

Black Grass Detection in the UK

Customer

Jack Wrangham is a commercial drone operator in the UK. His company, Drone Aerial Operators Group, provides services to many industries, and specializes in providing solutions for the agricultural industry through DroneAg. With almost a decade in aerial photography he entered the drone industry early and has ridden the leading edge ever since.

Challenge

In a continued quest to provide better data for farmers Jack needed more than simple pictures coming

Customer:
Agricultural Drone
Service Provider

Challenge:
Black Grass Discovery
and Tracking

Solution:
DJI M200 with
Slanrange 3P Sensor
System

Results:
High-Resolution easily
updateable field map
showing Black Grass
locations

back in from his field fly-overs. Standard cameras in the visual range weren't providing the data needed to count individual plants, detect weed growth, or measure plant health. Even basic heat-mapping and NDVI wasn't enough, leading him to seek a solution with more than just a calibrated sensor. He found one that included powerful software and useful algorithms.

Solution

When his company was contracted to help track a black grass infestation in an Oil Seed Rape field, Jack knew it was time to bring out a DJI M200 with Slanrange's 3P line of calibrated multi-spectral sensors. The solution includes not only an ultra-high-resolution sensor but access to Slanrange's software and Smart Detection algorithms.

With a flight lasting less than one minute per hectare the sensor provided an image resolution of just 4cm per pixel from 100 meters. Within minutes of landing the full dataset was processed and presented. Jack worked with the farmer to mark locations on the map where Black Grass was growing with the Smart Filter feature, allowing the software to then take over and show where else the same multi-spectral signatures

appeared. Right away they understood where the combine inadvertently distributed Black Grass during harvest.

Taking the information from the map they then did some spot checking in the field, providing hands on verification and tuning of the dataset. This fine-tuning translated to fewer false positives on not only the current map, but also on future maps from the field, and different fields.

Results

Knowing where Black Grass has encroached on the field allows the farmer to tune his treatment plan, saving time and money. With the increase of multiple-herbicide resistant black grass strains, knowing exactly where in each field the weed is located allows the farmer to fine-tune control methods even more so than per field.

The Slantview software saves changes to the automated filter, alleviating the need to walk the field in the future. Next time, a fly-over alone will provide the farmer with all the data he needs to know the effectiveness of the treatments. Filters persist not only from one field to the next, but from one season to the next, allowing methods that take advantage of the non-persistence of Black Grass to also be evaluated year over year with minimal future tuning required. The farmer is able to increase accuracy and start treatment sooner with the detail provided.

As DroneAg researches more and better drone solutions for agriculture on their 6000-acre farm Slantview continues to be a tool in their belt, providing industry leading sensor data and the software to take advantage of it.