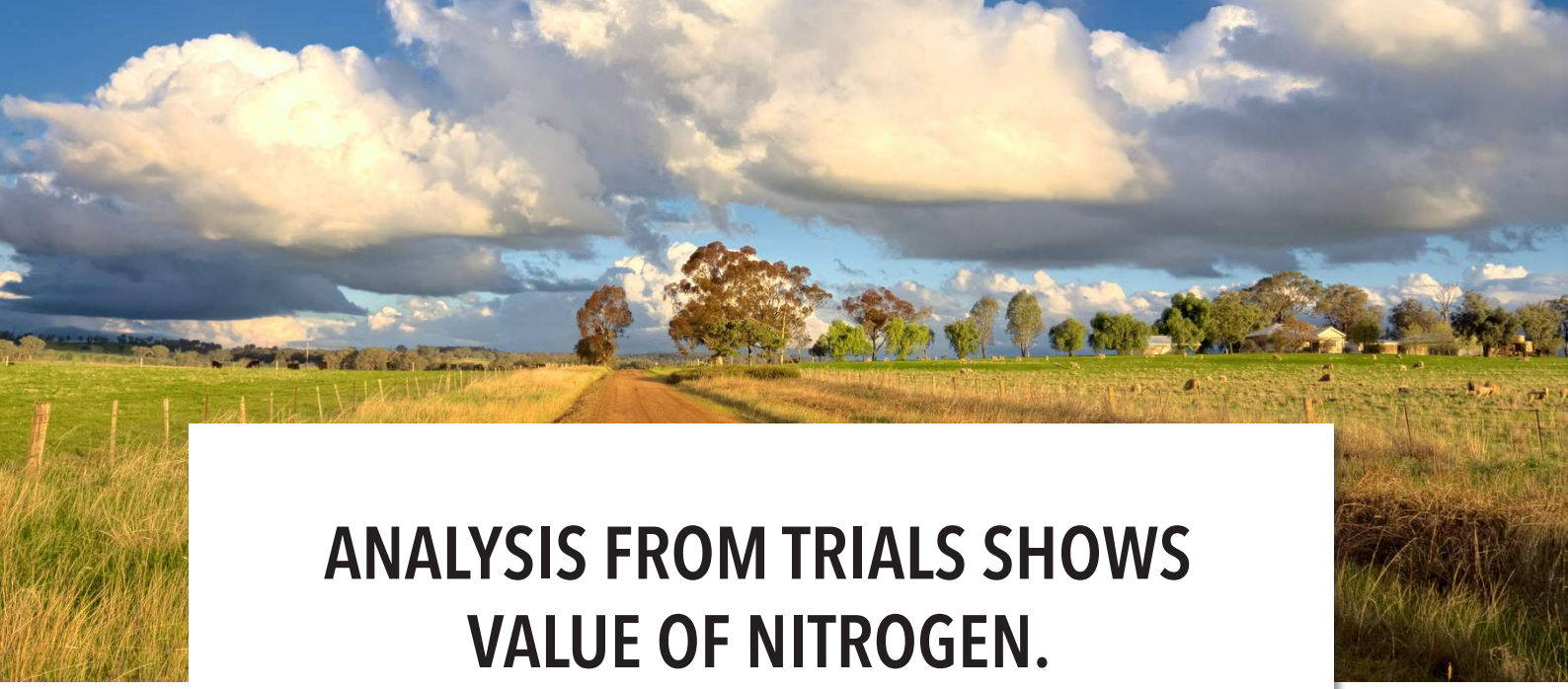


ANALYSIS FROM TRIALS SHOWS VALUE OF NITROGEN.

Charlie Walker - Incitec Pivot Fertilisers

ANALYSIS FROM TRIALS SHOWS VALUE OF NITROGEN

The results from seven fertiliser trials conducted in wheat last year in South Australia, Victoria and New South Wales indicate a positive correlation between nitrogen application rates and net returns.

Incitec Pivot Fertilisers commissioned the single year trials in wheat in 2013, collecting information on the crop responses to various nitrogen rates.

Charlie Walker, Technical and Development Manager with Incitec Pivot Fertilisers, then analysed the trial results, applying assumptions about wheat prices and costs, to indicate the financial returns of using different nitrogen rates.

As a result, the yield achieved in six of the seven trials resulted in a positive return net of fertiliser cost when compared with the control where no nitrogen was applied.

The wheat produced from each nitrogen rate was graded and given an assumed selling price based on the 2013/14 AWB eastern season starter pool (less estimated site costs1 for the silo closest to the trial). The fertiliser costs were assumed to be the Incitec Pivot Fertilisers recommended retail price from the nearest port, ex. GST on 25 February 2013, plus an estimated freight cost. These assumptions do not reflect labour, land holding costs or other expenses.

“At Dookie, Griffith, Bordertown and Willaura, returns net of fertiliser cost were positive and generally increased as nitrogen rates increased up to 120 kg/ha of nitrogen,” Mr Walker said.

“The exceptions were at Forbes where 30 kg/ha of nitrogen was not enough to increase wheat yields, but incurred a cost, and at Kerang where returns were variable and low due to lower average yields.”

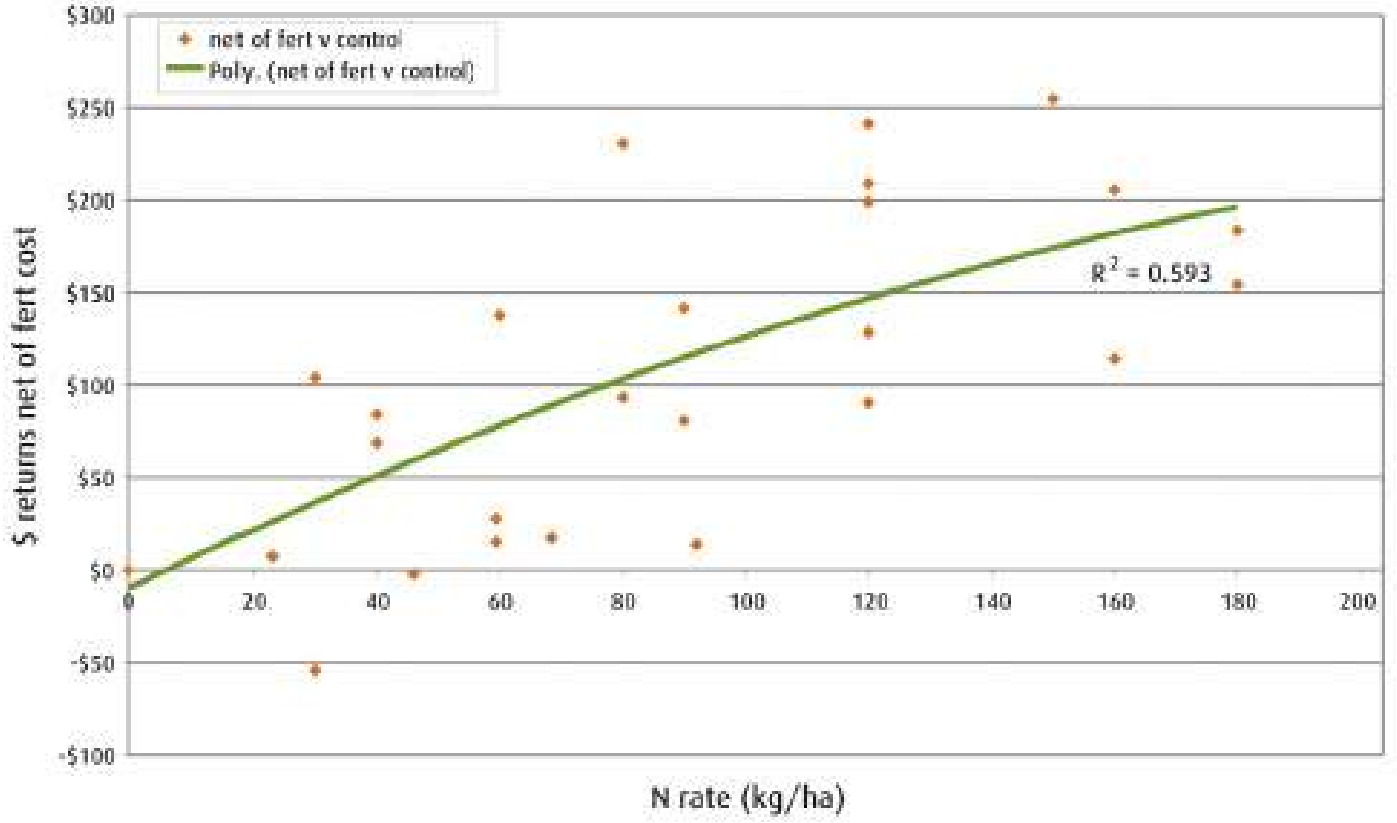
In the seventh trial, at Curban, the return net of fertiliser cost for all fertiliser application rates was less than the control. Mr Walker said that poor conditions and high residual nitrogen levels may explain this result.

“However, at Forbes, for example, applying 60 kg/ha of nitrogen yielded more than 5 t/ha of ASW1 grade wheat. On the same price assumptions, the return net of fertiliser cost was $28/ha greater than the control,” he said.

“Increasing rates to 90 kg/ha of nitrogen in this same trial at Forbes gave further yield gains and the return net of fertiliser cost was $80/ha higher than the control.

“Conversely, based on the same price assumptions, lowering the application rate to 30 kg/ha in the Forbes trial resulted in a negative return net of fertiliser cost when compared with the control.”

At the Willaura trial, 120 kg/ha of nitrogen gave the



Financial analyFinancial analysis of wheat response to N at six sites (excluding Curban) – 2013

top yield response, produced APW1 grade wheat and based on the same price assumptions, the return net of nitrogen costs was $241/ha greater than the control.

NOTE

Based on the six positive trial sites only (Dookie, Griffith, Bordertown, Forbes, Willaura and Kerang). Data from Curban excluded. Data from the 360 kg/ha of nitrogen rate at Griffith excluded. This chart represents the value of returns from increasing yield and achieving higher grade grain compared with the costs of the nitrogen applied. (Gross $ returns from treatment – gross $ returns from 0 N control – fertiliser cost)

"The correlation between returns and nitrogen rates shows that applying nitrogen fertiliser can provide good value in wheat in responsive situations," said Mr Walker.

He said advisers examining the combined data should consider the nitrogen rates generally used in their region.

Mr Walker encouraged advisers to base their nitrogen recommendations on sound information.

"While this analysis shows a general positive trend between using nitrogen and profitability, nitrogen fertiliser will not always boost profitability," he said.

"Use soil testing to determine starting soil nitrogen levels, ensure pests, weeds and diseases are under control and account for inputs from other nitrogen sources, including pulse crops and pasture rotations."

The full results of the financial analysis are available for review by members of the Agronomy Community at www.agronomycommunity.com.au or contact Charlie Walker, charlie.walker@incitecpivot.com.au.

REFERENCES

1 Estimated site costs include port, freight, receival and upcountry costs as quoted at www.awb.com.au