

Evaluate the effects of Amino Boost Transit Max and Momentum ZBM Trio on improving crop performance in Lentils

1. Introduction

The lentil industry in Australia has experienced significant growth in recent years, establishing itself as a formidable player in the global agricultural landscape. Lentils, being a versatile and nutrient-rich crop, have gained popularity as a healthy food choice worldwide. Bio-stimulants and fertilizers play a crucial role in improving crop yield and yield quality. Amino Boost Transit Max (ABTM) is a premium quality plant bio-stimulant that assists in increasing root uptake, root growth, and translocation of nutrients and promotes the availability of sufficient nutrients throughout the complete growing season. Momentum ZBM Trio is a chelated fertilizer with Boron, Zinc, Magnesium, Molybdenum and amino acid. The aim of this trial was to assess the performance of ABTM and Momentum ZBM Trio on improving crop performance in Lentils.

2. Project aim

To evaluate the effects of Amino Boost Transit Max and Momentum ZBM Trio on improving crop performance in Lentils.

2.1. Project objectives

To assess the yield quality parameters of treated and control plants:

- a) Compare the NDVI values of each treatment at different growth stages
- b) Evaluation of crop yield in each treatment
- c) Calculate the ROI based on crop yield

3. Material and Methods

Site Selection and Trial Design

The trial was conducted in Kadina, South Australia. Treatment applications were made as seed treatments, liquid injections and foliar applications at different growth stages. There were seven treatments and four replicates in this trial. Table 1 shows the treatments, application rates and application methods of each treatment.

Table 1: Treatments and application rates of Amino Boost Transit Max

Treatment	Application Rate (L/ha)
Control	N/A
T1	ABTM @ 5L / tonne – seed dress
T2	ABTM @ 1L / Ha – liquid injection
T3	ABTM @ 3L / Ha – liquid injection
T4	ABTM @ 4L / Ha – early foliar application + 500mL Momentum ZBM Trio
T5	ABTM – combination of Seed dressing + Foliar
T6	Liquid injection + foliar

4. Observations

NDVI

NDVI measurements were taken from each treatment at different crop growth stages to compare the greenness of crop. Collected NDVI data was analysed by using a statistical data analysis software called GraphPad Prism.

Yield and ROI

To evaluate the effects of each treatment on enhancing crop yield, the yield of each plot was recorded during the commercial harvesting period. This was done to measure the impact of the treatments on the overall productivity of Lentils.

ROI calculation was done by using the Lentil yield in each treatment and the total cost including application cost and chemical cost.

5. Results

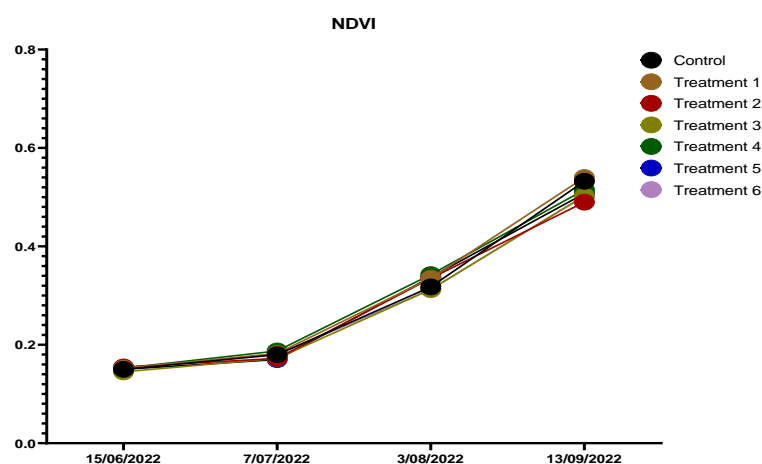


Figure 2: NDVI values in each treatment at different crop growth stages

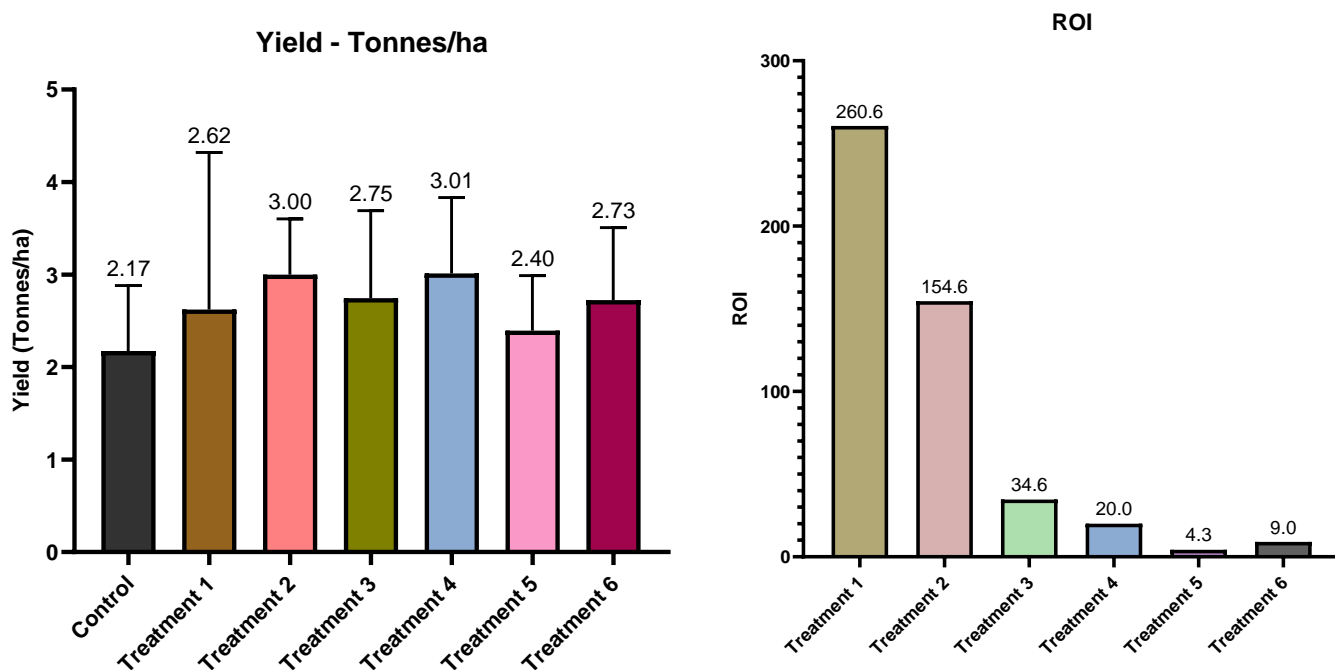


Figure 2: Effectiveness of different rates of Amino Boost Transit Max and Momentum ZBM Trio on improving yield and ROI in Lentil.

* Lentil price: \$750/tonne

6. Conclusion

All treatments had a higher yield compared to the control. Among them, treatment 2 (ABTM @ 1L / Ha – liquid injection) and treatment 4 (ABTM @ 4L / Ha – early foliar application + 500mL Momentum ZBM Trio) had the highest yield than all other treatments. The ROI calculations showed that treatment 1 (ABTM @ 5L / tonne – seed dressing) had the highest ROI than all other treatments. However, there was no considerable difference was observed in NDVI measurements between treatments. Hence, it can be concluded that applying of ABTM @ 1L / Ha – liquid injection is beneficial in improving crop yield and ROI in lentils.