As farm manager for a large-scale operation in southern Minnesota, the growing season was an extremely busy time for Chad Galles. Putting together a comprehensive, accurate picture of what was going on across 8,200 acres of corn, sweet corn, peas, and soybeans spanning more than 200 miles proved to be a real challenge.

Stand count is an especially important metric to Chad, and it was not uncommon for him to spend two full days driving out and taking samples from fields across the 8,200 acres in an effort to measure it. However, Chad is quick to admit that this method was neither efficient nor particularly accurate, since it required so much time and lacked precision. He needed a way to measure his stand count quickly and with greater accuracy. Chad and his team tested several different solutions:

“We tested four different products, but Sentera was the most engaged, and wanting to understand what we need as a consumer. They tried to figure out how to make their product fit our schedule. They were at the table, visiting with us two to three times through this process. That meant a lot to us because that means they’re listening and they’re engaged, and want to learn. That’s all we ask out of a supplier because we don’t have a lot of time.”

Growers have long struggled to find an accurate, efficient method for determining stand count. Current methods involve selecting a small area of the field (typically 1/1000 of an acre), counting the plants within that area, and extrapolating upon that number in relation to the overall size of the field. The problem with this method is twofold: people tend to select areas that are easily accessible (i.e. near the edge of the field), and the sample size is too small.

The Sentera team first visited Chad early in the spring of 2017. He explained the challenges he faced when it came to measuring stand count while the team listened, took notes, and asked
questions—in order to come up with an effective solution, it was important to fully understand his pain points.

The team got to work right away, and before the seeds were in the ground, they had designed a solution that could give Chad a significantly more accurate stand count in just a few hours: using a drone fitted with a Sentera Double 4K sensor, the team would fly the fields, taking approximately one photo per acre (this approach is called spot scouting). The data collected via these images was combined to create a spot map, which Sentera used to calculate the average stand count of each acre, and then extrapolate from to determine the stand count of the entire field. The resulting stand count maps clearly identified areas of potential concern. Initially, Chad was skeptical:

“We planted 25,000 to 26,000 plants per acre, and Sentera came back and said that we had about a 23,000 stand across the field. I went out—because you don’t trust any technology right away—so I’d take the map and walk out to the spots that they said had the lower stand count and higher stand count, and they correlated. So that gave me confidence that Sentera’s solution provided an accurate stand count, and that we had potential for a good crop. It put my mind at ease two weeks into the growing season.”

Sentera’s solution proved to be both reliable and cost-effective; taking just one photo per acre (instead of thousands) meant that there were fewer data points to process, so the spot map could be rendered quickly. It also offered Chad increased visibility, allowing him to identify problem areas and make informed, timely decisions about how to address them:

“Time is money, and making a replant decision is very critical because you don’t have a lot of time—you’re already into the growing season. The solution Sentera brought back laid an overall average on the map—you could see color trends and pockets of concern, so you could go out and ground truth it really quickly. You could send someone out—your consultant, yourself, some of your guys, divide and conquer—to the four or five fields that you need to check and make a quick decision. We’ve never had that before.”

Sentera views every customer relationship as a partnership. Understanding the challenges faced by ag professionals is the first step to developing solutions; that’s why Sentera takes advantage of every opportunity to hear from customers directly. Chad’s story is a testament to the benefits of open dialogue and continuous improvement.