INCREASING THE PROFITABILITY OF THE DOUBLE BREAK ROTATION IN THE MRZ OF WA WHEATBELT THROUGH INCORPORATION OF AN EARLY SOWN HIGH VALUE PULSE

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Lead Organisation: Liebe Group

Collaborators: West Midlands Group (led), Liebe Group, CFIG, Facey Group

PROJECT FUNDERS

GRDC
GRAINS RESEARCH & DEVELOPMENT CORPORATION

REPORTS AND LINKS

NA

Aim: The objective of this trial is to demonstrate that growing canola (with effective weed control options) followed by a high value legume (with higher economic value) can lead to an effective and profitable double break crop sequence. The contribution of an early sowing date versus a traditional sowing date to increase the profitability of these crops will also be evaluated.

Project Information: Break crops are widely acknowledged as being necessary to manage the biological constraints that reduce cereal crop production. While break crops have traditionally been used as a single crop in rotation, the use of two break crops in sequence has been shown to greatly increase cereal crop production and profitability, particularly as shifts in disease presence and increases herbicide resistance in weeds has reduced the effectiveness of a single break crop.

One of the constraints in the use of a single or double break crop sequence is that the Gross Margin of the most commonly used break crops are generally less than growing a cereal crop. As a result, break crops are used sparingly by growers in crop rotations with the aim of maintaining the most profitable sequence of crops while maintaining reasonable control of weeds and diseases. The short term decrease in economic return from growing a break crop is offset by the longer term benefits of decreased production costs and increase the productivity of cereal crops for many years following.

The most desired traits of a break crop are to be highly effective in controlling weeds and disease while also being highly profitable. Current highly effective break crop options of canola and lupin are rated as moderate to low profitability (respectively) by growers, while pasture phases or fallow period generally result in a low or negative Gross Margin. The integration of high value legumes such as chickpea or lentil have been successful in medium to low rainfall environments of Eastern Australia to improve crop rotation profitability while maintaining effective weed control.

Recent studies in WA found that profitable grain yields of both chickpea and lentil are achievable in the medium rainfall zone (MRZ) of the WA Wheatbelt. The impact of earlier sowing of these pulses has also been demonstrated to significantly increase in the profitability of these high value legumes. The downside of high value legumes is that potentially these break crop options have less developed (and therefore less effective) weed management packages for the WA environment.

This project will deliver innovation to growers by demonstrating a double break crop sequence of canola followed by chickpea or lentil that increases both the effectiveness and profitability of break crop phase to increase the overall productivity and profitability of crop rotations in the MRZ of WA. This project will determine the economic value of growing canola followed by a high value legume, and the impact of this rotation on the grain yield and profitability of a cereal crop in the first year following the double break crop sequence