



Precision agriculture on-demand with Pix4D Fusion

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When a crop is damaged, there's no time to waste. The Pix4D Fusion program offers precision agriculture on-demand.

Drone mapping has been the 'next big thing' in precision agriculture for almost a decade. But the start-up cost of buying a drone and training the team to use it is a lot for busy farmers.

The **Pix4D Fusion program** bridges the gap, as one farmer and drone service provider discovered recently.

A valuable, vulnerable crop

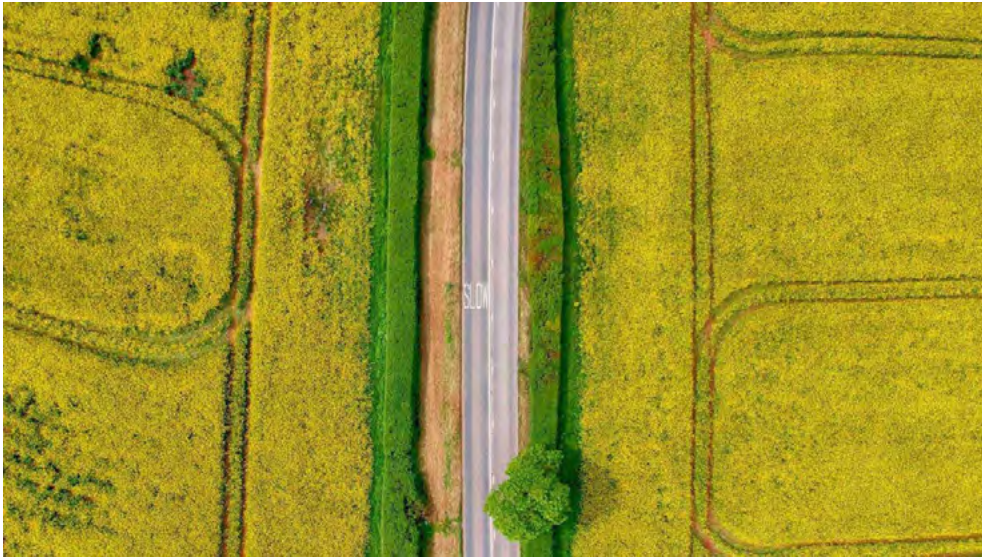
England's 'green and pleasant land' is dappled with brilliant yellow rapeseed fields. The crop (also called rape, oilseed rape, and canola) is known for its characteristic bright-yellow flower and is cultivated for its oil-rich seed.

Rapeseed is one of the highest yield oils - its dark black seeds are 45% oil - and the other 55% is high protein animal feed.¹ It's one of the world's major oil crops, and of the 70 million tonnes produced annually, 2.2 million tonnes is produced in the UK. Rapeseed is one of the most common break crops in the country. Break crops are generally a pulse or oilseed crop grown instead of cereals. Introducing a break crop typically improves productivity and economic value.²

As a high input, high output break crop, oilseed rape has become increasingly important over the last decade for intensive arable farmers. It can provide a good income and goes well in a rotation with wheat, which is often the most profitable cereal crop.³

However, rapeseed is extremely vulnerable to a large number of pests, diseases and animals such as wild game: particularly pheasants.

To make this crop more viable, farmers and service providers across the UK are exploring new technologies such as drone mapping and precision agriculture to scout and assess the fields for any potential issues.



Drone image of a rapeseed field

Pix4D Fusion in action

With the introduction of the **Pix4D Fusion** program we have opened the door to drone mapping for precision agriculture on demand.



Pix4D Fusion combines hardware, software and training

A drone, camera and software can be rented for a specific period, allowing users to leverage the technology for seasonal issues, without a large upfront investment.

One of our early adaptors for Pix4D Fusion, Chris Eglington, CEO of Crop Angel, did exactly that.

Crop Angel specializes in the delivery of agricultural services using UAV technology. They were, one of the first companies to offer crop spraying drones within the UK. They also work closely with YEN (yield enhancement network) on their momentum project which involves farmers trying out different treatments and timings of various applications onto various crops to optimize workflows and yields.

Project details

Company	Crop Angel
Location	Norfolk, England
Project description	Field assessment of pheasant/wild bird damage to rapeseed crop
Project size	6.1 ha/15 ac
Data capture	432 images totalling 3,118 MB
Processing time	6 minutes
Hardware	DJI Phantom 4 Pro + DJI RGB camera
Software	Pix4Dfields desktop , Pix4D Cloud
Outputs	Orthomosaic, index map

A rapeseed farmer was concerned about the damage caused by pheasants, and needed an accurate damage assessment of his field. The farmer asked the Crop Angel team drone mapping could help.

By renting a Pix4D Fusion bundle, Crop Angel was able to perform the assessment in no time.

“The ability to rent the drone bundle for the period of time I really need to use it, makes my workflow really flexible and if my project ends up taking longer than expected I can simply extend the rental.” says Eglington



Pix4D Fusion

Crop damage estimation with drone mapping and Pix4Dfields

Eglington performed one flight using the DJI Phantom 4 Pro mounted with a DJI RGB camera. Once the data was collected, the 432 images were uploaded and processed in Pix4Dfields.

“With the bundle I rented, I also got the Pix4Dfields software which I have used before so I know I can just process my images directly in the field without needing an internet connection. Plus I can show the damaged areas to my client immediately,” Eglington states.

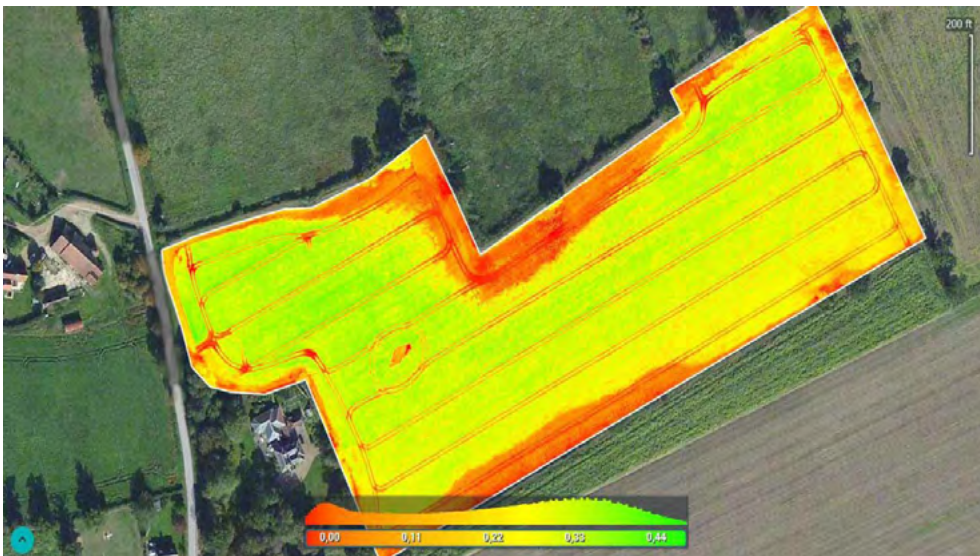
The total processing time for this project was six minutes.



Orthomosaic of a rapeseed field generated in Pix4Dfields

The initial overview showed two main damaged areas which the index map supported even further.

“With an index map you get another level of certainty. In this case is pretty obvious even just from the orthomosaic, but there are cases - like pest damage where an index map will show more information than the orthomosaic,” Eglington points out.



TGI index map of the rapeseed field generated in Pix4Dfields

With the PDF report tool, Eglington created an overview of different software outputs his client requested and then continued to the area damage assessment. Once the orthomosaic was generated, Eglington uploaded it to Pix4D Cloud and by using the measure tool calculated the size of the damaged area.



Measuring the damaged area in Pix4D Cloud

“I think it’s important to have tools to support your work, because in situations like these it becomes essential to have a way to prove and provide context fast and accurately in order to negotiate compensation,” Eglinton concludes.

Ready to get started?

Interested in trying out the precision agriculture technology on your farm? Take the first step and discover Pix4D Fusion flexible bundles.

References

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- ¹ **“Break Crop Benefits - West”**,
Grain Research and Development Corporation, 3 March 2011
 - ² **“Who what why: Why is there more oilseed rape being grown?”**
BBC News, 29 May 2012
 - ³ **“The supply chain of fats: Rapeseed oil”**,
Sustainable Food Trust, 26 July 2018
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Online version : www.pix4d.com/blog/precision-agriculture-on-demand