# Local Fertilizer Consultant Improves Strawberry Season

## Customer

Dylon McClure is a drone specialist working for Nutrien. He didn't start with drones though. His passion for helping local growers with technology had him looking into the company's Echelon Precision Agriculture solution. With a resolution of 5 meters, the solution allowed for more precise application of the company's products than past generations of growers could dream of. Dylon saw room for improvement though. Contacting the company providing satellite imagery, he discovered getting anything more than 5 meters of resolution with one flyby per month guaranteed was far too expensive for their operations.

### "5 meters by 5 meters is absolutely ridiculous; you don't get anything out of that."

He researched ways to improve the data they had to work with and stumbled on the DroneDeploy solution. Here was a solution that allowed him to run out to the local Best Buy, spend a few hundred dollars on an off-the-shelf

Customer: Nutrient, Fertilizer, Pesticide, and Pest Control Sales

Challenge: Improve PCA & CCA Effectiveness

Solution: SlantView Analytics

Results: Early identification of crop issues. drone, and start gathering better data the very same day. Dylan was ready and soon gained permission to run a pilot program within the local Nutrien office he worked at. The goal? Work with an existing CCA to increase profits by \$74,001 in the first year.

## Challenge

The pilot program was initially deployed with a local strawberry grower. Throughout 2018 it ended up servicing 4200 acres of strawberry fields. Near the start of the project limitations with an off the shelf DJI and DroneDeploy's software became apparent to Dylon. While DroneDeploy was happy to work with him, they ultimately realized they couldn't supply what he needed, and referred him to SlantRange for a solution that fit his needs. With proper due diligence Dylon checked out other providers of high-end agricultural drone solutions and ultimately settled on SlantRange. He preferred their software and their team felt more responsive to his needs.

Nutrien's primary goal throughout the program was to do good for their growers. The primary work Dylon and his partner did was evaluating the crop for nutrient solutions. Their goal was to address issues with the crop as soon as possible and help the grower realize the best yield possible. They wanted to take precision agriculture to the next level for their client.

Throughout the year Dylon flew the fields every month, following on with stress reports as requested by the grower. At the outset of the season correlating data to

action wasn't easy. While the data was clear and detailed, interpreting it was left to them. This is because light reflection is different across crops, and the cause of changes varies just as much. An indicator of overfertilization in one crop may be an indication of pest damage in another. Ground truthing to confirm the data was an important part of the process, especially early on.

## Solution

As the season continued it became easier to correlate various readings with possible issues. One of the largest advantages of the drone-based solution over satellite imagery became obvious early on, the resolution. With satellite imagery, every pixel in the final picture represented 5 square meters of the grower's field. The drone resolved images at 2 square centimeters. Individual leaves on plants became visible using the drone solution. The other major advantage was speed. Dylon had results for the grower right at the side of the field in minutes after the flight was done. There was no need for a high-speed internet connection or heading to town and coming back out for a follow-up analysis appointment. The grower was impressed with getting results so quickly after seeing other solutions take hours to process images into useable maps.

The speed and accuracy went a long way towards identifying issues and finding a solution for the grower immediately. Ground truthing was done with a high level of accuracy in location, allowing the CCA Dylon worked with to maximize the usefulness of his time. In one instance, the map showed two spotted spider mites hiding under a leaf. Ground truth proved they were there, and actions were taken to prevent the mites from turning into an infestation. In a more extreme example, they identified a pest issue while doing fertilizer consultation. They brought it to the grower's attention and discovered a PCA hadn't been doing their job to the level advertised, and they did it in time for that PCA to turn around and regain control of the situation.

#### "...unexpected sales of product for that part of the season all done from the images collected from SlantRange."

The results throughout the year have been impressive. In this particular region, strawberry growers are very particular about their irrigation practices. So much so, Dylon had been warned not to bring up over or underwatering without airtight proof. The drone solution provided that proof and followed it up with proof that cutting back on irrigation lead to a 14% chlorophyll content comeback in less than 2 weeks. This was faster and more accurate than any other method they had available for this task.

By the end of the season, Dylon fell just a little short of his \$74,001 goal, but the entire team counted the season, and the pilot program, a success. The growers they worked with had improved yields, the branch brought in more profit than it would have without the drone, and their lessons learned have set them up to be even more successful next year. He looks forward to continuing his relationship with SlantRange, pushing the boundaries of current technology, and helping identify useful new technologies. Resource allowing, he would like to bring the drone solution to more growers and more crops in the coming years, changing the agricultural industry from the inside, one flight at a time.