

## Real-time Field Maps for 5 components in Corn using the CropScan 3000H On Combine Analyser.

### Introduction:

Corn is the worlds highest production crop. The uses for corn are much wider than those for wheat and barley. Corn is used to make corn oil, corn starch, corn flour, high fructose corn syrup, popping corn as well as being consumed by humans as a vegetable, by animals as feed and in the production of bio-ethanol fuel.

Corn production requires considerable amounts of water and nitrogen fertilizer. As such management of Nitrogen fertilizer is important for optimizing the yield and reducing input costs.

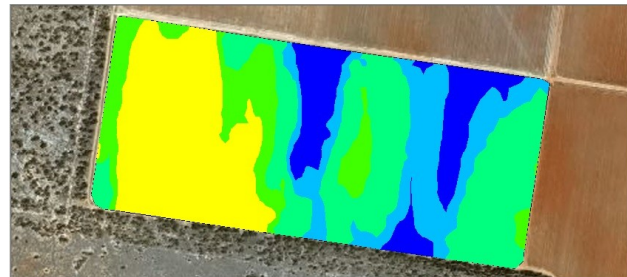
The CropScan 3000H On Combine Analyser has now been modified to measure corn in real-time. By widening the flow cell the CropScan handles corn even at higher moisture contents, i.e., 20%.

The CropScan 3000H scans the NIR spectrum from 720 to 1100nm. Within this region, protein, moisture, oil and starch absorb energy. Calibration models have been developed in association with Iowa State University, Ames, Iowa, Grains Laboratory. Corn and soybean samples from as far back as 2009, have been scanned on a CropScan 1000B. Calibrations for protein, oil, moisture, starch and density have been developed and transferred successfully to the CropScan 3000H On Combine Analyser.

### Results:

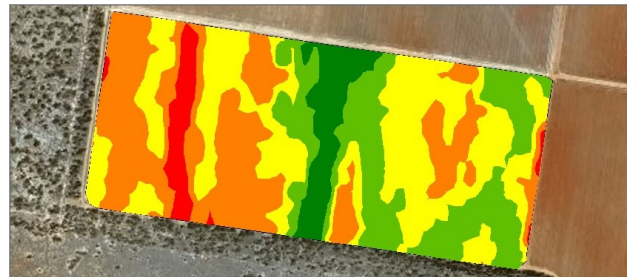
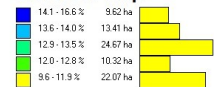
This case study provides maps generated from over 3000 readings collected from a 81 hectare corn field in Hillston, NSW. Readings were collected approximately every 15 seconds as the combine travelled down the field.

The maps show the variation that exist across the fields. The moisture map shows several zones with high moisture, i.e., 17%. The protein map shows that the Nitrogen uptake varied by 100% across the field.



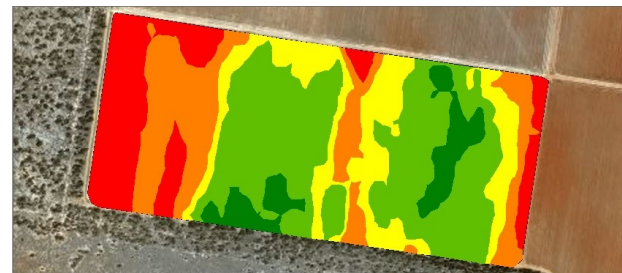
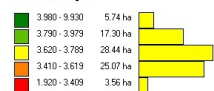
Corn Harvest 2017

Moisture Map



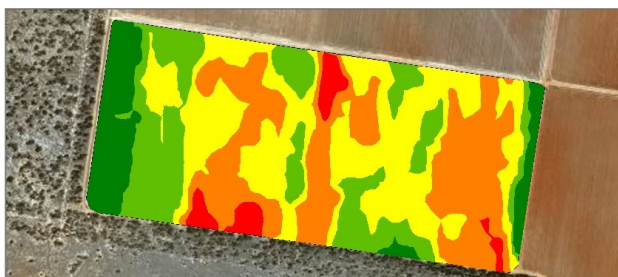
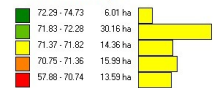
Corn Harvest 2017

Oil Map



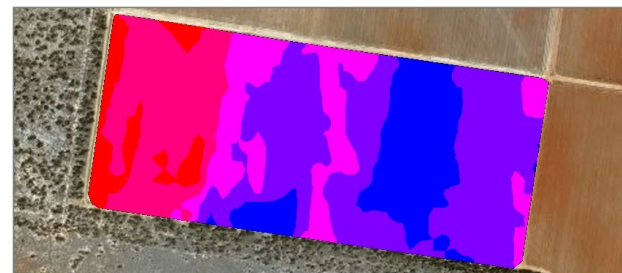
Corn Harvest 2017

Starch Map



Corn Harvest 2017

Protein Map



Corn Harvest 2017

Density Map

