

Choosing Your Data Collection Method to Analyze Plant Health

As new challenges have surfaced throughout the years, data collection methods have evolved to withstand these difficulties. New technologies and services have been developed to provide easier, more efficient options for collecting plant health data.

With less time, resources, and available labor, leveraging ag technology – like aerial imagery – collects more data, faster. Ag data capture ranges from manual capture to satellite and drone imagery, all working to get the detailed data sets needed for powering critical decisions and validating outcomes.

Each medium has its own advantages and shortcomings - begging the question: which method is best for collecting plant health data?



Boots on the Ground: Manual Data Collection

The age-old method of manually collecting data has been a preferred method for generations. Manual data collection was the first go at precision agriculture and still plays a significant role in gaining insights into crop and plant performance throughout each stage of the growing season.

Manual data collection allows a more hands-on look at performance than other methods. When looking for crop damage, measuring crop growth, or identifying pests or diseases, a close-up look allows for a more personal perspective and depth into what is occurring in the plots.

With boots-on-the-ground scouting, only specific areas are being covered; then that data is applied to the whole field, resulting in subjective data and guesswork. And there is no room for human error and subjectivity in ag research and product development – which is a common problem associated with manual data capture.

To complicate it further, the existing deficit in labor availability and a rise in labor costs means finding and maintaining manual scouting can be implausible. This method is not only less reliable and getting harder and harder to come by, but also time-consuming without achieving a look at entire field performance.



All Systems Go: Drone Pilots Ready

Boots on the ground scouting can go hand-in-hand with newer ag technologies, drastically simplifying the ag data collection process. Ag drone systems offer a birds-eye view to identify indicators of field performance, crop health and growth, and areas needing additional sampling. Once the imagery is captured, it can direct manual data collection by pinpointing problem areas and where attention is needed.

Becoming a drone pilot or building an internal team to manage flights throughout the season requires owning the equipment, which may require a bigger budget than what was previously allocated. And, when you own your equipment and manage the schedules yourself, the entire process becomes more flexible (well, as flexible as Mother Nature allows). Flexibility in scheduling flights opens the door for more flight opportunities and taking advantage of spontaneous perfect conditions.

Now owning the equipment can be double-sided, meaning it has its perks and its disadvantages.

When one owns an ag drone system, they need to be familiar with each aspect of it. Knowing the drone, sensor, and software systems' capabilities is critical to mission success. Beyond that, piloting a commercial drone flight – which is what flying over crops is considered – requires adherence to some federal regulations, like Part 107 certification.

Don't have a trained pilot or never flown a drone before? Sentera's Flight Services team offers pilot training to capture the data analytics needed for validating outcomes and supporting agronomic decisions.

Don't Want to Fly Yourself? We Fly For You!

Whether it's time or labor constraints or the challenge of procuring funds for equipment, becoming a drone pilot may not be the best option for you or your team.

But that doesn't mean you can't take advantage of the detailed analytics generated from aerial imagery. Sentera's Flight Services boast 250+ trained pilots around the world to do it for you – traveling to your fields, capturing the aerial imagery that needs to be collected, and uploading them for processing to get the detailed insights you desire.



With as little as two weeks' notice, the Flight Services team at Sentera can build out a data collection program with some information from you and your team. Depending on the analytics, information like planted date or desired row fill may be useful; but at the very basic level, the team just needs to understand which fields, what analytics, and when the flights should occur.

After all, this is what the Flight Services team does – they have flown over 10,000 missions with a 98%+ success rate. There are a number of unpredictable factors in every season, but getting your data collected doesn't have to be one of them.

In Conclusion: Finding the Solution for You

When choosing the appropriate data collection method, it comes down to the problems in need of solving; as well as the wants and needs of the operation.

It is also important to consider the resources available – can you spend a few days in the season walking the fields to understand what's happening? Of course. Should this be the pinnacle of data collection for your research or product development program? That's up to you – but knowing how important accurate analytics are to validating outcomes, leveraging a trusted and proven solution may be a better option.

Visit www.sentera.com to get a more detailed look into products and resources – such as Flight Services.