A Comparison of BioAg Bio-Stimulants for Improving a Conventional Fertiliser Program in Wheat

Introduction

A trial was conducted by Russell Ison, an agronomist at Tamworth Rural, in 2011 to evaluate the effectiveness of BioAg bio-stimulants in enhancing and improving a conventional fertiliser program in bread wheat. The trial was conducted at Brett and Jane Mason's property *Allawah*, on the Oxley Highway at Somerton, west of Tamworth.

The trial site at *Allawah* on the Oxley Highway, west of Tamworth.

The Aim of the Trial

The aim of the trial was to determine the extent to which the application of BioAg bio-stimulants would enhance the effectiveness of the conventional fertilisers applied at sowing and whether an economic benefit would result from applying them.

Treatments

The "control" treatment comprised an application of urea before sowing and of DAP at sowing (as shown in the following table) in line with district agronomic practice. In the BioAg plot, the same fertilisers were applied, but the BioAg products were applied in addition at the stages of development shown in the table.

Treatment	Product	Rate	Application Timing and Method
1. BioAg	DAP	75kg/ha	Down the tube at sowing
	Urea	120kg/ha	Pre-sowing
	BioAg Soil & Seed	3L/ha	Pre-sowing ground application
	BioAg Balance & Grow	2L/ha	Foliar spray at mid-tillering
	BioAg Fruit & Balance	2L/ha	Foliar spray at 2nd internode elongation
2. Control	DAP	75kg/ha	Down the tube at sowing
	Urea	120kg/ha	Pre-sowing

The trial layout was large plot unreplicated. The "control" and the BioAg treated plots were each 800m x 9m in area. The foliar treatments were applied using a three metre boom, incorporating eight 110010 AI nozzles, mounted on a quad bike. The treatments were applied in a total volume of 80 L/ha (e.g. 3 litres of Soil & Seed in 80 litres of water per hectare treated).

Part of the *Allawah* trial site showing the BioAg plot near the top left corner, and the control plot bottom right. The differences in colour and vigour stand out.

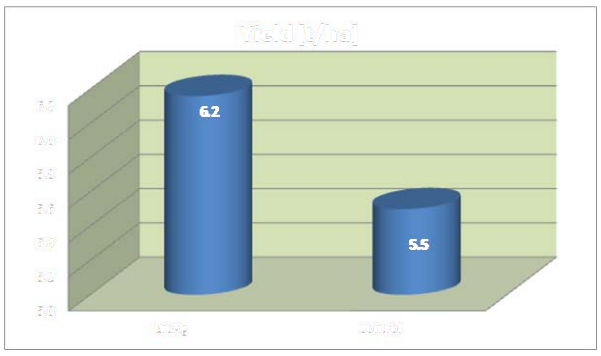
Results

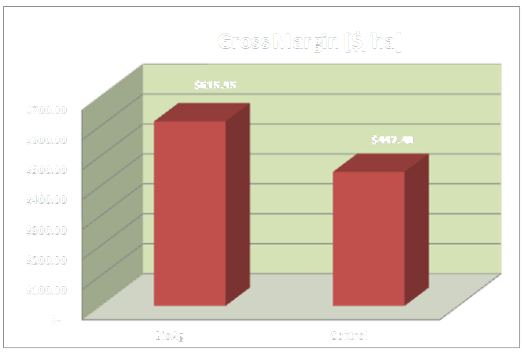
Yield

The yields of the two plots were measured at harvest. The BioAg treated plot produced an additional 0.7 tonne per hectare, which represents a 12.7% increase over the control.

Economic benefit

Taking into account the increase in yield, offset by an additional investment in the BioAg treatments of $42/ha (plus GST and application costs), Ison calculates the economic benefit of the BioAg treatments (expressed as additional gross margin) at $168.55/ha, a 37.7% increase over the control.





Conclusions

The addition of the BioAg bio-stimulants to the conventional fertiliser program in wheat has shown a positive result on yield and hence gross margin in this trial. The BioAg treated crop yielded an extra 700kg/ha (12.7%) compared with the "control" and this produced an extra $168.55/ha in gross margin (37.7%) after taking into account the extra cost of the BioAg treatment. The BioAg bio-stimulants therefore gave an excellent return on investment in this trial.

Agronomist's Comments

Tamworth Rural agronomist, Russell Ison reported as follows: "As well as the excellent yield response, the BioAg treatments had a positive effect on soil microbial activity, soil carbon and nitrogen balance. Under a biological program the crop appears to have increased nitrogen use efficiency as indicated by an increase in soil nitrogen after harvest when compared with the control treatment. The BioAg treatment was healthier with reduced leaf disease and nutrient deficiency symptoms. The grain quality was also higher with increased protein and lower screenings compared with the control".