture this data across numerous plot trials or fields in a fraction of the time – in fact, Sentera has found that it can save 25% of time invested in data collection compared to manual methods.

What's more, this results in full coverage of the area with the ability to capture more data points on a more frequent basis because of the time savings. For those teams that don't have staffing for pilots, Sentera offers Flight Services, which hires out pilots and equipment to capture the data.

When it comes to research trials, trusting in the data serves as imperative. Without accurate data, there's no clear indication of what's happening in the field. This makes it challenging – if not impossible – to validate outcomes and truly understand performance.

Relying on humans to capture data points for many, many plants across several trials inevitably results in error. Humans get tired and mistakes are made. Technology also offers the ability to replicate across plots to ensure consistent and exact results.

This is why drones and sensors built for the ag industry have gained significant traction in the past decade because they eliminate human error, reducing the chance for erroneous data to less than one percent.

It also provides an opportunity for faster data delivery. For researchers in agriscience, data collection requires some data for immediate analysis and other data sets that are reviewed in post-season. Either way, relying on technology can mean that these data sets are delivered 50% faster – helping to inform critical decisions when they matter most.

In Summary: Trust in Technology for Labor Needs

There's no indication that today's labor shortage will improve any time soon, and many experts predict that this will push the fourth agricultural revolution – one focused on digital ag tools – ahead faster.

Now is the time to rely on ag technology like drones and sensors to get the detailed measurements and data sets required to understand what's happening at the field level. While it does require some upfront analysis to understand how it will impact and change the research study at hand, it will pay for itself tenfold.

The ability to capture more accurate and precise data faster, helping researchers validate outcomes and make critical business decisions. The result? The ability to bring products to market faster to continue to drive the future of agriscience ahead.

Faster data collection and analysis provides you with more time to make critical decisions while utilizing less resources, costs, error, etc., fueling more successes in and out of the field.

Now is the time to get the technology needed to gain fast, accurate, in-depth data while saving time, resources, and money. Visit **sentera.com** to learn more.