

Project Catalyst

Case study



John and Dean Pastega examine the benefits of variable rates of suSCon

Grower Name: John and Dean Pastega
Entity Name: Pastega Holdings
Mill Area: Mackay Sugar - Marian
Total Farm Area: 700ha
Area under Cane: 540ha
No. Years Farming: 50
Trial Subdistrict: Eton



Dean and John Pastega

Growers participating in Project Catalyst trials provided data for analysis by economists from the Department of Agriculture and Fisheries to identify the cost-benefits and profitability of their trials. In this study, the Pastegas' and Farmacist trialled variable rates of suSCon Maxi Intel® (suSCon).

The objective of the trial was to examine the water quality, production and economic impacts from reducing the application rate of suSCon in a plant cane crop. It was expected that there could be a water quality improvement and economic benefit if sugar yield were maintained at the lower application rate.

TRIAL DESIGN

Farmacist worked with the Pastega family on their North Eton farm to conduct the trial over the 2017 and 2018 seasons. The Pastegas applied two different rates of suSCon at plant.

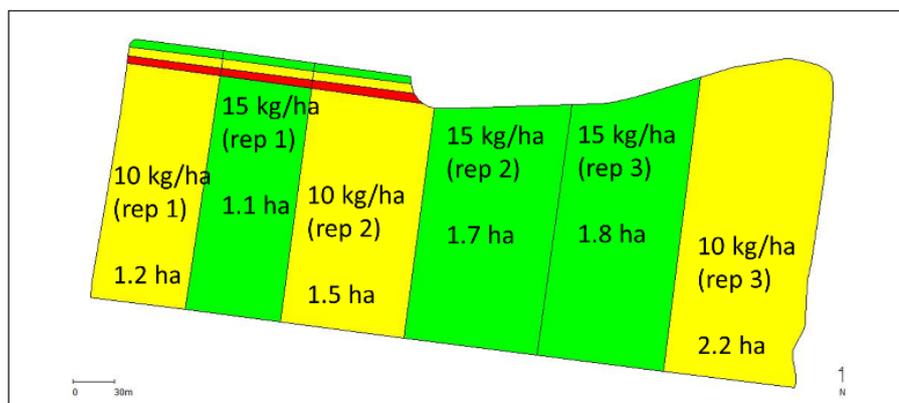


Figure 1: Trial design (source: Farmacist)

The treatments included suSCon applied at the grower standard rate of 15 kg/ha (maximum label rate) and a reduced rate of 10 kg/ha.

The randomised strip trial included three replications for both treatments (see figure 1). The plant cane crop was harvested in 2018. The trial will continue to monitor production and the resultant impact on profitability in follow-up ratoons.

KEY FINDINGS

- No evidence of grub activity indicated no grub damage at the time of inspection.
- Cane yields were significantly lower by 8 t/ha where suSCon was applied at a reduced rate.
- The reduced suSCon rate (10 kg/ha) had significantly lower profitability.

What it's about

Project Catalyst is a grower-led innovation project in sugar cane that was formed to explore and validate farm management practice change leading to improved water quality for the Great Barrier Reef. For more information on Project Catalyst please visit our website <https://www.projectcatalyst.net.au/> or phone Catchment Solutions on 07 4968 4216.

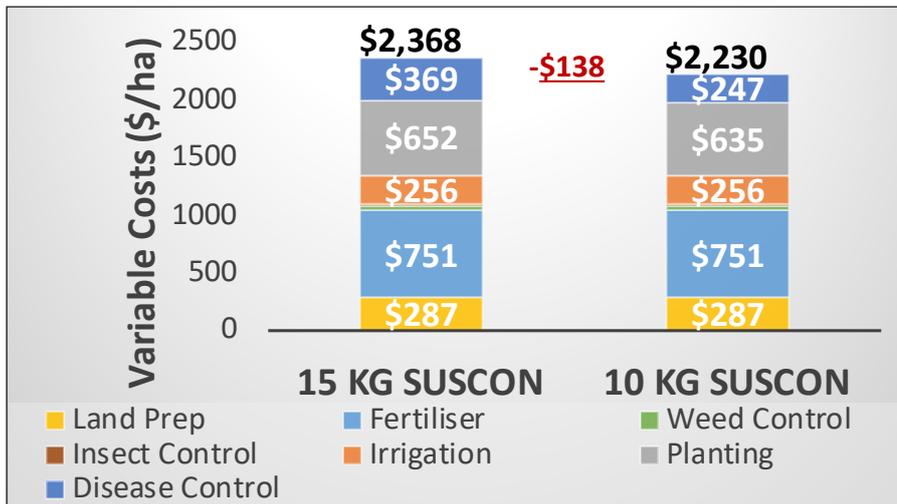


Figure 2: Variable cost breakdown (average)

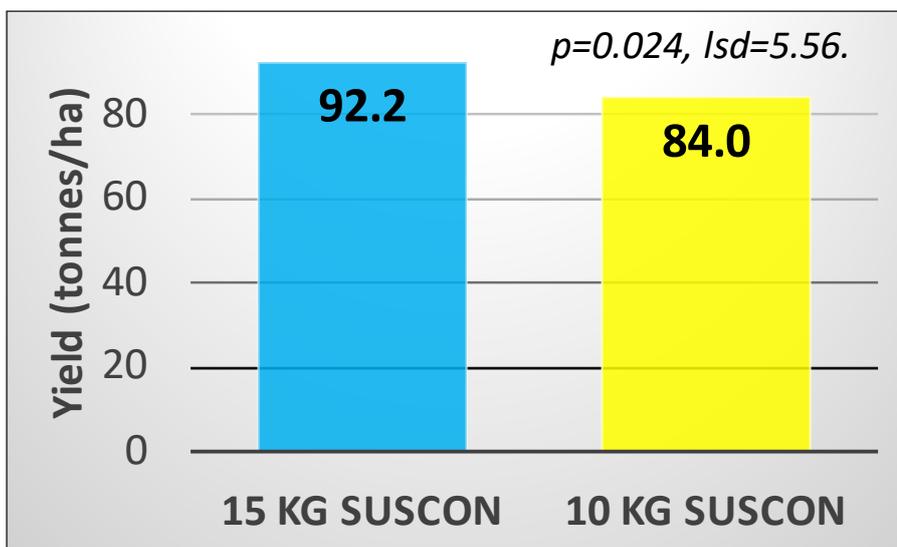


Figure 3: Average cane yields

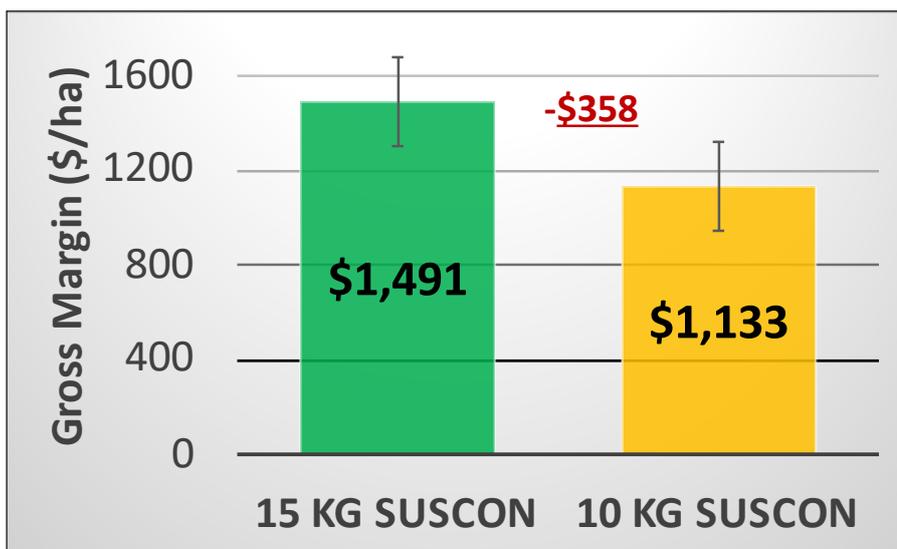


Figure 4: Average gross margins

COSTS

Figure 2 presents a breakdown of the variable costs for both treatments (excluding harvesting costs). The suSCon chemical cost change was the only major cost difference in the trial. The lower suSCon application rate reduced disease control variable costs by \$122/ha reflecting most of the difference in variable costs.

RESULTS

Figure 3 shows that the standard application rate of suSCon at 15 kg/ha produced 8.2 tonnes of cane per hectare (t/ha) more than the reduced application rate (10 kg/ha). The difference between the two suSCon rates was statistically significant ($p=0.024$).

The average gross margin was \$358/ha lower ($p=0.055$) at the reduced suSCon rate of 10 kg/ha (see figure 4). This was due to the lower application rate obtaining less cane yield than the higher application rate. The least significance difference error bars indicate the variability in the trial. Although there was a significant difference in both cane and sugar yield, there was no conclusive evidence it was due to a greater amount of grub damage.

CONCLUSION

In this trial, the standard application rate of suSCon attained a higher gross margin, due to the reduced application rate producing less yield. However, observed grub activity could not be directly linked to the differences in yield. Further trials need more focus on grub observations, particularly the timing of such observations. Results suggest that label rates of suSCon should be maintained.

For more information on the economic analysis please contact Brendon Nothard

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Note: The trial results are specific to this grower, paddock and prevailing conditions