

FINAL REPORT

KAL0001

Refinement of Crop Input and Management Strategies to Optimize Farm Profitability and Reduce Risk - Practice for Profit- Canola

PROJECT DETAILS

PROJECT CODE: KAL00001

PROJECT TITLE: REFINEMENT OF CROP INPUT AND MANAGEMENT STRATEGIES TO OPTIMIZE FARM PROFITABILITY AND REDUCE RISK - PRACTICE FOR PROFIT- CANOLA

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Summary

Objectives

To determine the yield, quality and profitability of three currently grown canola varieties compared to three potential replacements evaluated under three grower management practises in the region serviced by the West Wagin Top Crop Group. All varieties have been selected from the canola NVT trials conducted in the region.

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Outcomes

Background

After lengthy consultation and discussion with a number of LFGN grower group members across Western Australia we have determined that there is a need for growers in the various regions to benchmark crop variety adoption and refine the level of farm inputs required to Achieve target yield and quality parameters to maximise profitability and reduce risk. Of the eight groups involved in the discussion process, all were willing participants in the project. Due to the wide range of environments, soil types and rainfall zones, each group had different goals and objectives when selecting crop varieties and determining management strategies, crop inputs and level of risk.

Research & Outcomes

This trial was conducted in Arthur River, WA with the West Wagin Top Crop Group to establish the effect of increasing levels of inputs on the crop growth, disease infection, grain yield and profitability of six Canola (*Brassica napus*) varieties.

Low (\$74.54 /ha), Active Management (\$189.41 /ha) and High (\$257.76 /ha) input treatments were applied to the canola varieties Tanami[Ⓛ], Summit, Cobbler[Ⓛ], Bravo^{®#}, Thunder and Tornado^{®#} and crop vigour, disease infection and grain yield measured.

Increases in crop inputs tended to improve crop vigour at 69 DA-A. All varieties except Summitt[Ⓛ] and Bravo, showed significantly higher vigour in high input treatments relative to low inputs.

No variety accelerated or delayed flowering when subjected to differing input strategies, however there was a 14 day period between 50 % flowering of the quick maturing variety (Tanami) and the longer maturing variety (Summitt).

With very good seasonal growing conditions, canola yields ranged from 2.4-3.7 t/ha across the site. Tanami, Bravo and Summitt all yielded highest when supplied with high inputs, while Cobbler, Thunder and Tornado were less yield responsive, achieving highest yields under active management. No variety showed significant increases in yield between active and high input treatments.

Tanami, Cobbler, Bravo and Tornado all yielded significantly more in high input than low input treatments. Summitt and Thunder, the two longest season varieties showed no response to increased inputs.

Increasing inputs resulted in significantly higher protein and lower oil for Cobbler, Bravo and Summitt. No significant differences were observed for Thunder or Tornado, while Tanami showed higher protein, but no change to oil content.

Tanami was the only variety that significantly increased gross margin (GM) with increased inputs. All other varieties showed no significant differences between any input strategy. Factorial analysis showed active management and high input

strategies provided similar returns, and both showed significantly higher returns than low input treatments.

Reduced risk through lower expenditure, and a similar return to the high input treatment make the active management strategy most beneficial to growers. The substitution of Jockey for the Impact In-furrow in this protocol, which may further reduce expenditure without compromising disease protection, could also be considered to further improve returns.

Implications

All input treatments provided significantly less macro and micro nutrients than was removed in the grain harvested from this trial, with higher nutrient removal in the low input treatment due to high yields achieved. This is not reflected in the single year gross margin (GM) analysis used in this report, but should be considered when making management decisions on crop inputs.