

Strip Trials give Insight into Maximizing Protein and Yield Response

Post harvest mapping of Protein and Yield data allows farmers to quantify their planting and fertilization program. Yield data has been used for many years as a way to zone fields and then prepare VFR applications. Now with the CropScan 3000H On Combine Analyser farmers can measure Protein in their crop and thereby more effectively and accurately define the zones in their field. Combining the Yield and Protein data to generate Nitrogen Removal Maps provides farmers the tools to increase productivity and profitability.

Discussion:

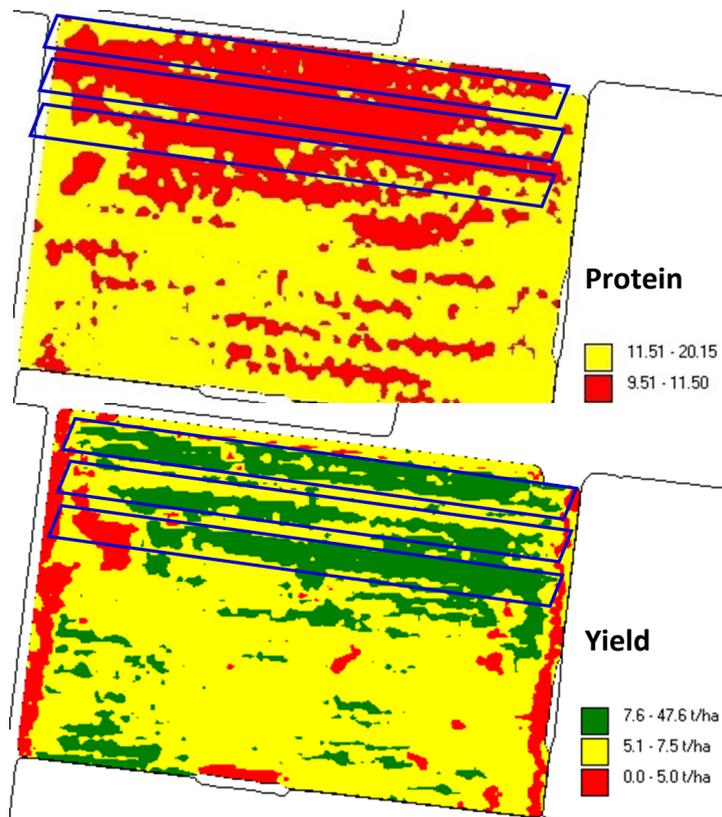
The Protein Map shows three Nitrogen Strip Trials applied in a wheat field in South Australia during the 2016 harvest. On the three strips, 100kg of Urea was added above the 200kg that was initially added across the entire field.

The farmer imported his data sets from his CASEiH AFS computer. The yield and protein data were imported into Farm Works to create Yield and Protein Maps.

Strip Trial Example

Name: College Rd Long
Paddock Size: 71ha
Tonnes: 483 t
Av Tonnage: 6.8t/ha
Av Protein : 11.8% (H2)
Fertilizer Rate Blanket : 200kg Urea
Strip Trial Fertilizer Rate VFA: 300kg Urea

The additional 100kg of Urea applied to three trial strips increased the yield by 0.5 t/ha compared to the field average of 6.8 t/ha.



The Protein map shows the Protein % for the three trial strips decreased by 1% as compared to the field average. This decrease in Protein resulted in a downgrade for loads delivered to the silo from H2 to APW.

By combining the information from the Yield Map, i.e., slight increase in yield, and the Protein Map, i.e., a drop in price based on grade, the farmer now has a means of quantifying whether applying an extra 100kg of Urea had positive or negative effect on his profitability for the field. The following table shows the Cost Analysis of applying extra Urea.

The answer is NO. The increase in yield would be offset by the decrease in payments because of load downgrades.

	200kg/ha	300kg/ha
Yield	6.8	7.2
Grade	H2 = \$193	APW = \$184
Field Size	71ha	71ha
Revenue	\$93,180	\$94,061
Urea Cost	\$6,205	\$9,308
Profit	\$86,975	\$84,753