# 3300H On Combine Analyser

*… Closing the Yield Gap*

## CropScanAg Solutions Return on Investment Analysis

### Introduction:

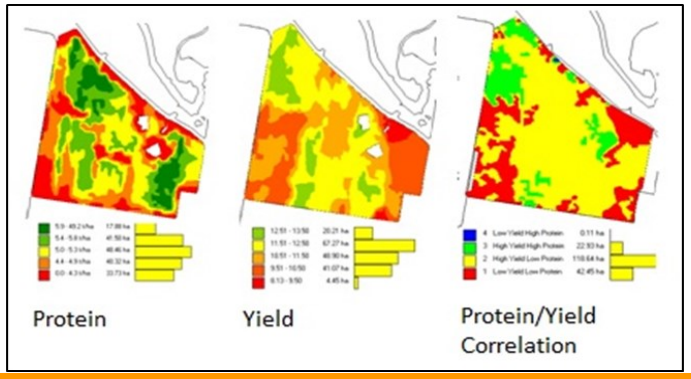
Next Instruments has developed a new tool for the grain farming industry, i.e., the CropScan 3300H On Combine Grain Analyser, that measures Protein, Moisture, Oil and Starch in cereal grains and oil seeds as they are harvested in the field. CropScanAg Solutions has developed a new service, CropScanAg Farm Data Manager, that collects the Protein, Moisture, Oil, Starch and Yield data along with the GPS coordinates from the combine and processes the data to generate Farm Field Maps for:

- Protein, Moisture, Oil and Starch
- Yield
- Protein/Yield Correlation Quadrants
- Nitrogen Removal
- Sulphur Removal
- Nitrogen Use Efficiency
- Water Use Efficiency

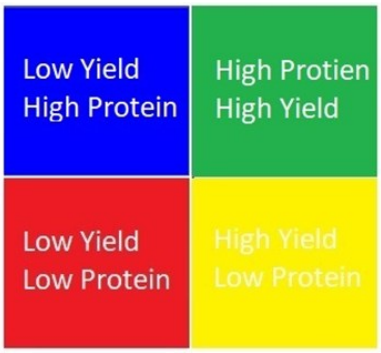
These Field Maps provide farmers with a complete picture of where and how much Nitrogen is taken up and used by the crop to produce seeds across the fields. Based on real Nitrogen measurements, the CropScanAg Farm Data Manager provides a means of generating Variable Rate Nitrogen Fertilization prescriptions that produce a Positive Yield Response to adding Nitrogen fertilizer.
This document demonstrates how the CropScanAg Solutions service provides a Return on Investment to farmers.

### Protein/Yield Correlation Quadrant Maps… Performance Zone Maps

The CropScan 3300H and CropScanAg Solution Farm Data Manager provides a simple solution to Variable Rate Nitrogen Fertilization based on measuring Protein in grains as they are harvested. By combining Protein and Yield along with the GPS coordinates, a Protein/Yield Correlation Quadrant Map can be generated. Figure 1 shows the Protein, Yield and PYCQ maps for a wheat field harvested in 2016. Note that the distribution of Protein was between grades ASW, APW and H2 and the Yield varied markedly across the field. The PYCQ map shows four performance zones; i.e.,



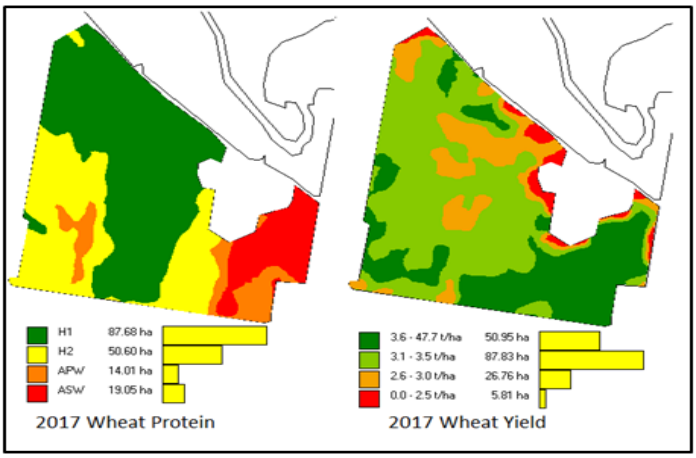

High Protein/Low Yield (Blue)
High Protein/High Yield (Green)
Low Protein/High Yield (Yellow)
Low Yield/Low Protein (Red)




Research shows that where the Protein is less than 11.5% the Full Yield Potential has not been achieved. By identifying the zones where the Protein is Low then a Positive Yield Response can be achieved by adding more Nitrogen for the next harvest.

Figure 3 shows the same field for the 2017 harvest.
A simple 3 rate Urea fertilization strategy;

| | |
|---|---|
| 120kg/ha | Yellow Zones |
| 100kg/ha | Red Zones |
| 80Kg/ha | Green Zones |




The 2017 harvest maps, figure 2, Show that the variation in Yield across the field has been reduced by 40% and the Protein has been increased whereby the bulk of the grain is graded H1, i.e., +$30/tonne Protein premium. The farm calculated that they gained 0.4T/ha and an increase in Protein premiums to the value of $14181 or $81/ha.

**Next Instruments Pty Ltd**
B1 366 Edgar Street, Condell Park, NSW, 2200, Australia
Tel: 612 9771 5444 Email; sales@nextinstruments.net Web: www.nextinstruments.net