Precision Agriculture: To Fly or Not to Fly?

Andrew Williamson Nsch
Why Precision Agriculture?
Precision Farming Experience

- Yield Mapping and Target soil sampling – 2007
- Variable rate application of P, K and N fertilizer – 2008
- Auto Section and Height control on Sprayer – 2010
- Variable rate seed - 2013
The Three Pillars of Precision Agriculture

- Machine Control
- Variable Rate Application
- Data Management

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Use of UAV’s on my Travels
The Challenge
Winter Barley
GS 27: 7 Tillers
“Brome patches still purple but plenty of it & no chemical control available!!”
Winter Barley
GS 65: Mid Flowering
“Brome grass widespread, pre-Harvest glyphosate a must”
Winter Barley
GS 87: Hard Dough
1 week before dessication
Winter Wheat
GS 75
Andrew Williamson Nsch

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Data is king

- Spatial variability - measured at a given time
- Temporal variability - same place but different time
- Collection is easy
- Analysis is more challenging

“We are in the business of Precision Ag not Picture Ag”

Andrew Smart, Precision Cropping Technologies, Australia
Data is Precision Agriculture’s palette of paint
Farm: Walton Farm  
Survey date: 27/05/2015  
Field name: Sandpits  
Field area (ha): 27 ha  
Brome area (ha): 4.31  
% Brome cover: 15.95

Brome detection map

> 10 T/ha

<1 T/ha

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Layers of Data
Moving Data to the Field

Terry Aberhart, Saskatchewan, Canada
Bucket List

- Disease monitoring
- Nutrition management
- Weed Identification
- Autonomous Data transfer
Conclusions

• “To Fly or Not to Fly? Yes to collect data

• Data analysis has to be good enough to determine the cause of variation not just measure it

• The value of the data is in the analysis

• Data management has to be simple, intuitive and freely accessible across all devices from controllers to a smartphone
Precision agriculture has to be based on good agronomy. Precision agriculture will not make a bad farmer into a good farmer, but can make a good farmer into a better farmer.
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Thank You

For the complete report see http://nuffieldinternational.org/reports/

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